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NTNU
Norwegian University of Science and Technology
Faculty of Social and Educational Sciences
Department of Psychology

Benjamin Andersen Sandoval
Tora Margrethe Hustad
Ida Maria Brennhaugen

Effects of interventions for eating disorders in children and adolescents

An overview of systematic reviews

Graduate thesis in Department of Psychology
Supervisor: Silje Steinsbekk
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Abstract

Background. Eating disorders (EDs) have severe health consequences for children and adolescents. The need for effective preventive interventions and treatments is therefore salient, but an overview of systematic reviews examining the effectiveness of interventions in childhood and adolescence is lacking. The present work thus aims to summarize and evaluate the effects of such interventions to inform policy makers and healthcare providers.

Methods. We searched for systematic reviews evaluating any preventive or treatment interventions targeting children and adolescents with or at risk of developing eating disorders. We reported the findings descriptively and assessed the certainty of the evidence using the GRADE approach.

Results. A total of 37 comparisons were extracted from six systematic reviews. For most interventions, the certainty of the evidence is very low or low. Low to moderate certainty evidence suggests that some preventive approaches may reduce risk factors associated with the development of EDs. Low certainty evidence indicates that family therapy might be favoured over individual therapy for anorexia nervosa and bulimia nervosa. For binge eating disorder, CBT-ED and internet-based semi-structured self-help might be appropriate treatments. Despite the overall low-certainty evidence, a substantial amount of ED patients achieved remission after a wide range of treatments.

Conclusions. There is a lack of studies focusing exclusively on child and adolescent populations, and the research is characterized by low methodological quality, making it difficult to draw definite conclusions. Further research is warranted to ensure high-quality evidence in the ED field for children and adolescents.

Sammendrag

Bakgrunn. Spiseforstyrrelser gir betydelig og varig redusert helse hos barn og ungdom. Det er derfor stort behov for effektive forebyggings- og behandlingsmetoder, men det finnes per dags dato ingen oversikt over systematiske oversikter som undersøker dette. Hensikten med denne kunnskapsoppsummeringen er å sammenfatte og evaluere effekten av denne typen intervensjoner på barn og unge for å underbygge evidensbasert beslutningstaking helsevesenet.

Metode. Vi inkluderte systematiske oversiktsartikler som evaluerer forebyggende tiltak eller behandlingsmetoder for barn og unge med, eller i risiko for å utvikle, spiseforstyrrelser. Funnene ble beskrevet deskriptivt, og tilliten til effektestimatene ble vurdert med GRADE.

Resultat. Dokumentasjonsgrunnlaget bygger på 37 sammenlikninger hentet fra seks systematiske oversiktsartikler. For de fleste intervensjonene er tilliten til effektestimatene lav til svært lav. Evidens av lav til moderat sikkerhet tyder på at enkelte forebyggingstiltak kan redusere risikofaktorer som er forbundet med utvikling av spiseforstyrrelser. Evidens av lav sikkerhet indikerer at familieterapi er mer effektivt enn individualterapi for behandling av anoreksi og bulimi. CBT-ED og internettbasert selvhjelp har muligens effekt på overspisingslidelse. Til tross for dokumentasjonsgrunnlag av lav kvalitet, blir en betydelig andel av pasientene friske uavhengig av behandlingstilnærming.

Konklusjon. Få studier fokuserer utelukkende på barn og unge, og forskningen er preget av lav metodologisk kvalitet. Det er derfor vanskelig å trekke sikre konklusjoner. Det er behov for ytterligere forskning for å sikre økt tillit til effekten av behandling og forebygging av spiseforstyrrelser hos barn og unge.

Preface

This overview of systematic reviews was conducted in collaboration with the Regional Centre for Child and Adolescent Mental Health, Eastern and Southern Norway, and the result will be published in BUP-håndboka.

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Conflict of interest

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Glossary

AN	Anorexia Nervosa
AMSTAR	A MeaSurement Tool to Assess systematic Reviews
ARFID	Avoidant/Restrictive Food Intake Disorder
BED	Binge Eating Disorder
BDI	Becks Depression Inventory
BFST	Behavioral Family Systems Therapy
BMI	Body Mass Index
BN	Bulimia Nervosa
BRIEF	Behavior Rating Inventory of Executive Function
CBT	Cognitive Behavioral Therapy
CDI	Children's Depression Inventory
CI	Confidence Intervals
CRT	Cognitive Remediation Therapy
DARE	Database of Abstracts of Reviews of Effect
EBW	Expected Body Weight
ECHO	Experienced Parents Helping Others
ED	Eating Disorder
EDE	The Eating Disorder Examination
EDNOS	Eating Disorder Not Otherwise Specified
EDI	Eating Disorder Inventory
EoT	End of Treatment
FBT	Family Based Treatment
FT	Family Therapy
GRADE	Grading of Recommendations, Assessment, Development and Evaluations
IBW	Ideal Body Weight
IPC	Intensive Parental Coaching
ITT	Intention to Treat
mBMI	Median Body Mass Index
MFT	Multi-Family Therapy
NICE	National Institute for Health and Care Excellence
OSFED	Other Specified Feeding or Eating Disorder
PROSPERO	international Prospective Register of Systematic Reviews
RR	Risk Ratio
SMD	Standardized Mean Difference
SPT	Supportive Psychotherapy
SyFT	Systemic Family Therapy
TAU	Treatment as Usual
UFED	Unspecified Eating or Feeding Disorder
WMD	Weighted Mean Difference

1.0 Introduction

Eating disorders (EDs) is a collective term for psychiatric disorders characterized by disturbed eating behavior, resulting in clinically significant impairment of physical health or psychosocial functioning (Fairburn & Harrison, 2003).

EDs are often long lasting and have serious implications, including a high risk of death, psychiatric comorbidity, and poor quality of life for patients and their relatives (National Institute of Care and Health Excellence [NICE], 2017, p. 22). When affecting children and adolescents, EDs may affect psychological and social development, causing long lasting damage (Gowers & Bryant-Waugh, 2004). The peak onset age of EDs is in adolescence, and anorexia nervosa (AN) is one of the most common psychiatric disorders affecting teenage girls (Sim et al., 2010; Weaver & Liebman, 2011).

In order to reduce these consequences, effective preventive measures are important. In cases where preventive measures have not been implemented or have failed to be effective, it is important to offer effective treatments at an early stage of the disorder. This is essential because longer illness duration is associated with more severe health consequences (The Norwegian Directorate of Health, 2017).

As to our knowledge, no overview of systematic reviews has been conducted on the effects of interventions for preventing and treating EDs amongst children and adolescents. To inform clinicians and policymakers, such an overview would be most valuable. The present work therefore aims to systematically evaluate the available evidence for preventive and treatment interventions for children and adolescents under the age of 18 who are at risk of developing or have developed EDs.

1.1 Characteristics of eating disorders

Both DSM-5 (American Psychiatric Association [APA], 2013) and ICD-11 (World Health Organization, 2018) list 8 different feeding and eating disorders, with substantial overlap in the diagnoses. The present work is based on the DSM-5 diagnoses mainly covered in research, namely anorexia nervosa, bulimia nervosa, binge eating disorder and OSFED/UFED, and their diagnostic criteria are described below. Please note that there are no age or gender specific diagnostic criteria for any of these disorders.

Anorexia nervosa. Anorexia nervosa (AN) is a disorder characterized by deliberate weight loss, induced and sustained by the patient. The diagnostic criteria include refusal to maintain a body weight at or above a minimal normal weight for age and height, an intense fear of gaining weight or becoming fat even though they are underweight, a dread of fatness and flabbiness of body contour persisting as an intrusive overvalued idea, as well as disturbances in how they experience their body weight or shape (APA, 2013, p. 338-339).

The disorder is associated with low body weight, which can lead to secondary disturbances of body function (APA, 2013, pp. 339-340). AN has the highest mortality rate of all psychiatric illnesses (Arcelus et al., 2011).

Bulimia nervosa. Bulimia nervosa (BN) is a disorder characterized by repeated overeating and preoccupation with the control of body shape and weight. This leads to a pattern of overeating followed by vomiting or use of purgatives. Repeated vomiting might lead to disturbances of body electrolytes and physical complications. BN often, but not always, occurs when there is a history of AN (APA, 2013, p. 347).

Binge eating disorder. Binge eating disorder (BED) is characterized by recurrent episodes of binge eating. Binge eating involves eating an amount of food in a short period of time that is considerably larger than most people would eat in a similar period of time under similar circumstances (APA, 2013, pp. 350). During these episodes, patients report a sense of lack of control. These episodes occur even when the person is not hungry and consist even if the person is uncomfortably full. They often take place when one is alone. Afterwards, one might feel depressed, disgusted or guilty. The episodes are not associated with the regular use of compensatory behavior (e.g., purging, fasting, exercise; APA, 2013, pp. 350-353).

EDNOS/OSFED/UFED. EDNOS (Eating Disorder Not Otherwise Specified) was the term previously used in DSM for what is today called OSFED (Other Specified Feeding or Eating Disorder) or UFED (Unspecified Feeding or Eating Disorder; APA, 2013, p. 354). OSFED/UFED is diagnosed when a person has symptoms consistent with AN or BN but does not meet the full criteria for a diagnosis. People with this disorder usually fall into one of three groups: 1) Sub-threshold AN or BN, 2) mixed features of both disorders, or 3) extremely atypical eating behaviors that are not described by either of the other established disorders (APA, 2013, pp. 353-354). Children are more often diagnosed with OSFED/UFED than adults (Kohn & Golden, 2001).

Other eating disorders not covered in this review. The following eating disorders are not covered in the current overview but are briefly mentioned here for reasons of completeness.

Pica is a disorder characterized by the developmentally and culturally inappropriate eating of nonnutritive, nonfood substances such as hair, paper or soap, on a persistent basis. The behavior can result in medical emergencies such as intestinal obstruction and poisoning. Pica can occur in otherwise normally developing children, but also regularly co-occur with autism spectrum disorders as well as intellectual disability (APA, 2013, p. 330-331).

Rumination disorder is a disorder characterized by the repeated regurgitation of food, which may be re-chewed, re-swallowed or spit out. The disorder can result in serious malnutrition. Rumination disorder is most commonly observed in children and adolescents with intellectual disability (APA, 2013, p. 332-333).

Avoidant/restrictive food intake disorder (ARFID), introduced in DSM-5 in 2013, is characterized by the avoidance or restriction of food intake, resulting in failure to meet requirements of nutrition or energy intake (APA, 2013, p. 334). The disorder is sometimes associated with heightened sensitivity to the sensory characteristics of the food (i.e., texture, temperature, taste), as well as to traumatic memories associated with the experience of eating or feeding. There are no disturbances in the way in which one's body weight or shape is experienced (APA, 2013, p. 335).

Transdiagnostic perspective. Although the EDs described above have their specific characteristics and constitute different diagnoses, it has been suggested that EDs may be understood from a transdiagnostic perspective. There is substantial overlap between diagnostic criteria for the different ED diagnoses, and many patients "move between ED diagnoses". For instance, patients with BN often, but not always, have a history of AN (APA, 2013, p. 347). In addition, many of the OSFED/UFED patients might be subthreshold AN or BN patients, meaning they have several, but not all AN or BN symptoms, or they might have mixed features of both disorders (APA, 2013, p. 353-354). This indicates that there is symptomatology that is common across disorders.

Fairburn and colleagues (2015) propose that all ED psychopathology is maintained by a largely common set of mechanisms, and treatment that is capable of addressing these mechanisms can be effective across EDs. They suggest the following transdiagnostic mechanisms to be at play: 1) dysfunctional systems for evaluating self-worth, involving basing

your self-worth on your weight, shape or eating behavior; 2) clinical perfectionism, which involves a severe and unrealistic perfectionism; 3) core low self-esteem, which concerns the impact of unconditional and pervasive low self-esteem; 4) mood intolerance, which concerns difficulty with coping with intense mood states; and 5) interpersonal difficulties, difficulties with creating and maintaining healthy social relationships. It is possible that addressing these mechanisms might be effective both as treatment and as prevention for EDs.

Comorbidities. The comorbidity of children and adolescents as a separate group is not known, but over 70% of individuals with an ED suffer from psychiatric comorbidity, and comorbidity elevates the risk of suicide (Keski-Rahkonen & Mustelin, 2016). Common comorbid disorders are anxiety disorders (e.g., social anxiety, OCD), mood disorders (e.g., depression), compulsive behavior and impulsive behavior (e.g., self-harm, alcohol use; NICE, p. 23). There are few treatment studies that focus on treating both the ED and the comorbid illness, but studies show that treating the ED also has an effect on the comorbid illness (The Norwegian Directorate of Health, 2017). Only studies on treating the EDs alone are included in this review.

Schmidt (2003) argues that based on the high levels of comorbidity between eating disorders and other psychiatric disorders, there might be shared genetic vulnerability between EDs and the many comorbid illnesses.

1.2 Prevalence of eating disorders

The estimated prevalence of EDs varies between studies, and at least some of the variation can be attributed to the use of different diagnostic criteria between studies and to which degree the health care system manages to detect those affected (Keski-Rahkonen & Mustelin, 2016; Smink et al., 2012, 2013).

AN has a peak age of onset of 13 to 18 years (Weaver & Liebman, 2011) and BN has a peak age of onset of 16 to 17 years (Sim et al., 2010), placing the peak onset in adolescent years. Data considering prevalence in children and adolescents is scarce, but in young women (15-45 years), 0.2-0.4% have AN, 1-2% have BN and 1.5-3.2% have BED at any particular point in time (The Norwegian Directorate of Health, 2017). More specifically, the lifetime prevalence of AN for European women is <1-4%, <1-2% for BN and <1-4% for BED (Keski-Rahkonen & Mustelin, 2016). The average duration of EDs in general is 6 years (Schmidt et al. 2016).

ARDIF was introduced as a diagnosis in DSM-5 in 2013 (APA, 2013), and therefore research is scarce. Nicely and colleagues (2014) found that 22.5% of children and adolescents in a day program treating EDs met the ARFID diagnostic criteria, and most of these were formally diagnosed with EDNOS.

Gender differences in eating disorders. In adult populations 10-25 % of ED patients are male (Beat, 2015; Murray et al., 2017), but this predominance of females with EDs appears to be lower in children and adolescents compared to in adults, and among the very youngest of patients the sexes might be equally affected (Rosen, 2010). One systematic review found a lifetime prevalence of EDs of 8.4% for women and 2.2% for men (Galmiche et al., 2019). In BED, the difference is less pronounced with about a third of BED patients being male (NICE, p. 21).

Murray et al. (2017) argue that the perception of EDs as rare in the male populations has resulted in stigmatization and systematic underrepresentation of males in ED research. They also suggest that the ideal male body is a muscular one, which is qualitatively different from the thin-body ideal described in women. Even very young boys down to the age of six demonstrate a preference for muscular body types (Baghurst et al., 2007). This might lead to disordered eating patterns that are not covered by the ED diagnostic criteria (Murray et al., 2017), resulting in underrepresentation in the statistics, especially amongst adolescents and adults.

1.3 What differentiates eating disorders in children and adolescents from eating disorders in adults?

Although children and adolescents with EDs are a heterogenous group (Campbell & Peebles, 2014), they do differ from adults with EDs in several regards, underscoring the need for specialized treatment for children and adolescents.

Children and adolescents with EDs are more likely than adults to have premorbid psychopathology (Rosen, 2010). Children and adolescents more rarely present the body shape perception disturbances that are needed for a full DSM-5 AN diagnosis. It has been suggested that these disturbances in perception are rarer in children because they depend upon factors of cognitive development not acquired until adolescence (Robin et al., 1998).

Until the adoption of the DSM-5 (APA, 2013), the weight criterion for AN depended on the child or adolescent being below the 85th percentile on age-adjusted BMI measures. Applying this weight criterion is difficult because inadequate nutrition in children and adolescents often

presents as a failure to grow and not as weight loss (Robin et al., 1998; Rosen, 2010). This could have had an impact on the number of children being diagnosed with OSFED/UFED instead of AN prior to 2013. Children and adolescents often fail to meet the criteria for BN because they might purge but not binge, or do not meet the frequency of binging and purging expected (Robin et al., 1998). Despite often not meeting the criteria for an AN or BN diagnosis, research suggests that serious sequelae normally attributed to AN or BN may also occur in sub-clinical cases (Robin et al., 1998). Additionally, since children and adolescents have less power to change their environment than adults, interventions that target the environment, i.e., the family system, may be more likely to succeed than interventions targeting individuals.

Given the aforementioned differences in presentation, relevant differences in the applicability of interventions seem plausible. Also, fitting interventions to the cognitive and emotional development of children requires adaptation that might impact the effect of the intervention.

1.4 Etiology

There is no consensus on the causal factors that lead to ED development. The psychopathology is thought to arise from the interplay of multiple risk and protective factors of both biological and psychosocial nature (Schmidt, 2003). The etiology has been explained from several clinical perspectives, including biological theories, psychosocial theories (Klump, 2014) and family theories (Attie et al., 1990). Because of the onset age being in adolescence, one of the most studied factors in recent years have been puberty (Klump, 2014), when biological changes often appear alongside with increased pressure from school, family and peers.

Biological theories have stated that development of EDs could be biological in origin. For instance, Scott (1986) proposed that an interaction between a biological predisposition toward an illness and adverse environmental factors could result in EDs. Evidence suggest that biological predispositions might be a factor, as heredity of EDs is moderate to high, with about 50% explained variance (Culbert et al., 2015), but environmental factors also need to be present.

Researchers have also found some evidence of neurobiological conditions and cognitive difficulties in ED patients. However, it is hard to determine whether they *cause* the ED or are a *consequence* of malnutrition (Culbert et al., 2015). On one hand, these conditions and difficulties might increase the risk of developing an ED. On the other hand, dieting and a low food intake

can cause neurobiological changes that might influence psychological functioning (Stice et al., 2017).

Psychosocial theories, on the other hand, emphasize the role of body dissatisfaction, self-esteem and mood in causing increased dieting, which is a possible triggering factor for EDs (Klump, 2014; Zipfel et al., 2015). Adolescents with early onset puberty are believed to be at particular risk as they experience changes in the body before their peers, possibly leading to increased body dissatisfaction (Klump, 2014). The emphasis on puberty as a triggering factor in a psychosocial perspective might also serve as an explanation for the gender difference in adolescents. This is because puberty moves boys closer to the muscular body ideal, and girls further away from the thin beauty ideal (Klump, 2014), and findings suggest that the pursuit of this ideal increases the risk of ED development, which leads to body dissatisfaction (Stice et al., 2017). Other traits associated with EDs are low self-esteem, perfectionism and rigidity (Haynos et al., 2016; Stice et al., 2017).

Factors in the family have also been identified as potential predictors of EDs, and family theories have claimed that dynamics in the family might serve as both the cause of EDs and a maintaining factor (Attie et al, 1990). Resent research suggest that conflicts in the family and parents that are emotionally unavailable increase the risk for developing EDs (Bakalar et al., 2015; Haynos et al., 2016). Further, parents who frequently talk about weight have been shown to have children who are more often dieting and using unhealthy weight strategies. Parents who instead talk about health and normal eating behaviors, seem to serve as a protecting factor against EDs (Berge et al., 2013). Other known protective factors are stable family relations, social networks and social support (Haynos et al., 2016).

No single model can explain the etiology, onset and maintenance of EDs. Different stressors, puberty, family relations, sociocultural factors and dieting have been pointed to as possible triggering factors (Zipfel et al., 2015). But individual development, specific family contexts, biogenetic dispositions and sociocultural influence might all contribute to a child being vulnerable to ED development.

1.5 Preventive interventions

There exists a range of preventive measures for EDs in children and adolescents, aiming to stop the disorders from developing. Some are purely educational, whilst others depend on

more involvement from the targeted population (Le et al. 2017). The aim of preventive efforts is to reduce symptoms and behavior associated with ED development; for instance, thin-ideal internalization (Becker et al., 2010), dieting (Berge et al., 2013), body dissatisfaction (Stice et al., 2017) and self-esteem (Haynos et al., 2016). These can be measured in several ways, and many studies use questionnaires such as Eating Attitudes Test (EAT) or Eating Disorder Questionnaire (EDQ); Le et al., 2017). In general, preventive efforts target three different groups: Universal prevention targets whole populations (e.g., a high school class), selective prevention targets specific high-risk populations (e.g., women with self-reported body-image concerns or athletes with a certain score on a body-image concern questionnaire), and indicated prevention targets people with symptoms of EDs but who have not developed a full-blown disorder (e.g., females with a high score on a questionnaire regarding eating problems (e.g., the weight and shape concern subscales in EAT or EDQ); Le et al., 2017). In the present overview, we include all these three categories of prevention.

Some preventive interventions included in this overview are based on treatments described in the following section (cognitive behavioral therapy and psychoeducation), whilst others are more specific for prevention, such as media literacy interventions, healthy weight interventions, and cognitive dissonance-based interventions. Some are also based on a combination of these.

Media literacy interventions. These interventions promote independent critical thinking when exposed to societal standards of beauty in the media, in order to decrease internalization of sociocultural pressure. The goal is for the recipients to become active, conscientious consumers of the images and values that dominate the media. This may in turn lead to a reduction in body dissatisfaction (Couglin & Kalodner, 2006), which is associated with ED development (Stice et al., 2017).

Healthy weight interventions. These interventions focus on encouraging participants to balance their caloric intake and output in order to attain a healthy body weight. They make small changes in order to change unhealthy habits, so that they eventually feel empowered to achieve a healthy weight for their body type. This in turn increases self-efficacy, which is presumed to contribute to reduced body dissatisfaction, negative affect and ED pathology (Becker et al., 2010).

Cognitive dissonance-based interventions. Cognitive dissonance theory states that people will work to resolve inconsistencies between their beliefs and their actions (Festinger, 1962). Preventive interventions based on this theory use this by having participants who have internalized the thin-ideal standard of beauty engage in activities opposing it, and thus produce dissonance. In order to reduce dissonance, the participants might decrease their investment in the thin-ideal, which in turn reduces other risk factors for ED development (Becker et al., 2010).

1.6 Treatment interventions

A range of different methods exist for the treatment of EDs in children and adolescents. The overall aim of treatment measures is to reduce symptoms of EDs. How this reduction in symptoms is measured in treatment intervention research varies according to which ED is being studied (see section 1.1 for details about specific diagnostic criteria for each ED). Nevertheless, some outcome measures are equally used throughout the research field and across diagnoses: Remission, BMI or weight, different questionnaires targeting typical psychological or behavioral aspects of EDs, and general psychopathology or depression.

Remission is the absence of symptoms for at least a brief period of time (Couturier & Lock, 2006b). How remission is measured is not always explicitly stated in the systematic reviews included in this overview. When described, however, common measurements are an average or good outcome on the Morgan Russell Outcome Assessment Schedule and/or body weight. Questionnaires that are commonly used include the Yale-Brown-Cornell Eating Disorder Scale (YBC-EDS), the Eating Disorder Inventory (EDI) and the Eating Disorder Examination (EDE). Studies report total scores or subscale scores, for instance focusing on eating and shape concerns (EDE subscales) or drive for thinness and body dissatisfaction (EDI subscales).

Below, we briefly describe the treatment interventions covered in our overview. When applicable, we also mention some of the recommendations for treatments given by The Norwegian Directorate of Health (2017) and NICE (2017). In cases of overlapping recommendations, the Norwegian recommendations are mentioned. In general, NICE (2017) recommends that if there are no guidelines specifically for children and adolescents, one should use the recommendations for adults. For OSFED/UFED, one should treat it like the illness it most closely resembles (NICE, 2017).

CBT-ED. Cognitive behavioural therapy (CBT) is a form of psychotherapy that focuses on the patterns of thought and behaviour that contribute to psychological disorders (American Psychological Association, n.d.). Adaptations of CBT for use on patients with eating disorders are named CBT-ED (eating disorder), CBT-AN (anorexia nervosa), CBT-BN (bulimia nervosa), and CBT-E (enhanced for transdiagnostic use; Linardon et al., 2017). In the different CBT-ED treatments, eating disorders are viewed as fundamentally cognitive disorders because of the role that abnormal cognitions are thought to have in the maintenance of the disorders (Fairburn, 2008, p. 23). There are several abnormal cognitions associated with the EDs anorexia nervosa and bulimia nervosa. One core belief is thought to be the exaggerated value placed on weight and shape when evaluating self-worth. In CBT-ED, the impact of this belief on the patient's feelings of self-worth is thought to explain why they have such difficulty giving up on weight-lowering or weight-maintaining behaviours (Gowers, 2006). Therefore, working to change these cognitions through cognitive restructuring and behavioural experiments is thought to be effective treatment for eating disorders (Waller et al. 2007). NICE (2017) recommends that individual or group CBT-ED is given to patients with BED and to children and young people with AN or BN if Family Therapy is not applicable.

Family therapy. The Norwegian Directorate of Health (2017) strongly recommends a family-based treatment specialized for EDs. They also strongly recommend dialogue and cooperation with family and others during treatment. Family therapy in the treatment of EDs involves a range of approaches, derived from different theories, but they all involve and focus on families in the treatment. Family system theories describe how family dynamics can contribute to the development or maintenance of problems in the family system, including EDs. Thus, the assumption is that by improving family dynamics, one can help treat individuals within the family suffering from an ED (Fisher, 2019).

One of the most used approaches, family-based therapy (FBT or Maudsley's model) is based on the concept that parents are central to their children's treatment, but not necessarily the cause of it. The treatment has a behavioral and educative focus, aiming to help families assist managing the eating behaviors of the family member with disrupted eating (Le Grange, 1999).

Systemic family therapy (SyFT) targes traits in the family system rather than addressing the eating disorder directly. The assumption is that difficulties do not arise from the individual

themselves but in the relationships, interactions and language that develop between individuals in the family. There is no specific emphasis on eating or weight (Agras et. al., 2014).

Adolescent-focused psychotherapy. Adolescent-focused therapy (AFP) is a form of psychotherapy developed specifically for adolescents with anorexia nervosa. AFP builds on self-psychology, and thus focuses on the ways in which the self-concepts play a role in the maintenance of AN.In AFP, anorexia nervosa is understood as a coping style of using food and weight to avoid particular negative affective states that arise with developmental challenges. Therefore, the therapist helps the patient to develop a more constructive coping style by training on identifying, defining and tolerating emotions (Fitzpatrick et al. 2010; Lock et al. 2010).

Cognitive remediation therapy. Cognitive remediation therapy (CRT) is a term that covers a range of psychological interventions that use different kinds of cognitive training exercises to reflect on cognitive processes, develop new strategies and thinking skills, and facilitate thinking about thinking. The assumption is that such processes in turn will enable patients to make behavioral changes.

For patients with EDs, the areas of executive functioning most focused on are set shifting and central coherence (Tchanturia et al., 2010). Set shifting is the ability to move flexibility across strategies, stimuli and different tasks, and central coherence is the ability to process information in a way that encourages the individual to look at a “bigger picture” instead of focusing on only the details. This is in turn meant to reduce behavior associated with EDs such as rule-focused behavior and resistance to change (Tchanturia et al., 2013). There exists a manualized, brief intervention for AN using CRT (Tchanturia et al., 2010).

Self-help. The Norwegian Directorate of Health (2017) recommends that self-help may be given to children and adolescents suffering from BN and BED, and as supplement to other treatments in AN. Self-help treatments aim to improve the clinical outcome by providing the patients with required information and teach them relevant skills to overcome and manage their ED. They usually involve using written materials, computer programs or audio/video material. This treatment can be managed fully by the patient or guided to some extent from a health professional or others. Self-help can be used as a stand-alone treatment, or in conjunction with other treatments. Self-help interventions may also be given to parents in order to reduce their children’s ED symptoms (Perkins et al., 2006).

Psychoeducation. Psychoeducation for EDs involves teaching the patient or important persons in the patient's life about nutrition and illness, in order to help them better understand the ED. The aim is that this information will help them manage their symptoms, and in turn reduce them. This information can be given in a range of settings, e.g., on the internet or in a classroom-setting. Psychoeducation is often a central part of other treatment interventions (Celio et al., 2000).

Supportive therapy. Supportive therapy involves a range of different approaches. The treatment uses psychological techniques common in all psychological treatment, such as empathy and discussion about experience and emotions. The intention is to provide support for the patient, in order to increase functioning (Linardon et al., 2017). There exist formalized supportive therapy approaches, but none are covered in this review.

Treatment as usual (TAU). Treatment as usual is often used as a control condition in clinical psychotherapeutic trials. TAU is not a unitary and clearly defined entity, as it comprises different treatment approaches in different studies. When clinical trials are conducted in a health care facility, TAU means the treatment that is routinely given there. During the trial, a new treatment is introduced into the setting and individuals are randomly assigned to receive this specific intervention or TAU. Consequently, TAU can involve a range of different treatment measures, depending on the health care facility (Kazdin, 2015).

Treatment settings. The different types of treatments for EDs can be given in different settings, with outpatient, inpatient and partial hospitalization (day hospital care) as the main categories. Inpatient care is often multidisciplinary, and involves nutritional counseling and supervised meals, combined with individual or group psychotherapy and medical care (La Puma et al., 2009). Partial hospitalization is quite similar, but there is no overnight stay. Outpatient care provides no regular meal supervision, and therapy is often less frequent. Normally, outpatient care is provided by a single therapist from one discipline (Hay, 2019).

The Norwegian Directorate of Health (2017) recommends that patients with a stable somatic health and less than severe underweight should be treated in outpatient settings. They also recommend a formalized cooperation between psychiatric and somatic health care providers.

Therapy can be given as individual therapy or as group therapy. In individual therapy the focus is on one patient suffering from an ED, and the system around this person. In group therapy, on the other hand, several patients receive therapy at the same time. Group therapy

enables the patients to support each other in their attempts to get better. At the same time, research suggests that they also might influence each other in a negative way, where negative behavior is spread through the group (Vandereycken, 2011).

Objective. The objective of the present overview of systematic reviews is to summarize and evaluate the effects of interventions for children and adolescents at risk of developing or already diagnosed with eating disorders. Both preventive and treatment interventions are of interest, and comparison groups may receive other relevant interventions or treatment as usual.

2.0 Methods

2.1 Research protocol

This overview of systematic reviews was registered in the international prospective register of systematic reviews (PROSPERO; ID CRD42020169210) on 28/04/2020. The research protocol describing our a priori design and deviations from the protocol can be found in Appendix A.

2.2 Eligibility criteria

We included systematic reviews published in 2015 and later (last date searched January 2020), with publications in English, Norwegian, Swedish or Danish, and fulfilling the DARE criteria (Box 1). Our inclusion criteria (PICO) are presented in Box 2.

Box 1

DARE criteria. Source: Database of Abstracts of Reviews of Effects (DARE), 1995

- Were inclusion/exclusion criteria reported?
- Was the search adequate?
- Were the included studies synthesized?
- Was the quality of the included studies assessed?
- Are sufficient details about the individual included studies presented?

Box 2

Inclusion criteria (PICO)

Population: Children and adolescents under 18 at risk of developing eating disorders, or already struggling with various types of eating disorders.

Intervention: Any intervention aiming to prevent or reduce eating disorders including psychological therapy, pharmaceutical interventions, psychosocial interventions, physical activity or nutrition.

Control: Other relevant interventions or treatment as usual (TAU).

Outcome: All outcomes evaluated on children and youth, including (but not restricted to) eating disorders, other health outcomes, quality of life, function, use of health care, attitudes and harms of interventions.

We excluded systematic reviews that did not meet the criteria for the above-mentioned PICO:

- Reviews that exclusively reported data on populations with somatic illness.
- Reviews with mainly adult populations and without separate outcome analyses for children and adolescents.
- Pharmaceutical interventions compared to placebo.

2.3 Search strategy

The literature search for this overview was completed in January 2020 and is largely based on IN SUM, a database of systematic reviews on the effects of child mental health and welfare interventions (www.insum.rbup.no; Regionsenter for barn og unges psykiske helse, Helseregion Øst og Sør, 2019). IN SUM indexes reviews from the following databases: Cochrane Database of Systematic Reviews, Campbell Library, PsycINFO, MEDLINE, Embase, Web of Science, Database of Abstracts of Reviews of Effects (DARE) and Evidence Based Mental Health (see Appendix B for a description of the IN SUM search strategy).

Two researchers independently reviewed all publications indexed in IN SUM (AD and IB). We also hand-searched for relevant systematic reviews that might not be published and available in the databases we searched. We hand-searched in the following databases and organizations:

• The Norwegian Institute of Public Health
• The Norwegian Directorate of Health
• The Swedish agency for health technology assessment and assessment of social services (SBU)
• The Danish Health Authority
• The National Institute for Health and Care Excellence (NICE)

All publications assessed to meet the inclusion criteria were retrieved in full text. All full text publications were screened and assessed for potential inclusion during consensus meetings with IB, AD, TMH, BAS and IMB.

2.4 Assessment of overlap and methodological quality

We sorted all included reviews by population and which interventions were compared (the PICOs). In cases where more than one review addressed the same treatment comparison for the same population, we (IB, AD, TMH, BAS and IMB) determined and selected the review with the newest search (and completeness of this search by considering the included primary studies)

and the best methodological quality. The methodological quality of the included reviews was assessed using a checklist for systematic reviews, AMSTAR (A MeaSurement Tool to Assess systematic Reviews; Shea et al., 2009). Two authors (TMH and/or BSA and/or IMB) considered each publication independently and solved any disagreements through discussions until consensus was reached.

The final decision on which reviews to include was made based on consensus agreement between four of the authors (IB, TMH, BAS and IMB).

2.5 Data extraction and analysis

TMH, BAS and IMB extracted data from the systematic reviews according to our inclusion criteria, and IB checked its accuracy. We primarily extracted information as it was reported in the systematic reviews, including any supplementary tables or appendices. When deemed necessary, we consulted the primary studies for more detailed information about included populations and interventions to ensure clinical relevance.

We did not attempt any reanalysis of effect estimates, but present results as reported in the systematic reviews. For the reviews that also included data on adult populations, we extracted information and data reported primarily on children and adolescents. In order to achieve a more complete picture of remission rates, we also calculated average remission rates for the eating disorders where sufficient data was available.

2.6 Quality of the evidence and reporting of results

We assessed the quality of the evidence for each outcome in order to determine the confidence in the accuracy of the effect estimates, using the GRADE methodology (the Grading of Recommendations Assessment, Development and Evaluation; Schünemann et al., 2013). In cases where the authors of the systematic review had already completed and reported a GRADE assessment, we reviewed the accuracy of their assessment. When reporting on the quality of evidence, we use quality of the evidence, confidence in the effect estimates, confidence in the evidence and certainty of the evidence interchangeably.

The certainty in evidence was rated down for risk of bias, imprecision, inconsistency, indirectness and publication bias. Reasons for downgrading due to risk of bias, indirectness and publication bias were based on the information provided by the authors of the included

systematic reviews. We downgraded the certainty of the evidence due to imprecision when the comparisons comprised less than 400 participants or only 1 primary study. We downgraded for inconsistency in cases where heterogeneity between primary studies surpassed $I^2 > 70$.

Although the quality of evidence constitutes a continuum, the GRADE methodology simplifies this by categorizing evidence into four categories of "quality of evidence grades": high, moderate, low, or very low, respectively. See table 1 for a description of the evidence grades.

In our results section, we report the effect or effect difference of outcomes with low GRADE scores as "possible". For outcomes with moderate GRADE scores, we report the effect or effect difference as "probable". For outcomes with high GRADE scores, we report the effect or effect difference using no such modifiers. For outcomes with very low GRADE scores, we do not report the effect estimate, as we have very little confidence in the accuracy of the estimate. Therefore, conclusions should not be drawn based on those particular effect estimates seeing as they might be misleading. All effect estimates (including those with a very low GRADE score) are reported in Appendix D.

Table 1
Quality of evidence grade. Source: Schünemann et al. 2013

GRADE score / confidence in effect estimates	**Definition**
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different
Low	Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

3.0 Results

3.1 Study selection

A total number of 1578 references in the IN SUM database were reviewed for potential relevance. We also identified one record through our hand-searches. We excluded 1552 of the identified reviews based on title or summary, mainly because they focused on other diagnoses or problem areas than EDs. In all, 27 full texts were retrieved and 18 of these were excluded because they did not meet the inclusion criteria. Three of the remaining 9 studies were excluded because of overlap (see Appendix C for excluded studies). The data from the guideline developed by the Norwegian Directorate of Health (2017) was only used qualitatively. Figure 1 describes the search process and the number of articles excluded in each step. As shown, six systematic reviews were included in the final analysis. For each comparison in these articles, assessments regarding age were made. Please note that due to the lack of studies reporting data exclusively on child and adolescent populations, comparisons from five of the systematic reviews included participants with a mean age ranging from 18 to 22 in addition to children and adolescents. The ages of the participants included is presented for each comparison in section 3.4.

3.2 Characteristics of included reviews

The six systematic reviews included in this paper were assessed for methodological quality using AMSTAR (Shea et al., 2009). For a detailed overview over AMSTAR scores for each included systematic review, see Table 2. For three reviews, we deemed the quality to be medium, with AMSTAR scores ranging from 5 to 8 (Le et al., 2017; Tchanturia et al., 2017; van den Berg et al., 2019). The main reasons for medium AMSTAR scores were lack of a priori design, no list of excluded studies, lack of assessment of conflict of interest for the systematic review itself and/or the included primary studies, no reported search for grey literature (literature produced outside of traditional publishing and distribution channels) and/or insufficient study selection and data extraction procedures. The remaining three studies received AMSTAR scores ranging from 9 to 11, which indicate high methodological quality (Fisher et al., 2019; Hay et al., 2019; NICE, 2017).

Figure 1:
Prisma flow chart

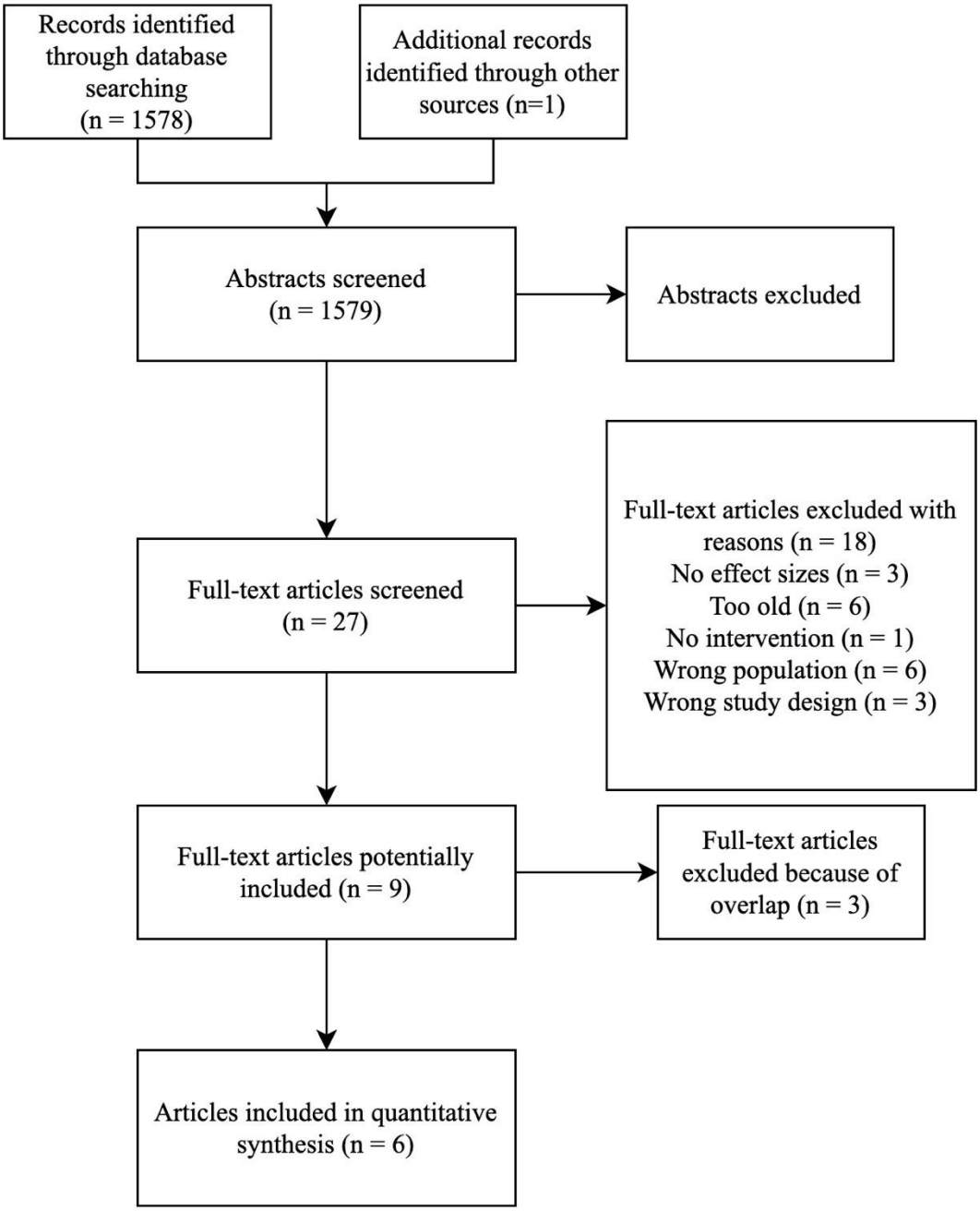

Table 2
AMSTAR assessment of the included reviews

	A measurement tool to assess the methodological quality of systematic reviews (AMSTAR)											
	A priori design	Duplicate study selection and data extraction	Comprehensive literature search	Grey literature / unpublished studies	List of included and excluded studies	Characteristics of included studies	Assessment of scientific quality of included studies	Scientific quality considered in conclusions	Appropriate statistical methods	Assessment of publication bias	Conflict of interest for primary studies and systematic review	Total score
Fisher, 2019	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	**11**
Hay, 2019	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	**11**
Le, 2017	yes	no	yes	no	no	yes	yes	yes	yes	yes	no	**7**
NICE, 2017	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	**9**
Tchanturia, 2017	no	yes	yes	no	no	yes	no	no	yes	yes	no	**5**
Van den Berg, 2019	no	yes	yes	yes	no	yes	yes	yes	yes	yes	no	**8**

Table 3 gives an overview over the characteristics of the included systematic reviews. We also list the comparisons that were extracted from each systematic review. Additionally, we also list some categories of interventions that we expected to find, but for which no systematic reviews or comparisons within reviews were identified. This is done to highlight the research gap concerning specific interventions for EDs in children and adolescents.

Table 3
Characteristics of included systematic reviews

Fisher et al., 2019	
Interventions searched for in the review	Family therapy approaches compared with standard treatment and other treatments for anorexia nervosa
Comparisons included in the present review of systematic reviews	**Comparison 24:** Family therapy approaches versus educational interventions in adolescents and young people with anorexia nervosa at follow up **Comparison 25:** Family-based therapy versus family-based therapy plus parent coaching in children and adolescents with anorexia nervosa at end of treatment **Comparison 26:** Family-based therapy versus family-based therapy plus consultation in children and adolescents with anorexia nervosa at end of treatment
Quality (AMSTAR X of 11)	11
Funding/Conflicts of interest	**Conflict of interest:** No known conflicts **Internal sources of support:** Orygen Youth Health Research Centre funded and supported by The Colonial Foundation, Australia.
Date of search	April 2016

The authors' defined study population	Participants of any age or gender with a primary clinical diagnosis of anorexia nervosa
Hay et al., 2019	
Intervention searched for in the review	Inpatient, partial hospitalization, or outpatient treatment for anorexia nervosa and bulimia nervosa
Comparisons included in the present review of systematic reviews	**Comparison 31:** Inpatient care for weight restoration versus active outpatient, or combined brief hospital and outpatient care in children, adolescents and young people with anorexia nervosa at end of treatment and follow up **Comparison 32:** Specialist inpatient care for weight restoration versus partial hospital care in children and adolescents with anorexia nervosa at end of treatment and follow up
Quality (AMSTAR X of 11)	11
Funding/Conflicts of interest	**Conflict of interest:** Phillipa Hay is a co-author of one included trial in this review (Madden 2014), and two reviews that address the topic (RANZCP 2014; Zipfel 2015). Sloane Madden and Stephen Touyz are co-authors of one included trial in this review (Madden 2014), and one review that addresses the topic (RANZCP 2014). These authors were not involved in the data extraction nor the risk of bias assessment of this trial (Madden 2014), this was done independently by other members of the author team. Phillipa Hay has received funding from Shire Pharmaceutical for a commissioned report (2017) and for teaching/education at a psychiatrist conference (2018) and Stephen Touyz is an advisor for Shire Pharmaceuticals. However, this review is concerning the effects of treatment setting not a named drug treatment that is marketed by Shire Pharmaceuticals. **Internal sources of support:** Western Sydney University, University of Sydney, Australia.
Date of search	July 2018
The authors' defined study population	Children, adolescents and adults in inpatient, outpatient, or partial hospital treatment for eating disorders diagnosed according to the DSM-5 or other internationally accepted diagnostic criteria
Le et al., 2017	
Intervention searched for in the review	Eating disorder prevention interventions
Comparisons included in the present review of systematic reviews	**Universal prevention:** **Comparison 1:** Cognitive behavioral therapy-based interventions versus class as usual **Comparison 2:** Media literacy interventions versus class as usual **Comparison 3:** Multicomponent interventions versus class as usual or unspecified control **Comparison 4:** Media literacy interventions versus control **Selective prevention:** **Comparison 5:** Cognitive behavioral therapy-based interventions versus control

	Comparison 6: One-shot interventions versus no or minimal intervention **Comparison 7:** Cognitive dissonance-based interventions versus control **Comparison 8:** Cognitive dissonance-based interventions versus other interventions **Comparison 9:** "Healthy weight" interventions versus no or minimal intervention **Comparison 10:** Psychoeducation versus no intervention or unspecified control **Comparison 11:** Multicomponent interventions versus no or minimal intervention **Indicated prevention:** **Comparison 12:** Active interventions versus no or minimal intervention
Quality (AMSTAR X of 11)	7
Funding/Conflicts of interest	**Conflict of interest:** Not reported **Funding:** National Health and Medical Research Council (NHMRC) Centre for Research Excellence Grant
Date of search	2015
The authors' defined study population	Children and adolescents in general, subgroups of the population at risk of developing an eating disorder or people who have symptoms of an eating disorder without meeting full diagnostic criteria.
NICE, 2017	
Intervention searched for in the review	All types of interventions for eating disorders
Comparisons included in the present review of systematic reviews	**Anorexia nervosa:** **Comparison 13:** CBT-ED versus any other intervention in children and adolescents with anorexia nervosa at follow up **Comparison 14:** Supportive therapy versus another intervention in adolescents with anorexia nervosa at end of treatment and at follow up **Comparison 15:** Adolescent-focused psychotherapy versus another intervention in children and adolescents with anorexia nervosa at end of treatment and follow up **Comparison 16:** Family therapy and treatment as usual versus treatment as usual in young inpatients with anorexia nervosa at end of treatment **Comparison 17:** Family therapy versus any other type of family intervention in adolescents with anorexia nervosa at end of treatment **Comparison 18:** Family-based therapy versus general family therapy in adolescents with anorexia nervosa at end of treatment and follow up **Comparison 19:** Multi-family therapy versus family therapy in adolescents with anorexia nervosa at end of treatment and follow up **Comparison 20:** Family therapy versus any individual therapy in adolescents with anorexia nervosa at end of treatment and follow up **Comparison 21:** Conjoint family therapy versus separated family therapy in adolescents with anorexia nervosa at end of treatment and follow up **Comparison 22:** Long-term family therapy versus short-term family therapy in adolescents with anorexia nervosa at end of treatment and follow up

	Comparison 23: Family therapy with family meal versus family therapy without family meal in children, adolescents and young people with anorexia nervosa at end of treatment and follow up **Comparison 29:** Self-help or guided self-help and treatment as usual versus treatment as usual for carers of children and adolescents with anorexia nervosa at 12 months after referral for outpatient treatment **Comparison 30:** Resistance training and treatment as usual versus treatment as usual in children and adolescents with anorexia nervosa restricting type at end of treatment **Bulimia nervosa:** **Comparison 33:** CBT-ED versus any other intervention in children, adolescents and young people with bulimia nervosa at the end of treatment and follow up **Comparison 34:** Family therapy for eating disorders versus any individual therapy in children, adolescents and young people with bulimia nervosa at end of treatment and follow up **Binge eating disorder:** **Comparison 35:** CBT-ED versus another intervention in adolescents with binge eating disorder at end of treatment **Comparison 36:** Internet self-help versus wait list controls in adolescents with binge eating disorder at end of treatment and follow up **Unspecified eating disorder:** **Comparison 37:** Group psychoeducation versus treatment as usual for adolescents and young people with disturbed eating and type I diabetes at end of treatment and follow up
Quality (AMSTAR X of 11)	9
Funding/Conflicts of interest	**Conflict of interest and funding:** See Appendix B in link: https://www.nice.org.uk/guidance/ng69/evidence/appendices-ag-pdf-4478187997
Date of search	July 2016
Tchanturia et al., 2017	
The authors' defined study population	Cognitive remediation therapy for anorexia nervosa
Comparisons included in the present review of systematic reviews	**Comparison 28:** Cognitive remediation therapy versus historical control in children and adolescents with anorexia nervosa at end of treatment
Quality (AMSTAR X of 11)	5
Funding/Conflicts of interest	**Conflict of interest:** Not reported **Funding:** Not reported

Date of search	March 2017
The authors' defined study population	Children and adolescents <18 years old with anorexia nervosa
Van den Berg et al., 2019	
Intervention searched for in the review	Any psychological treatment for anorexia nervosa compared with control condition(s)
Comparisons included in the present review of systematic reviews	**Comparison 27:** Psychotherapy versus treatment as usual in adolescents and adults with anorexia nervosa at end of treatment
Quality (AMSTAR X of 11)	8
Funding/Conflicts of interest	**Conflict of interest:** No known conflicts **Funding:** Did not receive any specific grant from funding agencies in the commercial, public, or not-for-profit sectors.
Date of search	1980-2017
The authors' defined study population	Participants aged 12 years and older diagnosed with anorexia nervosa.
Searched for, but not found	
Comparisons	**12 comparisons:** Group therapy versus individual or another treatment in children and adolescents with anorexia nervosa Dietary interventions versus any other treatment in children and adolescents with anorexia nervosa Pharmacological interventions versus any other intervention in children or adolescents with bulimia nervosa Dietary interventions versus any other treatment in children and adolescents with bulimia nervosa Other interventions versus any other treatment in children and adolescents with bulimia nervosa Pharmacological interventions versus any other intervention in children or adolescents with binge eating disorder Dietary treatment versus any other intervention in children or adolescents with binge eating disorder Other interventions versus any other intervention in children or adolescents with binge eating disorder Psychological treatment versus any other treatment in children and adolescents with unspecified eating disorder. Pharmacological interventions versus any other treatment in children and adolescents with unspecified eating disorder. Dietary interventions versus any other treatment in children and adolescents with unspecified eating disorder.

	Other interventions versus any other treatment in children and adolescents with unspecified eating disorder.

3.3 Confidence in the effect estimates

Our final data consisted of 37 comparisons retrieved from the six systematic reviews: Twelve comparisons regarding prevention interventions, 20 regarding treatment of anorexia nervosa, two regarding treatment of bulimia nervosa, two regarding treatment binge eating disorder and one regarding treatment of unspecified eating disorder. Characteristics of the included comparisons can be found in section 3.4, and the final assessment of the quality of the evidence can be found in the GRADE tables in Appendix D. The GRADE scores suggest that the overall evidence for prevention interventions is of low-medium quality, and of very low-low quality for treatment interventions. The two most frequent factors leading to the quality being rated down were risk of bias and imprecision, both of which will be described in more detail below.

We rated down for inconsistency in cases with high heterogeneity (tables D1, D7 and D20 in Appendix D), and for indirectness in cases where the samples consisted of various diagnoses or the level of specialist qualifications and treatment intensity varied (tables D19 and D31). No comparisons were rated down for publication bias.

Risk of bias. Downgrading due to risk of bias was based on the assessments made by the authors of the systematic reviews. For 58.3% (7 of 12) of comparisons of prevention interventions, risk of bias was deemed to be high, whereas the remaining 41.6% (5 of 12) had an unclear risk of bias. 90.9% (30 of 33) of the primary studies included in the treatment comparisons suffer from risks of bias, and for 6.1% (2 of 33) of these primary studies the risk of bias was considered unclear. Risk of bias was mostly caused by a lack of blinding procedures for participants, assessors and investigators; a lack of randomization or allocation methods; and high (>20%) dropout rates. Risk of bias was considered unclear in cases where blinding procedures, randomization and allocation methods and dropout rates were not sufficiently reported. For some studies, the baseline characteristics of the participants in the intervention and the comparison group differed significantly, which also causes heightened risk of bias. The nine primary studies regarding cognitive remediation therapy were non-RCTs, which automatically leads to low confidence in the estimated effects. Please see GRADE tables in Appendix D for a detailed

overview over reasons for downgrading the confidence in the evidence for each individual outcome measure.

Imprecision. Additionally, the certainty of the evidence was downgraded in a considerable amount of the treatment comparisons because of lack of precision due to small sample sizes and few included studies. Smaller sample sizes contribute to wider confidence intervals, which in turn reduces our confidence in the accuracy of the estimated effects. Whereas some of the treatment comparisons contained sufficient studies, none of them reached the threshold for sufficient participants, leading them to be downgraded due to lack of precision.

3.4 Comparisons

Below, we describe the following characteristics for each comparison included in the current overview: Which systematic review we extracted the data from, the number of primary studies the comparison is based on, population characteristics, prevention or treatment measures in the intervention and comparison group, a general overview over included outcome measures, treatment duration and follow up period.

The comparisons regarding preventive measures are sorted according to prevention target group (universal, selective or indicated prevention). The comparisons regarding treatment methods are sorted according to ED (AN, BN, BED, unspecified eating disorder) and intervention (psychological treatment, neuropsychological treatment, approaches targeting carers, pharmacological treatment, miscellaneous treatment, long-term follow up of complications connected to EDs and inpatient care).

For each comparison, we also summarize the findings and the confidence in the evidence based on the GRADE handbook. However, we do not list every outcome measure when the certainty is deemed very low. For complete outcome measures and effect estimates for each comparison, see GRADE tables in Appendix D.

Prevention interventions

Universal prevention interventions

Comparison 1: Cognitive behavioral therapy-based interventions versus class as usual

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison contains 2 studies with 226 children and adolescents aged 11-15. Prevention measures consisted of different universal interventions targeting children and adolescents, including cognitive behavioral therapy-based interventions, media literacy interventions, interventions combining elements from multiple treatment approaches, obesity prevention interventions and self-esteem enhancement interventions delivered in a classroom setting. The comparison groups had classes as usual. The outcome measure was eating disorder behaviors. Intervention duration was 6-8 2-hour sessions. Follow up was at 6 and 12 months.

The evidence of the effects of CBT-based interventions in the prevention of EDs is of very low certainty. See Table D1 in Appendix D.

Comparison 2: Media literacy interventions versus class as usual

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison contains 5 studies with 2435 children and adolescents with an average age ranging from 12 to 14 years. The prevention measures consisted of universal eating disorder interventions targeting children and adolescents, focusing on improving understanding of advertisement and other influence from media (e.g., the Go Girls and Media Smart programs). The intervention was administered in a classroom setting. The comparison groups had classes as usual. The objective was to determine the effect of preventive measures. Outcome measures were weight and shape concerns, dieting, body dissatisfaction, media internalization and self-esteem. Intervention duration was 4-8 sessions. Follow up was at 6, 12 and 30 months

Media literacy interventions possibly lead to a small reduction in dieting at the end of treatment (Girls: SMD -0.13, CI 95% -0.28 to 0.02; Boys: SMD -0.16, CI 95% -0.33 to 0.01), but the effect possibly does not hold up at follow up (Girls: SMD -0.01, CI 95% -0.16 to 0.14; Boys: SMD 0.00, CI 95% -0.17 to 0.17). The evidence of these effects is of low certainty.

Media literacy interventions possibly also lead to small reductions in body dissatisfaction (Girls: SMD -0.08, CI 95% -0.23 to 0.07; Boys: SMD -0.18, CI 95% -0.37 to 0.00), but the effect is possibly negligible at follow up (Girls: SMD -0.05, CI 95% -0.20 to 0.10; Boys: SMD -0.03, CI 95% -0.21 to 0.14). The evidence of these effects is of low certainty.

In addition, media literacy interventions possibly lead to moderate reductions in media-internalization in boys (SMD -0.49, CI 95% -0.87 to -0.11) and small reductions in media-internalization in girls (SMD -0.21, CI 95% -0.34 to 0.07). This effect is possibly reduced to a small effect in both sexes at follow up (Girls: SMD -0.09, CI 95% -0.23 to 0.05; Boys: SMD -0.26, CI 95% -0.49 to -0.03). The evidence of these effects is of low certainty.

The evidence for the effect of media literacy interventions on the other outcomes is of very low certainty. See Table D2 in Appendix D.

Comparison 3: Multicomponent interventions versus class as usual or unspecified control

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison contains 4 studies with 1698 children and adolescents with an average age ranging from 11 to 14 years. The intervention consisted of universal prevention measures with multiple components targeting children and adolescents delivered in a classroom setting. Measures included media literacy interventions, "Healthy school – Healthy kids" and the schools' own curriculum targeting eating disorders. The comparison groups had classes as usual or other unspecified measures. The objective was to determine the effects of universal preventive measures. Outcome measures were eating disorder behavior, body dissatisfaction and thin-ideal internalization. Intervention duration was 4-10 sessions. Follow up was at 3, 6, 12 and/or 30 months.

Multicomponent interventions possibly lead to large reductions in ED behavior in girls at the end of treatment (SMD -0.74, CI 95% -1.16 to -0.31), and the effect is possibly only reduced to a medium one at follow up (SMD -0.59, CI 95% -0.77 to -0.42). For both sexes, multicomponent interventions possibly lead to a small reduction in ED behaviors at the end of treatment (SMD -0.21, CI 95% -0.61 to 0.18), which holds up at follow up (SMD -0.37, CI 95% -1.07 to 0.32). The evidence of these effects is of low certainty.

Multicomponent interventions possibly lead to small reductions in the internalization of the thin-ideal for both sexes at the end of treatment (SMD -0.14, CI 95% -0.73 to 0.45). At follow up, the effect has possibly increased to a moderate reduction in girls (SMD -0.52, CI 95% -0.77 to -0.27), but remains a small reduction in boys (SMD -0.26, CI 95% -0.74 to 0.23). The evidence of these effects is of low certainty.

Multicomponent interventions possibly lead a very small reduction in body dissatisfaction in both sexes at the end of treatment (SMD 0.04, CI 95% -0.10 to 0.17). At follow up, the effect is possibly reduced to none (SMD 0.01, CI 95% -0.13 to 0.15). The evidence of these effects is of low certainty. See Table D3 in Appendix D.

Comparison 4: Media literacy interventions versus control

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison contains 3 studies with 717 male children and adolescents with an average age of 13 years. The prevention measures consisted of universal eating disorder interventions targeting children and adolescents, focusing on improving understanding of advertisement and other influence from media (e.g., the Go Girls and Media Smart programs) delivered in a classroom setting. The comparison groups received self-esteem enhancement, multicomponent interventions or had classes as usual. The outcome measure was media internalization. Intervention duration was 5-8 sessions. Follow up was at 3-30 months.

Media literacy interventions possibly lead to small reductions in media-internalization in boys at the end of intervention and follow up (EoT: SMD -0.35, CI 95% -0.52 to -0.18; FU: SMD -0.25, CI 95% -0.37 -0.03). See Table D4 in Appendix D.

Selective prevention interventions

Comparison 5: Cognitive behavioral therapy-based interventions versus control

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 19 studies with 1815 participants, of which 30 were male. The average age ranged from 14 to 43, with most participants being 18 to 20 years old on average. Participants were at risk of developing eating disorders. The interventions consisted of selective eating disorder prevention based on cognitive behavioral therapy administered in groups or on a computer. The comparison groups received treatment as usual, short educational interventions, delayed treatment, other prevention interventions or were on a waiting list. The objective was to determine the effects of selective prevention programs. Outcome measures were dieting, body dissatisfaction, bulimia symptoms, concerns with weight, eating and shape, thin-ideal internalization, BMI and self-esteem. Intervention duration was 4-16 sessions. Follow up was at 4 weeks or 9 months.

CBT-based interventions probably lead to moderate reductions in dieting at the end of treatment and follow up (EoT: SMD -0.44, CI 95% -0.67 to -0.20; FU: SMD -0.40, CI 95% -0.55 to -0.26). CBT-based interventions probably also lead to small reductions in body dissatisfaction at the end of treatment and follow up (EoT: SMD -0.24, CI 95% -0.67 to 0.18; FU: SMD -0.23, CI 95% -0.42 to 0.04), as well as small reductions in symptoms of bulimia at the end of treatment and follow up (EoT: SMD -0.27, CI 95% -0.41 to -0.13; FU: SMD -0.20, CI 95% -0.35 to 0.05). There is probably no effect of CBT-based interventions on BMI. The evidence of these effects is of moderate certainty.

CBT-based interventions possibly lead to moderate reductions in thin-ideal internalization at the end of treatment (SMD -0.58, CI 95% -0.98 to -0.18). CBT-based interventions possibly also lead to small reductions in shape concern at the end of treatment and follow up (EOT: SMD -0.09, CI 95% -0.30 to 0.12; FU: SMD -0.06, CI 95% -0.27 to 0.15), small reductions in weight concern at the end of treatment and follow up (EoT: SMD -0.18, CI 95% -0.39 to 0.03; FU: SMD -0.12, CI 95% -0.33 to 0.09), as well as small reductions in eating concern at the end of treatment and follow up (EoT: SMD -0.20, CI 95% -0.44 to 0.03; FU: SMD -0.18, CI 95% -0.60 to 0.25). There is possibly no effect of

CBT-based interventions on self-confidence at the end of treatment (WMD 0.06, CI 95% -3.74 to 3.86), but they are possibly responsible for a small increase in self-confidence measured at follow up (WMD 0.28, CI 95% -3.18 to 3.74). The evidence of these effects is of low certainty. See Table D5 in Appendix D.

Comparison 6: One-shot interventions versus no or minimal intervention

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 12 studies with 1044 females. The average age ranged from 7 to 43 in the studies, with most participants being 18 to 20 years old on average. The interventions consisted of selective prevention measures targeting children and adolescents at risk of developing eating disorders. The interventions were designed to be provided only once. The comparison groups received cold prevention, no intervention, delayed intervention, a brochure or were on a waiting list to receive the intervention. The objective was to determine the effects of selective prevention programs designed to be provided once. Outcome measures were thin-ideal internalization, dieting, body dissatisfaction and self-esteem. The interventions consisted of 1 session of different duration.

One-shot interventions probably lead to small reductions in dieting at the end of intervention (SMD -0.12, CI 95% -0.31 to 0.07), but probably has no effect on thin-ideal internalization (SMD 0.01, CI 95% -0.22 to 0.24). The evidence of these effects is of moderate certainty.

One-shot interventions possibly lead to very small reductions in body dissatisfaction (SMD -0.04, CI 95% -0.31 to 0.22) and possibly a small increase in self-confidence (SMD 0.09, CI 95% -0.12 to 0.31). The evidence of these effects is of low certainty. See Table D6 in Appendix D.

Comparison 7: Cognitive dissonance-based interventions versus control

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 24 studies with 3637 female children, adolescents and young people with an average age ranging from 12 to 21 years. The interventions consisted of selective prevention measures including a cognitive dissonance component, targeting children and

adolescents at risk of developing eating disorders. The comparison groups received no intervention, unspecified intervention, a brochure or were on a waiting list. The objective was to reduce the risk of developing symptoms that are connected to later development of eating disorders. Outcome measures were eating disorder symptoms, body dissatisfaction, negative affect, dieting and thin-ideal internalization. Intervention duration was 2-6 sessions. Follow up was at 3-12 months or 3 years.

Cognitive dissonance-based interventions probably lead to moderate reductions in body dissatisfaction at the end of treatment (SMD -0.42, CI 95% -0.61 to -0.24), which probably is reduced to a small reduction at follow-up (SMD -0.24, CI 95% -0.39 to -0.02). They probably lead to small reductions in dieting at the end of treatment and follow-up (EoT: SMD -0.39, CI 95% -0.59 to -0.19; FU: SMD -0.28, CI 95% -0.43 to -0.12). They also probably lead to small reductions in negative affect at the end of treatment and follow-up (EoT: SMD -0.31, CI 95% -0.56 to -0.06; FU: SMD -0.23, CI 95% -0.35 to -0.10). The evidence of these effects is of moderate certainty.

Cognitive dissonance-based interventions possibly lead to moderate reductions in thin-ideal internalization at posttest (SMD -0.71, CI 95% -1.14 to -0.27), which probably is reduced to a small reduction at follow-up (SMD -0.31, CI 95% -0.47 to -0.17). The evidence of these effects is of low certainty. See Table D7 in Appendix D.

Comparison 8: Cognitive dissonance-based interventions versus other interventions

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 24 studies with 3637 female children, adolescents and young people with an average age ranging from 12 to 21 years. The interventions consisted of selective prevention measures including a cognitive dissonance component, targeting children and adolescents at risk of developing eating disorders. The comparison groups received Healthy weight interventions or media literacy interventions. The objective was to reduce the risk of developing symptoms that are connected to later development of eating disorders. Outcome measures were body dissatisfaction, dieting, thin-ideal internalization and bulimic behaviors. Intervention duration was 2-6 sessions. Follow up was at 3-12 months or 3 years.

Cognitive dissonance-based interventions probably lead to slightly greater reductions in body dissatisfaction at the end of treatment and follow-up when compared to other interventions (EoT: SMD -0.08, CI 95% -0.30 to 0.14; FU: -0.07, CI 95% -0.23 to 0.09). They also probably lead to slightly greater reductions in dieting at the end of treatment when compared to other interventions (SMD -0.09, CI 95% -0.22 to 0.04), but the difference at follow up is probably none (SMD -0.03, CI 95% -0.16 to 0.10). Cognitive dissonance-based interventions probably lead to slightly greater reductions in thin-ideal internalization at the end of treatment when compared to other interventions (SMD -0.19, CI 95% -0.32 to 0.06), but this difference is probably negligible at follow-up (SMD -0.05, CI 95% -0.25 to 0.15). There is probably no difference in the effect on bulimic behavior between cognitive dissonance-based interventions and other interventions (EoT: SMD -0.01, CI 95% -0.23 to 0.09; FU: SMD 0.03, CI 95% -0.12 to 0.18). The evidence for these effects is of moderate certainty. See Table D8 in Appendix D.

Comparison 9: ”Healthy weight” interventions versus no or minimal intervention

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 7 studies with 1069 adolescent females with an average age ranging from 17 to 19 years. The intervention measures were based on the prevention program “Healthy weight”, focusing on encouraging participants to improve their eating habits and increase physical activity. The interventions targeted children and adolescents at risk of developing eating disorders. The comparison groups received brochures, other prevention interventions or were on a waiting list. The objective was to reduce the risk of developing symptoms that are connected to later development of eating disorders. Outcome measures were dieting, thin-ideal internalization, body dissatisfaction, BMI, negative affect and bulimic behaviors. Intervention duration was 2-4 sessions. Follow up was at 2-3 years.

“Healthy weight” interventions probably lead to slightly greater reductions in body dissatisfaction at the end of treatment when compared to no or minimal intervention (SMD -0.28, CI 95% -0.45 to -0.12), and the difference is comparable at follow up (SMD -0.28, CI 95% -0.56 to 0.01). “Healthy weight” interventions also probably lead to slightly greater reductions in dieting at the end of treatment when compared to no or minimal

intervention (SMD -0.23, CI 95% -0.55 to 0.09), and the difference holds at follow up (SMD -0.30, CI 95% -0.49 to 0.05). "Healthy weight" interventions also probably lead to substantially greater reductions in BMI at follow up when compared to no or minimal intervention (WMD -0.89, CI 95% -1.60 to -0.17). There is probably no difference on negative affect at the end of treatment or follow up from "Healthy weight" interventions compared to no or minimal intervention (EoT: SMD -0.02, CI 95% -0.43 to 0.39; FU: SMD 0.00, CI 95% -0.35 to 0.35). The evidence of these effects is of moderate certainty.

"Healthy weight" interventions possibly lead to moderately greater reductions in thin-ideal internalization at the end of treatment when compared to no or minimal intervention (SMD -0.45, CI 95% -1.16 to 0.27), but the difference between interventions decreases at follow up (SMD -0.27, CI 95% -0.49 to 0.05). They also possibly lead to slightly greater reductions in bulimic behavior at the end of treatment and follow up when compared to no or minimal intervention (EoT: SMD -0.30, CI 95% -1.21 to 0.60; FU: SMD -0.33, CI 95% -0.94 to 0.29). The evidence of these effects is of low certainty. See Table D9 in Appendix D.

Comparison 10: Psychoeducation versus no intervention or unspecified control

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 5 studies with 715 female children, adolescents and young people with an average age ranging from 15 to 22 years. The intervention measures consisted of selective eating disorder prevention interventions administered as psychoeducation to children and adolescents at risk of developing eating disorders. The intervention was compared to no intervention or unspecified controls. The objective was to reduce the risk of developing symptoms that are connected to later development of eating disorders. Outcome measures were body dissatisfaction and eating disorder behaviors. Intervention duration was 4-10 sessions. Follow up ranged from 5 weeks to 2 years.

Psychoeducation may lead to slightly greater reductions in eating disorder behaviors at follow up when compared to no intervention or unspecified control (SMD -0.09, CI 95% -0.25 to 0.07). The evidence for this effect is of low certainty. The evidence of the effect of psychoeducation on body dissatisfaction is of very low certainty. See Table D10 in Appendix D

Comparison 11: Multicomponent interventions versus no or minimal intervention

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 9 studies with 3637 children and adolescents with an average age ranging from 11 to 18 years. The intervention measures consisted of combinations of different selective eating disorder prevention approaches (e.g., psychoeducation, media literacy, the ATHENA program and dietary advice). The interventions targeted children and adolescents at risk of developing eating disorders. The interventions were compared to class as usual, no intervention or another unspecified control. The objective was to reduce the risk of developing symptoms that are connected to later development of eating disorders. Outcome measures were media internalization and eating disorder behaviors. Intervention duration was 2-18 sessions. Follow up varied between 6 months and 2 years.

Multicomponent interventions possibly lead to slightly greater reductions in eating disorder behaviors at the end of treatment and follow up when compared to no or minimal intervention (EoT: SMD -0.15, CI 95% -0.31 to 0.01; FU: SMD -0.15, CI 95% -0.28 to -0.02. They also possibly lead to slightly greater reductions in media internalization at the end of treatment and follow up when compared to no or minimal intervention (EoT: WMD -0.27, CI 95% -0.48 to -0.05; FU: WMD -0.31, CI 95% -0.60 to -0.03). The evidence of these effects is of low certainty. See Table D11 in Appendix D.

Indicated prevention interventions

Comparison 12: Active interventions versus no or minimal intervention

The evidence is extracted from the systematic review conducted by Le et al (2017). The comparison consists of 4 studies with 661 children, adolescents and young people (primarily female) with an average age ranging from 15 to 22 years. The intervention measures consisted of indicated eating disorder prevention interventions based on either cognitive behavioral therapy or psychoeducation. The interventions were targeted at adolescents and young adults who showed eating disorder symptoms but did not yet meet the diagnostic criteria for an eating disorder. The interventions were compared to wait list or other unspecified controls. The objective was to reduce the risk of developing more symptoms that are connected to later development of eating disorders. Outcome measures were dieting, shape and weight concerns, body dissatisfaction, BMI and bulimic behaviors. Intervention duration was 3-16 sessions. Follow up was at 3-9 months.

The effects of indicated prevention interventions is of very low certainty. See Table D12 in Appendix D.

Treatment interventions

Psychological interventions for anorexia nervosa

Comparison 13: CBT-ED versus any other intervention in children and adolescents with anorexia nervosa at follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 98 adolescents aged 11-17. The intervention consisted of specialist outpatient care, comprising a motivational interview, individual CBT and parental feedback, parental counseling with dietary therapy, and multi-modal feedback. The comparison group received treatment as usual in an outpatient setting including non-prescriptive family therapy with variable dietetic, individual supportive therapy and pediatric liaison, or inpatient care. The objective was to compare the treatment effects of

cognitive behavioral therapy for eating disorders with other treatments. Outcome measures were remission, BMI and eating disorder symptoms. Treatment duration varied from 6 weeks to 6 months. Follow up was at 18 months.

The evidence of the effects of CBT-ED on BMI, remission and eating disorder symptoms is of very low certainty. See Table D13 in Appendix D.

Comparison 14: Supportive therapy versus another intervention in adolescents with anorexia nervosa at end of treatment and at follow up

The evidence is extracted from the systematic review conducted by NICE (2017). Searches for supportive therapy compared to another intervention resulted in 2 studies that compared supportive therapy with family therapy.

Supportive therapy versus family therapy

The comparison contains 2 studies with 21 children and adolescents with a mean age of 15 years. The intervention consisted of individual supportive therapy. The comparison group received family therapy. The objective of the intervention was to treat anorexia nervosa. Outcome measures were weight and remission. Treatment duration was 12 months, and the number of sessions was not reported. Follow up was at 5 years.

The evidence of the effects of supportive therapy on weight and remission is of very low certainty. See Table D14 in Appendix D.

Comparison 15: Adolescent-focused psychotherapy versus another intervention in children and adolescents with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). Searches for adolescent-focused psychotherapy compared to another intervention resulted in 2 studies that compared adolescent-focused psychotherapy with family therapy.

Adolescent-focused psychotherapy versus family therapy

The comparison contains 2 studies with 158 children and adolescents aged 11-18. The intervention consisted of adolescent-focused psychotherapy. The comparison group received family therapy (FBT-AN or Behavioural Family Systems Therapy (BFST)). The objective of the intervention was to treat anorexia nervosa and reduce symptoms of eating disorder. Outcome measures were BMI and remission. Treatment duration varied between fortnightly sessions for 12 months and weekly sessions for 12-18 months. Follow up was at 6 months and/or 1 year after the intervention.

A*dolescent-focused psychotherapy may lead to moderately smaller increases in BMI at the end of treatment when compared to family therapy (SMD -0.43, CI 95% -0.77 to -0.09), but the difference between the interventions is small at follow up (SMD -0.18, CI 95% -0.53 to 0.16). The evidence of these effects is of low certainty.*

The effects of adolescent-focused psychotherapy may be no different on remission rates to that of family therapy (EoT: RR 0.79, CI 95% 0.61 to 1.01; FU: RR 1.07, CI 95% 0.83 to 1.37) but the evidence is of low certainty. See Table D15 in Appendix D.

Comparison 16: Family therapy and treatment as usual versus treatment as usual in young inpatients with anorexia nervosa at end of treatment

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 60 female inpatients aged 13-19. The intervention consisted of treatment as usual (individual therapy and sessions with the patient and her parents) and family therapy sessions targeting intra-familial dynamics, but not eating disorder symptoms. The family therapy sessions included the patient, her parents and sibling over the age of 6 living in the same household. The comparison group received treatment as usual. The objective was to evaluate the effects of targeting familial dynamics in addition to treatment as usual in treatment of anorexia nervosa. Outcome measures were remission, BMI, BMI improvement to >10th percentile, eating disorder symptoms, global functioning, amenorrhea, and hospitalizations to end of treatment. Sessions lasted 90 minutes and took place every three or four weeks for 18 months.

Family therapy possibly leads to substantially more remissions (RR 2.40, CI 95% 0.96 to 5.98) as well as substantially more young people recovering weight up to the 10th percentile compared to treatment as usual (RR 1.93, CI 95% 0.98 to 3.81).

Family therapy possibly leads to slightly greater increases in BMI (SMD 0.10, CI 95% -0.41 to 0.60), slightly greater decreases on the Global Assessment Scale (SMD 0.22, CI 95% -0.29 to 0.74), slightly fewer being amenorrheic, and slightly fewer being hospitalized at the end of treatment (RR 0.69, CI 95% 0.37 to 1.30) when compared to treatment as usual.

Family therapy may have no different effect on eating disorder symptoms when compared to treatment as usual (SMD 0.03, CI 95% -0.48 to 0.54).

The evidence of all the outcomes is of low certainty. See Table D16 in Appendix D.

Comparison 17: Family therapy versus any other type of family intervention in adolescents with anorexia nervosa at end of treatment

The evidence is extracted from the systematic review conducted by NICE (2017). Searches for family therapy compared to other family interventions resulted in 1 study that compared family therapy with family group psychoeducation.

Family therapy versus family group psychoeducation

The comparison contains 1 study with 25 girls aged 12-17. The intervention consisted of family therapy for patients in specialist inpatient care. The objective was to motivate parents to take on an active role in disorder management, to strengthen communication between parents, and help families distinguish between the eating disorder and common conflicts in teenage years. The families in the comparison group received group family psychoeducation, meaning several families receive information about EDs. Outcome measures were weight restoration to ideal body weight (IBW), eating disorder symptoms, general psychopathology, depression and family functioning. The intervention consisted of 8 fortnightly 45 minute sessions. Which family member participated in therapy sessions varied between families, seeing as this was decided at the beginning of the treatment. Follow up data was not reported.

The evidence of the effects of family therapy versus any other type of family intervention is of very low certainty. See Table D17 in Appendix D.

Comparison 18: Family-based therapy versus general family therapy in adolescents with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 164 adolescents aged 12-18. The intervention consisted of family-based therapy for eating disorders (FBT-ED) targeting weight restoration. The comparison group received systematic family therapy (SyFT) targeting traits in the family system rather than addressing the eating disorder directly. The objective was treating anorexia. Outcome measures were remission, percentage of ideal body weight (IBW), eating disorder symptoms, depression, and quality of life. The interventions involved 16 one-hour sessions delivered over nine months. Follow ups were at 6 and 12 months.

The evidence of the effects of family therapy versus general family therapy is of very low certainty. See Table D18 in Appendix D.

Comparison 19: Multi-family therapy versus family therapy in adolescents with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 167 adolescents with a mean age of 15.7 years. The intervention consisted of multi-family therapy in groups of 5-7 families (MFT-AN). The intervention involved an intensive 4-day introduction program followed by 6 sessions over 9 months, in addition to individual family sessions when necessary. The comparison group received family therapy for anorexia nervosa (FT-AN). Outcome measures were remission, BMI, percent of median BMI, eating disorder symptoms, depression, carer experience of caregiving, and service user experience for the patient and the carers. Treatment duration was 12 months. Follow ups were at 6 weeks and 6 months.

The evidence of the effects of multi-family therapy versus family therapy is of very low certainty. See Table D19 in Appendix D.

Comparison 20: Family therapy versus any individual therapy in adolescents with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 4 studies with 263 adolescents with a mean age ranging from 14 to 15 years. The intervention consisted of various types of family therapy: Behavioral family systems therapy (BFST) or family therapy for eating disorders (FT-ED). The comparison groups received adolescent-focused psychotherapy or supportive therapy. The objective was to treat anorexia nervosa. Outcome measures were remission, BMI or weight, eating disorder symptoms and depression. Treatment duration varied from 12 to 18 months. Follow ups varied from 12 months to 5 years.

Family therapy possibly leads to moderately more remissions (RR 1.45, CI 95% 0.82 to 2.59) as well as moderately greater increases in BMI (SMD 0.51, CI 95% 0.19 to 0.82) at the end of treatment when compared to individual therapy, but the difference may be small or not hold up on a 5 year follow up (remission: RR 1.01, CI 95% 0.80 to 1.27; BMI: SMD 0.24, CI 95% -0.08 to 0.56). The evidence is of low certainty. The evidence of the effects on the other outcomes is of very low certainty. See Table D20 in Appendix D.

Comparison 21: Conjoint family therapy versus separated family therapy in adolescents with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 2 studies with 147 children and adolescents aged 11-18. The studies compared two kinds of family therapy where interventions were either given to the whole family gathered in one room or to children and parents in separate rooms. The objective was to compare the effect of conjoint and separated family therapy on eating disorder symptoms. Outcome measures were remission, BMI, weight change, eating disorder symptoms, hospitalizations and depression. Treatment duration was 6-12 months. Follow ups were at 6 and 12 months. Only one study (n=108, 12-18 years) reported follow up data.

Conjoint family therapy possibly leads to slightly fewer remissions (RR 0.52, CI 95% 0.32 to 0.85), BMI (SMD -0.34, CI 95% -0.67 to -0.02), and slightly more symptoms of depression (SMD 0.12, CI 95% -0.44 to 0.21) when compared to separated family therapy. The evidence of the effects on the other outcomes is of very low certainty. See Table D21 in Appendix D.

Comparison 22: Long-term family therapy versus short-term family therapy in adolescents with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 86 adolescents aged 12-18. The intervention consisted of manual-based short-term family therapy (10 sessions over 6 months) and long-term family therapy (20 sessions over 12 months). The objective was to determine the optimal length of family therapy to treat eating disorders. Outcome measures were BMI, eating disorder symptoms and amenorrhea. In addition, percent of ideal body weight (IBW) and amenorrhea were measured at follow up. Follow up was on average 3.96 years after the intervention.

The evidence of the effects of long-term family therapy versus short-term family therapy is of very low certainty. See Table D22 in Appendix D.

Comparison 23: Family therapy with family meal versus family therapy without family meal in children, adolescents and young people with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 23 children, adolescents and young people aged 12-20. The intervention consisted of family therapy with or without a family meal. The objective was to determine the treatment effect of a family meal as part of therapy. Outcome measures were remission, weight, percent of expected body weight, eating disorder

symptoms, general psychopathology and amenorrhea. Treatment duration was 6 months. Follow up was at 6 months.

The evidence of the effects of a family meal as part of family therapy is of very low certainty. See Table D23 in Appendix D.

Comparison 24: Family therapy approaches versus educational interventions in adolescents and young people with anorexia nervosa at follow up

The evidence is extracted from the systematic review conducted by Fisher et al. (2019). Searches for family therapy approaches compared to educational interventions resulted in 1 study comparing family therapy to dietary advice.

Family therapy versus dietary advice

The comparison contains 1 study with 30 females aged 13-27. The intervention consisted of outpatient therapy combining individual therapy and family therapy. The therapy targeted how anorexia nervosa influences the relationships with family and friends, especially focusing on sustaining factors. The comparison group received dietary advice. The objective was to change the way anorexia nervosa influences the patient and her family in order to improve outcome. The outcome measure was remission at 9 months follow up. Treatment duration was 12 sessions over 12-24 weeks.

The evidence of the effects of family therapy approaches versus educational interventions is of very low certainty. See Table D24 in Appendix D.

Comparison 25: Family-based therapy versus family-based therapy plus parent coaching in children and adolescents with anorexia nervosa at end of treatment

The evidence is extracted from the systematic review conducted by Fisher et al. (2019). The comparison contains 1 study with 45 children and adolescents aged 12-18. The intervention consisted of family-based therapy (phase1 and 2 in Maudsley's FBT) with or without additional intensive parental coaching (IPC, phase 3 in Maudsley's FBT). Family coaching was given to families experiencing little weight restoration in early phases of the treatment.

The objective was to determine whether parent coaching would have effects on eating disorder symptoms. Outcome measures were remission, dropout, eating disorder symptoms and BMI. Treatment duration was on average 12.9 (FBT) and 13.9 (FBT+IPC) sessions over 6 months.

The evidence of the effects of parent coaching as a part of family-based therapy (FBT) is of very low certainty. See Table D25 in Appendix D.

Comparison 26: Family-based therapy versus family-based therapy plus consultation in children and adolescents with anorexia nervosa at end of treatment

The evidence is extracted from the systematic review conducted by Fisher et al. (2019). The comparison contains 1 study with 20 female adolescents aged 12-16. The intervention consisted of family-based therapy (Maudsley's FBT), with or without additional parent-to-parent consultations. Parent-to-parent consultations consisted of meetings between parents who had undergone treatment with their child and parents who were new to the treatment program. The objective was to determine whether FBT combined with parent-to-parent consultations would have an additional treatment effect on anorexia nervosa. Outcomes were measured on remission. Treatment duration was 20 hourly sessions.

The evidence of the effects of parent-to-parent consultations as part of family-based therapy (FBT) is of very low certainty. See Table D26 in Appendix D.

Comparison 27: Psychotherapy versus treatment as usual in adolescents and adults with anorexia nervosa at end of treatment

The evidence is extracted from the systematic review conducted by van den Berg et al (2019). The comparison consists of up to 8 studies with an unknown number of adolescents under the age of 18. The intervention consisted of one of or a selection of the following interventions: family therapy, motivational interviews, cognitive behavioral therapy, cognitive therapy, parental feedback, dietary therapy, interpersonal therapy and unspecified treatment as usual. The interventions were given individually or to families, both in inpatient and outpatient settings. The comparison groups received family group

psychoeducation, dietary advice, Specialist Supportive Clinical Management (SSCM) or unspecified treatment as usual. The objective was to determine the effect of psychotherapy on anorexia nervosa. Outcome measures were weight gain and eating disorder symptoms. Treatment duration varied significantly between interventions.

The evidence of psychotherapy compared to treatment as usual is of very low certainty. See Table D27 in Appendix D.

Neuropsychological interventions for anorexia nervosa

Comparison 28: Cognitive remediation therapy versus historical control in children and adolescents with anorexia nervosa at end of treatment

The evidence is extracted from the systematic review conducted by Tchantuira et al (2017). The comparison contains 9 studies with 435 children and adolescents under the age of 18. The intervention consisted of individual and group-based cognitive remediation therapy in an inpatient or outpatient setting. The objective was to evaluate post-treatment cognitive changes in patients with anorexia nervosa. Outcome measures were mental set shifting, central coherence and executive functioning. Treatment duration was 8-12 sessions in 6 of the studies. Treatment duration was not specified for the remaining 3 studies.

The evidence of the effects of cognitive remediation therapy (CRT) is of very low certainty. See Table D28 in Appendix D.

Interventions targeting carers for anorexia nervosa

Comparison 29: Self-help or guided self-help and treatment as usual versus treatment as usual for carers of children and adolescents with anorexia nervosa at 12 months after referral for outpatient treatment

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 149 children and adolescents (average age: 16,9 years) and one of their carers. The intervention consisted of treatment as usual and guided self-help targeting parents (Experienced Carers Helping Others, ECHO) administered via a book and DVDs, with or without additional parental coaching via phone. The comparison group received treatment as usual. Treatment as usual consisted of different treatment measures, both for the intervention group and the comparison group: individual therapy, family therapy, dietary counseling, consultations with the general practitioner, the use of self-help or telephone helplines, hospitalizations, and consultations with other health services. The objective was to determine the effect of the ECHO intervention on the patient's symptoms. Outcomes were measured on child psychopathology. Treatment duration was not reported, though the protocol stated 10 30-60 minute phone calls. Effects were measured at 12 months after referral.

The evidence of the effects of self-help or guided self-help for carers is of very low certainty. See Table D29 in Appendix D.

Resistance training for anorexia nervosa

Comparison 30: Resistance training and treatment as usual versus treatment as usual in children and adolescents with anorexia nervosa restricting type at end of treatment

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 2 studies with 64 children and adolescents aged 12-16. The intervention consisted of guided high- and low-intensity resistance training with various strength exercises involving all major muscle groups, in addition to treatment as usual. They were also given one extra light meal with 150 kcal. The objective was to enhance strength and agility in patients with anorexia nervosa restricting type without losses in weight or BMI. Outcome measures were BMI, and psychological and physical quality of life. Treatment duration was 2 sessions a week over 3 months in the low-intensity group, and 3 sessions a week over 8 weeks in the high-intensity group. Follow up measurement was conducted for only one of the studies at 4 weeks.

Resistance training and treatment as usual (TAU) possibly leads to slightly smaller increases in BMI when compared to treatment as usual (SMD -0.21, CI 95% -0.70 to 0.29), but the evidence is of low certainty. The evidence for the effects of resistance training on the other outcomes was of very low certainty. See Table D30 in Appendix D.

Inpatient care for anorexia nervosa

Comparison 31: Inpatient care for weight restoration versus active outpatient, or combined brief hospital and outpatient care in children, adolescents and young people with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by Hay et al (2019). The comparison contains 3 studies with 319 children, adolescents and young people aged 11-23. The intervention consisted of different specialist inpatient care provided by a specialist eating disorder service and health professionals. The comparison groups received outpatient care or combined brief hospital and outpatient care. The objective was to determine

whether different treatment settings have different effects on eating disorder symptoms. Outcome measures were weight/BMI, completion of treatment, weight restoration, remission, depression and general psychopathology. Treatment duration varied but included a minimum of 4 treatment sessions. Follow up was at 2 years after baseline.

Inpatient care for weight restoration probably leads to slightly smaller increases in BMI (SMD -0.22, CI 95% -0.49 to 0.05), but also in depression severity (SMD -0.20, CI 95% -0.49 to 0.10) when compared to combined brief hospital and outpatient care at the end of treatment. The evidence of these effects is of moderate certainty.

Inpatient care also possibly leads to slightly fewer patients completing the treatment (RR 0.75, CI 95% 0.64 to 0.88), slightly fewer remissions (RR 0.93, CI 95% 0.73 to 1.17), but possibly slightly greater decreases in psychiatric symptom severity (SMD -0.17, CI 95% -1.04 to 0.69). In addition, inpatient care possibly leads to only slightly, if any, more patients achieving weight restoration to within normal range at the end of treatment (RR 1.06, CI 95% 0.65 to 1.70). The evidence of these effects is of low certainty. See Table D31 in Appendix D.

Comparison 32: Specialist inpatient care for weight restoration versus partial hospital care in children and adolescents with anorexia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by Hay et al (2019). The comparison contains 1 study with 172 females aged 11-18. The intervention initially consisted of 3 weeks of inpatient medical weight restoration, dietary counseling, cognitive behavioral therapy and family therapy, followed by continued inpatient care or partial hospital care. The objective was to determine treatment effects of different treatment settings. Outcome measures were weight or BMI, completion of treatment, weight restoration, remission and the incidence of general psychopathology. Treatment duration was 12 months.

The evidence of the effect of specialist inpatient care for weight restoration is of very low certainty. See Table D32 in Appendix D.

Psychological treatment for bulimia nervosa

Comparison 33: CBT-ED versus any other intervention in children, adolescents and young people with bulimia nervosa at the end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 2 studies with 215 children, adolescents and young people aged 12-20. The intervention consisted of cognitive behavioral therapy adapted for adolescents with eating disorders (CBT-ED) and guided self-help. The comparison groups received family therapy (FBT-BN or FT-ED) or supportive psychotherapy (SPT). The objective was to reduce eating disorder symptoms. Outcome measures were purges, binge episodes, depression, eating disorder symptoms and remission. Treatment duration was 6 months with the number of sessions varying between 13 and 18. Follow up was at 6 months.

The evidence of the effect of CBT-ED versus any other intervention is of very low certainty. See Table D33 in Appendix D.

Comparison 34: Family therapy for eating disorders versus any individual therapy in children, adolescents and young people with bulimia nervosa at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 3 studies with 295 children, adolescents and young people aged 12-20. The intervention consisted of family therapy (Maudsley's model for family therapy, adapted for bulimia nervosa) or family-based therapy for bulimia nervosa (FBT-BN). The comparison groups received CBT guided self-care, supportive therapy or cognitive behavioral therapy for adolescents (CBT-A). The objective was to compare treatment effects of family therapy and individual therapy. Outcome measures were remission, binges, abstinence from vomiting, purges, eating disorder symptoms, depression, hospitalizations and user experience. Treatment duration was 15-20 sessions over 6 months. Follow up was at 6-12 months.

Family therapy possibly leads to moderately greater reductions in symptoms of eating disorder (EoT: SMD -0.38, CI 95% -0.69 to -0.06; FU: SMD -0.38, CI 95% -0.72 to -0.04), as well as slightly greater decreases in symptoms of depression (EoT: SMD -0.28, CI 95% -0.60 to 0.03; FU: SMD -0.10, CI 95% -0.43 to 0.24) and binge frequency (EoT: SMD -0.09, CI 95% -0.40 to 0.23; FU: SMD -0.10, CI 95% -0.44 to 0.24) when compared to individual therapy. The evidence for these effects is of low certainty. The evidence for the effects on the other outcomes is of very low certainty. See Table D34 in Appendix D.

Psychological treatment for binge eating disorder

Comparison 35: CBT-ED versus another intervention in adolescents with binge eating disorder at end of treatment

The evidence is extracted from the systematic review conducted by NICE (2017). Searches for cognitive behavioral therapy for eating disorders (CBT-ED) compared to another intervention resulted in 1 study comparing CBT-ED to treatment as usual or waiting list.

Cognitive behavioral therapy for eating disorders (CBT-ED) versus treatment as usual or wait list controls

The comparison contains 1 study with 26 girls aged 12-18. The intervention consisted of cognitive behavioral therapy adapted to adolescents with binge eating disorder (CBT-ED). The comparison group received treatment as usual or were on a waiting list to receive treatment. The objective was to reduce binge eating symptoms. Outcome measures were BMI, depression, eating disorder symptoms, social adjustment and remission. Treatment duration was 8 sessions over 12 months.

The evidence of the effects of CBT-ED compared to another intervention is of very low certainty. See Table D35 in Appendix D.

Comparison 36: Internet self-help versus wait list controls in adolescents with binge eating disorder at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 93 adolescents with a mean age of 15.1 years. The intervention consisted of an internet-based semi-structured self-help program that combined psychoeducation and strategies from cognitive behavioral therapy. The comparison group were on a waiting list to receive treatment. The objective was to reduce binge eating episodes and prevent weight gain amongst adolescents at risk for overweight. Outcome measures were BMI and depression. Treatment duration was 16 weeks. Follow up was at 9 months after baseline.

The evidence of the effects of internet self-help (ED) compared with wait list controls is of very low certainty. See Table D36 in Appendix D.

Psychological treatment for unspecified eating disorder

Comparison 37: Group psychoeducation versus treatment as usual for adolescents and young people with disturbed eating and type I diabetes at end of treatment and follow up

The evidence is extracted from the systematic review conducted by NICE (2017). The comparison contains 1 study with 85 girls and young women aged 12-20. The intervention consisted of group psychoeducation and treatment as usual for adolescents with type I diabetes mellitus. The comparison group received treatment as usual. The objective was to normalize disordered eating behaviors and attitudes and improve metabolic control. Outcome measures were binge episodes, eating disorder symptoms, insulin omission days and HbA1c levels. Treatment duration was weekly 90-minute group sessions over 6 weeks. Follow up was at 6 and 10 months.

The evidence of the effect of group psychoeducation versus treatment as usual is of very low certainty. See Table D37 in Appendix D.

4.0 Discussion

The purpose of this overview of systematic reviews is to summarize the effects of prevention and treatment for EDs in children and adolescents, and thereby inform clinicians and health care policymakers. Below, we sum up the main findings before discussing limitations to the generalizability of the findings and limitations of the present overview.

4.1 Summary of the main results

Below is a summary of the findings for prevention interventions targeting EDs in general and for treatment approaches for each individual ED. Overall, the quality of the evidence was low or very low for almost all interventions, limiting our confidence in the accuracy of the estimated effects.

Preventive interventions. The available evidence on the prevention of EDs suggests that several interventions for universal and selective populations probably reduce symptoms associated with ED development. The evidence for some of the interventions, such as healthy weight interventions, CBT-based interventions, and one-shot interventions was of moderate certainty, which makes it probable that the effect estimates are close to the true effect. All these interventions appear promising for slightly, and in some instances moderately, reducing body dissatisfaction and dieting in at-risk youth. In addition, one of the most robust results on prevention is that healthy weight interventions in selective populations probably lead to substantially greater reductions in BMI than minimal or no intervention. This might sound alarming if given to a population that is underweight or of normal weight, but healthy weight interventions given in an overweight population might cause both decreases in BMI and increased body satisfaction, which in turn can reduce ED pathology generally (Becker et al. 2010). The weight of the specific participants was not specified in the systematic review from which we extracted the data.

Anorexia nervosa. Based on the available evidence, it is uncertain which intervention for AN is most effective. The Norwegian guideline (The Norwegian Directorate of Health, 2017) strongly recommends family-based treatment (FBT) for the treatment of AN in children and adolescents. However, the evidence of the effect of FBT is uncertain because of the lack of studies or the very low quality of the evidence. The effects of several other treatment approaches are also uncertain: Cognitive behavioral therapy, supportive therapy, multi-family therapy,

educational interventions, neuropsychological interventions, self-help or guided self-help, and pharmaceutical interventions.

The majority of evidence on psychological interventions for AN stem from research on different family therapy approaches. Although all the evidence on family therapy in our overview is of low quality, the results do suggest that family therapy approaches generally might be superior to individual therapy approaches on most outcomes that are associated with weight, e.g., remission rates, weight restoration, and hospitalizations. This difference between individual and family therapy on weight-related outcomes could possibly be explained by family therapy's focus on enabling the family to better manage the disturbed eating of the child or adolescent. Change then might depend less on the adolescent him- or herself managing their eating behavior, and more on the family's management of the behavior (Le Grange, 1999). Beyond the weight-related outcomes, however, uncertain evidence suggests that there might be no difference between family and individual therapy. There is also some indication that the differences in the effects of family versus individual therapy is much less pronounced on follow up measurements. In summary, family therapy might be more effective than individual therapy at producing weight gains in the short term.

There is also a breadth of research on the effects of different additions or modifications to family therapy. However, the effects of the length of the family therapy, the use of family meals as part of the therapy, giving dietary advice, as well as the effects of parent coaching and parent-to-parent consultations are uncertain. There is evidence, however, that family therapy where the child or adolescent is given separate treatment sessions from the caretakers (separated family therapy) may have slightly superior effects on remission, BMI and depression symptoms when compared to conjoint family therapy where the caretakers and their child share treatment sessions. If the superiority of family therapy over individual therapy is explained by its strength in enabling the parents to better manage their child's eating behavior, as we suggest, then the strength of separated family therapy could lie in the parents' receiving more focus and time with the therapist.

Although uncertain, the evidence of the effects of adolescent-focused therapy indicates that adolescent-focused therapy might be comparable to family therapy in terms of remission rates, but inferior in achieving weight gains in the short term. As mentioned previously, family therapy seems particularly effective at increasing body weight measured at the end of treatment.

Since there is possibly no difference in remission rates, adolescent-focused therapy might make up for the moderately smaller increases in BMI by being more effective than family therapy at bettering the other symptoms of anorexia nervosa such as the fear of gaining weight and disturbances in the experience of body weight or shape.

Even though exercise is generally recommended (The Norwegian Directorate of Health, 2019), children and adolescents suffering from AN are at risk of compulsive exercise which can result in further weight loss (El Ghoch et al., 2013). The evidence of the effect of resistance training for children and adolescents with AN is of low quality. Nevertheless, it indicates that although resistance training can be done without losing weight, it might be inferior to doing no resistance training if the primary goal is to increase the patients' BMI.

Bulimia nervosa. The evidence of the effects of several interventions for children and adolescents with BN is uncertain because of the lack of studies or the very low quality of the evidence. As with the treatment of AN, The Norwegian guideline (The Norwegian Directorate of Health, 2017) strongly recommends family-based therapy (FBT) for children and adolescents with BN. Although this overview found no evidence for the effect of FBT specifically, there was evidence of low certainty that family therapy in general may be superior to individual therapy in terms of reducing symptoms of eating disorder, the frequency of binge-eating as well as symptoms of depression.

Binge-eating disorder. There is very little evidence for the effect of interventions targeting children and adolescents with BED. The results indicate that cognitive behavioral therapy for eating disorders (CBT-ED) and internet-based semi-structured self-help might be appropriate treatments, but the effects of the interventions are uncertain.

The Norwegian Directorate of Health (2017) recommends that self-help may be given to children and adolescents suffering from BED. The NICE guidelines (2017) have no recommendations specifically for children and adolescents with BED, but recommend offering patients with BED of any age guided self-help programs for BED if appropriate, or offering group or individual CBT-ED. This means that our findings coincide with currently applied recommendations. Yet, our data only involved two comparisons for BED, and the results are uncertain. More data is needed to be certain of the effects of treatments for children and adolescents with BED.

UFED/OSFED. There is very little evidence for the effect of interventions targeting children and adolescents with unspecified EDs. The results indicate that group psychoeducation for adolescents and young people with disturbed eating and type I diabetes might reduce symptoms of EDs, but the effect of the intervention is uncertain. The lack of research might in part be explained by that the children and adolescents diagnosed with UFED/OSFED are a fragmented group. The UFED diagnosis is often given to those who do not fulfill all of the diagnostic criteria to the other EDs (APA, 2013, pp. 353-354), and many of those who have historically been given this diagnosis might be better described as suffering from the newer diagnosis of ARFID (Nicely et al., 2014). This might explain the limited findings on treatments for UFED. NICE (2017) recommends that one should give patients with UFED/OSFED the treatment for the eating disorder it most closely resembles, meaning that some of our findings on AN, BN and BED might be applicable for patients diagnosed with UFED, and that future research on ARFID might also be relevant.

Avoidant/restrictive food intake disorder. We presume that the absence of systematic reviews focusing on ARFID can be explained by its very recent introduction in the diagnostic manual of DSM-5 (APA, 2013). Research indicates that this might be a more accurate diagnosis for many of those diagnosed with UFED/OSFED, suggesting that ARFID is in fact quite common in child and adolescent populations (Nicely et al., 2014). In future overviews of systematic reviews, one can therefore expect prevention and treatment of ARFID to be covered.

Inpatient treatment. The Norwegian guideline strongly recommends outpatient treatment for patients with EDs that are somatically stable and not seriously underweight (The Norwegian Directorate of Health, 2017). Our overview found conflicting evidence on the effects of inpatient care for weight restoration compared to outpatient care in children and adolescents with AN. There was evidence of moderate certainty that inpatient care is less effective at maintaining or increasing the weight of patients and might paradoxically lead to a greater weight loss than outpatient treatment. There was also evidence of low certainty that inpatient treatment might lead to higher dropout rates and fewer remissions. However, inpatient treatment might be more effective than outpatient treatment at reducing psychiatric symptoms, for symptoms of depression in particular.

Overall remission rates. Overall, our findings failed to identify any one specific treatment approach as being superior to other treatment approaches for any of the EDs.

Nevertheless, despite low confidence in the estimated effects, the results show substantial remission rates both for intervention and comparison conditions. For example, in comparisons regarding treatment of AN that reported on remission outcomes, an average of 56.0% (range 23.1%-90.9%) and 47.8% (range 16.7%-70.0%) of patients had achieved remission at end of treatment in intervention and comparison conditions, respectively. At follow up, remission rates were 49.2% (range 18.1%-77.4%) for intervention and 39.2% (range 0.00%-61.8%) for comparison conditions on average. See GRADE tables D13-D37 inn Appendix D for exact remission rates for all EDs and treatment conditions.

It is important to note, however, that the data available to this overview did not indicate whether remission was a result of specific treatment approaches or any other factors, as will be discussed in section 4.2.

4.2 Limitations to the generalizability of the findings

The generalizability of the research findings overall is limited, complicating evidence-based decision making for prevention and treatment of EDs in children and adolescents. This is due to several limitations to the research included in this overview that need to be taken into consideration when drawing conclusions about the effects of ED interventions. Below, we discuss five salient limitations of ED research and how these contribute to the uncertainty regarding research evidence and generalizability: Confidence in the effect estimates, gender imbalance, remission as an outcome measure, treatment as usual as a control group and the lack of untreated control groups.

Confidence in the estimated effects. Firstly, most of the effect estimates reported in the treatment comparisons are of low or very low certainty (see GRADE tables in Appendix D). This indicates that the true effects might be substantially different from the currently reported effect estimates. The most common reasons for the low certainty are that the studies suffer from risk of bias and lack of precision. This highlights the need for larger and methodologically rigorous research on ED treatment to ensure high-certainty evidence.

Risk of bias due to lack of blinding of participants, investigators and/or assessors is one of the main reasons for rating down the confidence in effect estimates in the treatment comparisons. However, blinding is often difficult to obtain for nonpharmaceutical trials because it is hardly feasible to conceal whether a patient receives for instance psychotherapy (Boutron et al., 2007).

Consequently, we have downgraded the confidence in the results for certain comparisons for a risk of bias which is, by default, practically inevitable for psychological treatment research. When interpreting the GRADE tables, the reader should bear this limitation in mind.

Additionally, the certainty of the evidence was downgraded in a considerable amount of the treatment comparisons because of *lack of precision* due to small sample sizes and few included studies. Smaller sample sizes contribute to wider confidence intervals, which in turn reduces our confidence in the accuracy of the effect estimates. Whereas some of the treatment comparisons contained sufficient studies, none of them reached the threshold for sufficient participants, leading them to be downgraded due to lack of precision.

The lack of studies on EDs in child and adolescent populations may partly be explained by the peak onset age of EDs, which puts the majority of people suffering from these disorders at the edge of adolescence. Therefore, even though deemed necessary to obtain sufficient sample sizes to ensure generalizable results, it might be difficult to conduct more comprehensive studies in practice if the age limitation for adolescence is set to be 18 and young people are thereby excluded. Another reason for the apparent difficulties in obtaining bigger sample sizes might be the focus on specific disorders in isolation in ED treatment research, resulting in a field of research that is fragmented. We believe this to be detrimental to discovering the true effect of treatments that might be transdiagnostic in their clinical range (Fairburn et al., 2015). If all ED psychopathology is maintained by a largely common set of mechanisms, as suggested by Fairburn et al. (2015), applying treatment capable of addressing these mechanisms can be effective across EDs. Such a transdiagnostic approach within treatment research could in turn be a solution for the methodological issue of lack of precision in that it would lead to bigger sample sizes and thus ensure more robust and generalizable findings.

Even though the research on prevention interventions does generally not suffer from a lack of precision due to limited trials and small sample sizes, the GRADE scores should be read with caution. Because researchers evaluating the effectiveness of prevention programs easily can achieve large samples of participants, the data available to our overview was usually robust enough to warrant a GRADE score indicating that we have some confidence that the effect estimates reflect the true effects. However, the GRADE framework does not take program implementation into account, which can act as a confounding variable when not assessed (Durlak, 2015). This may lead to an overconfidence in the effect estimates.

Gender imbalance in ED research. A second limitation that should be taken into consideration is the gender distribution in the included ED research. Out of the 37 comparisons in this overview, 23 did not specify gender distribution. In the comparisons with known gender distribution, 13 exclusively or primarily included female participants. One comparison consisted of males only. This might indicate that the distribution in our data reflects that of the general population.

The lack of research on male ED patients as well as selective and indicated ED prevention on males, indicates that the knowledge about symptomatology and treatment outcomes in males is scarce. When a substantial part of the research is based primarily or exclusively on females, one cannot be certain that the results would be similar if the genders were represented equally or if the populations consisted exclusively of males. Thus, the generalizability of the findings in ED research generally, and in this overview particularly, might be limited to the female population.

Remission. Third, several issues need to be noted regarding remission as an outcome measure. Below, we address issues that may influence the validity and practical implications of the present findings.

a) Remission is not applied and measured in a uniform manner across studies. For example, while some studies included in the current paper use the Morgan-Russell Outcome Assessment Schedule (e.g., Godart et al., 2012), others solely use ideal body weight or BMI as an indicator of remission (e.g., Agras, 2014). Therefore, we question whether the remission outcome measures from different primary studies can be appropriately merged, seeing as they might measure substantially different outcomes using the same term. Additionally, because the diagnosis of anorexia nervosa depends on several diagnostic criteria, the validity of measuring remission in AN solely in body weight might indeed be questioned.

b) The use of remission as an outcome measure in ED research warrants a discussion per se. As mentioned in the introduction, Couturier and Lock (2006b) define *remission* as a categorical assessment, conducted at a single point in time, indicating that symptoms are no longer present at least for a brief period of time. *Recovery*, on the other hand, can be defined as the continuation of remission for a significantly longer period of time (Couturier & Lock, 2006a). Hence, remission measured at follow up at a single point of time as seen in ED research does not necessarily indicate that the patient has fully recovered. Additionally, this underlines the

need for long-term follow up assessments: Remission outcomes are often measured at follow-ups as short as 6-12 months after end of treatment, even though eating disorders have been found to have an average duration of about 6 years (Schmidt et al., 2016). Thus, one should be careful when drawing conclusions about actual long-term remission outcomes after treatment.

Treatment as usual. Fourth, the use of treatment as usual (TAU) in control groups poses several problems that may impact the validity and the generalizability of the findings. TAU is not a unitary and clearly defined entity, as it comprises different treatment approaches in different studies. Many of the included studies list numerous treatment approaches that were all incorporated in the collective term TAU (e.g., Salerno et al., 2016). For other comparisons, TAU was not explicitly defined – neither in the systematic review nor in the primary study. In cases where a specific treatment approach (e.g., CBT-ED) is compared to unspecified TAU, it may also be difficult to rule out the possibility that the TAU group has received a similar treatment as the intervention group. Based on these observations, we suggest that the interpretation of TAU in this overview should lean closer to "any other treatment" rather than "treatment as usual".

Untreated comparison groups. Lastly, another limitation of the evidence on ED treatment interventions is the lack of untreated comparison groups. The use of untreated comparison groups, such as waitlist controls, is deemed unethical because of the high mortality rate and the irreversible health consequences associated with long lasting illness. Consequently, we know very little of the true effects of the treatments (Zeeck et al., 2018), and can therefore not draw any conclusions about the absolute effects of any particular treatment approach.

4.3 Limitations of the present overview

As to our knowledge, no overview of systematic reviews has been conducted to date focusing on prevention and treatment of EDs in children and adolescents. Therefore, the present overview fills an important research gap, but also underlines a dire need for further and rigorous research to provide effective ED interventions for the child and adolescent population.

However, there are several limitations to the present overview of systematic reviews that might influence the results and the conclusions drawn. First, overviews of systematic reviews do generally extract data from systematic reviews, and do not consult the primary studies that the reviews are based on. Consequently, they rely on the interpretations and the reporting of the

review authors. We did not attempt any reanalysis of any results and can therefore not rule out the possibility of inadequate analyses or wrongfully reported effect estimates.

The time interval for included systematic reviews poses a second limitation to the present paper. The 5-year criterion was chosen based on an assumption that most reviews older than 5 years would have been succeeded by more recent reviews and would therefore be redundant. This assumption might have been wrong, given that the most up to date review of family-based therapy for anorexia nervosa (Couturier et al., 2013) actually did not comply with the 5-year criterion. This means that we did not report on the best and most up to date evidence for the only treatment that is recommended by the Norwegian institute of public health for anorexia nervosa in children and adolescents (The Norwegian Directorate of Health, 2017). We cannot eliminate the possibility that this might also be the case for other clinically important prevention and treatment approaches.

Lastly, due to the lack of studies reporting data exclusively on child and adolescent populations, comparisons from five of the included systematic reviews included participants over the age of 18 in addition to children and adolescents. This is problematic when the aim of this overview is to review the effect of interventions on children and adolescents, not on adults. These mixed populations make it difficult to determine whether the effects would have been different if the populations consisted exclusively of children and adolescents. In several of the studies, it was also impossible to determine the actual age range of the participants, as the age was only stated in mean age in the systematic reviews from which we retrieved the characteristics of the primary studies.

4.4 Future research

Overall, there is a dire need for research on prevention and treatment of EDs amongst children and adolescents. As for prevention interventions, the evidence for indicated prevention interventions is particularly scarce and of very low quality. Even though the evidence is generally more robust for universal and selective interventions, certain approaches, such as media literacy, cognitive behavioral therapy-based interventions and psychoeducation warrant further research to fortify their effects. In general, more rigorous and thoroughly described program implementation would not only benefit the recipients of the interventions, but also

strengthen the confidence in the estimated effects and contribute to more reliable statistical merging of data from different trials.

None of the treatment comparisons warranted evidence of sufficient amount and methodological quality to draw firm conclusions about the superiority of any specific treatment intervention over any other intervention. There is therefore a general need for more clinical research in the field of treatment approaches for EDs in children and adolescents.

As discussed above, it is rare for primary studies in the field of ED treatment interventions to single-handedly obtain the sample size necessary to draw generalizable conclusions. Therefore, researchers conducting randomized controlled trials should strive to report results in a way that allows for statistical merging and analyses, e.g., in systematic reviews and meta-analyses. Furthermore, this entails designing trials in a manner that would minimize the risk of bias, as well as documenting the methods sufficiently. This allows third party assessment using the Cochrane tool for assessing risk of bias (Higgins et al., 2017).

Besides the need for more research on the comparisons we found uncertain evidence for, there is also a need for more research on the comparisons we found no evidence for (see table 3). There might be enough primary studies to warrant systematic reviews of the evidence for some of these interventions. There might also be a lack of primary studies on these comparisons, highlighting the need for more randomized controlled trials.

5.0 Conclusion

In this overview of systematic reviews, we summarize the most recent research on preventive and treatment measures for EDs in children and adolescents. In general, there is a lack of studies focusing exclusively on child and adolescent populations, and the research is characterized by low methodological quality, making it difficult to draw definite conclusions. We found low to moderate certainty evidence that some prevention interventions, such as healthy weight, CBT-based and cognitive dissonance-based interventions, might be effective at reducing risk factors associated with the development of EDs. As for treatment measures, low certainty evidence indicated that family therapy might be more effective than individual therapy at treating anorexia or bulimia nervosa in the short term, but there is possibly no difference in the longer term. CBT-ED and internet-based semi-structured self-help might be appropriate treatments for children and adolescents with binge eating disorder. A substantial amount of ED patients achieved remission in intervention and comparison conditions for a wide range of treatment measures. The scarcity of up-to-date research and the severe health consequences of long-lasting EDs in children and adolescents highlight the urgent need for further research to provide robust and high-confidence findings of high generalizability.

References

Agras, W. S., Lock, J., Brandt, H., Bryson, S. W., Dodge, E., Halmi, K. A., Jo, B., Johnson, C., Kaye, W., Wilfley, D., & Woodside, B. (2014). Comparison of 2 family therapies for adolescent anorexia nervosa: A randomized parallel trial. *JAMA Psychiatry, 71*(11), 1279–1286. https://doi.org/10.1001/jamapsychiatry.2014.1025

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association.

American Psychological Association (n.d.). Cognitive behavior therapy (CBT). *APA Dictionary of Psychology*. Retrieved December 19th, 2020, from https://dictionary.apa.org/cognitive-behavior-therapy

Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders: A meta-analysis of 36 studies. *Archives of General Psychiatry, 68*(7), 724–731. 10.1001/archgenpsychiatry.2011.74

Attie, I., Brooks-Gunn, J., & Petersen, A. C. (1990). A developmental perspective on eating disorders and eating problems. In M. Lewis & S. M. Miller (Eds.), *Handbook of Developmental Psychopathology* (pp. 409-420). Springer. https://doi.org/10.1007/978-1-4615-7142-1_31

Baghurst, T., Carlston, D., Wood, J., & Wyatt, F. B. (2007). Preadolescent perceptions of action figure physiques. *Journal of Adolescent Health, 41*(6), 613-615. https://doi.org/10.1016/j.jadohealth.2007.07.013

Bakalar, J. L., Shank, L. M., Vannucci, A., Radin, R. M., & Tanofsky-Kraff, M. (2015). Recent advances in developmental and risk factor research on eating disorders. *Current Psychiatry Reports, 17*(6), 42. 10.1007/s11920-015-0585-x.

Beating Eating Disorders (Beat; 2015). *The Cost of Eating Disorders: Social, Health and Economic Impacts.* https://www.beateatingdisorders.org.uk/uploads/documents/2017/10/the-costs-of-eating-disorders-final-original.pdf

Becker, C. B., Wilson, C., Williams, A., Kelly, M., McDaniel, L., & Elmquist, J. (2010). Peer-facilitated cognitive dissonance versus healthy weight eating disorders prevention: A randomized comparison. *Body Image, 7*(4), 280-288. 10.1016/j.bodyim.2010.06.004

Berge, J. M., Maclehose, R., Loth, K. A., Eisenberg, M., Bucchianeri, M. M., & Neumark-Sztainer, D. (2013). Parent conversations about healthful eating and weight: Associations with adolescent disordered eating behaviors. *JAMA Pediatrics, 167*(8), 746-753. 10.1001/jamapediatrics.2013.78.

Boutron, I., Guittet, L., Estellat, C., Moher, D., Hróbjartsson, A., & Ravaud, P. (2007). Reporting methods of blinding in randomized trials assessing nonpharmacological treatments. *PLoS Medicine 4*(2), 370-379. https://doi.org/10.1371/journal.pmed.0040061

Campbell, K., & Peebles, R. (2014). Eating disorders in children and adolescents: State of the art review. *Pediatrics, 134*(3), 582-592. 10.1542/peds.2014-0194

Celio, A. A., Winzelberg, A. J., Wilfley, D. E., Eppstein-Herald, D., Springer, E. A., Dev, P., & Taylor, C. B. (2000). Reducing risk factors for eating disorders: Comparison of an internet- and a classroom-delivered psychoeducational program. *Journal of Consulting and Clinical Psychology, 68*(4), 650-657. 10.1037/0022-006X.68.4.650

Coughlin, J. W. & Kalodnes, C. (2006). Media Literacy as a prevention intervention for college women at low- or high-risk for eating disorders. *Body Image, 3*(1), 35-43.

Couturier, J., Kimber, M., & Szatmari, P. (2013). Efficacy of family-based treatment for adolescents with eating disorders: a systematic review and meta-analysis. *The International Journal of Eating Disorders, 46*(1), 3–11. https://doi.org/10.1002/eat.22042

Couturier, J., & Lock, J. (2006a). What is recovery in adolescent anorexia nervosa? *International Journal of Eating Disorders, 39*(7), 550-555. https://doi.org/10.1002/eat.20309

Couturier, J., & Lock, J. (2006b). What is remission in adolescent anorexia nervosa? A review of various conceptualizations and quantitative analysis. *International Journal of Eating Disorders, 39*(3), 175-183. 10.1002/eat.20224

Culbert, K. M., Racine, S. E., & Klump, K. L. (2015). Research review: What we have learned about the causes of eating disorders - A synthesis of sociocultural, psychological, and biological research. *Journal of Child Psychology and Psychiatry, 56*(11), 1141-1164. doi:10.1111/jcpp.12441

Database of Abstracts of Reviews of Effects (1995). *Quality-Assessed Reviews*. Centre for Reviews and Dissemination. https://www.crd.york.ac.uk/crdweb/

Durlak, J. (2015). Studying program implementation is not easy but it is essential. *Prevention*

Science, 16(8), 1123-1127. 10.1007/s11121-015-0606-3

El Ghoch, M., Soave, F., Calugi, S., & Dalle Grave, R. (2013). Eating disorders, physical fitness and sport performance: A systematic review. *Nutrients, 5*(12), 5140-5160. 10.3390/nu5125140

Fairburn, C. G. (2008). *Cognitive Behavior Therapy and Eating Disorders.* The Guilford Press.

Fairburn, C. G., Bailey-Straebler, S., Basden, S., Doll, H. A., Jones, R., Murphy, R., O'Connor, M., & Cooper, Z. (2015). A Transdiagnostic comparison of enhanced cognitive behaviour therapy (CBT-E) and interpersonal psychotherapy in the treatment of eating disorders. *Behaviour Research and Therapy, 70,* 64-71. 10.1016/j.brat.2015.04.010

Fairburn, C. G, & Harrison, P. J. (2003). Eating disorders. *The Lancet, 361*(9355), 407-416. 10.1016/S0140-6736(03)12378-1

Festinger, L. (1962). *A theory of cognitive dissonance.* Stanford University Press.

Fisher, C. A., Skocic, S., Rutherford, K. A., & Hetricks, S. E. (2019). Family therapy approaches for anorexia nervosa. *The Cochrane database of systematic reviews, 10*(10), CD004780. https://doi.org/10.1002/14651858.CD004780.pub3

Fitzpatrick, K. K., Moye, A., Hoste, R., Lock, J., & Le Grange, D. (2010). Adolescent focused psychotherapy for adolescents with anorexia nervosa. *Journal of Contemporary Psychotherapy, 40*(1), 31-39. https://doi.org/10.1007/s10879-009-9123-7

Galmiche, M., Déchelotte, P., Lambert, G., & Tavolacci, M. P. (2019). Prevalence of eating disorders over the 2000–2018 period: A systematic literature review, *The American Journal of Clinical Nutrition*, *109*(5), 1402–1413. https://doi.org/10.1093/ajcn/nqy342

Godart, N., Berthoz, S., Curt, F., Perdereau, F., Rein, Z., Wallier, J., Horreard, A. S., Kaganski, I., Lucet, R., Atger, F., Corcos, M., Fermanian, J., Falissard, B., Flament, M., Eisler, I., & Jeammet, P. (2012). A randomized controlled trial of adjunctive family therapy and treatment as usual following inpatient treatment for anorexia nervosa adolescents. *PloS one, 7*(1), e28249. https://doi.org/10.1371/journal.pone.0028249

Gowers, S. (2006). Evidence based research in CBT with adolescent eating disorders. *Child and Adolescent Mental Health 11*(1), 9-12. https://doi.org/10.1111/j.1475-3588.2005.00348.x

Gowers, S., & Bryant-Waugh, R. (2004). Management of child and adolescent eating disorders: The current evidence base and future directions. *Journal of Child Psychology and Psychiatry, 45*(1), 63-83. 10.1046/j.0021-9630.2003.00309.x

Hay, P. J., Touyz, S., Claudino, A. M., Lujic, S., Smith, C. A., & Madden, S. (2019). Inpatient versus outpatient care, partial hospitalisation and waiting list for people with eating disorders. *Cochrane Database of Systematic Reviews, 1*(1). 10.1002/14651858.CD010827.pub2

Haynos, A. F., Watts, A. W., Loth, K. A., Pearson, C. M., & Neumark-Stzainer, D. (2016). Factors predicting an escalation of restrictive eating during adolescence. *Journal of Adolescent Health, 59*(4), 391-396. 10.1016/j.jadohealth.2016.03.011.

Higgins, J. P. T., Altman, D. G., & Sterne, J. A. C. (2017). Assessing risk of bias in included studies. In J. P. T. Higgins, R. Churchill, J. Chandler & M. S. Cumpston (Eds.), *Cochrane Handbook for Systematic Reviews of Interventions version 5.2.0*. Cochrane. www.training.cochrane.org/handbook

Kazdin, A. E. (2015). Treatment as usual and routine care in research and clinical practice. *Clinical Psychology Review, 42*, 168-178. 10.1016/j.cpr.2015.08.006.

Keski-Rahkonen, A., & Mustelin, L. (2016). Epidemiology of eating disorders in Europe: Prevalence, incidence, comorbidity, course, consequences, and risk factors. *Current Opinion of Psychiatry*, *29*(6), 340-345. 10.1097/YCO.0000000000000278

Klump, K. L. (2014). Developmental trajectories of disordered eating: Genetic and biological risk during puberty. In M. Lewis & K. Rudolph (Eds.), *Handbook of Developmental Psychopathology* (pp. 621-629). Springer. https://doi.org/10.1007 /978-1-4614-9608-3_31

Kohn, M., & Golden, N. H. (2001). Eating disorders in children and adolescents. *Paediatric Drugs*, *3*(2), 91–99. https://doi.org/10.2165/00128072-200103020-00002

La Puma, M., Touyz, S., Dean, H., Williams, H., & Thornton, C. (2009). To hospitalize or not to hospitalize patients with anorexia nervosa? In S. J. Paxton & P. J. Hay (Eds.), *Interventions for Body Image and Eating Disorders. Evidence and practice*, (pp. 95-118). Communications Ltd.

Le, L. K., Barendregt, J. J., Hay, P., & Mihalopoulos, C. (2017). Prevention of eating disorders: A systematic review and meta-analysis. *Clinical Psychology Review*, *53*, 46–58. https://doi.org/10.1016/j.cpr.2017.02.001

Le Grange, D. (1999). Family therapy for adolescent anorexia nervosa. *Journal of Clinical Psychology 55*(6) 727-740. https://doi.org/10.1002/(SICI)1097-

4679(199906)55:6<727::AID-JCLP6>3.0.CO;2-3

Linardon, J., Wade, T. D, de la Piedad Garcia, X., & Brennan, L. (2017). The efficacy of cognitive behavioral therapy for eating disorders: A systematic review and meta-analysis. *Journal of Consulting and Clinical Psychology 85*(11), 1080-1094. http://dx.doi.org/10.1037/ccp0000245

Lock, J., Le Grange, D., Agras, W. S., Moye, A., Bryson, S. W., & Booil, J. (2010). Randomized clinical trial comparing family-based treatment with adolescent-focused individual therapy for adolescents with anorexia nervosa. *Archives of General Psychiatry, 67*(10), 1025-1032. 10.1001/archgenpsychiatry.2010.128.

Murray, S. B., Nagata, J. M., Griffiths, S., Calzo, J. P., Brown, T. A., Mitchinson, D., Blashill, A. J., & Mond, J. M. (2017). The enigma of male eating disorders: A critical review and synthesis. *Clinical Psychology Review, 57*(1), 1-11. 10.10.16/j.cpr.2017.08.001

National Institute for Care and Health Excellence. (2017). *Eating Disorders: Recognition and treatment* (NICE Quality Standard No. 69). Retrieved from https://www.nice.org.uk/guidance/ng69/evidence/full-guideline-pdf-161214767896

Nicely, T. A., Lane-Loney, S., Masciulli, E. Hollenbeak, C. S., & Ornstein, R. M. (2014). Prevalence and characteristics of avoidant/restrictive food intake disorder in a cohort of young patients in day treatment for eating disorders. *Journal of Eating Disorders, 2*(21). https://doi.org/10.1186/s40337-014-0021-3

Perkins, S. J., Murphy, R. M., Schmidt, U., & Williams, C. (2006). Self-help and guided self-help for eating disorders. *Cochrane Database of Systematic Review 3*(3). https://doi.org/10.1002/14651858.CD004191.pub2

Regionsenter for barn og unges psykiske helse, Helseregion Øst og Sør (2019). *INSUM: Database for systematiske oversikter om effekt av tiltak for barn og unges psykiske helse og velferd.* https://insum.r-bup.no/no

Robin, A. L., Gilroy, M., & Dennis, A. B. (1998). Treatment of eating disorders in children and adolescents. *Clinical Psychology Review,18*(4),421-446. 10.1016/s0272-7358(98)00013-0

Rosen, D. S. (2010). Identification and management of eating disorders in children and adolescents. *Pediatrics, 126*(6), 1240-1253. https://doi.org/10.1542/peds.2010-2821

Salerno, L., Rhind, C., Hibbs, R., Micali, N., Schmidt, U., Gowers, S., Macdonald, P., Goddard,

E., Todd, G., Tchanturia, K., Lo Coco, G., & Treasure, J. (2016). A longitudinal examination of dyadic distress patterns following a skills intervention for carers of adolescents with anorexia nervosa. *European Child & Adolescent Psychiatry, 25*(12), 1337–1347. https://doi.org/10.1007/s00787-016-0859-9

Schmidt, U. (2003). Aetiology of eating disorders in the 21st century. New answers to old questions. *European Child and Adolescent Psychiatry, 12*, 30-37. 10.1007/s00787-003-1105-9

Schmidt, U., Adan, R., Böhm, I., Campbell, I. C., Dingemans, A., Herloch, S., Ehrlich, S., Elzakkers, I., Favaro, A., Giel, K., Harrison, A., Himmerich, H., & Hubertus, H. (2016). Eating disorders: The big issue. *The Lancet Psychiatry, 3*(4), 313-315. 10.1016/S2215-0366(16)00081-X

Schünemann, H., Brożek, J., Guyatt, G., & Oxman, A., (Eds.). (2013). *Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach*. https://gdt.gradepro.org/app/handbook/handbook.html

Scott, D. W. (1986). Anorexia nervosa: A review of possible genetic factors. *International journal of Eating Disorders*, 5, 1–20

Shea, B. J., Hamel, C., Wells, G. A., Bouter, L. M., Kristjansson, E., Grimshaw, J., Henry, D. A., & Boers, M. (2009). AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. *Journal of Clinical Epidemiology, 62*(10), 1013–1020. https://doi.org/10.1016/j.jclinepi.2008.10.009

Sim, L. A., McAlpine, D. E., Grothe, K. B., Himes, S. M., Cockerill, R. G., & Clark, M. M. (2010). Identification and treatment of eating disorders in the primary care setting. *Mayo Clinical Proceedings, 85*(8), 746–751. 10.4065/mcp.2010.0070

Smink, F. R. E., van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports, 14*(4). 406-414. 10.1007/s11920-012-0282-y

Smink, F. R. E., van Hoeken, D., & Hoek, H. W. (2013). Epidemiology, course, and outcome of eating disorders. *Current Opinion in Psychiatry, 26*(6), 543-548. 10.1097/YCO.0b013e328365a24f

Stice, E., Gau, J. M., Rohde, P., & Shaw, H. (2017). Risk factors that predict future onset of

each DSM-V eating disorder: Predictive specificity in high-risk adolescent females. *Abnormal Psychology*, *126*(1), 38-51. 10.1037/abn0000219

Tchanturia, K., Davis, C., Reeder, C., & Wykes, T. (2010). *Cognitive remediation therapy for anorexia nervosa.* Kings College London.

Tchanturia, K., Giombini, L., Leppanen, J., & Kinnaird, E. (2017). Evidence for cognitive remediation therapy in young people with anorexia nervosa: Systematic review and meta-analysis of the literature. *European Eating Disorders Review, 25*(4), 227–236. https://doi.org/10.1002/erv.2522

Tchanturia, K., Lloyd, S., & Lang, K. (2013). Cognitive remediation therapy for anorexia nervosa: Current evidence and future research directions. *The International Journal of Eating Disorders, 46*(5), 492–495. https://doi.org/10.1002/eat.22106

The Norwegian Directorate of Health. (2017, April 25th). *Nasjonal faglig retningslinje: Spiseforstyrrelser*. https://www.helsedirektoratet.no/retningslinjer/spiseforstyrrelser

The Norwegian Directorate of Health. (2019, April 29th). *Fysisk aktivitet for barn og unge*. https://www.helsedirektoratet.no/faglige-rad/fysisk-aktivitet-for-barn-unge-voksne-eldre-og-gravide/fysisk-aktivitet-for-barn-og-unge#barn-og-unge-bor-vaere-i-fysisk-aktivitet-minimum-60-minutter-hver-dag

van den Berg, E., Houtzager, L., de Vos, J., Daemen, I., Katsaragaki, G., Karyotaki, E., Cuijpers, P., & Dekker, J. (2019). Meta-analysis on the efficacy of psychological treatments for anorexia nervosa. *European Eating Disorders Review, 27*(4), 331–351. https://doi.org/10.1002/erv.2683

Vandereycken, W. (2011). Can eating disorders become “contagious” in group therapy and specialized inpatient care? *European Eating Disorders Review 19*(4). https://doi.ord/10.1002/erv.1087

Waller, G. Cordery, H., Corstorphine, E., Hinrichsen, H., Lawson, R., Mountford, V., & Russell, K. (2007). *Cognitive Behavioral Therapy for Eating Disorders.* Cambridge University Press.

Weaver, L., & Liebman, R. (2011). Assessment of anorexia nervosa in children and adolescents. *Current Psychiatry Reports, 13*(2), 93–98. 10.1007/s11920-010-0174-y

World Health Organization. (2018). *International classification of diseases for mortality and morbidity statistics* (11th Revision). Retrieved from https://icd.who.int/browse11/l-m/en

Zeeck, A., Herpertz-Dahlmann, B., Friederich, H-C., Brockmeyer, T., Resmark, G., Hagenah, U., Ehrlich, S., Cuntz, U., Zipfel, S., & Hartmann, A. (2018). Psychotherapeutic treatment for anorexia nervosa: A systematic review and network meta-analysis. *Frontiers in Psychiatry*, *9*, 158. 10.3389/fpsyt.2018.00158

Zipfel, S., Giel, K. E., Bulik, C. M., Hay, P., & Schmidt, U. (2015). Anorexia nervosa: Aetiology, assessment, and treatment. *The Lancet Psychiatry*, *2*(12), 1099-1111. 10.1016/S2215-0366(15)00356-9.

Appendices

Appendix A: PROSPERO protocol and deviations

Appendix B: Search string

Appendix C: Excluded studies

Appendix D: GRADE tables

Appendix E: Primary studies

Appendix A - PROSPERO protocol and deviations

Deviations from the protocol

- Because of the lack of studies, some studies with populations over 18 were included
- We cannot be certain that the control groups were always treatment as usual or other relevant interventions, because sometimes they were not described but only named "control" or they consisted of a wide range of treatments or lack thereof.

The protocol (ID: CRD42020169210)

Effects of interventions for eating disorders in children and adolescents: An overview of systematic reviews.

Ida Maria Brennhaugen, Tora Margrethe Hustad, Benjamin Andersen Sandoval, Ingrid Borren, Astrid Austvoll-Dahlgren & Silje Steinsbekk

Citation

Ida Maria Brennhaugen, Tora Margrethe Hustad, Benjamin Andersen Sandoval, Ingrid Borren, Astrid Austvoll-Dahlgren & Silje Steinsbekk. Interventions for eating disorders in children and adolescents: An overview of systematic reviews.

Review question

Effects of interventions for eating disorders in children and adolescents.

Searches

Literature search from 1946 until January 2020. No restrictions on language or other restrictions.

The literature search for this overview of systematic reviews will be based on the INSUM database of systematic reviews.

INSUM indexes systematic reviews and guidelines found in:

- Cochrane Database of Systematic Reviews
- Campbell Library
- PsycINFO
- MEDLINE
- Embase
- Web of Science
- Database of Abstracts of Reviews of Effects (DARE)
- Evidence Based Mental Health

The literature search for this overview of systematic reviews is based on the INSUM database of systematic reviews and will be completed in January 2020 (12). The INSUM search is wider than our PICO, as it includes a

broader population (children and adolescents at risk for or with other diagnoses/problem areas than eating disorders), and is updated every sixth months. See Appendix 1 for a description of the INSUM search strategy. Sources that will be used to identify studies for the review include screening of reference list, and hand- search for relevant evidence-based guidelines including systematic reviews in the following databases and organizations:

- The Norwegian Institute of Public Health, Section of reviews
- The Swedish agency for health technology assessment and assessment of social services (SBU)
- The Norwegian Directorate of Health
- The Danish Health Authority
- The National Institute for Health and Care Excellence (NICE)

Two researchers will independently assess the publications according to the inclusion criteria, first title and abstract, and then relevant publications in full text. In cases of disagreement, we will consult a third person.

Types of study to be included

Study design: Systematic reviews published in 2012 and later and fulfilling the DARE-criteria for systematic reviews:

1. Clear criteria for inclusion and exclusion
2. Comprehensive search strategy
3. Synthesized results of the included studies
4. Quality assessment of the included studies

Condition or domain being studied

In the literature, “eating disorder” is a collective term for several conditions that involve an unhealthy relationship with food. The eating disorders include anorexia nervosa, bulimia nervosa, binge-eating disorder and OSFED.

Anorexia nervosa is characterized by a desire to be thin and fear of gaining weight, expressed through insufficient food intake or excessive exercising.

Bulimia nervosa is characterized by periods of quick and excessive food consumption ('bingeing') followed by unhealthy measures to get rid of calories. These measures may include volitional vomiting, using laxatives ('purging'), excessive exercising, taking medication or using diet supplements.

Binge-eating disorder involves episodes of incontrollable intake of excessive amounts of food (often secretly) until one feels uncomfortably full, frequently followed by a feeling of distress and guilt.

OSFED means 'other specified feeding or eating disorder', and encompasses conditions that do not meet strict diagnostic criteria for any of the abovementioned eating disorders, but do still inflict serious and clinically relevant illness on the person affected.

Participants/population

Children and adolescents under 18 at risk of developing eating disorders, or are already struggling with various types of eating disorders.

Intervention(s), exposure(s)

Any intervention aiming to prevent or reduce eating disorders including psychological therapy, pharmaceutical interventions, psychosocial interventions, physical activity or nutrition.

Comparator(s)/control
Other relevant interventions or treatment as usual (TAU).
Context
Main outcome(s)
All outcomes evaluated on children and youth, including (but not restricted to) eating disorders, other health outcomes, quality of life, function, use of health care, attitudes and harms of interventions.
Additional outcome(s)
Not applicable
Data extraction (selection and coding)
IMB, TMH and BAS will extract data from the systematic reviews and IB will check its accuracy. We will only extract information from the systematic reviews, including any supplementary tables or appendixes. We will not extract information from primary studies, considering this is an overview of systematic reviews.

From the systematic reviews providing results in our review, we will obtain information about the study populations, characteristics of the interventions and control groups, which variables effects of interventions were measured by, duration of the interventions, follow-up-times, outcomes, outcome measures, effect estimates for each outcome.

We will present results based on outcomes and analyses found in the systematic reviews. For reviews also including studies on adult populations, we will only extract information from studies of children under 18 of age. We will report estimates as reported in the included systematic reviews.

Risk of bias (quality) assessment
We assessed the quality of the included reviews based on a checklist for systematic reviews (AMSTAR). Two people will consider each publication independently and decide on the methodological quality through discussions until consensus.

Strategy for data synthesis
Since this is a systematic review of reviews (OoO), data will be reported as stated in the included reviews.

We will sort all included reviews by population and treatments being compared (PICO). In cases where more than one review addresses the same treatment comparison for the same population, we will include the review with the newest search (and by consideration of completeness of this search) and the quality of the reviews (AMSTAR). In considering overlap, the first author will extract this information from the reviews and IB will double-check this information. The decision on which review to include will be done through agreement between the authors.

Data extraction will be performed by one of the authors while another author will do the quality assessment to obtain consensus. We will provide a narrative synthesis of the findings from the included reviews, structured around the type of intervention, target population characteristics, type of outcome and intervention content. We will provide summaries of intervention effects for each treatment comparison, as reported by the review authors. For systematic reviews, including studies of both children and adults, when appropriate, we will conduct meta-analysis of the studies including only children. Where studies have used the same type of intervention and comparator, with the

same outcome measure, we will pool the results using a random- effects meta-analysis, using the effect estimates as reported in the review.

The pooled estimates will be assessed according to the GRADE. We will assess the certainty of the evidence using the GRADE methodology (the Grading of Recommendations Assessment, Development and Evaluation). If the systematic review authors already have done a GRADE assessment, we will review their judgments.

Analysis of subgroups or subsets
Not applicable
Contact details for further information
Ingrid Borren
Organisational affiliation of the review
The Regional Center for Child and Adolescent Mental Health, East and South, Oslo, Norway
www.r-bup.no
Review team members and their organizational affiliations
Ida Maria Brennhaugen, Norwegian University of Science and Technology, Trondheim, Norway
Tora Margrethe Hustad, Norwegian University of Science and Technology, Trondheim, Norway
Benjamin Andersen Sandoval, Norwegian University of Science and Technology, Trondheim, Norway
Dr Astrid Austvoll-Dahlgren. The Regional Center for Child and Adolescent Mental Health, East and South, Oslo, Norway
Ingrid Borren. The Regional Center for Child and Adolescent Mental Health, East and South, Oslo, Norway
Prof. Silje Steinsbekk. Norwegian University of Science and Technology, Trondheim, Norway

Type and method of review
Intervention, Meta-analysis, Review of reviews, Systematic review
Anticipated or actual start date
February 2020
Anticipated completion date
October 2020
Funding sources/sponsors
- The Regional Center for Child and Adolescent Mental Health, East and South, Oslo, Norway
- The Norwegian Directorate of Health
- Norwegian University of Science and Technology
Conflicts of interest
Language
Norwegian/English
Country
Norway
Stage of review
Review Ongoing
Subject index terms status
Subject indexing assigned by CRD
Subject index terms

Adolescent; Child; Humans; Eating disorders, Feeding and eating disorders of childhood, Anorexia nervosa, atypical Anorexia nervosa, Bulimia nervosa, atypical Bulimia nervosa, Binge eating disorder, unspecified eating disorder
Date of registration in PROSPERO
18.04.2020

Date of publication of this version

Details of any existing review of the same topic by the same authors Stage of review at time of this submission

Stage	**Started**	**Completed**
Preliminary searches	Yes	No
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Appendix B – Search string

Search strategy (IN SUM version 2) March 2015: Medline, Embase, PsycINFO and Web of Science

Searched 26.3.2015
Sølvi Biedilæ and Brynhildur Axelsdottir

#	**Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R)** 1946 to Present	**Results**
1	exp Adolescent/ or exp Child/ or exp Infant/	2906684
2	(child* or kid or kids* or minors* or juvenil* or adoles* or youth* or youngster* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or boy or boys* or boyfriend* or boyhood* or girl* or under 18* or under eighteen* or underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*).ti,ab,hw,kf,jw.	3867949
3	or/1-2	3867949
4	systematic$ review$.ti,ab.	65238
5	meta-analysis as topic/	14038
6	meta-analytic$.ti,ab.	3931
7	meta-analysis.ti,ab,pt.	79135
8	metanalysis.ti,ab.	131
9	metaanalysis.ti,ab.	1132
10	meta analysis.ti,ab.	61456
11	meta-synthesis.ti,ab.	272
12	metasynthesis.ti,ab.	144
13	meta synthesis.ti,ab.	272
14	meta-regression.ti,ab.	2789
15	metaregression.ti,ab.	316
16	meta regression.ti,ab.	2789
17	(synthes$ adj3 literature).ti,ab.	1534
18	(synthes$ adj3 evidence).ti,ab.	4450
19	integrative review.ti,ab.	1014
20	data synthesis.ti,ab.	7627
21	(research synthesis or narrative synthesis).ti,ab.	854
22	(systematic study or systematic studies).ti,ab.	7998
23	(systematic comparison$ or systematic overview$).ti,ab.	2005
24	evidence based review.ti,ab.	1379
25	comprehensive review.ti,ab.	7422

26	critical review.ti,ab.	11417
27	quantitative review.ti,ab.	493
28	structured review.ti,ab.	498
29	realist review.ti,ab.	68
30	realist synthesis.ti,ab.	52
31	or/4-30	168562
32	review.pt.	1948874
33	medline.ab.	62782
34	pubmed.ab.	38185
35	cochrane.ab.	34779
36	embase.ab.	34398
37	cinahl.ab.	11404
38	psyc?lit.ab.	882
39	psyc?info.ab.	8861
40	(literature adj3 search$).ab.	28924
41	(database$ adj3 search$).ab.	26987
42	(bibliographic adj3 search$).ab.	1336
43	(electronic adj3 search$).ab.	9818
44	(electronic adj3 database$).ab.	12012
45	(computeri?ed adj3 search$).ab.	2722
46	(internet adj3 search$).ab.	1868
47	included studies.ab.	8079
48	(inclusion adj3 studies).ab.	7216
49	inclusion criteria.ab.	39615
50	selection criteria.ab.	20990
51	predefined criteria.ab.	1156
52	predetermined criteria.ab.	762
53	(assess$ adj3 (quality or validity)).ab.	44259
54	(select$ adj3 (study or studies)).ab.	40564
55	(data adj3 extract$).ab.	31657
56	extracted data.ab.	7401
57	(data adj2 abstracted).ab.	3425
58	(data adj3 abstraction).ab.	912
59	published intervention$.ab.	109
60	((study or studies) adj2 evaluat$).ab.	113039
61	(intervention$ adj2 evaluat$).ab.	6512
62	confidence interval$.ab.	239531
63	heterogeneity.ab.	99430
64	pooled.ab.	48751
65	pooling.ab.	8074
66	odds ratio$.ab.	159340
67	(Jadad or coding).ab.	126430
68	or/33-67	859723
69	32 and 68	125631
70	review.ti.	277642
71	70 and 68	53817
72	(review$ adj4 (papers or trials or studies or evidence or intervention$ or evaluation$)).ti,ab.	110587

73	31 or 69 or 71 or 72	310573
74	letter.pt.	869310
75	editorial.pt.	372309
76	comment.pt.	616986
77	or/74-76	1389017
78	73 not 77	302379
79	exp animals/ not humans/	4003250
80	78 not 79	292758
81	exp "psychiatry and psychology (non mesh)"/ or exp Child Abuse/ or exp child welfare/ or exp foster home care/ or exp infant welfare/ or exp Schools, Nursery/ or exp Substance-Related Disorders/	3518349
82	(mental* or psych* or internali*ing* or externali*ing* or anxi* or depress* or ocd or obsessive* or tourette* or mutism* or autis* or asperger* or (child* adj3 (abuse* or neglect* or welfare* or protect*)) or maltreat* or (foster* adj3 (care* or home* or child*)) or (sexual* adj3 abuse*) or ptsd or post-traumatic* or resilien* or cbt or ((cognitiv* or behavi*) adj3 (therap* or treatment*)) or (family* adj2 therap*) or suicid* or selfharm* or self-harm* or eating disorder* or anorexi* or bulimi* or kindergar* or (child* adj3 (daycare* or day care*)) or nursery school* or attachment* or ((conduct* or defian* or behavio* or development* or learning* or affect*) adj3 disorder*) or adhd* or attention-deficit* or hyperactiv* or bipolar* or schizophreni* or bullying* or emotion* or coping* or (behavio* adj3 adjust*) or stress* or grief* or bereav* or alcohol* or abuse* or addict* or ((drug* or substance*) adj3 (use* or usage* or dependen* or disorder*)) or (underage* adj3 drink*)).tw.	2232489
83	or/81-82	4577822
84	exp therapeutics/ or exp psychiatric somatic therapies/ or exp psychological techniques/ or exp psychotherapy/ or exp "chemicals and drugs (non mesh)"/ or exp "pharmacological actions (non mesh)"/	13562561
85	(intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*).tw.	7451415
86	(diet therapy or drug therapy or prevention control or radiotherapy or rehabilitation or therapy).fs.	4232841
87	or/84-86	16673856
88	3 and 80 and 83 and 87	18069
89	"cochrane database of systematic reviews".jn.	11092
90	88 not 89	17088

91	limit 90 to yr="2000 -Current"	14414
92	limit 91 to (danish or english or multilingual or norwegian or swedish)	13659

Searched 27.3.2015
Sølvi Biedilæ and Brynhildur Axelsdottir

PsycINFO 1806 to March Week 4 2015

	Searches	**Results**
1	(childhood birth 12 yrs or adolescence 13 17 yrs).ag.	628314
2	(child* or kid or kids* or minors* or juvenil* or adoles* or youth* or youngster* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or boy or boys* or boyfriend* or boyhood* or girl* or under 18* or under eighteen* or underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*).ti,ab,id,hw,jw.	1021281
3	or/1-2	1109027
4	metaanaly*.ti,sh.	64
5	meta-analy*.ti,sh.	11947
6	cochrane*.ti.	141
7	(review or overview).ti.	126468
8	meta analysis/	3594
9	meta analysis.md.	12707
10	(review adj2 literature).ti.	3173
11	"literature review".md.	108505
12	"systematic review".md.	11001
13	(synthes* adj3 (literature* or research or studies or data)).ti.	605
14	pooled analys*.ti,ab.	466
15	((data adj2 pool*) and studies).ti,ab.	664
16	((hand or manual* or database* or computer* or electronic*) adj2 search*).ti,ab.	5903
17	((electronic* or bibliographic*) adj2 (database* or data base*)).ti,ab.	2623
18	or/4-17	219949
19	(comment reply or editorial or letter or "review book" or "review media" or "review software other").dt.	266095
20	(electronic collection or dissertation abstract or encyclopedia).pt.	437579

21	(rat or rats or mouse or mice or hamster or hamsters or animal or animals or dog or dogs or cat or cats or bovine or sheep).ti,ab,sh.	269589
22	or/19-21	909494
23	18 not 22	130796
24	"Intervention"/	39611
25	exp treatment/	608914
26	exp training/	59228
27	exp drugs/	252359
28	(intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*).tw.	1632613
29	or/24-28	1822686
30	3 and 23 and 29	20522
31	limit 30 to yr="2000-Current"	14715

Searched 27.3.2015
Sølvi Biedilæ and Brynhildur Axelsdottir

Embase 1974 to 2015 March 25

#	**Searches**	**Results**
1	exp child/ or exp adolescent/ or exp newborn/ or exp adolescence/ or exp childhood/ or exp newborn period/	2829098
2	(child* or kid or kids* or minors* or juvenil* or adoles* or youth* or youngster* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or student* or boy or boys* or boyfriend* or boyhood* or girl* or under 18* or under eighteen* or underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*).ti,ab,kw,hw,jw.	4134487
3	1 and 2	2826517
4	systematic$ review$.ti,ab.	79782
5	systematic$ literature review$.ti,ab.	5775
6	"systematic review"/	86346
7	"systematic review (topic)"/	10095
8	meta analysis/	89309
9	"meta analysis (topic)"/	18114
10	meta-analytic$.ti,ab.	4554
11	meta-analysis.ti,ab.	77898
12	metanalysis.ti,ab.	323

13	metaanalysis.ti,ab.	3774
14	meta analysis.ti,ab.	77898
15	meta-synthesis.ti,ab.	269
16	metasynthesis.ti,ab.	141
17	meta synthesis.ti,ab.	269
18	meta-regression.ti,ab.	3395
19	metaregression.ti,ab.	482
20	meta regression.ti,ab.	3395
21	(synthes$ adj3 literature).ti,ab.	1839
22	(synthes$ adj3 evidence).ti,ab.	4985
23	(synthes$ adj2 qualitative).ti,ab.	761
24	integrative review.ti,ab.	927
25	data synthesis.ti,ab.	9441
26	(research synthesis or narrative synthesis).ti,ab.	877
27	(systematic study or systematic studies).ti,ab.	8981
28	(systematic comparison$ or systematic overview$).ti,ab.	2223
29	(systematic adj2 search$).ti,ab.	12399
30	systematic$ literature research$.ti,ab.	156
31	(review adj3 scientific literature).ti,ab.	1059
32	(literature review adj2 side effect$).ti,ab.	11
33	(literature review adj2 adverse effect$).ti,ab.	2
34	(literature review adj2 adverse event$).ti,ab.	8
35	(evidence-based adj2 review).ti,ab.	2395
36	comprehensive review.ti,ab.	8766
37	critical review.ti,ab.	13015
38	critical analysis.ti,ab.	6435
39	quantitative review.ti,ab.	557
40	structured review.ti,ab.	629
41	realist review.ti,ab.	74
42	realist synthesis.ti,ab.	43
43	(pooled adj2 analysis).ti,ab.	9062
44	(pooled data adj6 (studies or trials)).ti,ab.	1503
45	(medline and (inclusion adj3 criteria)).ti,ab.	11768
46	(search adj (strateg$ or term$)).ti,ab.	20818
47	or/4-46	274460
48	medline.ab.	73771
49	pubmed.ab.	48598
50	cochrane.ab.	41787
51	embase.ab.	40657
52	cinahl.ab.	12369
53	psyc?lit.ab.	952
54	psyc?info.ab.	9921
55	lilacs.ab.	3556
56	(literature adj3 search$).ab.	35943
57	(database$ adj3 search$).ab.	32991
58	(bibliographic adj3 search$).ab.	1584
59	(electronic adj3 search$).ab.	11238
60	(electronic adj3 database$).ab.	15544

61	(computeri?ed adj3 search$).ab.	3130
62	(internet adj3 search$).ab.	2444
63	included studies.ab.	9692
64	(inclusion adj3 studies).ab.	8499
65	inclusion criteria.ab.	63156
66	selection criteria.ab.	20711
67	predefined criteria.ab.	1486
68	predetermined criteria.ab.	922
69	(assess$ adj3 (quality or validity)).ab.	56330
70	(select$ adj3 (study or studies)).ab.	51100
71	(data adj3 extract$).ab.	40100
72	extracted data.ab.	8430
73	(data adj2 abstracted).ab.	5082
74	(data adj3 abstraction).ab.	1260
75	published intervention$.ab.	131
76	((study or studies) adj2 evaluat$).ab.	152155
77	(intervention$ adj2 evaluat$).ab.	8557
78	confidence interval$.ab.	268716
79	heterogeneity.ab.	118325
80	pooled.ab.	63308
81	pooling.ab.	10078
82	odds ratio$.ab.	187008
83	(Jadad or coding).ab.	141036
84	evidence-based.ti,ab.	80239
85	or/48-84	1125764
86	review.pt.	2024836
87	85 and 86	141827
88	review.ti.	325232
89	85 and 88	66536
90	(review$ adj10 (papers or trials or trial data or studies or evidence or intervention$ or evaluation$ or outcome$ or findings)).ti,ab.	316886
91	(retriev$ adj10 (papers or trials or studies or evidence or intervention$ or evaluation$ or outcome$ or findings)).ti,ab.	15294
92	47 or 87 or 89 or 90 or 91	584095
93	letter.pt.	874014
94	editorial.pt.	468051
95	conference abstract.pt.	1789893
96	93 or 94 or 95	3131958
97	92 not 96	510742
98	(animal/ or nonhuman/) not exp human/	4753532
99	97 not 98	487256
100	("cochrane database of systematic reviews$" or "the cochrane database of systematic reviews").jn.	11814
101	99 not 100	476532
102	exp mental disease/ or exp "psychological and psychiatric procedures"/ or exp psychiatry/ or	2499757

	exp psychology/ or exp child abuse/ or child welfare/ or foster care/ or infant welfare/ or nursery school/ or kindergarten/ or substance abuse/ or exp alcohol abuse/ or exp drug abuse/	
103	(mental* or psych* or internali*ing* or externali*ing* or anxi* or depress* or ocd or obsessive* or tourette* or mutism* or autis* or asperger* or (child* adj3 (abuse* or neglect* or welfare* or protect*)) or maltreat* or (foster* adj3 (care* or home* or child*)) or (sexual* adj3 abuse*) or ptsd or post-traumatic* or resilien* or cbt or ((cognitiv* or behavi*) adj3 (therap* or treatment*)) or (family* adj2 therap*) or suicid* or selfharm* or self-harm* or eating disorder* or anorexi* or bulimi* or kindergar* or (child* adj3 (daycare* or day care*)) or nursery school* or attachment* or ((conduct* or defian* or behavio* or development* or learning* or affect*) adj3 disorder*) or adhd* or attention-deficit* or hyperactiv* or bipolar* or schizophreni* or bullying* or emotion* or coping* or (behavio* adj3 adjust*) or stress* or grief* or bereav* or alcohol* or abuse* or addict* or ((drug* or substance*) adj3 (use* or usage* or dependen* or disorder*)) or (underage* adj3 drink*)).tw.	2844318
104	or/102-103	3966926
105	exp procedures/ or exp "chemicals and drugs"/	24460923
106	(intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*).tw.	9468174
107	(cm or dt or pc or pr or rh or th).fs.	4797462
108	or/105-107	25226867
109	3 and 101 and 104 and 108	13033
110	limit 109 to yr="2000 -Current"	10293
111	limit 110 to (danish or english or norwegian or swedish)	9619

Searched 27.3.2015
Sølvi Biedilæ and Brynhildur Axelsdottir

Results: 3,313

(from Web of Science Core Collection)

You searched for: **TOPIC:** ((child* or kid or kids* or minors* or juvenil* or adoles* or youth* or young* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or boy or boys* or boyfriend* or boyhood* or girl* or “under eighteen*” or

underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*)) *AND* **TOPIC:** (((systematic* NEAR/2 review*) or metanaly* or metaanaly* meta-analy* or synthes*)) *AND* **TOPIC:** ((mental* or psych* or internali*ing* or externali*ing* or anxi* or depress* or ocd or obsessive* or tourette* or mutism* or autis* or asperger* or (child* NEAR/3 (abuse* or neglect* or welfare* or protect*)) or maltreat* or (foster* NEAR/3 (care* or home* or child*)) or (sexual* NEAR/3 abuse*) or ptsd or post-traumatic* or resilien* or cbt or ((cognitiv* or behavi*) NEAR/3 (therap* or treatment*)) or (family* NEAR/3 therap*) or suicid* or selfharm* or self-harm* or "eating disorder*" or anorexi* or bulimi* or kindergar* or (child* NEAR/3 (daycare* or "day care*")) or "nursery school*" or attachment* or ((conduct* or defian* or behavio* or development* or learning* or affect*) NEAR/3 disorder*) or adhd* or attention-deficit* or hyperactiv* or bipolar* or schizophreni* or bullying* or emotion* or coping* or (behavio* NEAR/3 adjust*) or stress* or grief* or bereav* or alcohol* or abuse* or addict* or ((drug* or substance*) NEAR/3 (use* or usage* or dependen* or disorder*)) or (underage* NEAR/3 drink*))) *AND* **TOPIC:** ((intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*))

Refined by: LANGUAGES: (ENGLISH)

Timespan: 2000-2015. **Indexes:** SSCI, A&HCI.

Searches Cochrane and Campbell (IN SUM version 2) Nov 2016

Searched 15.11.2016 by Sølvi Biedilæ and Brynhildur Axelsdottir. The search is limited to completed reviews.

Cochrane Database of Systematic Reviews

ID	Search	Hits
#1	MeSH descriptor: [Mental Disorders] explode all trees	50535
#2	MeSH descriptor: [Psychological Phenomena and Processes] explode all trees	72801
#3	MeSH descriptor: [Behavior and Behavior Mechanisms] explode all trees	88667
#4	MeSH descriptor: [Behavioral Disciplines and Activities] explode all trees	47731
#5	MeSH descriptor: [Child Abuse] explode all trees	511
#6	MeSH descriptor: [Child Welfare] explode all trees	423
#7	MeSH descriptor: [Infant Welfare] explode all trees	101
#8	MeSH descriptor: [Foster Home Care] explode all trees	110
#9	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8	1625
#10	psych* or mental* or depress* or anxiety*:ti,ab,kw	171355
#11	(infant* or child* or adolescen*):ti,ab,kw	184908
#12	#10 and #11	1233

#13 #9 or #12 2456

Manual searches

Browse by Groups

Common mental disorders group

- Child Health
- Developmental, Psychosocial and learning problems
- Pregnancy & childbirth

Developmental, psychosocial and learning problems group

- Child Health

Effective practice and organisation of care group

- Mental health

Neonatal group

- Developmental, psychosocial and learning problems

Pregnancy and childbirth group

- Mental health
- Developmental, psychosocial and learning problems

Browse by Topic

Child Health

- Mental Health
- Developmental, psychosocial, and learning problems

Developmental, psychosocial and learning problems

Campbell Library

Limited to Type of document: Review

Imported all search results.

125 results

Update search (IN SUM version 2): Medline Embase PsycINFO Web of Science Feb 2017

Medline, Embase og PsycINFO searched 16.2.2017 by Sølvi Biedilæ and Brynhildur Axelsdottir

Before removal of duplicates: 11 412 results

After removal of duplicates: 8709 results

Web of Science searched 22.2.2017 by Sølvi Biedilæ and Brynhildur Axelsdottir

1532 results

Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

#	Searches	Results
1	exp Adolescent/ or exp Child/ or exp Infant/	3178148
2	(child* or kid or kids* or minors* or juvenil* or adoles* or youth* or youngster* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or boy or boys* or boyfriend* or boyhood* or girl* or under 18* or under eighteen* or underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*).ti,ab,hw,kf,jw.	4279016
3	or/1-2	4279016
4	systematic$ review$.ti,ab.	100723
5	exp meta-analysis as topic/	15512
6	meta-analytic$.ti,ab.	5141
7	meta-analysis.ti,ab,pt.	112774
8	metanalysis.ti,ab.	154
9	metaanalysis.ti,ab.	1352
10	meta analysis.ti,ab.	91252
11	meta-synthesis.ti,ab.	506
12	metasynthesis.ti,ab.	213
13	meta synthesis.ti,ab.	506
14	meta-regression.ti,ab.	4398
15	metaregression.ti,ab.	429
16	meta regression.ti,ab.	4398
17	(synthes$ adj3 literature).ti,ab.	2146
18	(synthes$ adj3 evidence).ti,ab.	6322
19	integrative review.ti,ab.	1641
20	data synthesis.ti,ab.	8987
21	(research synthesis or narrative synthesis).ti,ab.	1520
22	(systematic study or systematic studies).ti,ab.	9628
23	(systematic comparison$ or systematic overview$).ti,ab.	2541
24	evidence based review.ti,ab.	1661
25	comprehensive review.ti,ab.	10160
26	critical review.ti,ab.	13173
27	quantitative review.ti,ab.	566
28	structured review.ti,ab.	632
29	realist review.ti,ab.	155
30	realist synthesis.ti,ab.	112
31	or/4-30	232129
32	review.pt.	2230676

33	medline.ab.	82067
34	pubmed.ab.	63180
35	cochrane.ab.	50597
36	embase.ab.	52595
37	cinahl.ab.	16818
38	psyc?lit.ab.	903
39	psyc?info.ab.	16271
40	(literature adj3 search$).ab.	40174
41	(database$ adj3 search$).ab.	38518
42	(bibliographic adj3 search$).ab.	1770
43	(electronic adj3 search$).ab.	14362
44	(electronic adj3 database$).ab.	17975
45	(computeri?ed adj3 search$).ab.	3131
46	(internet adj3 search$).ab.	2405
47	included studies.ab.	13199
48	(inclusion adj3 studies).ab.	10588
49	inclusion criteria.ab.	56136
50	selection criteria.ab.	25095
51	predefined criteria.ab.	1510
52	predetermined criteria.ab.	881
53	(assess$ adj3 (quality or validity)).ab.	56992
54	(select$ adj3 (study or studies)).ab.	50363
55	(data adj3 extract$).ab.	42374
56	extracted data.ab.	9866
57	(data adj2 abstracted).ab.	4147
58	(data adj3 abstraction).ab.	1205
59	published intervention$.ab.	140
60	((study or studies) adj2 evaluat$).ab.	142151
61	(intervention$ adj2 evaluat$).ab.	8350
62	confidence interval$.ab.	307915
63	heterogeneity.ab.	122978
64	pooled.ab.	63801
65	pooling.ab.	9655
66	odds ratio$.ab.	201657
67	(Jadad or coding).ab.	148254
68	or/33-67	1082168
69	32 and 68	174305
70	review.ti.	346986
71	70 and 68	83178
72	(review$ adj4 (papers or trials or studies or evidence or intervention$ or evaluation$)).ti,ab.	139624
73	31 or 69 or 71 or 72	407365
74	letter.pt.	954482
75	editorial.pt.	426655
76	comment.pt.	680538
77	or/74-76	1550626
78	73 not 77	397465
79	exp animals/ not humans/	4325741
80	78 not 79	386462

81	exp "psychiatry and psychology (non mesh)"/ or exp Child Abuse/ or exp child welfare/ or exp foster home care/ or exp infant welfare/ or exp Schools, Nursery/ or exp Substance-Related Disorders/	3958711
82	(mental* or psych* or internali*ing* or externali*ing* or anxi* or depress* or ocd or obsessive* or tourette* or mutism* or autis* or asperger* or (child* adj3 (abuse* or neglect* or welfare* or protect*)) or maltreat* or (foster* adj3 (care* or home* or child*)) or (sexual* adj3 abuse*) or ptsd or post-traumatic* or resilien* or cbt or ((cognitiv* or behavi*) adj3 (therap* or treatment*)) or (family* adj2 therap*) or suicid* or selfharm* or self-harm* or eating disorder* or anorexi* or bulimi* or kindergar* or (child* adj3 (daycare* or day care*)) or nursery school* or attachment* or ((conduct* or defian* or behavio* or development* or learning* or affect*) adj3 disorder*) or adhd* or attention-deficit* or hyperactiv* or bipolar* or schizophreni* or bullying* or emotion* or coping* or (behavio* adj3 adjust*) or stress* or grief* or bereav* or alcohol* or abuse* or addict* or ((drug* or substance*) adj3 (use* or usage* or dependen* or disorder*)) or (underage* adj3 drink*)).tw.	2592350
83	or/81-82	5230382
84	exp therapeutics/ or exp psychiatric somatic therapies/ or exp psychological techniques/ or exp psychotherapy/ or exp "chemicals and drugs (non mesh)"/ or exp "pharmacological actions (non mesh)"/	14918303
85	(intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*).tw.	8675089
86	(diet therapy or drug therapy or prevention control or radiotherapy or rehabilitation or therapy).fs.	4678870
87	or/84-86	18667985
88	3 and 80 and 83 and 87	23332
89	"cochrane database of systematic reviews".jn.	12974
90	88 not 89	22095
91	limit 90 to (danish or english or multilingual or norwegian or swedish)	20979
92	(201503* or 201504* or 201505* or 201506* or 201507* or 201508* or 201509* or 201510* or 201511* or 201512* or 2016* or 2017*).dc.	2546263
93	91 and 92	4068

PsycINFO <1806 to February Week 1 2017>

#	Searches	Results
1	(childhood birth 12 yrs or adolescence 13 17 yrs).ag.	691015
2	(child* or kid or kids* or minors* or juvenil* or adoles* or youth* or youngster* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or boy or boys* or boyfriend* or boyhood* or girl* or under 18* or under eighteen* or underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*).ti,ab,id,hw,jw.	1123829
3	or/1-2	1222162
4	metaanaly*.ti,sh.	73
5	meta-analy*.ti,sh.	15277
6	cochrane*.ti.	171
7	(review or overview).ti.	141194
8	meta analysis/	3955

9	meta analysis.md.	16005
10	(review adj2 literature).ti.	3918
11	"literature review".md.	125811
12	"systematic review".md.	15684
13	(synthes* adj3 (literature* or research or studies or data)).ti.	718
14	pooled analys*.ti,ab.	594
15	((data adj2 pool*) and studies).ti,ab.	844
16	((hand or manual* or database* or computer* or electronic*) adj2 search*).ti,ab.	7620
17	((electronic* or bibliographic*) adj2 (database* or data base*)).ti,ab.	3621
18	or/4-17	248206
19	(comment reply or editorial or letter or "review book" or "review media" or "review software other").dt.	293886
20	(electronic collection or dissertation abstract or encyclopedia).pt.	470702
21	(rat or rats or mouse or mice or hamster or hamsters or animal or animals or dog or dogs or cat or cats or bovine or sheep).ti,ab,sh.	303882
22	or/19-21	1000933
23	18 not 22	151337
24	exp "Intervention"/	83333
25	exp treatment/	674553
26	exp training/	65286
27	exp drugs/	279183
28	(intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*).tw.	1835236
29	or/24-28	2048419
30	3 and 23 and 29	23919
31	limit 30 to (danish or english or norwegian or swedish)	22282
32	(201503* or 201504* or 201505* or 201506* or 201507* or 201508* or 201509* or 201510* or 201511* or 201512* or 2016* or 2017*).up.	416280
33	31 and 32	3119

Embase <1996 to 2017 Week 07>

#	Searches	Results
1	exp child/ or exp adolescent/ or juvenile/ or exp adolescence/ or exp childhood/ or exp newborn period/	2133836
2	(child* or kid or kids* or minors* or juvenil* or adoles* or youth* or youngster* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or student* or boy or boys* or boyfriend* or boyhood* or girl* or under 18* or under eighteen* or underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*).ti,ab,kw,hw,jw.	3063401
3	1 or 2	3066216
4	systematic$ review$.ti,ab.	123408
5	systematic$ literature review$.ti,ab.	9002
6	"systematic review"/	153990
7	"systematic review (topic)"/	27562
8	meta analysis/	153970

9	"meta analysis (topic)"/	38082
10	meta-analytic$.ti,ab.	5605
11	meta-analysis.ti,ab.	115606
12	metanalysis.ti,ab.	373
13	metaanalysis.ti,ab.	5467
14	meta analysis.ti,ab.	115606
15	meta-synthesis.ti,ab.	460
16	metasynthesis.ti,ab.	216
17	meta synthesis.ti,ab.	460
18	meta-regression.ti,ab.	5536
19	metaregression.ti,ab.	716
20	meta regression.ti,ab.	5536
21	(synthes$ adj3 literature).ti,ab.	2305
22	(synthes$ adj3 evidence).ti,ab.	6319
23	(synthes$ adj2 qualitative).ti,ab.	1281
24	integrative review.ti,ab.	1290
25	data synthesis.ti,ab.	10138
26	(research synthesis or narrative synthesis).ti,ab.	1488
27	(systematic study or systematic studies).ti,ab.	8494
28	(systematic comparison$ or systematic overview$).ti,ab.	2489
29	(systematic adj2 search$).ti,ab.	18668
30	systematic$ literature research$.ti,ab.	211
31	(review adj3 scientific literature).ti,ab.	1333
32	(literature review adj2 side effect$).ti,ab.	11
33	(literature review adj2 adverse effect$).ti,ab.	1
34	(literature review adj2 adverse event$).ti,ab.	12
35	(evidence-based adj2 review).ti,ab.	2992
36	comprehensive review.ti,ab.	10751
37	critical review.ti,ab.	10312
38	critical analysis.ti,ab.	5031
39	quantitative review.ti,ab.	577
40	structured review.ti,ab.	807
41	realist review.ti,ab.	138
42	realist synthesis.ti,ab.	92
43	(pooled adj2 analysis).ti,ab.	13352
44	(pooled data adj6 (studies or trials)).ti,ab.	2037
45	(medline and (inclusion adj3 criteria)).ti,ab.	17181
46	(search adj (strateg$ or term$)).ti,ab.	26908
47	or/4-46	370369
48	medline.ab.	97638
49	pubmed.ab.	80308
50	cochrane.ab.	63755
51	embase.ab.	65341
52	cinahl.ab.	18567
53	psyc?lit.ab.	950
54	psyc?info.ab.	15017
55	lilacs.ab.	5143
56	(literature adj3 search$).ab.	48741
57	(database$ adj3 search$).ab.	46862

58	(bibliographic adj3 search$).ab.	1954
59	(electronic adj3 search$).ab.	16820
60	(electronic adj3 database$).ab.	23675
61	(computeri?ed adj3 search$).ab.	3370
62	(internet adj3 search$).ab.	3142
63	included studies.ab.	16150
64	(inclusion adj3 studies).ab.	12594
65	inclusion criteria.ab.	91695
66	selection criteria.ab.	25746
67	predefined criteria.ab.	1917
68	predetermined criteria.ab.	938
69	(assess$ adj3 (quality or validity)).ab.	69539
70	(select$ adj3 (study or studies)).ab.	57980
71	(data adj3 extract$).ab.	54382
72	extracted data.ab.	12196
73	(data adj2 abstracted).ab.	6331
74	(data adj3 abstraction).ab.	1672
75	published intervention$.ab.	155
76	((study or studies) adj2 evaluat$).ab.	181457
77	(intervention$ adj2 evaluat$).ab.	10495
78	confidence interval$.ab.	346338
79	heterogeneity.ab.	127964
80	pooled.ab.	77621
81	pooling.ab.	10738
82	odds ratio$.ab.	240475
83	(Jadad or coding).ab.	139384
84	evidence-based.ti,ab.	101857
85	or/48-84	1343461
86	review.pt.	1784065
87	85 and 86	171877
88	review.ti.	309893
89	85 and 88	101452
90	(review$ adj10 (papers or trials or trial data or studies or evidence or intervention$ or evaluation$ or outcome$ or findings)).ti,ab.	372222
91	(retriev$ adj10 (papers or trials or studies or evidence or intervention$ or evaluation$ or outcome$ or findings)).ti,ab.	20157
92	47 or 87 or 89 or 90 or 91	706529
93	letter.pt.	680869
94	editorial.pt.	441469
95	conference.pt.	2950679
96	93 or 94 or 95	4073017
97	92 not 96	585081
98	(animal/ or nonhuman/) not exp human/	3011605
99	97 not 98	565169
100	("cochrane database of systematic reviews$" or "the cochrane database of systematic reviews").jn.	15378
101	99 not 100	551190
102	exp mental disease/ or exp "psychological and psychiatric procedures"/ or exp psychiatry/ or exp psychology/ or exp child abuse/ or child welfare/ or foster care/	2103280

	or infant welfare/ or nursery school/ or kindergarten/ or substance abuse/ or exp alcohol abuse/ or exp drug abuse/	
103	(mental* or psych* or internali*ing* or externali*ing* or anxi* or depress* or ocd or obsessive* or tourette* or mutism* or autis* or asperger* or (child* adj3 (abuse* or neglect* or welfare* or protect*)) or maltreat* or (foster* adj3 (care* or home* or child*)) or (sexual* adj3 abuse*) or ptsd or post-traumatic* or resilien* or cbt or ((cognitiv* or behavi*) adj3 (therap* or treatment*)) or (family* adj2 therap*) or suicid* or selfharm* or self-harm* or eating disorder* or anorexi* or bulimi* or kindergar* or (child* adj3 (daycare* or day care*)) or nursery school* or attachment* or ((conduct* or defian* or behavio* or development* or learning* or affect*) adj3 disorder*) or adhd* or attention-deficit* or hyperactiv* or bipolar* or schizophreni* or bullying* or emotion* or coping* or (behavio* adj3 adjust*) or stress* or grief* or bereav* or alcohol* or abuse* or addict* or ((drug* or substance*) adj3 (use* or usage* or dependen* or disorder*)) or (underage* adj3 drink*)).tw.	2504828
104	or/102-103	3392269
105	procedures/ or exp medical procedures/ or exp pharmacological procedures/ or exp "prediction and forecasting"/ or exp "prevention and control"/ or exp "agents interacting with transmitter, hormone or drug receptors"/ or exp central nervous system agents/ or exp "drugs used in the treatment of addiction"/ or exp "natural products and their synthetic derivatives"/	17192232
106	(intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*).tw.	8561419
107	(cm or dt or pc or pr or rh or th).fs.	3909124
108	or/105-107	17932173
109	3 and 101 and 104 and 108	32078
110	limit 109 to (danish or english or norwegian or swedish)	30064
111	(201503* or 201504* or 201505* or 201506* or 201507* or 201508* or 201509* or 201510* or 201511* or 201512* or 2016* or 2017*).dd,dc.	3627408
112	110 and 111	7134
113	limit 112 to embase	4225

Web of Science – Core Collection

TS=(((child* or kid or kids* or minors* or juvenil* or adoles* or youth* or young* or teen* or preteen* or midteen* or pubert* or prepube* or pubescen* or school* or kindergar* or preschool* or highschool* or boy or boys* or boyfriend* or boyhood* or girl* or “under eighteen*” or underag* or under-ag* or pediatr* or paediatr* or peadiatr* or infan* or newborn* or new-born* or neonat* or perinat* or preterm* or prematur* or postmatur* or baby* or babies* or toddler*))) AND TS=((((systematic* NEAR/2 review*) or metanaly* or metaanaly* meta-analy* or synthes*))) AND TS=(((mental* or psych* or internali*ing* or externali*ing* or anxi* or depress* or ocd or obsessive* or tourette* or mutism* or autis* or asperger* or (child* NEAR/3 (abuse* or neglect* or welfare* or protect*)) or maltreat* or (foster* NEAR/3 (care* or home* or child*)) or (sexual* NEAR/3 abuse*) or ptsd or post-traumatic* or resilien* or cbt or ((cognitiv* or behavi*) NEAR/3 (therap* or treatment*)) or (family* NEAR/3 therap*) or suicid* or selfharm* or self-harm* or “eating disorder*” or anorexi* or bulimi* or kindergar* or (child* NEAR/3 (daycare* or “day care*”)) or “nursery school*” or attachment* or ((conduct* or defian* or behavio* or development* or learning* or affect*) NEAR/3 disorder*) or adhd* or attention-deficit* or

hyperactiv* or bipolar* or schizophreni* or bullying* or emotion* or coping* or (behavio* NEAR/3 adjust*) or stress* or grief* or bereav* or alcohol* or abuse* or addict* or ((drug* or substance*) NEAR/3 (use* or usage* or dependen* or disorder*)) or (underage* NEAR/3 drink*)))) AND TS=(((intervention* or strategy or strategies or therap* or psychotherap* or treatment* or training* or approach* or technique* or program* or drug* or pharma*)))

Refined by: LANGUAGES: (ENGLISH)

Indexes=SSCI, A&HCI Timespan=2015-2017

Results: 1,532

Appendix C - Excluded studies

Table C1

Excluded studies

Reference	Reason for exclusion
Albano, G., Hodsoll, J., Kan, C., Lo Coco, G., & Cardi, V. (2019). Task-sharing interventions for patients with anorexia nervosa or their carers: A systematic evaluation of the literature and meta-analysis of outcomes. *International Review of Psychiatry, 31*(4), 367-381. http://dx.doi.org/10.1080/09540261.2019.1588711	The review was excluded because it didn't report effect sizes for our population.
Chua, J. Y. X., Tam, W., & Shorey, S. (2019). Research review: Effectiveness of universal eating disorder prevention interventions in improving body image among children: a systematic review and meta-analysis. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 19*, 19. https://dx.doi.org/10.1111/jcpp.13164	The review was excluded because of overlap with Le et al. Le et al. had more comparisons.
Couturier, J., Kimber, M., & Szatmari, P. (2013). Efficacy of family-based treatment for adolescents with eating disorders: A systematic review and meta-analysis. *The International Journal of eating disorders 46*(1), 3-11. 10.1002/eat.22042	The review does not meet our recency criteria (published before 2015).
Gregertsen, E. C., Mandy, W., Kanakam, N., Armstrong, S., & Serpell, L. (2019). Pre-treatment patient characteristics as predictors of drop-out and treatment outcome in individual and family therapy for adolescents and adults with anorexia nervosa: A systematic review and meta-analysis. *Psychiatry Research, 271*, 484-501. http://dx.doi.org/10.1016/j.psychres.2018.11.068	The review does not meet our intervention criteria.
Ho, T., Lee, C., Wong, S. N., & Lau, Y. (2018). Internet-based self-monitoring interventions for overweight and obese adolescents: A systematic review and meta-analysis. *International journal of medical informatics*, *120*, 20–30. https://doi.org/10.1016/j.ijmedinf.2018.09.019	The review does not meet our population criteria (population is overweight and obese).

Loucas, C. E., Fairburn, C. G., Whittington, C., Pennant, M. E., Stockton, S., & Kendall, T. (2014). E-therapy in the treatment and prevention of eating disorders: A systematic review and meta-analysis. *Behaviour research and therapy*, *63*, 122–131. https://doi.org/10.1016/j.brat.2014.09.011	The review does not meet our recency criteria (published before 2015).
Murray, M., Pearson, J. L., Dordevic, A. L., & Bonham, M. P. (2018). The impact of multicomponent weight management interventions on quality of life in adolescents affected by overweight or obesity: A meta-analysis of randomized controlled trials. *Obesity Reviews*, *20*(2), 278–289. https://doi.org/10.1111/obr.12774	The review does not meet our population criteria.
The Norwegian Directorate of Health (2017). *Nasjonal faglig retningslinje: Spiseforstyrrelser*. https://www.helsedirektoratet.no/retningslinjer/spiseforstyrrelser	The review does not meet our study design criteria.
Reinar, L. M, Straumann, G. H., Myrhaug, H. T., & Vist, G. E. (2015). Ingen effektstudier om behandling av gravide med spiseforstyrrelse. Report Kunnskapssenteret no. 18. ISBN 978-82-8121-956-4 ISSN 1890-1298	The review does not meet our population criteria (sample consists of pregnant women, no separate analyses on adolescents).
Richards, I. L., Subar, A., Touyz, S., & Rhodes, P. (2018). Augmentative approaches in family-based treatment for adolescents with restrictive eating disorders: A systematic review. *European Eating Disorders Review*, *26*(2), 92–111. https://doi.org/10.1002/erv.2577	The review was excluded because of overlap with Fischer et al. Fischer et al was deemed as higher quality on the AMSTAR criteria.
SBU. Behandling av hetsätningsstörning. Stockholm: Statens beredning för medicinsk och social utvärdering (SBU); 2016. SBU-rapport nr 248. ISBN 978-91-85413-91-1.	The review does not meet our population criteria (population is adult).
SBU. Ätstörningar. En sammanställning av systematiska översikter av kvalitativ forskning utifrån patientens, närståendes och hälso- och sjukvårdens perspektiv. Stockholm: Statens beredning för medicinsk och social	The review does not meet our study design criteria (review is based on qualitative research).

utvärdering (SBU); 2019. SBU-rapport nr 302. ISBN 978-91-88437-44-0.	
Stice, E., Marti, C. N., Shaw, H., & Rohde, P. (2019). Meta-analytic review of dissonance-based eating disorder prevention programs: Intervention, participant, and facilitator features that predict larger effects. C*linical Psychology Review*, *70*, 91-107. https://dx.doi.org/10.1016/j.cpr.2019.04.004	The review was excluded because it didn't report effect sizes.
Strobel, C., Quadflieg, N., Voderholzer, U., Naab, S., & Fichter, M. M. (2018). Short- and long-term outcome of males treated for anorexia nervosa: A review of the literature. *Eating and Weight Disorders*, *23*(5), 541–552. https://doi.org/10.1007/s40519-018-0538-6	The review was excluded because it does not report effect sizes.
Sundhedsstyrelsen. (2015). *National Klinisk Retningslinje for behandling af moderat og svær bulimi.* https://www.sst.dk/da/udgivelser/2015/nkr-moderat-og-svaer-bulimi	The review does not meet our recency criteria (published before 2015).
Sundhedsstyrelsen. (2016). *National Klinisk Retningslinje for behandling af anorexia nervosa.* https://www.sst.dk/da/udgivelser/2016/nkr-anoreksi	The review does not meet our recency criteria (published before 2015).
Vist, G. E., Jung, S., Straumann G. H., Ding, K. Y., & Reinar, L. M. (2016). Kognitiv atferdsterapi sammenlignet med annen psykoterapi for personer med bulimia nervosa: En systematisk oversikt. Report from the Norwegian Institute of Public Health (NIPH). ISBN 978-82-8082-765-4	The review does not meet our population criteria (sample includes adults, no separate analyses on children and adolescents).
Vist, G. E., Reinar, L. M., Straumann, G. H., & Wisting, L. (2015). Behandling av personer som både har spiseforstyrrelse og diabetes. Report Kunnskapssenteret no. 18. ISBN 978-82-8121-970-0 ISSN 1890-1298.	The review does not meet our population criteria (sample includes adults, no separate analyses on children and adolescents).
Watson, H. J., & Bulik, C. M. (2013). Update on the treatment of anorexia nervosa: Review of clinical trials, practice guidelines and emerging interventions.	The review does not meet our recency criteria (published before 2015).

Psychological medicine, *43*(12), 2477–2500. https://doi.org/10.1017/S0033291712002620	
Watson, H. J., Joyce, T., French, E., Willan, V., Kane, R. T., Tanner-Smith, E. E., McCormack, J., Dawkins, H., Hoiles, K. J., & Egan, S. J. (2016). Prevention of eating disorders: A systematic review of randomized, controlled trials. *The International Journal of Eating Disorders*, *49*(9), 833–862. https://doi.org/10.1002/eat.22577	The review was excluded because of overlap with Le et al. Le et al is more recent and was deemed as higher quality on the AMSTAR criteria.
Xia, Q. C., Feng, Z. X., & Ping, C. X. (2014). Evaluating the efficacy of Tui Na in treatment of childhood anorexia: A meta-analysis. *Alternative Therapies in Health and Medicine*, *20*(5), 45–52.	The review does not meet our recency criteria (published before 2015).
Zeeck, A., Herpertz-Dahlmann, B., Friederich, H. C., Brockmeyer, T., Resmark, G., Hagenah, U., Ehrlich, S., Cuntz, U., Zipfel, S., & Hartmann, A. (2018). Psychotherapeutic treatment for anorexia nervosa: A systematic review and network meta-analysis. *Frontiers in Psychiatry*, *9*, 158. https://doi.org/10.3389/fpsyt.2018.00158	The review does not meet our study design criteria (network meta-analysis).

Appendix D – GRADE tables

Prevention interventions

Universal prevention interventions

Table D1

Comparison 1: Cognitive behavioral therapy-based interventions versus class as usual

Population: Children and adolescents aged 11-15
Intervention: Universal prevention interventions
Comparison: Class as usual
Based on: Le, 2017
Primary studies: De Leon, 2008; Grave, 2011

Outcomes	**No of studies (participants)**	**Effects without prevention intervention**	**Effect estimates**	**Quality of evidence (GRADE)**
Eating disorder behaviors – EoT	2 studies (186 participants)		Weighted mean difference -1.51 (CI 95% -5.51 to 2.50)	⨁⊖⊖⊖[124] Very low
Eating disorder behaviors – follow up	2 studies (186 participants)		Weighted mean difference 0.44 (CI 95% -7.0 to 7.89)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -2 due to high risk of bias
2. Downgraded -1 due to lack of precision: <400 participants
3. Downgraded -1 due to inconsistency: (I^2=92)
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Table D2

Comparison 2: Media literacy interventions versus class as usual

Population: Children and adolescents with an average age ranging from 12 to 14 years
Intervention: Media literacy interventions
Comparison: Class as usual
Based on: Le, 2017
Primary studies: Gonzales, 2011; Wade, 2003; Wilksch & Wade 2009; Wilkcsh, 2014, 2015

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Shape and weight concern (girls) – EoT	2 studies (300 participants)		Standardized mean difference -0.74 (CI 95% -0.99 to -0.49)	⊕⊖⊖⊖[12] Very low
Shape and weight concern (girls) – follow up	2 studies (300 participants)		Standardized mean difference -0.69 (CI 95% -1.17 to -0.22)	⊕⊖⊖⊖[12] Very low
Shape and weight concern (boys) – EoT	2 studies (291 participants)		Standardized mean difference -0.29 (CI 95% -0.54 to -0.04)	⊕⊖⊖⊖[12] Very low
Shape and weight concern (boys) – follow up	2 studies (291 participants)		Standardized mean difference -0.32 (CI 95% -0.57 to -0.07)	⊕⊖⊖⊖[123] Very low
Dieting (girls) – EoT	4 studies (783 participants)		Standardized mean difference -0.13 (CI 95% -0.28 to 0.02)	⊕⊕⊖⊖[2] Low
Dieting (girls) – follow up	4 studies (783 participants)		Standardized mean difference -0.01 (CI 95% -0.16 to 0.14)	⊕⊕⊖⊖[2] Low
Dieting (boys) – EoT	4 studies (593 participants)		Standardized mean difference -0.16 (CI 95% -0.33 to 0.01)	⊕⊕⊖⊖[2] Low
Dieting (boys) – follow up	4 studies (593 participants)		Standardized mean difference 0,00	⊕⊕⊖⊖[2] Low

		(CI 95% -0.17 to 0.17)	
Body dissatisfaction (girls) – EoT	3 studies (767 participants)	Standardized mean difference -0.08 (CI 95% -0.23 to 0.07)	⊕⊕⊖⊖[2] Low
Body dissatisfaction (girls) – follow up	3 studies (767 participants)	Standardized mean difference -0.05 (CI 95% -0.20 to 0.10)	⊕⊕⊖⊖[2] Low
Body dissatisfaction (boys) – EoT	3 studies (566 participants)	Standardized mean difference -0.18 (CI 95% -0.37 to 0.00)	⊕⊕⊖⊖[2] Low
Body dissatisfaction (boys) – follow up	3 studies (566 participants)	Standardized mean difference -0.03 (CI 95% -0.21 to 0.14)	⊕⊕⊖⊖[2] Low
Media internalization (girls) – EoT	4 studies (968 participants)	Standardized mean difference -0.21 (CI 95% -0.34 to 0.07)	⊕⊕⊖⊖[2] Low
Media internalization (girls) – follow up	4 studies (968 participants)	Standardized mean difference -0.09 (CI 95% -0.23 to 0.05)	⊕⊕⊖⊖[2] Low
Media internalization (boys) – EoT	4 studies (968 participants)	Standardized mean difference -0.49 (CI 95% -0.87 to -0.11)	⊕⊕⊖⊖[2] Low
Media internalization (boys) – follow up	4 studies (968 participants)	Standardized mean difference -0.26 (CI 95% -0.49 to -0.03)	⊕⊕⊖⊖[2] Low
Self-esteem (girls) – EoT	2 studies (300 participants)	Standardized mean difference 0.22 (CI 95% -0.03 to 0.46)	⊕⊖⊖⊖[12] Very low
Self-esteem (girls) – follow up	2 studies (300 participants)	Standardized mean difference 0.18 (CI 95% -0.40 to 0.75)	⊕⊖⊖⊖[123] Very low
Self-Esteem (Boys) – EoT	2 studies (291 participants)	Standardized mean difference 0.20	⊕⊖⊖⊖[12] Very low

			(CI 95% -0.05 to 0.44)	
Self-Esteem (Boys) – follow up	2 studies (291 participants)		Standardized mean difference 0.08 (CI 95% -0.17 to 0.33)	⊕⊖⊖⊖[12] Very low

1. Downgraded -1 due to lack of precision: <400 participants
2. Downgraded -2 due to high risk of bias
3. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Table D3

Comparison 3: Multicomponent interventions versus class as usual or unspecified control

Population: Children and adolescents with an average age ranging from 11 to 14 years
Intervention: Universal prevention measures with multiple components
Comparison: Class as usual or other unspecified measures
Based on: Le, 2017
Primary studies: Gozales, 2011; McCabe, 2006; McVey, 2007; Mora, 2015

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Eating disorder behaviors – EoT	2 studies (447 participants)		Standardized mean difference -0.21 (95% CI -0.61 to 0.18)	⊕⊕⊖⊖[12] Low
Eating disorder behaviors – follow up	2 studies (447 participants)		Standardized mean difference -0.37 (95% CI -1.07 to 0.32)	⊕⊕⊖⊖[12] Low
Eating disorder behaviors (girls) – EoT	2 studies (534 participants)		Standardized mean difference -0.74 (95% CI -1.16 to -0.31)	⊕⊕⊖⊖[1] Low
Eating disorder behaviors (girls) – follow up	2 studies (534 participants)		Standardized mean difference -0.59 (95% CI -0.77 to -0.42)	⊕⊕⊖⊖[1] Low

Thin ideal internalization – EoT	3 studies (1134 participants)	Standardized mean difference -0.14 (95% CI -0.73 to 0.45)	⨁⨁⨀⨀[12] Low
Thin ideal internalization – follow up	3 studies (1134 participants)	Standardized mean difference -0.41 (95% CI -0.68 to -0.13)	⨁⨁⨀⨀[1] Low
Thin ideal internalization (girls) – EoT	2 studies (534 participants)	Standardized mean difference -0.12 (95% CI -0.86 to 0.63)	⨁⨁⨀⨀[12] Low
Thin ideal internalization (girls) – follow up	2 studies (534 participants)	Standardized mean difference -0.52 (95% CI -0.77 to -0.27)	⨁⨁⨀⨀[12] Low
Thin ideal internalization (boys) – EoT	2 studies (453 participants)	Standardized mean difference -0.07 (95% CI -0.87 to 0.72)	⨁⨁⨀⨀[12] Low
Thin ideal internalization (boys) – follow up	2 studies (453 participants)	Standardized mean difference -0.26 (95% CI -0.74 to 0.23)	⨁⨁⨀⨀[1] Low
Body dissatisfaction – EoT	2 studies (834 participants)	Standardized mean difference 0.04 (95% CI -0.10 to 0.17)	⨁⨁⨀⨀[1] Low
Body dissatisfaction – follow up	2 studies (834 participants)	Standardized mean difference 0.01 (95% CI -0.13 to 0.15)	⨁⨁⨀⨀[1] Low

1. Downgraded -2 due to high risk of bias
2. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Table D4

Comparison 4: Media literacy versus control

Population: Male children and adolescents with a mean age of 13 years
Intervention: Media literacy interventions
Comparison: Control (class as usual, self-esteem enhancement, multicomponent interventions)
Based on: Le, 2017
Primary studies: Gonzalez, 2011; Wade, 2003; Wilksch, 2014

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Media internalization – EoT	3 studies (717 participants)		Standardized mean difference -0.35 (CI 95 % -0.52 to -0.18)	⊕⊕⊖⊖[1] Low
Media internalization – follow up	3 studies (717 participants)		Standardized mean difference -0.20 (CI 95 % -0.37 to -0.03)	⊕⊕⊖⊖[1] Low

1. Downgraded -2 due to high risk of bias: unknown drop out rate, selective reporting

Selective prevention interventions

Table D5

Comparison 5: Cognitive behavioral therapy-based interventions versus control

Population: Persons (mean age ranging from 14 to 43) at risk of developing eating disorders
Intervention: Selective eating disorder prevention based on cognitive behavioral therapy
Comparison: Treatment as usual, short educational interventions, delayed treatment, other prevention interventions or waiting list
Based on: Le, 2017
Primary studies: Bearman, 2003; Butter, 1987; Celio, 2000; Delinsky, 2006; Doyle, 2008; Dworkin, 1987; Gollings, 2006; Heinicke, 2007; Jacobi, 2007; Kass, 2014; Low, 2006; Luethcke, 2011; McLean, 2011; Nicolino, 2002; Rosen, 1989; Taylor, 2006; Winzelberg, 1998, 2000; Zabinski, 2004

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Weight concern – EoT	5 studies (354 participants)		Standardized mean difference -0.18 (95% CI -0.39 to 0.03)	⊕⊕⊖⊖[12] Low
Weight concern – follow up	5 studies (354 participants)		Standardized mean difference -0.12 (95% CI -0.33 to 0.09)	⊕⊕⊖⊖[12] Low
Shape concern – EoT	5 studies (354 participants)		Standardized mean difference -0.09 (95% CI -0.30 to 0.12)	⊕⊕⊖⊖[12] Low
Shape concern – follow up	5 studies (354 participants)		Standardized mean difference -0.06 (95% CI -0.27 to 0.15)	⊕⊕⊖⊖[12] Low
Eating concern – EoT	5 studies (354 participants)		Standardized mean difference -0.20 (95% CI -0.44 to 0.03)	⊕⊕⊖⊖[12] Low
Eating concern – follow up	5 studies (354 participants)		Standardized mean difference -0.18 (95% CI -0.60 to 0.25)	⊕⊕⊖⊖[12] Low

Body dissatisfaction – EoT	12 studies (717 participants)	Standardized mean difference -0.24 (95% CI -0.67 to 0.18)	⊕⊕⊕⊖[2] Medium
Body dissatisfaction – follow up	8 studies (467 participants)	Standardized mean difference -0.23 (95% CI -0.42 to 0.04)	⊕⊕⊕⊖[2] Medium
Dieting – EoT	12 studies (1144 participants)	Standardized mean difference -0.44 (95% CI -0.67 to -0.20)	⊕⊕⊕⊖[2] Medium
Dieting – follow up	9 studies (925 participants)	Standardized mean difference -0.40 (95% CI -0.55 to -0.26)	⊕⊕⊕⊖[2] Medium
Bulimia symptoms – EoT	7 studies (796 participants)	Standardized mean difference -0.27 (95% CI -0.41 to -0.13)	⊕⊕⊕⊖[2] Medium
Bulimia symptoms – follow up	6 studies (723 participants)	Standardized mean difference -0.20 (95% CI -0.35 to - 0.05)	⊕⊕⊕⊖[2] Medium
BMI – EoT	7 studies (849 participants)	Weighted mean difference -0.02 (95% CI -0.46 to 0.43)	⊕⊕⊕⊖[2] Medium
BMI – follow up	6 studies (776 participants)	Weighted mean difference 0.07 (95% CI -0.63 to 0.78)	⊕⊕⊕⊖[2] Medium
Self-esteem – EoT	2 studies (105 participants)	Weighted mean difference 0.06 (95% CI -3.74 to 3.86)	⊕⊕⊖⊖[123] Low

Self-esteem – follow up	2 studies (105 participants)	Weighted mean difference 0.28 (95% CI -3.18 to 3.74)	⨁⨁⨀⨀[123] Low
Thin ideal internalization – EoT	2 studies (134 participants)	Standardized mean difference -0.58 (95% CI -0.98 to -0.18)	⨁⨁⨀⨀[12] Low

1. Downgraded -1 due to lack of precision: <400 participants
2. Downgraded -1 due to unclear risk of bias
3. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Table D6

Comparison 6: One-shot interventions versus no or minimal intervention

Population: Females (mean age ranging from 7 to 43 years) at risk of developing eating disorders
Intervention: Selective prevention measures
Comparison: Cold prevention, no intervention, delayed intervention, a brochure or waiting list
Based on: Le, 2017
Primary studies: Boivin, 2008; Bucholz, 2008; Dohnt & Tiggermann, 2008; Irving & Berel, 2001; Martz & Bazzini, 1999; Matusek, 2004; Mutterperl & Sanderson, 2002; Pearson, 2012; Ridolfi & Vander Wal, 2008; Roehrig, 2008; Shafran, 2009

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Media/thin-ideal internalization – EoT	6 studies (515 participants)		Standardized mean difference 0.01 (95% CI -0.22 to 0.24)	⨁⨁⨁⨀[1] Medium
Dieting – EoT	5 studies (434 participants)		Standardized mean difference -0.12 (95% CI -0.31 to 0.07)	⨁⨁⨁⨀[1] Medium
Body dissatisfaction – EoT	3 studies (218 participants)		Standardized mean difference -0.04 (95% CI -0.31 to 0.22)	⨁⨁⨀⨀[12] Low

Self-esteem – EoT	4 studies (357 participants)		Standardized mean difference 0,09 (95% CI -0,12 to 0,31)	⊕⊕⊖⊖[12] Low

1. Downgraded -1 due to unclear risk of bias
2. Downgraded -1 due to lack of precision: <400 participants

Table D7

Comparison 7: Cognitive dissonance-based interventions versus control

Population: Female children, adolescents and young people (mean age ranging from 12 to 21 years) at risk of developing eating disorders
Intervention: Selective prevention measures including a cognitive dissonance component at risk of developing eating disorders
Comparison: No intervention, unspecified intervention, a brochure or waiting list
Based on: Le, 2017
Primary studies: Atkinson & Wade, 2014; Becker et al., 2005, 2006, 2008, 2010, 2012; Green, 2005; McMillan, 2011; Mitchell, 2007; Rohde, 2014; Serdar, 2014; Smith, 2008; Stice, 2001, 2003, 2006, 2008, 2009, 2011, 2012, 2013, 2014, 2015; Wiseman, 2004

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Thin-ideal internalization – EoT	12 studies (1905 participants)		Standardized mean difference -0.71 (95% CI -1,14 to -0,27)	⊕⊕⊖⊖[12] Low
Thin-ideal internalization – follow up	9 studies (1455 participants)		Standardized mean difference -0.31 (95% CI -0.47 to -0.17)	⊕⊕⊕⊖[1] Medium
Dieting – EoT	12 studies (1706 participants)		Standardized mean difference -0.39 (95% CI -0.59 to -0.19)	⊕⊕⊕⊖[1] Medium
Dieting – follow up	9 studies (1455 participants)		Standardized mean difference -0.28 (95% CI -0.43 to -0.12)	⊕⊕⊕⊖[1] Medium

Body Dissatisfaction – EoT	12 studies (1706 participants)	Standardized mean difference -0.42 (95% CI -0.61 to -0.24)	⨁⨁⨁⊖[1] Medium
Body Dissatisfaction – follow up	9 studies (1455 participants)	Standardized mean difference -0.20 (95% CI -0.39 to -0.02)	⨁⨁⨁⊖[1] Medium
Negative Affect – EoT	10 studies (1307 participants)	Standardized mean difference -0.31 (95% CI -0.56 to -0.06)	⨁⨁⨁⊖[1] Medium
Negative Affect – follow up	8 studies (1172 participants)	Standardized mean difference -0.23 (95% CI -0.35 to -0.10)	⨁⨁⨁⊖[1] Medium
Eating disorder symptoms – EoT	10 studies (1550 participants)	Standardized mean difference -0.32 (95% CI -0.52 to -0.13)	⨁⨁⨁⊖[1] Medium
Eating disorder symptoms – follow up	7 studies (1100 participants)	Standardized mean difference -0.09 (95% CI -0.27 to 0.09)	⨁⨁⨁⊖[1] Medium

1. Downgraded -1 due to unclear risk of bias
2. Downgraded -1 due to inconsistency: high heterogeneity (I^2>70%)

Table D8

Comparison 8: Cognitive dissonance-based interventions versus other interventions

Population: Female children, adolescents and young people (mean age ranging from 12 to 21 years) at risk of developing eating disorders
Intervention: Selective prevention measures including a cognitive dissonance component
Comparison: Healthy weight interventions or media literacy interventions
Based on: Le, 2017
Primary studies: Atkinson & Wade, 2014; Becker et al., 2005, 2006, 2008, 2010, 2012; Green, 2005; McMillan, 2011; Mitchell, 2007; Rohde, 2014; Serdar, 2014; Smith, 2008; Stice, 2001, 2003, 2006, 2008, 2009, 2011, 2012, 2013, 2014, 2015; Wiseman, 2004

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Body Dissatisfaction – EoT	7 studies (792 participants)		Standardized mean difference -0.08 (95% CI -0.30 to 0.14)	⊕⊕⊕⊖[1] Medium
Body Dissatisfaction – follow up	6 studies (773 participants)		Standardized mean difference -0.07 (95% CI -0.23 to 0.09)	⊕⊕⊕⊖[1] Medium
Dieting – EoT	8 studies (949 participants)		Standardized mean difference -0.09 (95% CI -0.22 to 0.04)	⊕⊕⊕⊖[1] Medium
Dieting – follow up	7 studies (930 participants)		Standardized mean difference -0.03 (95% CI -0.16 to 0.10)	⊕⊕⊕⊖[1] Medium
Thin-ideal internalization – EoT	8 studies (949 participants)		Standardized mean difference -0.19 (95% CI -0.32 to -0.06)	⊕⊕⊕⊖[1] Medium
Thin -ideal internalization – follow up	7 studies (930 participants)		Standardized mean difference -0.05 (95% CI -0.25 to 0.15)	⊕⊕⊕⊖[1] Medium
Bulimic behaviors – EoT	8 studies (949 participants)		Standardized mean difference -0.01 (95% CI -0.17 to 0.14)	⊕⊕⊕⊖[1] Medium

Bulimic behaviors – follow up	7 studies (930 participants)		Standardized mean difference 0.03 (95% CI -0.12 to 0.18)	⨁⨁⨁⨀[1] Medium

1. Downgraded -1 due to unclear risk of bias

Table D9

Comparison 9: "Healthy weight" interventions versus no or minimal intervention

Population: Adolescent females (mean age ranging from 17 to 19 years) at risk of developing eating disorders
Intervention: Healthy weight interventions
Comparison: Brochures, other prevention interventions or waiting list
Based on: Le, 2017
Primary studies: Becker, 2010, 2012; Smith & Petrie, 2008; Stice et al., 2001, 2003, 2006, 2012, 2013

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Body dissatisfaction – EoT	4 studies (745 participants)		Standardized mean difference -0.28 (95% CI -0.45 to -0.12)	⨁⨁⨁⨀[1] Medium
Body dissatisfaction – follow up	3 studies (728 participants)		Standardized mean difference -0.28 (95% CI -0.56 to 0.01)	⨁⨁⨁⨀[12] Medium
Thin-ideal internalization – EoT	2 studies (330 participants)		Standardized mean difference -0.45 (95% CI -1.16 to 0.27)	⨁⨁⨀⨀[12] Low
Thin-ideal internalization – follow up	2 studies (330 participants)		Standardized mean difference -0.27 (95% CI -0.49 to 0.05)	⨁⨁⨀⨀[12] Low
Dieting – EoT	4 studies (745 participants)		Standardized mean difference -0.23 (95% CI -0.55 to 0.09)	⨁⨁⨁⨀[13] Medium

Dieting – follow up	3 studies (728 participants)	Standardized mean difference -0.30 (95% CI -0.57 to -0.04)	⨁⨁⨁⨀[13] Medium
Negative affect – EoT	4 studies (745 participants)	Standardized mean difference -0.02 (95% CI -0.43 to 0.39)	⨁⨁⨁⨀[1] Medium
Negative affect – follow up	3 studies (728 participants)	Standardized mean difference 0,00 (95% CI -0.35 to 0.35)	⨁⨁⨁⨀[1] Medium
Bulimia – EoT	2 studies (330 participants)	Standardized mean difference -0.30 (95% CI -1.21 to 0.60)	⨁⨁⨀⨀[123] Low
Bulimia – follow up	2 studies (330 participants)	Standardized mean difference -0.33 (95% CI -0.94 to 0.29)	⨁⨁⨀⨀[123] Low
BMI – follow up	2 studies (641 participants)	Weighted mean difference -0.89 (95% CI -1.60 to -0.17)	⨁⨁⨁⨀[1] Medium

1. Downgraded -1 due to unclear risk of bias
2. Downgraded -1 due to lack of precision: <400 participants
3. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Table D10

Comparison 10: Psychoeducation versus no intervention or unspecified control

Population: Female children, adolescents and young people (mean age ranging from 15 to 22 years) at risk of developing eating disorders
Intervention: Psychoeducation
Comparison: Treatment as usual or unspecified controls
Based on: Le, 2017
Primary studies: Kaminski & McNamara, 1996; Neumark-Sztainer, 1995; O'Brien & LeBow 2007; Olmsted, 2002; Santonastaso, 1999

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Body dissatisfaction – EoT	2 studies (114 participants)		Standardized mean difference -0.73 (95% CI -2.32 to 0.87)	⨁⊖⊖⊖[123] Very low
Body dissatisfaction – follow up	3 studies (378 participants)		Standardized mean difference -0.25 (95% CI -0.96 to 0.45)	⨁⊖⊖⊖[123] Very low
Eating disorder behaviors – follow up	2 studies (578 participants)		Standardized mean difference -0.09 (95% CI -0.25 to 0.07)	⨁⨁⊖⊖[2] Low

1. Downgraded -1 due to lack of precision: <400 participants
2. Downgraded -2 due to high risk of bias
3. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Table D11

Comparison 11: Multicomponent interventions versus no or minimal intervention

Population: Children and adolescents (mean age ranging from 11 to 18 years) at risk of developing eating disorders
Intervention: Combinations of different selective eating disorder prevention approaches
Comparison: Class as usual, no intervention or another unspecified control
Based on: Le, 2017
Primary studies: Canetti, 2009; Elliot, 2004, 2006; Favaro, 2005; Franko, 2005; Killen, 1993; Lopez-Guimerà, 2011; McVey, 2002, 2004; Raich, 2008

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Eating disorder behaviors – EoT	3 studies (667 participants)		Standardized mean difference -0.15 (95% CI -0.31 to 0.01)	⨁⨁⊖⊖[1] Low
Eating disorder behaviors – follow up	5 studies (1046 participants)		Standardized mean difference -0.15 (95% CI -0.28 to -0.02)	⨁⨁⊖⊖[1] Low
Media internalization – EoT	2 studies (414 participants)		Weighted mean difference -0.27 (95% CI -0.48 to -0.05)	⨁⨁⊖⊖[1] Low
Media internalization – follow up	2 studies (414 participants)		Weighted mean difference -0.31 (95% CI -0.60 to -0.03)	⨁⨁⊖⊖[1] Low

1. Downgraded -2 due to high risk of bias

Indicated prevention interventions

Table D12

Comparison 12: Active interventions versus no or minimal intervention

Population: Children, adolescents and young people (mean age ranging from 15 to 22 years) who showed eating disorder symptoms, but did not yet satisfy the diagnostic criteria for an eating disorder
Intervention: Indicated eating disorder prevention interventions based on either cognitive behavioral therapy or psychoeducation
Comparison: Waiting list or other unspecified controls
Based on: Le, 2017
Primary studies: Buddeberg-Fischer, 1998; Jacobi, 2012; Jones, 2008; Paxton, 2007

Outcomes	No of studies (participants)	Effects without prevention intervention	Effect estimates	Quality of evidence (GRADE)
Shape and weight concern – EoT	2 studies (208 participants)		Standardized mean difference -0.13 (95% CI -0.41 to 0.14)	⨁⊖⊖⊖[12] Very low
Shape and weight concern – follow up	2 studies (208 participants)		Standardized mean difference -0.14 (95% CI -0.41 to 0.14)	⨁⊖⊖⊖[12] Very low
Body dissatisfaction – EoT	2 studies (182 participants)		Standardized mean difference -0.39 (95% CI -1.20 to 0.41)	⨁⊖⊖⊖[123] Very low
Dieting – EoT	2 studies (182 participants)		Standardized mean difference -0.31 (95% CI -0.74 to 0.11)	⨁⊖⊖⊖[123] Very low
Bulimic behavior – EoT	2 studies (182 participants)		Standardized mean difference 0.06 (95% CI -0.46 to 0.58)	⨁⊖⊖⊖[123] Very low
BMI – EoT	3 studies (287 participants)		Weighted mean difference -0.52 (95% CI -1.42 to 0.39)	⨁⊖⊖⊖[123] Very low

BMI – follow up	2 studies (208 participants)	Weighted mean difference -0.78 (95% CI -1.76 to 0.20)	⨁⊖⊖⊖[123] Very low

1. Downgraded -1 due to lack of precision: <400 participants
2. Downgraded -2 due to high risk of bias
3. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Treatment interventions

Psychological interventions for anorexia nervosa

Table D13

Comparison 13: CBT-ED versus any other intervention in children and adolescents with anorexia nervosa at follow up

Population: Children and adolescents aged 11-17 with anorexia nervosa
Intervention: Cognitive behavioral therapy for eating disorders (CBT-ED)
Comparison: Treatment as usual (TAU)
Based on: NICE, 2017
Primary study: Gowers, 2007

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with TAU	Risk difference with CBT-ED	
BMI – 1 or 2 year follow up	1 study (98 participants)	-	Not calculable for SMD values	Standardized mean difference -0.29 (CI 95% -0.69 to 0.11)	⨁⊖⊖⊖[1234] Very low
EDI total score – 1 or 2 year follow up	1 study (82 participants)	-	Not calculable for SMD values	Standardized mean difference -0.17 (CI 95% -0.60 to 0.27)	⨁⊖⊖⊖[1234] Very low

Remission – 1 or 2 year follow up	1 study (110 participants)	Risk ratio 1.25 (CI 95% 0.53 to 2.93)	Achieved remission: 145/1000	Achieved remission: 36 more per 1000 (from 68 fewer to 281 more)	⨁⊖⊖⊖[1235] Very low

1. Downgraded -1 due to unclear risk of bias: unclear methods of randomization, unclear if either participants, investigators or assessors were blind, and high drop outs were reported >20%
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)
5. <300 events for dichotomous outcome

Table D14

Comparison 14: Supportive therapy versus another intervention in adolescents with anorexia nervosa at end of treatment and at follow up

Population: Children and adolescents (mean age 15 years) with anorexia nervosa
Intervention: Supportive therapy
Comparison: Family therapy
Based on: NICE, 2017
Primary studies: Russell, 1987; Eisler, 1997

Outcomes	**No of studies (participants)**	**Relative effect**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
			Risk with family therapy	**Risk difference with supportive therapy**	
Weight (percentile) – EoT	1 study (21 participants)		Not calculable for SMD values	Standardized mean difference -0.98 (CI 95% -1.90 to -0.07)	⨁⊖⊖⊖[1234] Very low
Did not achieve remission ITT – EoT	1 study (21 participants)	Risk ratio 2.27 (CI 95% 1.04 to 4.97)	Remission not achieved: 600/1000	Remission not achieved: 762 more per 1000 (from 24 more to 1000 more)	⨁⊖⊖⊖[1235] Very low

Weight (percentile) – 5 year follow up	1 study (19 participants)		Not calculable for SMD values	Standardized mean difference -0.57 (CI 95% -1.50 to 0.35)	⨁⊖⊖⊖[1234] Very low
Remission ITT – 5 year follow up	1 study (21 participants)	Risk ratio 1.36 (CI 95% 0.54 to 3.46)	Achieved remission: 400/1000	Achieved remission: 144 more per 1000 (from 184 fewer to 984 more)	⨁⊖⊖⊖[1235] Very low

1. Downgraded -1 due to risk of bias: unclear methods of allocation, lack of blinding and high drop outs were reported >20%
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)
5. Lack of precision: wide confidence interval

Table D15

Comparison 15: Adolescent-focused psychotherapy versus another intervention in children and adolescents with anorexia nervosa at end of treatment and follow up

Population: Children and adolescents aged 11-18 with anorexia nervosa
Intervention: Adolescent-focused psychotherapy
Comparison: Family therapy (FBT-AN or Behavioral Family Systems Therapy (BFST))
Based on: NICE, 2017
Primary studies: Robin, 1999; Lock, 2010

Outcomes	**No of studies (participants)**	**Relative effect**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
			Risk with family therapy	**Risk difference with adolescent-focused psychotherapy**	
BMI – EoT	2 studies (139 participants)		Not calculable for SMD values	Standardized mean difference -0.43 (CI 95% -0.77 to -0.09)	⨁⨁⊖⊖[123] Low

Remission ITT – EoT	2 studies (158 participants)	Risk ratio 0.79 (CI 95% 0.61 to 1.01)	Achieved remission: 700/1000	Achieved remission: 147 fewer per 1000 (from 273 fewer to 7 more)	⨁⨁⨀⨀[123] Low
BMI – follow up	2 studies (129 participants)		Not calculable for SMD values	Standardized mean difference -0.18 (CI 95% -0.53 to 0.16)	⨁⨁⨀⨀[123] Low
Remission ITT – follow up	2 studies (158 participants)	Risk ratio 1.07 (CI 95% 0.83 to 1.37)	Achieved remission: 588/1000	Achieved remission: 41 more per 1000 (from 100 fewer to 217 more)	⨁⨁⨀⨀[123] Low

1. Downgraded -1 due to risk of bias: unclear allocation methods, unclear or lack of blinding
2. Downgraded -1 due to lack of precision: <400 participants
3. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D16

Comparison 16: Family therapy and treatment as usual versus treatment as usual in young inpatients with anorexia nervosa at end of treatment

Population: Female inpatients aged 13-19 with anorexia nervosa
Intervention: Family therapy and treatment as usual (FT + TAU)
Comparison: Treatment as usual (TAU)
Based on: NICE, 2017
Primary study: Godart, 2012

Outcomes	**No of studies (participants)**	**Relative effect**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
			Risk with TAU	**Risk difference with FT + TAU**	
Remission (ITT) Morgan-Russell Good or	1 study (60 participants)	Risk ratio 2.40 (CI 95% 0.96 to 5.98)	Achieved remission: 167/1000	Achieved remission: 233 more per 1000 (from 7 fewer to 830 more)	⨁⨁⨀⨀[123] Low

Intermediate outcome					
BMI (raw)	1 study (60 participants)		Not calculable for SMD values	Standardized mean difference 0.10 (CI 95% -0.41 to 0.60)	⨁⨁⨀⨀[123] Low
#>=BMI 10th percentile (age-sex corrected)	1 study (59 participants)	Risk ratio 1.93 (CI 95% 0.98 to 3.81)	Achieved #>=BMI 10th percentile: 276/1000	Achieved #>=BMI 10th percentile: 257 more per 1000 (from 6 fewer to 775 more)	⨁⨁⨀⨀[123] Low
EDI Total	1 study (59 participants)		Not calculable for SMD values	Standardized mean difference 0.03 (CI 95% -0.48 to 0.54)	⨁⨁⨀⨀[123] Low
Global Functioning Global Outcome Assessment Scale	1 study (59 participants)		Not calculable for SMD values	Standardized mean difference 0.22 (CI 95% -0.29 to 0.74)	⨁⨁⨀⨀[123] Low
Amenorrheic patients	1 study (59 participants)	Risk ratio 0.56 (CI 95% 0.33 to 0.96)	Amenorrheic patients: 655/1000	Amenorrheic patients: 288 fewer per 1000 (from 26 fewer to 439 fewer)	⨁⨁⨀⨀[123] Low
Hospitalizations to EoT	1 study (59 participants)	Risk ratio 0.69 (CI 95% 0.37 to 1.30)	Hospitalizations to EoT: 483/1000	Hospitalizations to EoT: 150 fewer per 1000 (from 304 fewer to 145 more)	⨁⨁⨀⨀[123] Low

1. Downgraded -1 due to lack of precision: only 1 study
2. Downgraded -1 due to lack of precision: <400 participants
3. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D17

Comparison 17: Family therapy versus any other type of family intervention in adolescents with anorexia nervosa at end of treatment

Population: Girls aged 12-17 with anorexia nervosa
Intervention: Family therapy
Comparison: Family group psychoeducation
Based on: NICE, 2017
Primary study: Geist, 2000

Outcomes	No of studies (participants)	Anticipated absolute effects		Quality of evidence (GRADE)
		Risk with family group psychoeducation	Risk difference with family therapy	
% of ideal body weight	1 study (25 participants)	Not calculable for SMD values	Standardized mean difference -0.62 (CI 95% -1.43 to 0.19)	⨁⊖⊖⊖[1234] Very low
EDI Bulimia	1 study (25 participants)	Not calculable for SMD values	Standardized mean difference -0.54 (CI 95% -1.34 to 0.26)	⨁⊖⊖⊖[1234] Very low
EDI Drive for Thinness	1 study (25 participants)	Not calculable for SMD values	Standardized mean difference -0.13 (CI 95% -0.91 to 0.66)	⨁⊖⊖⊖[1234] Very low
EDI Body Dissatisfaction	1 study (25 participants)	Not calculable for SMD values	Standardized mean difference -0.20 (CI 95% -0.99 to 0.59)	⨁⊖⊖⊖[1234] Very low
General Psychopathology BSI GSI	1 study (25 participants)	Not calculable for SMD values	Standardized mean difference 0.00 (CI 95% -0.78 to 0.78)	⨁⊖⊖⊖[1234] Very low
Depression CDI	1 study (25 participants)	Not calculable for SMD values	Standardized mean difference -0.50 (CI 95% -1.30 to 0.30)	⨁⊖⊖⊖[1234] Very low
Family Functioning FAM-III	1 study (25 participants)	Not calculable for SMD values	Standardized mean difference -0.43 (CI 95% -1.23 to 0.37)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: unclear methods of randomization and allocation, lack of blinding
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Table D18

Comparison 18: Family-based therapy versus general family therapy in adolescents with anorexia nervosa at end of treatment and follow up

Population: Adolescents aged 12-18 with anorexia nervosa
Intervention: Family-based therapy for eating disorders (FBT-ED)
Comparison: Systematic family therapy (SyFT)
Based on: NICE, 2017
Primary study: Agras, 2014

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with SyFT	Risk difference with FBT-ED	
Remission (ITT) % of patients achieving ≥ 95% IBW – EoT	1 study (164 participants)	Risk ratio 1.30 (CI 95% 0.79 to 2.14)	Achieved remission: 244/1000	Achieved remission: 73 more per 1000 (from 51 fewer to 278 more)	⨁⊖⊖⊖[1234] Very low
% of ideal body weight – EoT	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference 0.16 (CI 95% -0.15 to 0.47)	⨁⊖⊖⊖[1234] Very low
EDE Global – EoT	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference -0.26 (CI 95% -0.58 to 0.05)	⨁⊖⊖⊖[1234] Very low
Yale-Brown-Cornell Eating Disorder Scale – EoT	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference -0.18 (CI 95% -0.49 to 0.13)	⨁⊖⊖⊖[1234] Very low
Depression BDI – EoT	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference 0.09 (CI 95% -0.22 to 0.40)	⨁⊖⊖⊖[1234] Very low
Quality of life	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference -0.15 (CI 95% -0.46 to 0.16)	⨁⊖⊖⊖[1234] Very low

Quality of Life and Enjoyment Scale (Short-Form) – EoT					
Remission (ITT) % of patients achieving ≥95% IBW – 12 month follow up	1 study (164 participants)	Risk ratio 1.03 (CI 95% 0.70 to 1.52)	Achieved remission: 378/1000	Achieved remission: 11 more per 1000 (from 113 fewer to 197 more)	⨁⊖⊖⊖[1234] Very low
% of ideal body weight – follow up	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference 0.16 (CI 95% -0.15 to 0.47)	⨁⊖⊖⊖[1234] Very low
EDE Global – 12 month follow up	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference -0.26 (CI 95% -0.58 to 0.05)	⨁⊖⊖⊖[1234] Very low
General psychopathology – 12 month follow up	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference 0.18 (CI 95% -0.04 to 0.40)	⨁⊖⊖⊖[1234] Very low
Yale-Brown-Cornell Eating Disorder Scale – 12 month follow up	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference -0.18 (CI 95% -0.49 to 0.13)	⨁⊖⊖⊖[1234] Very low
Depression BDI – 12 month follow up	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference 0.09 (CI 95% -0.22 to 0.40)	⨁⊖⊖⊖[1234] Very low
Quality of life Quality of Life and Enjoyment Scale (Short-Form) – 12 month follow up	1 study (158 participants)		Not calculable for SMD values	Standardized mean difference -0.15 (CI 95% -0.46 to 0.16)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: dropout rate for both arms >20%
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D19

Comparison 19: Multi-family therapy versus family therapy in adolescents with anorexia nervosa at end of treatment and follow up

Population: Adolescents (mean age 15.7) with anorexia nervosa
Intervention: Multi-family therapy (MFT-AN)
Comparison: Family therapy for anorexia nervosa (FT-AN)
Based on: NICE, 2017
Primary study: Eisler, 2016

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with FT-AN	Risk difference with MFT-AN)	
Remission ITT – EoT	1 study (167 participants)	Risk ratio 1.31 (CI 95% 1.05 to 1.62)	Achieved remission: 585/1000	Achieved remission: 181 more per 1000 (from 29 more to 363 more)	⨁⊖⊖⊖[2345] Very low
BMI - change scores – EoT	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.39 (CI 95% 0.09 to 0.70)	⨁⊖⊖⊖[2345] Very low
%mBMI - change scores – EoT	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.45 (CI 95% 0.14 to 0.75)	⨁⊖⊖⊖[2345] Very low
EDE Restraint - change scores – EoT	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.38 (CI 95% 0.08 to 0.69)	⨁⊖⊖⊖[12345] Very low
EDE Eating Concerns - change scores – EoT	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.12 (CI 95% -0.18 to 0.43)	⨁⊖⊖⊖[1234] Very low
EDE Shape Concerns - change scores – EoT	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.42 (CI 95% 0.11 to 0.72)	⨁⊖⊖⊖[12345] Very low

EDE Weight Concerns - change scores – EoT	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.35 (CI 95% 0.04 to 0.65)	⨁⊖⊖⊖[12345] Very low
Depression - change scores – EoT	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.28 (CI 95% -0.02 to 0.59)	⨁⊖⊖⊖[12345] Very low
Service user experience Client Satisfaction Questionnaire score 27-32 – EoT	1 study (69 participants)	Risk ratio 0.88 (CI 95% 0.47 to 1.65)	Score 27-32: 351/1000	Score 27-32: 42 fewer per 1000 (from 186 fewer to 228 more)	⨁⊖⊖⊖[1234] Very low
Remission ITT – 6 month follow up	1 study (167 participants)	Risk ratio 1.35 (CI 95% 1.09 to 1.69)	Achieved remission: 573/1000	Achieved remission: 201 more per 1000 (from 52 more to 395 more)	⨁⊖⊖⊖[12345] Very low
BMI – change scores – 6 month follow up	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.67 (CI 95% 0.35 to 0.98)	⨁⊖⊖⊖[12345] Very low
%mBMI - change scores – 6 month follow up	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.40 (CI 95% 0.09 to 0.71)	⨁⊖⊖⊖[12345] Very low
EDE Restraint - change scores – 6 month follow up	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.37 (CI 95% 0.06 to 0.67)	⨁⊖⊖⊖[12345] Very low
EDE Eating Concerns - change scores – 6 month follow up	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.17 (CI 95% -0.13 to 0.48)	⨁⊖⊖⊖[1234] Very low
EDE Shape Concerns - change scores – 6 month follow up	1 study (167 participants)		Not calculable for SMD values	Standardized mean difference 0.42 (CI 95% 0.12 to 0.73)	⨁⊖⊖⊖[12345] Very low

EDE Weight Concerns - change scores – 6 month follow up	1 study (167 participants)	Not calculable for SMD values	Standardized mean difference 0.35 (CI 95% 0.05 to 0.66)	⨁⊖⊖⊖[12345] Very low
Depression - change scores – 6 month follow up	1 study (167 participants)	Not calculable for SMD values	Standardized mean difference 0.20 (CI 95% -0.11 to 0.50)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: no participant nor investigator blinding
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Downgraded -1 due to indirectness: Sample consists of 120 AN and 40 Restricting EDNOS participants
5. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D20

Comparison 20: Family therapy versus any individual therapy in adolescents with anorexia nervosa at end of treatment and follow up

Population: Adolescents (mean age ranging from 14 to 15 years) with anorexia nervosa
Intervention: Behavioral family systems therapy (BFST) or family therapy for eating disorders (FT-ED)
Comparison: Individual therapy (adolescent-focused psychotherapy or supportive therapy)
Based on: NICE, 2017
Primary studies: Ciao, 2015; Eisler, 1997; Robin, 1999; Russel, 1987

Outcomes	**No of studies (participants)**	**Relative effect**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
			Risk with individual therapy	**Risk difference with BFST / FT-ED**	
Remission ITT: >85% of expected IBW or good or intermediate outcome on Morgan-Russell – EoT	3 studies (179 participants)	Risk ratio 1.45 (CI 95% 0.82 to 2.59)	Achieved remission: 506/1000	Achieved remission: 228 more per 1000 (from 91 fewer to 804 more)	⨁⊖⊖⊖[1267] Very low

BMI/weight – EoT	3 studies (160 participants)		Not calculable for SMD values	Standardized mean difference 0.51 (CI 95% 0.19 to 0.82)	⨁⨁⨀⨀[127] Low
Morgan-Russell Average Score – EoT	1 study (21 participants)		Not calculable for SMD values	Standardized mean difference 1.92 (CI 95% 0.85 to 2.99)	⨁⨀⨀⨀[235] Very low
EDE Global – EoT	1 study (103 participants)		Not calculable for SMD values	Standardized mean difference -0.45 (CI 95% -0.84 to -0.05)	⨁⨀⨀⨀[2457] Very low
Depression BDI – EoT	1 study (35 participants)		Not calculable for SMD values	Standardized mean difference 0.35 (CI 95% -0.32 to 1.02)	⨁⨀⨀⨀[1257] Very low
Remission ITT – 5 year follow up	3 studies (179 participants)	Risk ratio 1.01 (CI 95% 0.80 to 1.27)	Achieved remission: 618/1000	Achieved remission: 6 more per 1000 (from 124 fewer to 167 more)	⨁⨁⨀⨀[127] Low
BMI/weight – 5 year follow up	3 studies (150 participants)		Not calculable for SMD values	Standardized mean difference 0.24 (CI 95% -0.08 to 0.56)	⨁⨁⨀⨀[127] Low
EDE Global – 12 month follow up	1 study (93 participants)		Not calculable for SMD values	Standardized mean difference -0.23 (CI 95% -0.63 to 0.18)	⨁⨀⨀⨀[2457] Very low
Depression BDI – 12 month follow up	1 study (35 participants)		Not calculable for SMD values	Standardized mean difference 0.87 (CI 95% 0.17 to 1.57)	⨁⨀⨀⨀[1257] Very low

1. Downgraded -1 due to risk of bias: inadequate randomization method, unclear allocation concealment, participant and assessor blinding, dropout data not provided
2. Downgraded -1 due to lack of precision: <400 participants
3. Downgraded -1 due to unclear risk of bias: unclear randomization method, allocation method, participant blinding, dropout rate both arms >20%
4. Downgraded -1 due to risk of bias: no participant blinding
5. Downgraded -1 due to lack of precision: only 1 study
6. Downgraded -1 due to inconsistency: high heterogeneity
7. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D21

Comparison 21: Conjoint family therapy versus separated family therapy in adolescents with anorexia nervosa at end of treatment and follow up

Population: Children and adolescents aged 11-18 with anorexia nervosa
Intervention: Conjoint family therapy
Comparison: Separated family therapy
Based on: NICE, 2017
Primary studies: Eisler, 2000; Le Grange, 2016

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with separated FT	Risk difference with conjoint FT	
Full remission ITT: Morgan-Russell Good outcome; >=95% mBMI and EDE global <= 1.59 – EoT	2 studies (146 participants)	Risk ratio 0.52 (CI 95% 0.32 to 0.85)	Achieved full remission: 444/1000	Achieved full remission: 213 fewer per 1000 (from 67 fewer to 302 fewer)	⨁⨁⨀⨀[124] Low
BMI – EoT	2 studies (146 participants)		Not calculable for SMD values	Standardized mean difference -0.34 (CI 95% -0.67 to -0.02)	⨁⨁⨀⨀[124] Low
% of average body weight (change scores) – EoT	1 study (40 participants)		Not calculable for SMD values	Standardized mean difference -0.42 (CI 95% -1.05 to 0.21)	⨁⨀⨀⨀[1234] Very low
Morgan-Russell Outcome-Average – EoT	1 study (40 participants)		Not calculable for SMD values	Standardized mean difference 0.29 (CI 95% -0.34 to 0.91)	⨁⨀⨀⨀[1234] Very low
EDE Global – EoT	1 study (106 participants)		Not calculable for SMD values	Standardized mean difference 0.23 (CI 95% -0.16 to 0.61)	⨁⨀⨀⨀[1234] Very low

EDE Restraint – EoT	1 study (106 participants)		Not calculable for SMD values	Standardized mean difference 0.21 (CI 95% -0.17 to 0.59)	⨁⊖⊖⊖[1234] Very low
EDE Eating Concerns – EoT	1 study (106 participants)		Not calculable for SMD values	Standardized mean difference 0.13 (CI 95% -0.26 to 0.51)	⨁⊖⊖⊖[1234] Very low
EDE Weight Concerns – EoT	1 study (106 participants)		Not calculable for SMD values	Standardized mean difference 0.26 (CI 95% -0.12 to 0.64)	⨁⊖⊖⊖[1234] Very low
EDE Shape Concerns – EoT	1 study (106 participants)		Not calculable for SMD values	Standardized mean difference 0.25 (CI 95% -0.13 to 0.63)	⨁⊖⊖⊖[1234] Very low
Hospitalized during treatment – EoT	1 study (106 participants)	Risk ratio 2.01 (CI 95% 0.83 to 4.89)	Hospitalizations: 118/1000	Hospitalizations: 119 more per 1000 (from 20 fewer to 458 more)	⨁⊖⊖⊖[1234] Very low
Depression CDI – EoT	2 studies (146 participants)		Not calculable for SMD values	Standardized mean difference 0.12 (CI 95% -0.44 to 0.21)	⨁⨁⊖⊖[124] Low
Full remission (ITT) 12-mo FU>=95% mBMI and EDE global <= 1.59 – 12 month follow up	1 study (106 participants)	Risk ratio 0.78 (CI 95% 0.45 to 1.35)	Achieved full remission: 373/1000	Achieved full remission: 82 fewer per 1000 (from 205 fewer to 130 more)	⨁⊖⊖⊖[1234] Very low
%mBMI – 12 month follow up	1 study (106 participants)		Not calculable for SMD values	Standardized mean difference -0.23 (CI 95% -0.61 to 0.15)	⨁⊖⊖⊖[1234] Very low
EDE Global – 12 month follow up	1 study (106 participants)		Not calculable for SMD values	Standardized mean difference 0.19 (CI 95% -0.19 to 0.57)	⨁⊖⊖⊖[1234] Very low

EDE Restraint – 12 month follow up	1 study (106 participants)	Not calculable for SMD values	Standardized mean difference 0.20 (CI 95% -0.18 to 0.58)	⨁⊖⊖⊖[1234] Very low
EDE Eating Concerns – 12 month follow up	1 study (106 participants)	Not calculable for SMD values	Standardized mean difference 0.12 (CI 95% -0.26 to 0.50)	⨁⊖⊖⊖[123] Very low
EDE Weight Concerns – 12 month follow up	1 study (106 participants)	Not calculable for SMD values	Standardized mean difference 0.13 (CI 95% -0.25 to 0.51)	⨁⊖⊖⊖[1234] Very low
EDE Shape Concerns – 12 month follow up	1 study (106 participants)	Not calculable for SMD values	Standardized mean difference 0.20 (CI 95% -0.18 to 0.58)	⨁⊖⊖⊖[1234] Very low
Depression CDI – 12 month follow up	1 study (106 participants)	Not calculable for SMD values	Standardized mean difference 0.42 (CI 95% 0.04 to 0.81)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: Unclear methods of randomization and allocation, unclear or no blinding
2. Downgraded -1 due to lack of precision: <400 participants
3. Downgraded -1 due to lack of precision: only 1 study
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D22

Comparison 22: Long-term family therapy versus short-term family therapy in adolescents with anorexia nervosa at end of treatment and follow up

Population: Adolescents aged 12-18 with anorexia nervosa
Intervention: Short-term family therapy, 6 months
Comparison: Long-term family therapy, 12 months
Based on: NICE, 2017
Primary study: Lock, 2005

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects

			Risk with long-term FT	Risk difference with short-term FT	Quality of evidence (GRADE)
BMI – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference 0.22 (CI 95% -0.20 to 0.65)	⨁⊖⊖⊖[1234] Very low
EDE Restraint – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference -0.24 (CI 95% -0.67 to 0.18)	⨁⊖⊖⊖[1234] Very low
EDE Weight Concerns – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference -0.42 (CI 95% -0.85 to 0.01)	⨁⊖⊖⊖[1234] Very low
EDE Eating Concerns – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference -0.36 (CI 95% -0.79 to 0.06)	⨁⊖⊖⊖[1234] Very low
EDE Shape Concerns – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference -0.29 (CI 95% -0.72 to 0.13)	⨁⊖⊖⊖[1234] Very low
Yale-Brown-Cornell Eating Disorder Scale – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference -0.54 (CI 95% -0.97 to -0.11)	⨁⊖⊖⊖[1234] Very low
BMI (unadjusted) – 3.96 year follow up	1 study (71 participants)		Not calculable for SMD values	Standardized mean difference 0.08 (CI 95% -0.39 to 0.54)	⨁⊖⊖⊖[1234] Very low
BMI >20 – 3.96 year follow up	1 study (71 participants)	Risk ratio 0.91 (CI 95% 0.63 to 1.31)	Achieved BMI >20: 649/1000	Achieved BMI >20: 58 fewer per 1000 (from 240 fewer to 201 more)	⨁⊖⊖⊖[1234] Very low
# >90% Ideal BW – 3.96 year follow up	1 study (71 participants)	Risk ratio 1.05 (CI 95% 0.89 to 1.24)	Achieved >90% IBW: 865/1000	Achieved >90% IBW: 43 more per	⨁⊖⊖⊖[123] Very low

				1000 (from 95 fewer to 208 more)	
Resumed menstruation – 3.96 year follow up	1 study (71 participants)	Risk ratio 0.98 (CI 95% 0.63 to 1.51)	Resumed menstruation: 541/1000	Resumed menstruation: 11 fewer per 1000 (from 200 fewer to 276 more)	⨁⊖⊖⊖[1234] Very low
Amenorrheic patients – 3.96 year follow up	1 study (71 participants)	Risk ratio 0.36 (CI 95% 0.04 to 3.32)	Amenorrheic patients: 81/1000	Amenorrheic patients: 52 fewer per 1000 (from 78 fewer to 188 more)	⨁⊖⊖⊖[1234] Very low
EDE Eating Concerns – 3.96 year follow up	1 study (35 participants)		Not calculable for SMD values	Standardized mean difference -0.39 (CI 95% -1.06 to 0.29)	⨁⊖⊖⊖[1234] Very low
EDE Restraint – 3.96 year follow up	1 study (35 participants)		Not calculable for SMD values	Standardized mean difference -0.06 (CI 95% -0.73 to 0.61)	⨁⊖⊖⊖[1234] Very low
EDE Weight Concerns – 3.96 year follow up	1 study (35 participants)		Not calculable for SMD values	Standardized mean difference -0.32 (CI 95% -1.00 to 0.35)	⨁⊖⊖⊖[1234] Very low
EDE Shape Concerns – 3.96 year follow up	1 study (35 participants)		Not calculable for SMD values	Standardized mean difference -0.39 (CI 95% -1.07 to 0.28)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: unclear or no blinding
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D23

Comparison 23: Family therapy with family meal versus family therapy without family meal in children, adolescents and young people with anorexia nervosa at end of treatment and follow up

Population: Children, adolescents and young people aged 12-20 with anorexia nervosa
Intervention: Family therapy with family meal
Comparison: Family therapy without family meal
Based on: NICE, 2017
Primary study: Hersovici, 2015

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with FT without family meal	Risk difference with FT with family meal	
Remission Morgan-Russell good or intermediate outcome – EoT	1 study (23 participants)	Risk ratio 2.18 (CI 95% 1.09 to 4.37)	Achieved remission: 417/1000	Achieved remission: 492 more per 1000 (from 38 more to 1000 more)	⨁⊖⊖⊖[1234] Very low
Weight (kg) – EoT	1 study (23 participants)		Not calculable for SMD values	Standardized mean difference -0.31 (CI 95% -1.13 to 0.52)	⨁⊖⊖⊖[1234] Very low
% EBW – EoT	1 study (23 participants)		Not calculable for SMD values	Standardized mean difference 0.41 (CI 95% -0.42 to 1.23)	⨁⊖⊖⊖[1234] Very low
Morgan-Russell Outcome – average score – EoT	1 study (23 participants)		Not calculable for SMD values	Standardized mean difference -0.15 (CI 95% -0.97 to 0.67)	⨁⊖⊖⊖[1234] Very low
EDI-2 – EoT	1 study (23 participants)		Not calculable for SMD values	Standardized mean difference 0.60 (CI 95% -0.24 to 1.44)	⨁⊖⊖⊖[1234] Very low

General psychopathology SCL90-R GSI – EoT	1 study (23 participants)		Not calculable for SMD values	Standardized mean difference 0.92 (CI 95% 0.05 to 1.79)	⨁⊖⊖⊖[1234] Very low
Menstruation resumed – EoT	1 study (21 participants)	Risk ratio 2.93 (CI 95% 1.06 to 8.08)	Menstruation resumed: 273/1000	Menstruation resumed: 526 more per 1000 (from 16 more to 1000 more)	⨁⊖⊖⊖[1234] Very low
Remission Full and partial remission – 6 month follow up	1 study (23 participants)	Risk ratio 1.45 (CI 95% 0.74 to 2.85)	Achieved remission: 500/1000	Achieved remission: 225 more per 1000 (from 130 fewer to 925 more)	⨁⊖⊖⊖[1234] Very low
Weight	1 study (21 participants)		Not calculable for SMD values	Standardized mean difference -0.23 (CI 95% -1.09 to 0.63)	⨁⊖⊖⊖[1234] Very low
% EBW – 6 month follow up	1 study (21 participants)		Not calculable for SMD values	Standardized mean difference 0.43 (CI 95% -0.44 to 1.30)	⨁⊖⊖⊖[1234] Very low
Morgan-Russell Outcome - average score – 6 month follow up	1 study (21 participants)		Not calculable for SMD values	Standardized mean difference 0.05 (CI 95% -0.81 to 0.90)	⨁⊖⊖⊖[1234] Very low
EDI-2 – 6 month follow up	1 study (21 participants)		Not calculable for SMD values	Standardized mean difference 0.54 (CI 95% -0.34 to 1.41)	⨁⊖⊖⊖[1234] Very low
General psychopathology – 6 month follow up	1 study (21 participants)		Not calculable for SMD values	Standardized mean difference 0.78 (CI 95% -0.13 to 1.66)	⨁⊖⊖⊖[1234] Very low
Menstruation resumed – 6 month follow up	1 study (20 participants)	Risk ratio 2.14 (CI 95% 0.91 to 5.04)	Menstruation resumed: 364/1000	Menstruation resumed: 415 more per 1000 (from 33	⨁⊖⊖⊖[1234] Very low

					fewer to 1000 more)

1. Downgraded -1 due to risk of bias: unclear allocation concealment; no participant, investigator nor assessor blinding; EDI-2 and SCL-90-R GSI score significantly lower in FT group
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D24

Comparison 24: Family therapy approaches versus educational interventions in adolescents and young people with anorexia nervosa at follow up

Population: Females aged 13-27 with anorexia nervosa
Intervention: Outpatient therapy combining individual therapy and family therapy
Comparison: Dietary advice
Based on: Fisher, 2019
Primary study: Hall, 1987

Outcomes	**No of studies (participants)**	**Relative effect**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
			Risk with dietary advice	**Risk difference with family therapy**	
Remission – 9 month follow up	1 study (30 participants)	Risk ratio 9.00 (CI 95% 0.53 to 153.79)	Achieved remission: 0/15 (0%)	Achieved remission: 4/15 (27%)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to unclear or high risk of bias: Unclear methods of randomization and allocation. No blinding of participants and therapists, selective reporting
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: wide confidence interval

Table D25

Comparison 25: Family-based therapy versus family-based therapy plus parent coaching in children and adolescents with anorexia nervosa at end of treatment

Population: Children and adolescents aged 12-18
Intervention: Family-based therapy (phase 1 and 2 in Maudsley's FBT)
Comparison: Family-based therapy plus parent coaching (FBT+IPC)
Based on: Fisher, 2019
Primary study: Lock, 2015

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with FBT+IPC	Risk difference with FBT	
Remission – EoT	1 study (45 participants)	Risk ratio 1.03 (CI 95% 0.51 to 2.09)	Achieved remission: 17/35 (49%)	Achieved remission: 5/10 (50%)	⨁⊖⊖⊖[123] Very low
Dropouts – EoT	1 study (45 participants)	Risk ratio 1.00 (CI 95% 0.25 to 4.08)	Dropouts: 7/35 (20%)	Dropouts: 2/10 (20%)	⨁⊖⊖⊖[123] Very low
Eating disorder psychopathology EDE – EoT	1 study (36 participants)	Average (SD): 1.1 (1.4)	Not calculable for SMD values	Average (SD): 0.3 (0.4) Mean difference −0.80 (CI 95% −1.39 to −0.21)	⨁⊖⊖⊖[123] Very low
BMI – EoT	1 study (36 participants)	Average (SD): 19 (1.4)	Not calculable for SMD values	Average (SD): 18.9 (1.2) Mean difference −0.10 (CI 95% −1.08 to 0.88)	⨁⊖⊖⊖[123] Very low

1. Downgraded -2 due to unclear/high risk of bias
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants

Table D26

Comparison 26: Family-based therapy versus family-based therapy plus consultation in children and adolescents with anorexia nervosa at end of treatment

Population: Female adolescents aged 12-16 with anorexia nervosa
Intervention: Family-based therapy (Maydsley's FBT) with parent-to-parent consultations
Comparison: Family-based therapy (Maydsley's FBT) without parent-to-parent consultations
Based on: Fisher, 2019
Primary study: Rhodes, 2008

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with FBT	Risk difference with FBT + consultation	
Remission – EoT	1 study (20 participants)	Risk ratio 1.14 (CI 95% 0.69 to 1.90)	Achieved remission: 700/1000	Achieved remission: 800/1000	⨁⊖⊖⊖[123] Very low

1. Downgraded -1 due to risk of bias: unclear or no blinding, high drop-out rates, risk of selective reporting
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants

Table D27

Comparison 27: Psychotherapy versus treatment as usual in adolescents and adults with anorexia nervosa at end of treatment

Population: Adolescents and adults
Intervention: Psychotherapy
Comparison: Treatment as usual
Based on: van den Berg, 2019
Primary studies: Geist, 2000; Godart, 2012; Gowers, 2007; Hall, 1987; McIntosh, 2005; Russel, 1987; Serfaty, 1999; Wade, 2009

Outcomes	**No of comparisons (participants)**	**Relative effect**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
			Risk with TAU	**Risk difference with psychotherapy**	
Weight gain – EoT	5 comparisons (unknown)		Not calculable for SMD values	Standardized mean difference -0.18 (95% CI -0.41 to 0.06)	⨁⊖⊖⊖[123] Very low
Eating disorder symptoms – EoT	4 comparisons (unknown)		Not calculable for SMD values	Standardized mean difference -0.01 (95% -0.24 to 0.23)	⨁⊖⊖⊖[123] Very low

1. Downgraded -2 due to high risk of bias
2. Downgraded -1 due to lack of precision: unknown sample size
3. Risk of lack of precision: unknown number of studies

Neuropsychological interventions for anorexia nervosa

Table D28

Comparison 28: Cognitive remediation therapy versus historical control in children and adolescents with anorexia nervosa at end of treatment

Population: Children and adolescents under the age of 18 with anorexia nervosa
Intervention: Individual and group-based cognitive remediation therapy
Control: Historical control
Based on: Tchanturia, 2017
Primary studies: Harrison, 2018; Herbrich, 2017; Giombini, 2017, 2018; van Noort, 2015, 2016; Dahlgren, 2013, 2014; Pretorius, 2012

Outcomes	No of studies (participants)	Effect estimates	Quality of evidence (GRADE)
Set shifting	4 studies (125 participants)	Standardized mean change -0.03 (CI 95% -0.48 to 0.43)	⨁⊖⊖⊖[12] Very low
Central coherence	6 studies (272 participants)	Standardized mean change 0.41 (CI 95% 0.29 to 0.54)	⨁⊖⊖⊖[12] Very low
Executive function BRIEF	4 studies (148 participants)	Standardized mean change 0.32 (CI 95% 0.19 to 0.44)	⨁⊖⊖⊖[12] Very low
Metacognitive Index BRIEF	4 studies (148 participants)	Standardized mean change 0.36 (CI 95% 0.19 to 0.53)	⨁⊖⊖⊖[12] Very low
Behavioral Regulation Index BRIEF	4 studies (148 participants)	Standardized mean change 0.31 (CI 95% 0.13 to 0.48)	⨁⊖⊖⊖[12] Very low

1. Downgraded -2 due to serious limitations in study design: non-RCT
2. Downgraded -1 due to lack of precision: <400 participants

Interventions targeting carers for anorexia nervosa

Table D29

Comparison 29: Self-help or guided self-help and treatment as usual versus treatment as usual for carers of children and adolescents with anorexia nervosa at 12 months after referral for outpatient treatment

Population: Children and adolescents (mean age 16.9 years) with anorexia nervosa
Intervention: Treatment as usual (TAU) and guided self-help targeting parents (Experienced Carers Helping Others, ECHO)
Comparison: Treatment as usual
Based on: NICE, 2017
Primary study: Salerno, 2016

Outcomes	No of studies (participants)	Anticipated absolute effects		Quality of evidence (GRADE)
		Risk with TAU	Risk difference with TAU and ECHO	
Patient general psychopathology DASS-21. Scale from 0 to 126	1 study (149 participants)	Not calculable for SMD values	Standardized mean difference -0.09 (CI 95% -0.43 to 0.25)	⨁⊖⊖⊖[123] Very low

1. Downgraded -1 due to risk of bias: no participant blinding; dropout rate of TAU group >20%. Unclear whether baseline demographic and clinical features similar. 50 carer-patient dyads received ECHO with guidance, 49 carer-patient dyads received ECHO without guidance
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants

Resistance training for anorexia nervosa

Table D30

Comparison 30: Resistance training and treatment as usual versus treatment as usual in children and adolescents with anorexia nervosa restricting at end of treatment and follow up

Population: Children and adolescents aged 12-16 with anorexia nervosa restricting type
Intervention: Resistance training and treatment as usual (TAU)
Comparison: Treatment as usual (TAU)
Based on: NICE, 2017
Primary studies: Del Valle 2010; del Valle 2014

Outcomes	No of studies (participants)	Anticipated absolute effects		Quality of evidence (GRADE)
		Risk with TAU	Risk difference with resistance training and TAU	
BMI – EoT	2 studies (64 participants)	Not calculable for SMD values	Standardized mean difference -0.21 (CI 95% -0.70 to 0.29)	⨁⨁⊖⊖[124] Low
Quality of life SF-36 Physical – EoT	1 study (22 participants)	Not calculable for SMD values	Standardized mean difference 0.51 (CI 95% -0.34 to 1.36)	⨁⊖⊖⊖[1234] Very low
Quality of life SF-36 Mental – EoT	1 study (22 participants)	Not calculable for SMD values	Standardized mean difference 0.25 (CI 95% -0.58 to 1.09)	⨁⊖⊖⊖[1234] Very low
BMI – 4 week follow up	1 study (36 participants)	Not calculable for SMD values	Standardized mean difference -0.53 (CI 95% -1.19 to 0.14)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: unclear methods of randomization and allocation. Unclear or no blinding procedures. Unclear whether baseline similar.
2. Downgraded -1 due to lack of precision: <400 participants
3. Downgraded -1 due to lack of precision: only 1 study
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Inpatient care for anorexia nervosa

Table D31

Comparison 31: Inpatient care for weight restoration versus active outpatient, or combined brief hospital and outpatient care in children, adolescents and young people with anorexia nervosa at end of treatment and follow up

Population: Children, adolescents and young people aged 11-23 with anorexia nervosa
Intervention: Specialist inpatient care
Comparison: Outpatient care or combined brief hospital and outpatient care
Based on: Hay, 2019
Primary studies: Crisp, 1991; Gowers, 2010; Madden, 2015

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with outpatient care	Risk difference with inpatient care	
Weight/BMI – EoT	2 studies (232 participants)		Not calculable for SMD values	Standardized mean difference -0.22 (CI 95 % -0.49 to 0.05)	⨁⨁⊖⊖[14] Low
Acceptability: Number of participants who completed treatment – EoT	3 studies (319 participants)	Risk ratio 0.75 (CI 95 % 0.64 to 0.88)	Acceptability: 150/191 (79%)	Acceptability: 79/128 (62%)	⨁⊖⊖⊖[124] Very low
Clinical response: Weight restoration to within normal range – EoT	1 study (82 participants)	Risk ratio 1.06 (CI 95% 0.65 to 1.70)	Weight restoration: 18/41 (44%)	Weight restoration: 19/41 (46%)	⨁⨁⊖⊖[13] Low
Recovery: Morgan-Russell intermediate or better – EoT	2 studies (234 participants)	Risk ratio 0.93 (CI 95% 0.73 to 1.17)	Recovery: 89/146 (61%)	Recovery: 49/88 (56%)	⨁⊖⊖⊖[12] Very low

Depression: Severity – EoT	2 studies (196 participants)	Not calculable for SMD values	Standardized mean difference -0.20 (CI 95% -0,49 to 0,10)	⨁⊖⊖⊖[12] Very low
General psychiatric symptoms: severity – EoT	2 studies (227 participants)	Not calculable for MD values	Mean difference -0,17 (CI 95% -1,04 to 0,69)	⨁⊖⊖⊖[12] Very low
Weight/BMI – 1 year after EoT or 2 years after baseline	1 study (102 participants)	Not calculable for MD values	Mean difference -3,72 kg (CI 95% -8,96 to 1,52)	⨁⊖⊖⊖[123] Very low

1. Downgraded -1 due to lack of precision: <400 participants
2. Downgraded -2 due to high risk of bias: unclear methods of randomization and allocation, no blinding, and high drop out rates
3. Downgraded -1 due to lack of precision: only 1 study
4. Downgraded -1 due to indirectness: variable level of specialist qualifications and treatment intensity in comparison group

Table D32

Comparison 32: Specialist inpatient care for weight restoration versus partial hospital care in children and adolescents with anorexia nervosa at end of treatment and follow up

Population: Female children and adolescents aged 11-18 with anorexia nervosa
Intervention: Specialist inpatient care for weight restoration
Comparison: Partial hospital care
Based on: Hay, 2019
Primary studies: Herpertz-Dahlmann, 2014

Outcomes	**No of studies (participants)**	**Relative effect**	**Anticipated absolute effects**

			Risk with partial hospital care	Risk difference with specialist inpatient care	Quality of evidence (GRADE)
Weight/BMI – EoT	1 study (161 participants)		Not calculable for MD values	Mean difference -0.30 (CI 95% -0.87 to 0.27)	⨁⊖⊖⊖[123] Very low
Acceptability: Number of participants who completed treatment	1 study (172 participants)	Risk ratio 1.07 (CI 95% 1.01 to 1.14)	Acceptability: 81/87 (93%)	Acceptability: 85/85 (100%)	⨁⊖⊖⊖[123] Very low
Clinical response: Weight restoration to within normal range – EoT	1 study (172 participants)	Risk ratio 0.99 (CI 95% 0.85 to 1.16)	Weight restoration: 69/87 (79%)	Weight restoration: 67/85 (79%)	⨁⊖⊖⊖[123] Very low
Recovery: Morgan-Russell intermediate or better – EoT	1 study (167 participants)	Risk ratio 0,96 (CI 95% 0,66 to 1,40)	Recovery: 33/82 (40%)	Recovery: 33/85 (39%)	⨁⊖⊖⊖[123] Very low
General psychiatric symptoms: Incidence – EoT	1 study (140 participants)		Not calculable for MD values	Mean difference -2,10 (CI 95% -3,05 to -1,15)	⨁⊖⊖⊖[123] Very low

1. Downgraded -1 due to risk of bias: no blinding, unclear selective reporting
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants

Psychological treatment for bulimia nervosa

Table D33

Comparison 33: CBT-ED versus any other intervention in children, adolescents and young people with bulimia nervosa at the end of treatment and follow up

Population: Children, adolescents and young people aged 12-20 with bulimia nervosa or EDNOS
Intervention: CBT-ED and guided self-help
Comparison: Family therapy (FBT-BN or FT-ED) or supportive psychotherapy (SPT)
Based on: NICE, 2017
Primary studies: Le Grange, 2015; Schmidt, 2007

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with FBT-BN / FT-ED / SPT	Risk difference with CBT-ED and guided self-help	
Purges – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference 0.33 (CI 95% -0.10 to 0.75)	⨁⊖⊖⊖[1235] Very low
Binges objective – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference 0.23 (CI 95% -0.20 to 0.65)	⨁⊖⊖⊖[1235] Very low
Depression – EoT	1 study (110 participants)		Not calculable for SMD values	Standardized mean difference 0.43 (CI 95% 0.00 to 0.86)	⨁⊖⊖⊖[1235] Very low
EDE Total score – EoT	1 study (110 participants)		Not calculable for SMD values	Standardized mean difference 0.28 (CI 95% -0.15 to 0.70)	⨁⊖⊖⊖[1235] Very low
Remission – EoT	2 studies (215 participants)	Risk ratio 1.54 (CI 95% 0.96 to 2.47)	Achieved remission: 186/1000	Achieved remission: 100 more per 1000 (from 7 fewer to 273 more)	⨁⊖⊖⊖[1245] Very low

Purges – 6 month follow up	1 study (69 participants)		Not calculable for SMD values	Standardized mean difference 0.00 (CI 95% -0.48 to 0.48)	⨁⊖⊖⊖[123] Very low
Binge episodes – 6 month follow up	1 study (69 participants)		Not calculable for SMD values	Standardized mean difference -0.06 (CI 95% -0.54 to 0.42)	⨁⊖⊖⊖[123] Very low
Remission – 6 month follow up	2 studies (215 participants)	Risk ratio 0.85 (CI 95% 0.56 to 1.30)	Achieved remission: 363/1000	Achieved remission: 54 fewer per 1000 (from 160 fewer to 109 more)	⨁⊖⊖⊖[1245] Very low

1. Downgraded -1 due to risk of bias: unclear methods of randomization, no blinding
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Downgraded -1 due to lack of directness: Sample in one study consists of 61 bulimia nervosa and 24 EDNOS
5. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D34

Comparison 34: Family therapy for eating disorders versus any individual therapy in children, adolescents and young people with bulimia nervosa at end of treatment and follow up

Population: Children, adolescents and young people aged 12-20 with bulimia nervosa
Intervention: Maudsley's model for family therapy or family-based therapy for bulimia nervosa (FBT-BN)
Comparison: CBT guided self-care, supportive therapy or cognitive behavioral therapy for adolescents (CBT-A)
Based on: NICE, 2017
Primary studies: Le Grange, 2007; Le Grange, 2015; Schmidt, 2007

Outcomes	**No of studies (participants)**	**Relative effect**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
			Risk with individual therapy	**Risk difference with family therapy**	

Remission – EoT	3 studies (295 participants)	Risk ratio 1.27 (CI 95% 0.87 to 1.86)	Achieved remission: 248/1000	Achieved remission: 67 more per 1000 (from 32 fewer to 214more)	⨁⨀⨀⨀[1235] Very low
Binge frequency – EoT	2 studies (157 participants)		Not calculable for SMD values	Standardized mean difference -0.09 (CI 95% -0.40 to 0.23)	⨁⨁⨀⨀[13] Low
Abstinence from vomiting EATATE – EoT	1 study (63 participants)	Risk ratio 0.87 (CI 95% 0.41 to 1.85)	Abstinence from vomiting: 323/1000	Abstinence from vomiting: 42 fewer per 1000 (from 190 fewer to 274 more	⨁⨀⨀⨀[12345] Very low
Purge frequency – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference -0.33 (CI 95% -0.75 to 0.10)	⨁⨀⨀⨀[1345] Very low
Vomit frequency EDE – EoT	1 study (71 participants)		Not calculable for SMD values	Standardized mean difference -0.64 (CI 95% -1.12 to -0.16)	⨁⨀⨀⨀[1345] Very low
EDE Global – EoT	2 studies (155 participants)		Not calculable for SMD values	Standardized mean difference -0.38 (CI 95% -0.69 to -0.06)	⨁⨁⨀⨀[135] Low
EDE Restraint – EoT	1 study (71 participants)		Not calculable for SMD values	Standardized mean difference -0.51 (CI 95% -0.98 to -0.04)	⨁⨀⨀⨀[1345] Very low
EDE Shape Concern – EoT	1 study (71 participants)		Not calculable for SMD values	Standardized mean difference -0.54 (CI 95% -1.01 to 0.07)	⨁⨀⨀⨀[1345] Very low
EDE Weight Concern – EoT	1 study (71 participants)		Not calculable for SMD values	Standardized mean difference -0.48 (CI 95% -0.95 to -0.01)	⨁⨀⨀⨀[1345] Very low
Yale-Brown-Cornell Eating Disorder Scale – EoT	1 study (86 participants)		Not calculable for SMD values	Standardized mean difference -0.36 (CI 95% -0.78 to 0.07)	⨁⨀⨀⨀[1345] Very low

Depression BDI – EoT	2 studies (157 participants)		Not calculable for SMD values	Standardized mean difference -0.28 (CI 95% -0.60 to 0.03)	⨁⨁⨀⨀[135] Low
Hospitalized during treatment phase	1 study (109 participants)	Risk ratio 0.09 (CI 95% 0.01 to 0.70)	Hospitalizations: 207/1000	Hospitalizations: 188 fewer per 1000 (from 62 fewer to 205 fewer)	⨁⨀⨀⨀[1345] Very low
Service User Experience Helping Relationship Questionnaire – EoT	1 study (68 participants)		Not calculable for SMD values	Standardized mean difference 0.06 (CI 95% -0.42 to 0.53)	⨁⨀⨀⨀[1345] Very low
Remission – follow up	2 studies (215 participants)	Risk ratio 1.69 (CI 95% 1.11 to 2.57)	Achieved remission: 254/1000	Achieved remission: 175 more per 1000 (from 28 more to 399 more)	⨁⨀⨀⨀[1235] Very low
Binge frequency – follow up	2 studies (137 participants)		Not calculable for SMD values	Standardized mean difference -0.10 (CI 95% -0.44 to 0.24)	⨁⨁⨀⨀[13] Low
Abstinence from vomiting EATATE – follow up	1 study (54 participants)	Risk ratio 0.92 (CI 95% 0.56 to 1.51)	Abstinence from vomiting: 560/1000	Abstinence from vomiting: 45 fewer per 1000 (from 246 fewer to 286 more)	⨁⨀⨀⨀[1345] Very low
Purge frequency – follow up	1 study (69 participants)		Not calculable for SMD values	Standardized mean difference 0.00 (CI 95% -0.48 to 0.48)	⨁⨀⨀⨀[134] Very low
Vomit frequency EDE – follow up	1 study (68 participants)		Not calculable for SMD values	Standardized mean difference -0.17 (CI 95% -0.65 to 0.30)	⨁⨀⨀⨀[1345] Very low
EDE Global – follow up	2 studies (137 participants)		Not calculable for SMD values	Standardized mean difference -0.38 (CI 95% -0.72 to -0.04)	⨁⨁⨀⨀[135] Low

EDE Restraint – follow up	1 study (68 participants)	Not calculable for SMD values	Standardized mean difference -0.38 (CI 95% -0.86 to 0.10)	⨁⨀⨀⨀[1345] Very low
EDE Shape Concern – follow up	1 study (68 participants)	Not calculable for SMD values	Standardized mean difference -0.58 (CI 95% -1.06 to -0.09)	⨁⨀⨀⨀[1345] Very low
EDE Weight Concern – follow up	1 study (68 participants)	Not calculable for SMD values	Standardized mean difference -0.46 (CI 95% -0.94 to 0.02)	⨁⨀⨀⨀[1345] Very low
Yale-Brown-Cornell Eating Disorder Scale – follow up	1 study (69 participants)	Not calculable for SMD values	Standardized mean difference -0.37 (CI 95% -0.85 to 0.11)	⨁⨀⨀⨀[1345] Very low
Depression – follow up	2 studies (137 participants)	Not calculable for SMD values	Standardized mean difference -0.10 (CI 95% -0.43 to 0.24)	⨁⨁⨀⨀[13] Low
Service User Experience Helping Relationship Questionnaire – follow up	1 study (71 participants)	Not calculable for SMD values	Standardized mean difference -0.41 (CI 95% -0.88 to 0.06)	⨁⨀⨀⨀[1345] Very low

1. Downgraded -1 due to high risk of bias: unclear methods of randomization and allocation, no blinding
2. Downgraded -1 due to lack of directness: Sample consists of 61 bulimia nervosa and 24 EDNOS
3. Downgraded -1 due to lack of precision: <400 participants
4. Downgraded -1 due to lack of precision: only 1 study
5. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Psychological treatment of binge eating disorder

Table D35

Comparison 35: CBT-ED versus another intervention in adolescents with binge eating disorder at end of treatment

Population: Female adolescents aged 12-18 with binge eating disorder
Intervention: Cognitive behavioral therapy adapted to adolescents with binge eating disorder (CBT-ED)
Comparison: Treatment as usual or waiting list
Based on: NICE, 2017
Primary study: DeBar, 2013

Outcomes	No of studies (participants)	Relative effect	Anticipated absolute effects		Quality of evidence (GRADE)
			Risk with TAU / waiting list	Risk difference with CBT-ED	
BMI	1 study (26 participants)		Not calculable for SMD values	Standardized mean difference 0.02 (CI 95% -0.75 to 0.79)	⨁⊖⊖⊖[1234] Very low
Depression	1 study (26 participants)		Not calculable for SMD values	Standardized mean difference -1.08 (CI 95% -1.91 to -0.25)	⨁⊖⊖⊖[1234] Very low
EDE Dietary restraint	1 study (26 participants)		Not calculable for SMD values	Standardized mean difference -0.65 (CI 95% -1.44 to 0.15)	⨁⊖⊖⊖[123] Very low
EDE Eating concerns	1 study (26 participants)		Not calculable for SMD values	Standardized mean difference -1.41 (CI 95% -2.29 to -0.54)	⨁⊖⊖⊖[123] Very low
EDE Shape concerns	1 study (26 participants)		Not calculable for SMD values	Standardized mean difference 0.11 (CI 95% -0.66 to 0.88)	⨁⊖⊖⊖[1234] Very low
EDE Weight concerns	1 study (26 participants)		Not calculable for SMD values	Standardized mean difference -0.30 (CI 95% -1.07 to 0.48)	⨁⊖⊖⊖[1234] Very low

Social adjustment	1 study (26 participants)		Not calculable for SMD values	Standardized mean difference -0.52 (CI 95% -1.30 to 0.27)	⨁⊖⊖⊖[1234] Very low
Remission ITT	1 study (26 participants)	Risk ratio 2.00 (CI 95% 0.95 to 4.23)	Achieved remission: 385/1000	Achieved remission: 385 more per 1000 (from 19 fewer to 1000 more)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: Unclear methods of allocation, unclear whether participants and investigators were blind
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (SMD: -0.5 or 0.5/RR: 0.75 or 1.25)

Table D36

Comparison 36: Internet self-help versus wait list controls in adolescents with binge eating disorder at end of treatment and follow up

Population: Adolescents (average age 15.1 years) with binge eating disorder
Intervention: Internet-based self-help (ED)
Comparison: Waiting list
Based on: NICE, 2017
Primary study: Jones, 2008

Outcomes	**No of studies (participants)**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
		Risk with waiting list	**Risk difference with ED**	
BMI – EoT	1 study (93 participants)	Not calculable for SMD values	Standardized mean difference -0.21 (CI 95% -0.62 to 0.20)	⨁⊖⊖⊖[1234] Very low

Depression – EoT	1 study (93 participants)	Not calculable for SMD values	Standardized mean difference -0.32 (CI 95% -0.72 to 0.09)	⨁⊖⊖⊖[1234] Very low
BMI – follow up	1 study (93 participants)	Not calculable for SMD values	Standardized mean difference -0.27 (CI 95% -0.67 to 0.14)	⨁⊖⊖⊖[1234] Very low
Depression – follow up	1 study (93 participants)	Not calculable for SMD values	Standardized mean difference 0.17 (CI 95% -0.24 to 0.58)	⨁⊖⊖⊖[1234] Very low

1. Downgraded -1 due to risk of bias: Unclear methods of allocation, unclear or no blinding
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Psychological treatment for unspecified eating disorder

Table D37

Comparison 37: Group psychoeducation versus treatment as usual for adolescents and young people with disturbed eating and type I diabetes at end of treatment and follow up

Population: Female children, adolescents and young people aged 12-20 with disturbed eating and type I diabetes
Intervention: Group psychoeducation and treatment as usual (TAU)
Comparison: Treatment as usual (TAU)
Based on: NICE, 2017
Primary study: Olmsted, 2002

Outcomes	**No of studies (participants)**	**Anticipated absolute effects**		**Quality of evidence (GRADE)**
		Risk with TAU	**Risk difference with psychoeducation and TAU**	

EDE Objective Binge Episodes – EoT	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.13 (CI 95% -0.56 to 0.31)	⨁⊖⊖⊖[1234] Very low
EDE Restraint – EoT	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.33 (CI 95% -0.77 to 0.10)	⨁⊖⊖⊖[1234] Very low
EDE Eating Concerns – EoT	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.32 (CI 95% -0.75 to 0.12)	⨁⊖⊖⊖[1234] Very low
EDE Shape Concerns – EoT	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.07 (CI 95% -0.50 to 0.36)	⨁⊖⊖⊖[1234] Very low
EDE Weight Concerns – EoT	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.15 (CI 95% -0.58 to 0.28)	⨁⊖⊖⊖[1234] Very low
EDI Drive for Thinness – EoT	1 study (81 participants)	Not calculable for SMD values	Standardized mean difference -0.28 (CI 95% -0.73 to 0.17)	⨁⊖⊖⊖[1234] Very low
EDI Bulimia – EoT	1 study (81 participants)	Not calculable for SMD values	Standardized mean difference -0.35 (CI 95% -0.80 to 0.10)	⨁⊖⊖⊖[1234] Very low
EDI Body Dissatisfaction – EoT	1 study (81 participants)	Not calculable for SMD values	Standardized mean difference -0.38 (CI 95% -0.83 to 0.07)	⨁⊖⊖⊖[1234] Very low
Insulin omission days – EoT	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference 0.17 (CI 95% -0.26 to 0.60)	⨁⊖⊖⊖[1234] Very low
HbA1c Level (%) – EoT	1 study (82 participants)	Not calculable for SMD values	Standardized mean difference 0.00 (CI 95% -0.44 to 0.44)	⨁⊖⊖⊖[123] Very low
EDE Objective Binge Episodes – follow up	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.34 (CI 95% -0.78 to 0.09)	⨁⊖⊖⊖[1234] Very low

EDE Restraint – follow up	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference 0.00 (CI 95% -0.43 to 0.43)	⨁⊖⊖⊖[123] Very low
EDE Overeating – follow up	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.22 (CI 95% -0.66 to 0.21)	⨁⊖⊖⊖[1234] Very low
EDE Eating Concerns – follow up	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.25 (CI 95% -0.69 to 0.18)	⨁⊖⊖⊖[123] Very low
EDE Shape Concerns – follow up	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.07 (CI 95% -0.50 to 0.36)	⨁⊖⊖⊖[1234] Very low
EDE Weight Concerns – follow up	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference -0.08 (CI 95% -0.51 to 0.36)	⨁⊖⊖⊖[1234] Very low
EDI Drive for Thinness – follow up	1 study (81 participants)	Not calculable for SMD values	Standardized mean difference -0.03 (CI 95% -0.48 to 0.41)	⨁⊖⊖⊖[123] Very low
EDI Bulimia – follow up	1 study (81 participants)	Not calculable for SMD values	Standardized mean difference -0.34 (CI 95% -0.79 to 0.11)	⨁⊖⊖⊖[1234] Very low
EDI Body Dissatisfaction – follow up	1 study (81 participants)	Not calculable for SMD values	Standardized mean difference -0.13 (CI 95% -0.58 to 0.31)	⨁⊖⊖⊖[1234] Very low
Insulin omission days – follow up	1 study (85 participants)	Not calculable for SMD values	Standardized mean difference 0.04 (CI 95% -0.40 to 0.47)	⨁⊖⊖⊖[123] Very low
HbA1c Level (%) – follow up	1 study (82 participants)	Not calculable for SMD values	Standardized mean difference 0.00 (CI 95% -0.44 to 0.44)	⨁⊖⊖⊖[123] Very low

1. Downgraded -1 due to risk of bias: unclear methods of randomization, no blinding, unclear how many completed the intervention
2. Downgraded -1 due to lack of precision: only 1 study
3. Downgraded -1 due to lack of precision: <400 participants
4. Lack of precision: CI crosses both line for no effect and clinically significant risk and/or benefit (-0.5 or 0.5)

Appendix E - Primary studies

Agras, W. S., Lock, J., Brandt, H., Bryson, S. W., Dodge, E., Halmi, K. A., Jo, B., Johnson, C., Kaye, W., Wilfley, D., & Woodside, B. (2014). Comparison of 2 family therapies for adolescent anorexia nervosa: A randomized parallel trial. *JAMA Psychiatry*, *71*(11), 1279–1286. https://doi.org/10.1001/jamapsychiatry.2014.1025
Atkinson, M. J., & Wade, T. D. (2016). Does mindfulness have potential in eating disorders prevention? A preliminary controlled trial with young adult women. *Early Intervention in Psychiatry*, *10*(3), 234–245. https://doi.org/10.1111/eip.12160
Bearman, S. K., Stice, E., & Chase, A. (2003). Evaluation of an Intervention Targeting Both Depressive and Bulimic Pathology: A Randomized Prevention Trial. *Behavior therapy*, *34*(3), 277–293. https://doi.org/10.1016/S0005-7894(03)80001-1
Becker, C. B., Smith, L. M., & Ciao, A. C. (2005). Reducing eating disorder risk factors in sorority members: A randomized trial. *Behavior Therapy*, *36*(3), 245-253. https://doi.org/10.1016/S0005-7894(05)80073-5
Becker, C. B., Smith, L. M., & Ciao, A. C. (2006). Peer-facilitated eating disorder prevention: A randomized effectiveness trial of cognitive dissonance and media advocacy. *Journal of Counseling Psychology, 53*(4), 550. 10.1037/0022-0167.53.4.550
Becker, C. B., Bull, S., Schaumberg, K., Cauble, A., & Franco, A. (2008). Effectiveness of peer-led eating disorders prevention: a replication trial. *Journal of Consulting and Clinical Psychology*, *76*(2), 347–354. https://doi.org/10.1037/0022-006X.76.2.347
Becker, C. B., Wilson, C., Williams, A., Kelly, M., McDaniel, L., & Elmquist, J. (2010). Peer-facilitated cognitive dissonance versus healthy weight eating disorders prevention: A randomized comparison. *Body Image*, *7*(4), 280–288. https://doi.org/10.1016/j.bodyim.2010.06.004
Becker, C. B., McDaniel, L., Bull, S., Powell, M., & McIntyre, K. (2012). Can we reduce eating disorder risk factors in female college athletes? A randomized exploratory investigation of two peer-led interventions. *Body Image*, *9*(1), 31–42. https://doi.org/10.1016/j.bodyim.2011.09.005
Boivin, M. K., Polivy, J., & Herman, C. P. (2008). An intervention to modify expectations of unrealistic rewards from thinness. *Eating disorders*, *16*(2), 160–179. https://doi.org/10.1080/10640260801887329
Buchholz, A., Mack, H., McVey, G., Feder, S., & Barrowman, N. (2008). BodySense: An evaluation of a positive body image intervention on sport climate for female athletes. *Eating Disorders*, *16*(4), 308–321. https://doi.org/10.1080/10640260802115910
Buddeberg-Fischer, B., Klaghofer, R., Gnam, G., & Buddeberg, C. (1998). Prevention of disturbed eating behaviour: a prospective intervention study in 14- to 19-year-old Swiss students. *Acta psychiatrica Scandinavica*, *98*(2), 146–155. https://doi.org/10.1111/j.1600-0447.1998.tb10057.x
Butters, J. W., & Cash, T. F. (1987). Cognitive-behavioral treatment of women's body-image dissatisfaction. *Journal of consulting and clinical psychology*, *55*(6), 889–897. https://doi.org/10.1037//0022-006x.55.6.889

Canetti, L., Bachar, E., Gur, E., & Stein, D. (2009). The influence of a primary prevention program on eating-related attitudes of Israeli female middle-school students. *Journal of Adolescence, 32*(2), 275-291. https://doi.org/10.1016/j.adolescence.2008.03.007
Celio, A. A., Winzelberg, A. J., Wilfley, D. E., Eppstein-Herald, D., Springer, E. A., Dev, P., & Taylor, C. B. (2000). Reducing risk factors for eating disorders: comparison of an Internet- and a classroom-delivered psychoeducational program. *Journal of Consulting and Clinical Psychology*, *68*(4), 650–657.
Ciao, A. C., Accurso, E. C., Fitzsimmons-Craft, E. E., Lock, J., & Le Grange, D. (2015). Family functioning in two treatments for adolescent anorexia nervosa. *The International journal of eating disorders*, *48*(1), 81–90. https://doi.org/10.1002/eat.22314
Crisp, A. H., Norton, K., Gowers, S., Halek, C., Bowyer, C., Yeldham, D., Levett, G., & Bhat, A. (1991). A controlled study of the effect of therapies aimed at adolescent and family psychopathology in anorexia nervosa. *The British Journal of Psychiatry*, *159*, 325–333. https://doi.org/10.1192/bjp.159.3.325
Dahlgren, C. L., Lask, B., Landrø, N. I., & Rø, Ø. (2013). Neuropsychological functioning in adolescents with anorexia nervosa before and after cognitive remediation therapy: a feasibility trial. *The International journal of eating disorders*, *46*(6), 576–581. https://doi.org/10.1002/eat.22155
Dahlgren, C. L., Lask, B., Landrø, N. I., & Rø, Ø. (2014). Patient and parental self-reports of executive functioning in a sample of young female adolescents with anorexia nervosa before and after cognitive remediation therapy. *European Eating Disorders Review*, *22*(1), 45–52. https://doi.org/10.1002/erv.2265
Dalle Grave, R., De Luca, L., & Campello, G. (2001). Middle school primary prevention program for eating disorders: a controlled study with a twelve-month follow-up. *Eating disorders*, *9*(4), 327–337. https://doi.org/10.1080/106402601753454895
De León, M. E. P., Díaz, J. M., & Ruiz, E. C. (2008). A pilot study of the clinical and statistical significance of a program to reduce eating disorder risk factors in children. *Eating and Weight Disorders*, *13*(3), 111-118. 10.1007/BF03327611
Debar, L. L., Wilson, G. T., Yarborough, B. J., Burns, B., Oyler, B., Hildebrandt, T., Clarke, G. N., Dickerson, J., & Striegel, R. H. (2013). Cognitive behavioral treatment for recurrent binge eating in adolescent girls: A pilot trial. *Cognitive and Behavioral Practice*, *20*(2), 147–161. https://doi.org/10.1016/j.cbpra.2012.04.001
Delinsky, S. S., & Wilson, G. T. (2006). Mirror exposure for the treatment of body image disturbance. *The International Journal of Eating Disorders*, *39*(2), 108–116. https://doi.org/10.1002/eat.20207
Del Valle, M. F., Pérez, M., Santana-Sosa, E., Fiuza-Luces, C., Bustamante-Ara, N., Gallardo, C., Villaseñor, A., Graell, M., Morandé, G., Romo, G. R., López-Mojares, L. M., Ruiz, J. R., & Lucía, A. (2010). Does resistance training improve the functional capacity and well being of very young anorexic patients? A randomized controlled trial. *The Journal of adolescent health*, *46*(4), 352-358. https://doi.org/10.1016/j.jadohealth.2009.09.001
Dohnt, H. K., & Tiggemann, M. (2008). Promoting positive body image in young girls: An evaluation of 'Shapesville'. *European Eating Disorders Review*, *16*(3), 222–233. https://doi.org/10.1002/erv.814

Doyle, A. C., Goldschmidt, A., Huang, C., Winzelberg, A. J., Taylor, C. B., & Wilfley, D. E. (2008). Reduction of overweight and eating disorder symptoms via the Internet in adolescents: a randomized controlled trial. *The Journal of Adolescent Health*, *43*(2), 172–179. https://doi.org/10.1016/j.jadohealth.2008.01.011

Dworkin, S. H., & Kerr, B. A. (1987). Comparison of interventions for women experiencing body image problems. *Journal of Counseling Psychology*, *34*(2), 136. https://doi.org/10.1037/0022-0167.34.2.136

Eisler, I., Dare, C., Russell, G. F., Szmukler, G., le Grange, D., & Dodge, E. (1997). Family and individual therapy in anorexia nervosa. A 5-year follow-up. *Archives of General Psychiatry*, *54*(11), 1025–1030. https://doi.org/10.1001/archpsyc.1997.01830230063008

Eisler, I., Dare, C., Hodes, M., Russell, G., Dodge, E., & Le Grange, D. (2000). Family therapy for adolescent anorexia nervosa: the results of a controlled comparison of two family interventions. *Journal of Child Psychology and Psychiatry*, *41*(6), 727–736.

Eisler, I., Simic, M., Hodsoll, J., Asen, E., Berelowitz, M., Connan, F., Ellis, G., Hugo, P., Schmidt, U., Treasure, J., Yi, I., & Landau, S. (2016). A pragmatic randomised multi-centre trial of multifamily and single family therapy for adolescent anorexia nervosa. *BMC Psychiatry*, *16*(1), 422. https://doi.org/10.1186/s12888-016-1129-6

Elliot, D. L., Moe, E. L., Goldberg, L., DeFrancesco, C. A., Durham, M. B., & Hix-Small, H. (2006). Definition and outcome of a curriculum to prevent disordered eating and body-shaping drug use. *The Journal of School Health*, *76*(2), 67–73. https://doi.org/10.1111/j.1746-1561.2006.00070.x

Elliot, D. L., Goldberg, L., Moe, E. L., Defrancesco, C. A., Durham, M. B., & Hix-Small, H. (2004). Preventing substance use and disordered eating: initial outcomes of the ATHENA (athletes targeting healthy exercise and nutrition alternatives) program. *Archives of Pediatrics & Adolescent Medicine*, *158*(11), 1043–1049. https://doi.org/10.1001/archpedi.158.11.1043

Favaro, A., Zanetti, T., Huon, G., & Santonastaso, P. (2005). Engaging teachers in an eating disorder preventive intervention. *The International Journal of Eating Disorders*, *38*(1), 73–77. https://doi.org/10.1002/eat.20148

Fernandez-del-Valle, M., Larumbe-Zabala, E., Villaseñor-Montarroso, A., Cardona Gonzalez, C., Diez-Vega, I., Lopez Mojares, L. M., & Perez Ruiz, M. (2014). Resistance training enhances muscular performance in patients with anorexia nervosa: a randomized controlled trial. *The International journal of eating disorders*, *47*(6), 601–609. https://doi.org/10.1002/eat.22251

Franko, D. L., Mintz, L. B., Villapiano, M., Green, T. C., Mainelli, D., Folensbee, L., Butler, S. F., Davidson, M. M., Hamilton, E., Little, D., Kearns, M., & Budman, S. H. (2005). Food, mood, and attitude: Reducing risk for eating disorders in college women. *Health psychology*, *24*(6), 567–578. https://doi.org/10.1037/0278-6133.24.6.567

Geist, R., Heinmaa, M., Stephens, D., Davis, R., & Katzman, D. K. (2000). Comparison of family therapy and family group psychoeducation in adolescents with anorexia nervosa. *Canadian journal of psychiatry*, *45*(2), 173–178. https://doi.org/10.1177/070674370004500208

Giombini, L., Moynihan, J., Turco, M., & Nesbitt, S. (2017). Evaluation of individual cognitive remediation therapy (CRT) for the treatment of young people with anorexia nervosa. *Eating and weight disorders*, *22*(4), 667–673. https://doi.org/10.1007/s40519-016-0322-4

Giombini, L., Nesbitt, S., Waples, L., Finazzi, E., Easter, A., & Tchanturia, K. (2018). Young people's experience of individual cognitive remediation therapy (CRT) in an inpatient eating disorder service: A qualitative study. *Eating and Weight Disorders*, *23*(4). 10.1007/s40519-017-0369-x.

Godart, N., Berthoz, S., Curt, F., Perdereau, F., Rein, Z., Wallier, J., Horreard, A. S., Kaganski, I., Lucet, R., Atger, F., Corcos, M., Fermanian, J., Falissard, B., Flament, M., Eisler, I., & Jeammet, P. (2012). A randomized controlled trial of adjunctive family therapy and treatment as usual following inpatient treatment for anorexia nervosa adolescents. *PloS one*, *7*(1), e28249. https://doi.org/10.1371/journal.pone.0028249

Gollings, E. K., & Paxton, S. J. (2006). Comparison of internet and face-to-face delivery of a group body image and disordered eating intervention for women: A pilot study. *Eating disorders*, *14*(1), 1–15. https://doi.org/10.1080/10640260500403790

González, M., Penelo, E., Gutiérrez, T., & Raich, R. M. (2011). Disordered eating prevention programme in schools: A 30-month follow-up. *European eating disorders review*, *19*(4), 349–356. https://doi.org/10.1002/erv.1102

Gowers, S. G., Clark, A. F., Roberts, C., Byford, S., Barrett, B., Griffiths, A., Edwards, V., Bryan, C., Smethurst, N., Rowlands, L., & Roots, P. (2010). A randomised controlled multicentre trial of treatments for adolescent anorexia nervosa including assessment of cost-effectiveness and patient acceptability - the TOuCAN trial. *Health Technology Assessment*, *14*(15), 1–98. https://doi.org/10.3310/hta14150

Gowers, S. G., Clark, A., Roberts, C., Griffiths, A., Edwards, V., Bryan, C., Smethurst, N., Byford, S., & Barrett, B. (2007). Clinical effectiveness of treatments for anorexia nervosa in adolescents: Randomised controlled trial. *The British journal of psychiatry*, *191*, 427–435. https://doi.org/10.1192/bjp.bp.107.036764

Green, M., Scott, N., Diyankova, I., & Gasser, C. (2005). Eating disorder prevention: An experimental comparison of high level dissonance, low level dissonance, and no-treatment control. *Eating disorders*, *13*(2), 157–169. https://doi.org/10.1080/10640260590918955

Hall, A., & Crisp, A. (1987). Brief psychotherapy in the treatment of anorexia nervosa: Outcome at one year. *British Journal of Psychiatry*, *151*(2), 185-191. doi:10.1192/bjp.151.2.185

Harrison, A., Stavri, P., Ormond, L., McEnemy, F., Akyol, D., Qureshi, A., & Al-Khairulla, H. (2018). Cognitive remediation therapy for adolescent inpatients with severe and complex anorexia nervosa: A treatment trial. *European eating disorders review*, *26*(3), 230–240. https://doi.org/10.1002/erv.2584

Heinicke, B. E., Paxton, S. J., McLean, S. A., & Wertheim, E. H. (2007). Internet-delivered targeted group intervention for body dissatisfaction and disordered eating in adolescent girls: A randomized controlled trial. *Journal of abnormal child psychology*, *35*(3), 379-391. https://doi.org/10.1007/s10802-006-9097-9

Herbrich, L., van Noort, B., Pfeiffer, E., Lehmkuhl, U., Winter, S., & Kappel, V. (2017). Follow-up assessment of cognitive remediation rherapy in adolescent anorexia nervosa: A pilot study. *European eating disorders review*, *25*(2), 104–113. https://doi.org/10.1002/erv.2501
Herpertz-Dahlmann, B., Schwarte, R., Krei, M., Egberts, K., Warnke, A., Wewetzer, C., Pfeiffer, E., Fleischhaker, C., Scherag, A., Holtkamp, K., Hagenah, U., Bühren, K., Konrad, K., Schmidt, U., Schade-Brittinger, C., Timmesfeld, N., & Dempfle, A. (2014). Day-patient treatment after short inpatient care versus continued inpatient treatment in adolescents with anorexia nervosa (ANDI): A multicentre, randomised, open-label, non-inferiority trial. *Lancet*, *383*(9924), 1222–1229. https://doi.org/10.1016/S0140-6736(13)62411-3
Herscovici, C. R., Kovalskys, I., & Orellana, L. (2017). An exploratory evaluation of the family meal intervention for adolescent anorexia nervosa. *Family process*, *56*(2), 364–375. https://doi.org/10.1111/famp.12199
Irving, L. M., & Berel, S. R. (2001). Comparison of media-literacy programs to strengthen college women's resistance to media images. *Psychology of Women Quarterly*, *25*(2), 103-111. 10.1111/1471-6402.00012
Jacobi, C., Morris, L., Beckers, C., Bronisch-Holtze, J., Winter, J., Winzelberg, A. J., & Taylor, C. B. (2007). Maintenance of internet-based prevention: A randomized controlled trial. *International Journal of Eating Disorders*, *40*(2), 114-119. https://doi.org/10.1002/eat.20344
Jacobi, C., Völker, U., Trockel, M. T., & Taylor, C. B. (2012). Effects of an Internet-based intervention for subthreshold eating disorders: a randomized controlled trial. *Behaviour research and therapy*, *50*(2), 93–99. https://doi.org/10.1016/j.brat.2011.09.013
Jones, M., Luce, K. H., Osborne, M. I., Taylor, K., Cunning, D., Doyle, A. C., Wilfley, D. E., & Taylor, C. B. (2008). Randomized, controlled trial of an internet-facilitated intervention for reducing binge eating and overweight in adolescents. *Pediatrics*, *121*(3), 453–462. https://doi.org/10.1542/peds.2007-1173
Kaminski, P. L., & McNamara, K. (1996). A treatment for college women at risk for bulimia: A controlled evaluation. *Journal of Counseling & Development, 74*(3), 288-294. https://doi.org/10.1002/j.1556-6676.1996.tb01868.x
Kass, A. E., Trockel, M., Safer, D. L., Sinton, M. M., Cunning, D., Rizk, M. T., Genkin, B. H., Weisman, H. L., Bailey, J. O., Jacobi, C., Wilfley, D. E., & Taylor, C. B. (2014). Internet-based preventive intervention for reducing eating disorder risk: A randomized controlled trial comparing guided with unguided self-help. *Behaviour research and therapy*, *63*, 90–98. https://doi.org/10.1016/j.brat.2014.09.010
Killen, J. D., Taylor, C. B., Hammer, L. D., Litt, I., Wilson, D. M., Rich, T., Hayward, C., Simmonds, B., Kraemer, H., & Varady, A. (1993). An attempt to modify unhealthful eating attitudes and weight regulation practices of young adolescent girls. *The International journal of eating disorders*, *13*(4), 369–384. https://doi.org/10.1002/1098-108x(199305)13:4<369::aid-eat2260130405>3.0.co;2-0
Le Grange, D., Crosby, R. D., Rathouz, P. J., & Leventhal, B. L. (2007). A randomized controlled comparison of family-based treatment and supportive psychotherapy for adolescent bulimia nervosa. *Archives of general psychiatry*, *64*(9), 1049–1056. https://doi.org/10.1001/archpsyc.64.9.1049

Le Grange, D., Lock, J., Agras, W. S., Bryson, S. W., & Jo, B. (2015). Randomized clinical trial of family-based treatment and cognitive-behavioral therapy for adolescent bulimia nervosa. *Journal of the American Academy of Child and Adolescent Psychiatry*, *54*(11), 886–94. https://doi.org/10.1016/j.jaac.2015.08.008

Le Grange, D., Hughes, E. K., Court, A., Yeo, M., Crosby, R. D., & Sawyer, S. M. (2016). Randomised clinical trial of parent-focused treatment and family-based treatment for adolescent anorexia nervosa. *Journal of the American academy of child and adolescent psychiatry*, *55*(8), 683-692. https://doi.org/10.1016/j.jaac.2016.05.007

Lock, J., Le Grange, D., Agras, W. S., Fitzpatrick, K. K., Jo, B., Accurso, E., Forsberg, S., Anderson, K., Arnow, K., & Stainer, M. (2015). Can adaptive treatment improve outcomes in family-based therapy for adolescents with anorexia nervosa? Feasibility and treatment effects of a multi-site treatment study. *Behaviour Research and Therapy*, *73*, 90–95. https://doi.org/10.1016/j.brat.2015.07.015

Lock, J., Le Grange, D., Agras, W. S., Moye, A., Bryson, S. W., & Jo, B. (2010). Randomized clinical trial comparing family-based treatment with adolescent-focused individual therapy for adolescents with anorexia nervosa. *Archives of General Psychiatry*, *67*(10), 1025–1032. https://doi.org/10.1001/archgenpsychiatry.2010.128

Lock, J., Agras, W. S., Bryson, S., & Kraemer, H. C. (2005). A comparison of short- and long-term family therapy for adolescent anorexia nervosa. *Journal of the American Academy of Child and Adolescent Psychiatry*, *44*(7), 632–639. https://doi.org/10.1097/01.chi.0000161647.82775.0a

López-Guimerà, G., Sánchez-Carracedo, D., Fauquet, J., Portell, M., & Raich, R. M. (2011). Impact of a school-based disordered eating prevention program in adolescent girls: General and specific effects depending on adherence to the interactive activities. *The Spanish journal of psychology*, *14*(01), 293- 303. 10.5209/rev_sjop.2011.v14.n1.26

Low, K. G., Charanasomboon, S., Lesser, J., Reinhalter, K., Martin, R., Jones, H., Winzelberg, A., Abascal, L., & Taylor, C. B. (2006). Effectiveness of a computer-based interactive eating disorders prevention program at long-term follow-up. *Eating disorders*, *14*(1), 17–30. https://doi.org/10.1080/10640260500403816

Luethcke, C. A., McDaniel, L., & Becker, C. B. (2011). A comparison of mindfulness, nonjudgmental, and cognitive dissonance-based approaches to mirror exposure. *Body Image, 8*(3), 251-258. https://doi.org/10.1016/j.bodyim.2011.03.006

Madden, S., Miskovic-Wheatley, J., Wallis, A., Kohn, M., Lock, J., Le Grange, D., Jo, B., Clarke, S., Rhodes, P., Hay, P., & Touyz, S. (2015). A randomized controlled trial of in-patient treatment for anorexia nervosa in medically unstable adolescents. *Psychological medicine*, *45*(2), 415–427. https://doi.org/10.1017/S0033291714001573

Martz, D. M., & Bazzini, D. G. (1999). Eating disorders prevention programming may be failing: Evaluation of 2 one-shot programs. *Journal of College Student Development, 40*(1), 32-42.

Matusek, J. A., Wendt, S. J., &Wiseman, C. V. (2004). Dissonance thin-ideal and didactic healthy behavior eating disorder prevention programs: Results from a controlled trial. *International Journal of Eating Disorders, 36*(4), 376-388. https://doi.org/10.1002/eat.20059

McCabe, M. P., Ricciardelli, L. A., & Salmon, J. (2006). Evaluation of a prevention program to address body focus and negative affect among children. *Journal of health psychology*, *11*(4), 589–598. https://doi.org/10.1177/1359105306065019

McIntosh, V. V., Jordan, J., Carter, F. A., Luty, S. E., McKenzie, J. M., Bulik, C. M., Frampton, C. M., & Joyce, P. R. (2005). Three psychotherapies for anorexia nervosa: A randomized, controlled trial. *The American journal of psychiatry*, *162*(4), 741–747. https://doi.org/10.1176/appi.ajp.162.4.741

McLean, S. A., Paxton, S. J., & Wertheim, E. H. (2011). A body image and disordered eating intervention for women in midlife: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *79*(6), 751. https://doi.org/10.1037/a0026094

McMillan, W., Stice, E., &; Rohde, P. (2011). High-and low-level dissonance-based eating disorder prevention programs with young women with body image concerns: An experimental trial. *Journal of Consulting and Clinical Psychology*, *79*(1), 129. https://doi.org/10.1037/a0022143

McVey, G. L., & Davis, R. (2002). A program to promote positive body image: A 1-year follow-up evaluation. *The Journal of Early Adolescence*, *22*(1), 96-108. https://doi.org/10.1177/0272431602022001005

McVey, G. L., Davis, R., Tweed, S., & Shaw, B. F. (2004). Evaluation of a school-based program designed to improve body image satisfaction, global self-esteem, and eating attitudes and behaviors: A replication study. *International Journal of Eating Disorders*, *36*(1), 1-11. https://doi.org/10.1002/eat.20006

McVey, G., Tweed, S., & Blackmore, E. (2007). Healthy Schools-Healthy Kids: A controlled evaluation of a comprehensive universal eating disorder prevention program. *Body Image*, *4*(2), 115-136. https://doi.org/10.1016/j.bodyim.2007.01.004

Mitchell, K. S., Mazzeo, S. E., Rausch, S. M., & Cooke, K. L. (2007). Innovative interventions for disordered eating: Evaluating dissonance-based and yoga interventions. *International Journal of Eating Disorders*, *40*(2), 120-128. https://doi.org/10.1002/eat.20282

Mora, M., Penelo, E., Gutiérrez, T., Espinoza, P., González, M. L., & Raich, R. M. (2015). Assessment of two school-based programs to prevent universal eating disorders: Media literacy and theatre-based methodology in Spanish adolescent boys and girls. *The Scientific World Journal*, *2015*. https://doi.org/10.1155/2015/328753

Mutterperl, J. A., & Sanderson, C. A. (2002). Mind over matter: Internalization of the thinness norm as a moderator of responsiveness to norm misperception education in college women. *Health Psychology*, *21*(5), 519. https://doi.org/10.1037//0278-6133.21.5.519

Neumark-Sztainer, D., Butler, R., & Palti, H. (1995). Eating disturbances among adolescent girls: Evaluation of a school-based primary prevention program. J*ournal of Nutrition Education*, *27*(1), 24-31. https://doi.org/10.1016/S0022-3182(12)80262-7

Nicolino, J. C., Martz, D. M., & Curtin, L. (2002). Evaluation of a cognitive–behavioral therapy intervention to improve body image and decrease dieting in college women. Eating Behaviors, 2(4), 353-362. https://doi.org/10.1016/s1471-0153(01)00043-5

O'Brien, K. M., & LeBow, M. D. (2007). Reducing maladaptive weight management practices: Developing a psychoeducational intervention program. *Eating Behaviors, 8*(2), 195-210. https://doi.org/10.1016/j.eatbeh.2006.06.001
Olmsted, M. P., Daneman, D., Rydall, A. C., Lawson, M. L., & Rodin, G. (2002). The effects of psychoeducation on disturbed eating attitudes and behavior in young women with type 1 diabetes mellitus. *The International Journal of Eating Disorders, 32*(2), 230–239. https://doi.org/10.1002/eat.10068
Paxton, S. J., McLean, S. A., Gollings, E. K., Faulkner, C., & Wertheim, E. H. (2007). Comparison of face-to-face and internet interventions for body image and eating problems in adult women: An RCT. *International Journal of Eating Disorders, 40*(8), 692-704. https://doi.org/10.1002/eat.20446
Pearson, A. N., Follette, V. M., & Hayes, S. C. (2012). A pilot study of acceptance and commitment therapy as a workshop intervention for body dissatisfaction and disordered eating attitudes. *Cognitive and Behavioral Practice, 19*(1), 181-197. https://doi.org/10.1016/j.cbpra.2011.03.001
Pretorius, N., Dimmer, M., Power, E., Eisler, I., Simic, M., & Tchanturia, K. (2012). Evaluation of a cognitive remediation therapy group for adolescents with anorexia nervosa: A pilot study. *European Eating Disorders Review, 20*(4), 321–325. https://doi.org/10.1002/erv.2176
Raich, R. M., Sánchez-Carracedo, D., López-Guimerà, G., Portell, M., Moncada, A., & Fauquet, J. (2008). A controlled assessment of school-based preventive programs for reducing eating disorder risk factors in adolescent Spanish girls. *Eating Disorders, 16*(3), 255-272. https://doi.org/10.1080/10640260802016852
Rhodes P., Baillee A., Brown J., & Madden S. (2008). Can parent-to-parent consultation improve the effectiveness of the Maudsley model of family-based treatment for anorexia nervosa? A randomized control trial. *Journal of Family Therapy 30*(1), 96–108. 10.1111/j.1467-6427.2008.00418.x
Ridolfi, D. R., & Vander Wal, J. S. (2008). Eating disorders awareness week: The effectiveness of a one-time body image dissatisfaction prevention session. *Eating Disorders, 16*(5), 428–443. https://doi.org/10.1080/10640260802370630
Robin, A. L., Siegel, P. T., Moye, A. W., Gilroy, M., Dennis, A. B., & Sikand, A. (1999). A controlled comparison of family versus individual therapy for adolescents with anorexia nervosa. *Journal of the American Academy of Child & Adolescent Psychiatry 38*(12), 1482-1489. https://doi.org/10.1097/00004583-199912000-00008
Rohde, P., Auslander, B. A., Shaw, H., Raineri, K. M., Gau, J. M., & Stice, E. (2014). Dissonance-based prevention of eating disorder risk factors in middle school girls: Results from two pilot trials. *The International Journal of Eating Disorders, 47*(5), 483–494. https://doi.org/10.1002/eat.22253
Rosen, J. C., Saltzberg, E., & Srebnik, D. (1989). Cognitive behavior therapy for negative body image. *Behavior Therapy, 20*(3), 393–404. https://doi.org/10.1016/S0005-7894(89)80058-9
Russell, G. F., Szmukler, G. I., Dare, C., & Eisler, I. (1987). An evaluation of family therapy in anorexia nervosa and bulimia nervosa. *Archives of general psychiatry, 44*(12), 1047–1056. https://doi.org/10.1001/archpsyc.1987.01800240021004

Salerno, L., Rhind, C., Hibbs, R., Micali, N., Schmidt, U., Gowers, S., Macdonald, P., Goddard, E., Todd, G., Tchanturia, K., Lo Coco, G., & Treasure, J. (2016). A longitudinal examination of dyadic distress patterns following a skills intervention for carers of adolescents with anorexia nervosa. *European Child & Adolescent Psychiatry*, *25*(12), 1337–1347. https://doi.org/10.1007/s00787-016-0859-9
Santonastaso, P., Zanetti, T., Ferrara, S., Olivotto, M. C., Magnavita, N., & Favaro, A. (1999). A preventive intervention program in adolescent schoolgirls: A longitudinal study. *Psychotherapy and Psychosomatics*, *68*(1), 46–50. https://doi.org/10.1159/000012310
Schmidt, U., Lee, S., Beecham, J., Perkins, S., Treasure, J., Yi, I., Winn, S., Robinson, P., Murphy, R., Keville, S., Johnson-Sabine, E., Jenkins, M., Frost, S., Dodge, L., Berelowitz, M., & Eisler, I. (2007). A randomized controlled trial of family therapy and cognitive behavior therapy guided self-care for adolescents with bulimia nervosa and related disorders. *The American Journal of Psychiatry*, *164*(4), 591–598. https://doi.org/10.1176/ajp.2007.164.4.591
Serdar, K., Kelly, N. R., Palmberg, A. A., Lydecker, J. A., Thornton, L., Tully, C. E., & Mazzeo, S. E. (2014). Comparing online and face-to-face dissonance-based eating disorder prevention. *Eating Disorders*, *22*(3), 244–260. https://doi.org/10.1080/10640266.2013.874824
Serfaty, M. A., Turkington, D., Heap, M., Ledsham, L., & Jolley, E. (1999). Cognitive therapy versus dietary counselling in the out- patient treatment of anorexia nervosa: Effects of the treatment phase. *European Eating Disorders Review, 7*(5), 334–350. https:// doi.org/10.1002/(SICI)1099-0968(199911)7:5<334::AID-ERV311>3.0.CO;2-H
Shafran, R., Farrell, C., Lee, M., & Fairburn, C. G. (2009). Brief cognitive behavioural therapy for extreme shape concern: an evaluation. *The British Journal of Clinical Psychology*, *48*(1), 79–92. https://doi.org/10.1348/014466508X360755
Smith, A., & Petrie, T. (2008). Reducing the risk of disordered eating among female athletes: A test of alternative interventions. *Journal of Applied Sport Psychology, 20*(4), 392–407. https://doi.org/10.1080/10413200802241832
Stice, E., Butryn, M. L., Rohde, P., Shaw, H., & Marti, C. N. (2013). An effectiveness trial of a new enhanced dissonance eating disorder prevention program among female college students. *Behaviour Research and Therapy, 51*(12), 862-871. https://doi.org/10.1016/j.brat.2013.10.003
Stice, E., Chase, A., Stormer, S., & Appel, A. (2001). A randomized trial of a dissonance-based eating disorder prevention program. *International Journal of Eating Disorders, 29*(3), 247–262. https://doi.org/10.1002/eat.1016
Stice, E., Durant, S., Rohde, P., & Shaw, H. (2014). Effects of a prototype Internet dissonance-based eating disorder prevention program at 1- and 2-year follow-up. *Health Psychology*, *33*(12), 1558–1567. https://doi.org/10.1037/hea0000090
Stice, E., Marti, C. N., Spoor, S., Presnell, K., & Shaw, H. (2008). Dissonance and healthy weight eating disorder prevention programs: long-term effects from a randomized efficacy trial. *Journal of Consulting and Clinical Psychology*, *76*(2), 329–340. https://doi.org/10.1037/0022-006X.76.2.329

Stice, E., Rohde, P., Butryn, M. L., Shaw, H., & Marti, C. N. (2015). Effectiveness trial of a selective dissonance-based eating disorder prevention program with female college students: Effects at 2- and 3-year follow-up. *Behaviour Research and Therapy, 71*, 20–26. https://doi.org/10.1016/j.brat.2015.05.012
Stice, E., Rohde, P., Durant, S., & Shaw, H. (2012). A preliminary trial of a prototype Internet dissonance-based eating disorder prevention program for young women with body image concerns. *Journal of Consulting and Clinical Psychology*, *80*(5), 907–916. https://doi.org/10.1037/a0028016
Stice, E., Rohde, P., Durant, S., Shaw, H., & Wade, E. (2013). Effectiveness of peer-led dissonance-based eating disorder prevention groups: Results from two randomized pilot trials. *Behaviour Research and Therapy, 51*(4), 197-206. https://doi.org/10.1016/j.brat.2013.01.004
Stice, E., Rohde, P., Gau, J., & Shaw, H. (2009). An effectiveness trial of a dissonance-based eating disorder prevention program for high-risk adolescent girls. *Journal of Consulting and Clinical Psychology, 77*(5), 825. https://doi.org/10.1037/a0016132
Stice, E., Trost, A., & Chase, A. (2003). Healthy weight control and dissonance-based eating disorder prevention programs: Results from a controlled trial. *International Journal of Eating Disorders, 33*(1), 10-21. https://doi.org/10.1002/eat.10109
Taylor, C. B., Bryson, S., Luce, K. H., Cunning, D., Doyle, A. C., Abascal, L. B., Rockwell, R., Dev, P., Winzelberg, A. J., & Wilfley, D. E. (2006). Prevention of eating disorders in at-risk college-age women. *Archives of General Psychiatry*, *63*(8), 881–888. https://doi.org/10.1001/archpsyc.63.8.881
van Noort, B. M., Kraus, M. K., Pfeiffer, E., Lehmkuhl, U., & Kappel, V. (2016). Neuropsychological and behavioural short-term effects of cognitive remediation therapy in adolescent anorexia nervosa: A pilot study. *European Eating Disorders Review*, *24*(1), 69–74. https://doi.org/10.1002/erv.2383
van Noort, B. M., Pfeiffer, E., Lehmkuhl, U., & Kappel, V. (2015). Cognitive remediation therapy for children with anorexia nervosa. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie*, *43*, 351-355. https://doi.org/10.1024/1422-4917/a000372.
Wade, T. D., Davidson, S., & O'Dea, J. A. (2003). A preliminary controlled evaluation of a school-based media literacy program and self-esteem program for reducing eating disorder risk factors. *International Journal of Eating Disorders, 33*(4), 371-383. https://doi.org/10.1002/eat.10136
Wade, T. D., Frayne, A., Edwards, S. A., Robertson, T., & Gilchrist, P. (2009). Motivational change in an inpatient anorexia nervosa population and implications for treatment. *The Australian and New Zealand Journal of Psychiatry, 43*, 235–243. https://doi. org/10.1080/00048670802653356
Wilksch S. M. (2015). School-based eating disorder prevention: A pilot effectiveness trial of teacher-delivered Media Smart. *Early Intervention in Psychiatry*, *9*(1), 21–28. https://doi.org/10.1111/eip.12070
Wilksch, S. M., & Wade, T. D. (2009). Reduction of shape and weight concern in young adolescents: A 30-month controlled evaluation of a media literacy program. *Journal of the American Academy of Child and Adolescent Psychiatry*, *48*(6), 652–661. https://doi.org/10.1097/CHI.0b013e3181a1f559
Wilksch, S. M., Paxton, S. J., Byrne, S. M., Austin, S. B., McLean, S. A., Thompson, K. M., Dorairaj, K., & Wade, T. D. (2014). Prevention across the spectrum: A randomized controlled trial of three programs to reduce

risk factors for both eating disorders and obesity. *Psychological Medicine*, *45*(9), 1811–1823. https://doi.org/10.1017/S003329171400289X

Winzelberg, A. J., Eppstein, D., Eldredge, K. L., Wilfley, D., Dasmahapatra, R., Dev, P., & Taylor, C. B. (2000). Effectiveness of an Internet-based program for reducing risk factors for eating disorders. *Journal of Consulting and Clinical Psychology, 68*(2), 346. https://doi.org/10.1037//0022-006x.68.2.346

Winzelberg, A. J., Taylor, C. B., Sharpe, T., Eldredge, K. L., Dev, P., & Constantinou, P. S. (1998). Evaluation of a computer-mediated eating disorder intervention program. *International Journal of Eating Disorders, 24*(4), 339-349. https://doi.org/10.1002/(sici)1098-108x(199812)24:4<339::aid-eat1>3.0.co;2-j

Wiseman, C. V., Sunday, S. R., Bortolotti, F., & Halmi, K. A. (2004). Primary prevention of eating disorders through attitude change: A two country comparison. *Eating Disorders, 12*(3), 241-250. https://doi.org/10.1080/10640260490481447

Zabinski, M. F., Wilfley, D. E., Calfas, K. J., Winzelberg, A. J., &Taylor, C. B. (2004). An interactive psychoeducational intervention for women at risk of developing an eating disorder. *Journal of Consulting and Clinical Psychology, 72*(5), 914. https://doi.org/10.1037/0022-006X.72.5.914

Andersen, Hustad, Brennhaugen

NTNU
Norwegian University of
Science and Technology