NATIONAL GUIDELINE CLEARINGHOUSE™ (NGC) GUIDELINE SYNTHESIS

MANAGEMENT OF EATING DISORDERS

Guidelines

1. **American Academy of Pediatrics (AAP)**. Identifying and treating eating disorders. Pediatrics 2003 Jan;111(1):204-11. [78 references]
2. **American Psychiatric Association (APA)**. Practice guideline for the treatment of patients with eating disorders. 3rd ed. Washington (DC): American Psychiatric Association (APA); 2006 Jun. 128 p. [765 references]
3. **Finnish Medical Society Duodecim (FMSD)**. Eating disorders among children and adolescents. In: EBM Guidelines. Evidence-Based Medicine [Internet]. Helsinki, Finland: Wiley Interscience. John Wiley & Sons; 2007 Mar 28 [Various]
4. **National Collaborating Centre for Mental Health (NCCMH/NICE)**. Eating disorders. Core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders. Leicester (UK): British Psychological Society; 2004. 260 p. [408 references]

INTRODUCTION

A direct comparison of the American Academy of Pediatrics (AAP), American Psychiatric Association (APA), Finnish Medical Society Duodecim (FMSD), and National Collaborating Centre for Mental Health/National Institute for Health and Clinical Excellence (NCCMH/NICE) recommendations for the management of eating disorders is provided in the tables below.

Some guidelines are broader in scope than others. For example, in addition to management, AAP, FMSD, and NCCMH/NICE also address the screening for and identification of eating disorders. These topics, however, are beyond the scope of this synthesis (See the NGC synthesis, Screening for and Identification of Eating Disorders). The AAP guideline differs from the others in that it focuses specifically on the primary care pediatrician's role in the assessment and management of eating disorders. The APA guideline includes a discussion of clinical features influencing the treatment plan, including the chronicity of eating disorders, other psychiatric factors, concurrent general medical conditions, and demographic variables. These topics, however, are also beyond the scope of this synthesis.

While FMSD focuses on anorexia and bulimia nervosa, AAP, APA, and NCCMH/NICE also address atypical eating disorders such as binge eating disorder and eating disorders not otherwise specified (EDNOS). The APA and NCCMH/NICE guidelines address areas where more research is needed. In formulating its

conclusions, APA reviewed the NCCMH/NICE guideline and NCCMH/NICE reviewed the previous (2000) version of the APA guideline.

The tables below provide a side-by-side comparison of key attributes of each guideline, including specific interventions and practices that are addressed. The language used in these tables, particularly that which is used in Table 4, Table 5, and Table 6, is in most cases taken verbatim from the original guidelines:

- Table 1 provides a quick-view glance at the primary interventions considered by each group.
- Table 2 provides a comparison of the overall scope of both guidelines.
- Table 3 provides a comparison of the methodology employed and documented by both groups in developing their guidelines.
- Table 4 provides a more detailed comparison of the specific recommendations offered by each group for the topics under consideration in this synthesis, including.
    - Comprehensive Assessment and Coordination of Care
    - Determination of Treatment Setting
    - Physical Management/Nutritional Rehabilitation
    - Psychological Interventions
    - Pharmacological Interventions
    - Education
    - Supporting References
- Table 5 lists the potential benefits and harms associated with the implementation of each guideline as stated in the original guidelines.
- Table 6 presents the rating schemes used by APA, FMSD, and NCCMH/NICE to rate the level of evidence and/or the strength of the recommendations.

A summary discussion of the areas of agreement and areas of differences among the guidelines is presented following the content comparison tables.

Abbreviations

- AAP, American Academy of Pediatrics
- APA, American Psychiatric Association
- BMI, body mass index
- CAT, cognitive analytic therapy
- CBT, cognitive behavior therapy
- CBT-BED, cognitive behavior therapy for binge eating disorder
- CBT-BN, cognitive behavior therapy for bulimia nervosa
- DSM-IV-TR, *Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision*
- ECG, electrocardiogram
- FDA, U.S. Food and Drug Administration
- FMSD, Finnish Medical Society Duodecim
- IPT, interpersonal therapy
- MAOI, monoamine oxidase inhibitor
- NCCMH, National Collaborating Centre for Mental Health
- NICE, National Institute for Health and Clinical Excellence
- SSRI, selective serotonin reuptake inhibitor

TABLE 1: COMPARISON OF INTERVENTIONS AND PRACTICES CONSIDERED *("✓" indicates topic is addressed)*				
	AAP (2003)	**APA (2006)**	**FMSD (2007)**	**NCCMH/NICE (2004)**
Comprehensive Assessment and Coordination of Care	✓	✓	✓	✓
Determination of Treatment Setting	✓	✓	✓	✓
Physical Management/Nutritional Rehabilitation	✓	✓		✓
Psychological Interventions	✓	✓	✓	✓
Pharmacological Interventions	✓	✓	✓	✓
Education		✓		✓

TABLE 2: COMPARISON OF GUIDELINE SCOPE	
Objective and Scope	
AAP (2003)	• To assist pediatricians with early detection and appropriate management of eating disorders • To prevent the physical and psychological consequences of malnutrition that allow for progression to a later stage of an eating disorder
APA (2006)	To provide guidance to psychiatrists in the assessment and care of patients with eating disorders
FMSD (2007)	Evidence-Based Medicine Guidelines collect, summarize, and update the core clinical knowledge essential in general practice. The guidelines also describe the scientific evidence underlying the given recommendations.
NCCMH/NICE (2004)	To make recommendations for the identification, treatment, and management of eating disorders Specifically, to:

	• Evaluate the role of specific psychological interventions in the treatment and management of eating disorders • Evaluate the physical management and role of specific pharmacological agents in the treatment of eating disorders • Evaluate the role of specific service delivery systems and service-level interventions in the management of eating disorders • Integrate the above to provide best practice advice on the care of individuals with a diagnosis of an eating disorder throughout the course of the disorder • Promote the implementation of best clinical practice through the development of recommendations tailored to the requirements of the National Health Service (NHS) in England and Wales
Target Population	
AAP (2003)	• United States • Children and adolescents
APA (2006)	• United States • Patients of all ages from childhood to adulthood with eating disorders
FMSD (2007)	• Finland • Children and adolescents with known or suspected eating disorders, such as anorexia nervosa or bulimia nervosa
NCCMH/NICE (2004)	• England and Wales • People aged 8 years and over with eating disorders including anorexia nervosa, bulimia nervosa, or related conditions
Intended Users	
AAP (2003)	Health Care Providers Physicians Psychologists/Non-physician Behavioral Health Clinicians
APA (2006)	Physicians

FMSD (2007)	Advanced Practice Nurses Health Care Providers Physicians Psychologists/Non-physician Behavioral Health Clinicians
NCCMH/NICE (2004)	Advanced Practice Nurses Allied Health Personnel Dentists Dietitians Emergency Medical Technicians/Paramedics Health Care Providers Hospitals Nurses Occupational Therapists Patients Pharmacists Physical Therapists Physician Assistants Physicians Psychologists/Non-physician Behavioral Health Clinicians Public Health Departments

TABLE 3: COMPARISON OF METHODOLOGY
Methods Used to Collect/Select the Evidence

AAP (2003)	• Searches of Electronic Databases *Described Process*: Not stated *Number of Source Documents*: Not stated *Number of References*: 78
APA (2006)	• Searches of Electronic Databases *Described Process*: A MEDLINE search, using PubMed, of "anorexia nervosa OR bulimia OR binge eating disorder OR binge eating disorders OR eating disorder OR eating disorders" yielded 15,561 citations, of which 3,596 were published between 1998 and 2004, were written in English, and contained abstracts. Of these, 334 were reports of clinical trials (including randomized controlled trials) or meta-analyses. Abstracts for these articles as well as abstracts for an additional 634 review articles were screened individually for their relevance to the guideline. The Cochrane Library was also searched for relevant abstracts. Additional, less formal literature searches were conducted by American Psychiatric Association (APA) staff and individual members of the Work Group on Eating Disorders. *Number of Source Documents*: Not stated *Number of References*: 765
FMSD (2007)	• Hand-searches of Published Literature (Primary Sources) • Hand-searches of Published Literature (Secondary Sources) • Searches of Electronic Databases *Described Process*: The evidence reviewed was collected from the Cochrane database of systematic reviews and the Database of Abstracts of Reviews of Effectiveness (DARE). In addition, the Cochrane Library and medical journals were searched specifically for original publications. *Number of Source Documents*: Not stated *Number of References*: 8
NCCMH/NICE	• Hand-searches of Published Literature (Primary Sources)

(2004)	• Hand-searches of Published Literature (Secondary Sources) • Searches of Electronic Databases *Described Process*: In conducting the review, the team systematically searched the literature for all English language systematic reviews relevant to the eating disorders scope that were published or updated after 1995. Search filters developed by the review team consisted of a combination of subject heading and free-text phrases. A general filter was developed for eating disorders along with more specific filters for each clinical question. In addition, filters were developed for randomized controlled trials (RCTs) and for other appropriate research designs. (The search filters can be found in Appendix 8 of the original document.) Electronic searches were made of the major bibliographic databases (MEDLINE, EMBASE, PsycINFO, CINAHL), in addition to the Cochrane Database of Systematic Reviews, the National Health Service Research and Development (NHS R&D) Health Technology Assessment database, Evidence-Based Mental Health and Clinical Evidence (Issue 5). Ineligible articles were excluded, and a second independent reviewer crosschecked these for relevance. The remaining references were acquired in full and re-evaluated for eligibility. The most recently published reviews that appropriately addressed a clinical question were selected. For each systematic review used, a search was made for new studies, and the papers for these and for existing studies were retrieved. The search for further evidence included research published after each review's search date, in-press papers identified by experts, and reviewing reference lists and recent contents of selected journals. All reports that were retrieved but later excluded are listed with reasons for exclusion in the appropriate evidence table. Where no relevant systematic reviews were located, the review team asked the Guideline Development Group (GDG) to decide whether a fresh systematic review should be undertaken. Eligible reviews were critically appraised for methodological quality and the reliability of this procedure was confirmed by parallel independent assessment. The eligibility/quality assessment was tested on a representative sample of papers. (Appendix 10 of the original document provides the quality checklist.)

	Cost Analysis Bibliographic electronic databases and health economic databases were searched for economic evidence using the combination of a specially developed health economics search filter and a general filter for eating disorders. A combination of subject headings and free text searches were used where possible. (The search strategies and the databases searched are presented in Appendix 12 of the full version of the original guideline document.) The search for further evidence included papers from reference lists of eligible studies and relevant reviews. Experts in the field of eating disorders and mental health economics were also contacted to identify additional relevant published and unpublished studies. Studies included in the clinical evidence review and stakeholders' submissions were also screened for economic evidence. Upon completion of the database searches, titles and abstracts of all references were screened for relevance to the scope of the guideline. The health economist then assessed relevant papers using a modified version of the Drummond et al. checklist (see Appendix 13 of the full version of the original guideline document). *Number of Source Documents:* Not stated *Number of References:* 408
Methods Used to Assess the Quality and Strength of the Evidence	
AAP (2003)	Not stated
APA (2006)	Expert Consensus (Committee)
FMSD (2007)	Weighting According to a Rating Scheme (Scheme Given - Refer to Table 6)
NCCMH/NICE (2004)	Weighting According to a Rating Scheme (Scheme Given - Refer to Table 6)
Methods Used to Analyze the Evidence	
AAP (2003)	• Review *Described Process*: Not stated

APA (2006)	• Review of Published Meta-Analyses • Systematic Review with Evidence Tables *Described Process*: The Work Group on Eating Disorders constructed evidence tables to illustrate the data regarding risks and benefits for each treatment and to evaluate the quality of the data. These tables facilitated group discussion of the evidence and agreement on treatment recommendations before guideline text was written. Evidence tables do not appear in the guideline; however, they are retained by APA to document the development process in case queries are received and to inform revisions of the guideline.
FMSD (2007)	• Review of Published Meta-Analyses • Systematic Review *Described Process*: Not stated
NCCMH/NICE (2004)	• Meta-Analysis • Review of Published Meta-Analyses • Systematic Review with Evidence Tables *Described Process*: **Synthesising the Evidence** Where possible, outcome data were extracted directly from all eligible studies that met the quality criteria into Review Manager 4.2 (Cochrane Collaboration, 2003). Meta-analysis was then used to synthesise the evidence where appropriate using Review Manager. If necessary, reanalyses of the data or sensitivity analyses were used to answer clinical questions not addressed in the original studies or reviews. Where meta-analysis was not appropriate and/or possible, the reported results from each primary-level study were entered into the Access database. Evidence tables were used to summarise general information about each study. Consultation was used to overcome difficulties with coding. Data from studies included in existing systematic reviews were extracted independently by one reviewer directly into Review Manager and crosschecked with the existing data set. Two independent reviewers extracted data from new studies, and disagreements were resolved by discussion. Where consensus could not be reached, a third reviewer resolved the disagreement. Masked assessment (i.e., blind to the journal from which the article comes, the authors, the institution, and the magnitude of the effect) was not used since it is

unclear that doing so reduces bias.

Presenting the Data to the Guideline Development Group (GDG)

Where possible, the GDG was given a graphical presentation of the results using forest plots generated with the Review Manager software. Each forest plot displayed the effect size and confidence interval (CI) for each study as well as the overall summary statistic. The graphs were organised so that the display of data in the area to the left of the "line of no effect" indicated a "favourable" outcome for the treatment in question. Dichotomous outcomes were presented as relative risks (RR) and the associated 95 percent CI. A relative risk (or risk ratio) is the ratio of the treatment event rate to the control event rate. A RR of 1 indicates no difference between treatment and control.

All dichotomous outcomes were calculated on an intention-to-treat basis (i.e., a "once-randomised- always-analyse" basis). This assumes that those participants who ceased to engage in the study -- from whatever group -- had an unfavourable outcome (with the exception of the outcome of "death"). The Number Needed to Treat (NNT) or the Number Needed to Harm (NNH) was reported for each statistically significant outcome where the baseline risk (i.e., control group event rate) was similar across studies. In addition, NNTs calculated at follow-up were only reported where the length of follow-up was similar across studies. When length of follow-up or baseline risk varies (especially with low risk), the NNT is a poor summary of the treatment effect.

Both the I^2 test of heterogeneity and the chi-squared test of heterogeneity (p<0.10) were used, as well as visual inspection of the forest plots, to look for the possibility of heterogeneity. I^2 describes the proportion of total variation in study estimates that is due to heterogeneity. An I^2 of less than 30 percent was taken to indicate mild heterogeneity and a fixed effects model was used to synthesise the results. An I^2 of more than 50 percent was taken as notable heterogeneity. In this case an attempt was made to explain the variation. If studies with heterogeneous results were found to be comparable, a random effects model was used to summarise the results. In the random effects analysis, heterogeneity is accounted for both in the width of CIs and in the estimate of the treatment effect. With decreasing heterogeneity the random effects approach moves asymptotically towards a fixed effects model. An I^2 of 30 to 50 percent was taken to indicate moderate heterogeneity. In this case, both the chi-squared test of heterogeneity and a visual inspection of the forest plot were used to decide

	between a fixed and random effects model. To explore the possibility that the results entered into each meta-analysis suffered from publication bias, data from included studies were entered, where there was sufficient data, into a funnel plot. Asymmetry of the plot was taken to indicate possible publication bias and investigated further.
Methods Used to Formulate the Recommendations	
AAP (2003)	Not stated
APA (2006)	Expert Consensus (refer to Table 6 for rating scheme) *Described Process*: This practice guideline was developed under the auspices of the Steering Committee on Practice Guidelines. The development process is detailed in "APA Guideline Development Process," which is available from the APA Department of Quality Improvement and Psychiatric Services. The key features of this process include the following: • A comprehensive literature review to identify all relevant randomized clinical trials as well as less rigorously designed clinical trials and case series when evidence from randomized trials was unavailable • Development of evidence tables that summarized the key features of each identified study, including funding source, study design, sample sizes, subject characteristics, treatment characteristics, and treatment outcomes • Initial drafting of the guideline by a work group that included psychiatrists with clinical and research expertise in eating disorders • Production of multiple revised drafts with widespread review (10 organizations and 58 individuals submitted significant comments) • Approval by the APA Assembly and Board of Trustees • Planned revisions at regular intervals
FMSD (2007)	Not stated
NCCMH/NICE (2004)	• Expert Consensus (Refer to Table 6 for Rating Scheme) *Described Process*:

The Guideline Development Group (GDG)

The eating disorders GDG consisted of professionals in psychiatry, clinical psychology, nursing, social work, and general practice; academic experts in psychiatry and psychology; a patient, and a representative from a patient organisation. The carer perspective was provided through focus group discussion with carers; the group was run by the patient on the GDG. The guideline development process was supported by staff from the NCCMH review team, who undertook the clinical and health economics literature searches, reviewed and presented the evidence to the GDG, managed the process, and contributed to the drafting of the guideline.

Guideline Development Group Meetings

Twenty-three eating disorders GDG meetings were held between March 2002 and October 2003. During the series of day-long meetings, clinical questions were written, clinical evidence was reviewed and assessed, statements were developed, and recommendations were formulated. At each meeting, all GDG members declared any potential conflict of interests, and patient and carer concerns were routinely discussed as part of a standing agenda.

Forming and Grading the Statements and Recommendations

The evidence tables and forest plots formed the basis for developing clinical statements and recommendations. For intervention studies, the statements were classified according to an accepted hierarchy of evidence. Recommendations were then graded A to C based on the level of associated evidence (see Table 6).

In order to facilitate consistency in generating and drafting the clinical statements the GDG utilised a statement decision tree. The flowchart was designed to assist with, but not replace, clinical judgement.

Where a statistically significant summary statistic (effect size [ES]) was obtained (after controlling for heterogeneity), the GDG considered whether this finding was of clinical significance (i.e., likely to be of benefit to patients) taking into account the trial population, nature of the outcome, and size of the effect. On the basis of this consideration the ES was characterised as "clinically significant" or not. A further consideration was made about the strength of the evidence by examining the confidence interval (CI) surrounding the

	ES. For level **I** evidence, where the ES was judged to be clinically significant and had a CI entirely within a clinical relevant range, the result was characterised as "strong evidence" (S1). For non-level **I** evidence or in situations where the upper/lower bound of the CI was not clinically significant, the result was characterised as "limited evidence" (S2). Where an ES was statistically significant, but not clinically significant and the CI excluded values judged to be clinically important, the result was characterised as "unlikely to be clinically significant" (S3). Alternatively, if the CI included clinically important values, the result was characterised as "insufficient to determine clinical significance" (S6). Where a non-statistically significant ES was obtained, the GDG reviewed the trial population, nature of the outcome, size of the effect and, in particular, the CI surrounding the result. If the CI was narrow and excluded a clinically significant ES, this was seen as indicating evidence of "no clinically significant difference" (S4), but where the CI was wide this was seen as indicating 'insufficient evidence' to determine if there was a clinically significant difference or not (S5). Once all evidence statements relating to a particular clinical question were finalised and agreed by the GDG, the associated recommendations were produced and graded. Grading the recommendations allowed the GDG to distinguish between the level of evidence and the strength of the associated recommendation. It is possible that a statement of evidence would cover only one part of an area in which a recommendation was to be made or would cover it in a way that would conflict with other evidence. In order to produce more comprehensive recommendations suitable for people in England and Wales, the GDG had to extrapolate from the available evidence. This led to a weaker level of recommendation (i.e. B, as data were based upon level **I** evidence). It is important to note that the grading of the recommendation is not a reflection of its clinical significance or relevance. A number of issues relating to the study of eating disorders meant that the outcomes available for analysis were classified as primary or secondary. When making recommendations, the primary outcomes were given more weight during the decision process. The process also allowed the GDG to moderate recommendations based on factors other than the strength of evidence. Such considerations include the applicability of the evidence to people with eating disorders, economic considerations, values of the development group and society,

or the group's awareness of practical issues.

Method Used to Answer a Clinical Question in the Absence of Appropriately Designed, High-Quality Research

Where it was not possible to identify at least one appropriately designed study or high-quality systematic review, or where the GDG was of the opinion (on the basis of previous searches or their knowledge of the literature) that there was unlikely to be appropriately designed primary-level research that directly addressed the clinical question, an informal consensus process was adopted. This process focused on those questions that the GDG considered a priority.

The starting point for this process of informal consensus was that a member of the topic group identified, with help from the systematic reviewer, a narrative review that most directly addressed the clinical question. Where this was not possible a new review of the recent literature was initiated.

This existing narrative review or new review was used as a basis for identifying lower levels of evidence relevant to the clinical question. This was then presented for discussion to the GDG. On the basis of this, additional information was sought and added to the information collected. This may include studies that did not directly address the clinical question but were thought to contain relevant data. This led to the development of an initial draft report that addressed the following issues:

- A description of what is known about the issues concerning the clinical question
- Brief review of the existing evidence, including RCTs, non-randomised controlled studies, cohort studies, and other studies that help answer the question
- The summary of the evidence so far obtained. This was then presented in narrative form to the GDG and further comments were sought about the evidence and its perceived relevance to the clinical question.
- If, during the course of preparing the report, a significant body of primary-level studies (of appropriate design to answer the question) were identified, a full systematic review was done.
- At this time, subject possibly to further reviews of the evidence, a series of statements that directly addressed the clinical question were developed.
- Following this, on occasions and as deemed appropriate by the development group, the report was then sent to appointed experts outside of the GDG for peer review

	and comment. The information from this process was then fed back to the GDG for further discussion of the statements. • Recommendations were then developed and could also be sent for further external peer review. • After this final stage of comment, the statements and recommendations were again reviewed and agreed upon by the GDG.
Outcomes	
AAP (2003)	• Prevalence and incidence of eating disorders in children and adolescents • Medical complications of eating disorders • Relapse rates • Malnutrition sequela
APA (2006)	*Anorexia Nervosa* • Amount of weight gained within specified time intervals • Proportion of patients achieving a specified percentage of expected body weight • Return of menses • Measures of severity or frequency of eating disorder behaviors *Bulimia Nervosa* • Reduction in the frequency or severity of eating disorder behaviors (e.g., binge eating, vomiting, laxative use) • Proportion of patients achieving remission from or a specific reduction in eating disorder behaviors)
FMSD (2007)	• Eating disorder symptomatology • Weight gain • Efficacy of treatment at reducing symptoms of eating disorders and improving prognosis • Mortality
NCCMH/NICE (2004)	• Body weight adjusted for height, usually represented as the BMI or the percentage of expected weight for the person's age, height, and sex *(for anorexia nervosa)* • Frequency of binge eating and "purging" (self-induced vomiting or the use of laxatives to influence body shape or weight); that is, the frequency of these forms of behaviour over a set period of time *(for bulimia nervosa)*

	• The proportion of participants who no longer practise the behaviour (sometime referred to as the "abstinence" rates) • The frequency of binge eating, represented as for bulimia nervosa (for binge eating disorder) • Relapse rates • Cost-effectiveness of treatment
Financial Disclosures/Conflicts of Interest	
AAP (2003)	Not stated
APA (2006)	This practice guideline has been developed by psychiatrists who are in active clinical practice. In addition, some contributors are primarily involved in research or other academic endeavors. It is possible that through such activities some contributors, including work group members and reviewers, have received income related to treatments discussed in this guideline. A number of mechanisms are in place to minimize the potential for producing biased recommendations due to conflicts of interest. Work group members are selected on the basis of their expertise and integrity. Any work group member or reviewer who has a potential conflict of interest that may bias (or appear to bias) his or her work is asked to disclose this to the Steering Committee on Practice Guidelines and the work group. Iterative guideline drafts are reviewed by the Steering Committee, other experts, allied organizations, APA members, and the APA Assembly and Board of Trustees; substantial revisions address or integrate the comments of these multiple reviewers. The development of the APA practice guidelines is not financially supported by any commercial organization.
FMSD (2007)	Not stated
NCCMH/NICE (2004)	All Guideline Development Group (GDG) members made formal declarations of interest at the outset, which were updated at every GDG meeting.

TABLE 4: COMPARISON OF RECOMMENDATIONS FOR THE MANAGEMENT/TREATMENT OF EATING DISORDERS
Comprehensive Assessment and Coordination of Care

AAP (2003)	Initial evaluation of the child or adolescent with a suspected eating disorder includes establishment of the diagnosis (***Note from NGC**: The diagnosis of eating disorders is outside the scope of this synthesis*); determination of severity, including evaluation of medical and nutritional status; and performance of an initial psychosocial evaluation. Each of these initial steps can be performed in the pediatric primary care setting. In general, determination of total weight loss and weight status (calculated as percent below ideal body weight and/or as BMI), along with types and frequency of purging behaviors (including vomiting and use of laxatives, diuretics, ipecac, and over-the-counter or prescription diet pills as well as use of starvation and/or exercise) serve to establish an initial index of severity for the child or adolescent with an eating disorder. The medical complications associated with eating disorders are listed in Table 4 of the original guideline document, and details of these complications have been described in several reviews. It is uncommon for the pediatrician to encounter most of these complications in a patient with a newly diagnosed eating disorder. • However, it is recommended that an initial laboratory assessment be performed and that this include complete blood cell count, electrolyte measurement, liver function tests, urinalysis, and a thyroid-stimulating hormone test. • Additional tests (urine pregnancy, luteinizing and follicle-stimulating hormone, prolactin, and estradiol tests) may need to be performed in patients who are amenorrheic to rule out other causes for amenorrhea, including pregnancy, ovarian failure, or prolactinoma. • Other tests, including an erythrocyte sedimentation rate and radiographic studies (such as computed tomography or magnetic resonance imaging of the brain or upper or lower gastrointestinal system studies), should be performed if there are uncertainties about the diagnosis. • An electrocardiogram should be performed on any patient with bradycardia or electrolyte abnormalities. • Bone densitometry should be considered in those amenorrheic for more than 6 to 12 months. It should be noted, however, that most test results will be normal in most patients with eating disorders, and normal laboratory test results do not exclude serious illness or medical instability in these patients. • The initial psychosocial assessment should include an evaluation of the patient's degree of obsession with food and weight, understanding of the diagnosis, and

	willingness to receive help; an assessment of the patient's functioning at home, in school, and with friends; and a determination of other psychiatric diagnoses (such as depression, anxiety, and obsessive compulsive disorder), which may be comorbid with or may be a cause or consequence of the eating disorder. • Suicidal ideation and history of physical or sexual abuse or violence should also be assessed. • The parents' reaction to the illness should be assessed, because denial of the problem or parental differences in how to approach treatment and recovery may exacerbate the patient's illness. • The pediatrician who feels competent and comfortable in performing the full initial evaluation is encouraged to do so. Others should refer to appropriate medical subspecialists and mental health personnel to ensure that a complete evaluation is performed. A differential diagnosis for the adolescent with symptoms of an eating disorder can be found in Table 5 of the original guideline document. Several treatment decisions follow the initial evaluation, including the questions of where and by whom the patient will be treated. • Patients who have minimal nutritional, medical, and psychosocial issues and show a quick reversal of their condition may be treated in the pediatrician's office, usually in conjunction with a registered dietitian and a mental health practitioner. • Pediatricians who do not feel comfortable with issues of medical and psychosocial management can refer these patients at this early stage. • Pediatricians can choose to stay involved even after referral to the team of specialists, as the family often appreciates the comfort of the relationship with their long-term care provider. • Pediatricians comfortable with the ongoing care and secondary prevention of medical complications in patients with eating disorders may choose to continue care themselves. More severe cases require the involvement of a multidisciplinary specialty team working in outpatient, inpatient, or day program settings. **Recommendations:** • Pediatricians should know when and how to monitor and/or refer patients with eating disorders to best address their medical and nutritional needs, serving as

	an integral part of the multidisciplinary team.
APA (2006)	**<u>Psychiatric Management</u>** • Psychiatric management begins with the establishment of a therapeutic alliance, which is enhanced by empathic comments and behaviors, positive regard, reassurance, and support **[I]**. • Basic psychiatric management includes support through the provision of educational materials, including self-help workbooks; information on community-based and Internet resources; and direct advice to patients and their families (if they are involved) **[I]**. • A team approach is the recommended model of care **[I]**. **Coordinating Care and Collaborating with Other Clinicians** In treating adults with eating disorders, the psychiatrist may assume the leadership role within a program or team that includes other physicians, psychologists, registered dietitians, and social workers or may work collaboratively on a team led by others. • For the management of acute and ongoing medical and dental complications, it is important that psychiatrists consult other physician specialists and dentists **[I]**. • When a patient is managed by an interdisciplinary team in an outpatient setting, communication among the professionals is essential to monitoring the patient's progress, making necessary adjustments to the treatment plan, and delineating the specific roles and tasks of each team member **[I]**. **Assessing and Monitoring Eating Disorder Symptoms and Behaviors** • The complete assessment usually requires at least several hours and includes a thorough review of the patient's height and weight history; restrictive and binge eating and exercise patterns and their changes; purging and other compensatory behaviors; core attitudes regarding weight, shape, and eating; and associated psychiatric conditions **[I]**. • A family history of eating disorders or other psychiatric disorders, including alcohol and other substance use disorders; a family history of obesity; family interactions in relation to the patient's disorder; and family attitudes toward eating, exercise, and appearance are all relevant

to the assessment **[I]**.

- A clinician's articulation of theories that imply blame or permit family members to blame one another or themselves can alienate family members from involvement in the treatment and therefore be detrimental to the patient's care and recovery **[I]**.
- It is important to identify family stressors whose amelioration may facilitate recovery **[I]**.
- In the assessment of children and adolescents, it is essential to involve parents and, whenever appropriate, school personnel and health professionals who routinely work with the patient **[I]**.

Assessing and Monitoring the Patient's General Medical Condition

- A full physical examination of the patient is strongly recommended and may be performed by a physician familiar with common findings in patients with eating disorders. The examination should give particular attention to vital signs, physical status (including height and weight), cardiovascular and peripheral vascular function, dermatological manifestations, and evidence of self-injurious behaviors **[I]**.
- Calculation of the patient's BMI is also useful (see http://www.cdc.gov/nccdphp/dnpa/bmi/00binaries/bmi-tables.pdf [for ages 2-20] and http://www.cdc.gov/nccdphp/dnpa/bmi/00binaries/bmi-adults.pdf [for adults]) **[I]**.
- Early recognition of eating disorder symptoms and early intervention may prevent an eating disorder from becoming chronic **[I]**.
- During treatment, it is important to monitor the patient for shifts in weight, blood pressure, pulse, other cardiovascular parameters, and behaviors likely to provoke physiological decline and collapse **[I]**.
- Patients with a history of purging behaviors should also be referred for a dental examination **[I]**.
- Bone density examinations should be obtained for patients who have been amenorrheic for 6 months or more **[I]**.
- In younger patients, examination should include growth pattern, sexual development (including sexual maturity rating), and general physical development **[I]**.
- The need for laboratory analyses should be determined on an individual basis depending on the patient's condition or the laboratory tests' relevance to making treatment decisions **[I]**.

Assessing and Monitoring the Patient's Safety and

	Psychiatric Status • The patient's safety will be enhanced when particular attention is given to suicidal ideation, plans, intentions, and attempts as well as to impulsive and compulsive self-harm behaviors **[I]**. • Other aspects of the patient's psychiatric status that greatly influence clinical course and outcome and that are important to assess include mood, anxiety, and substance use disorders, as well as motivational status, personality traits, and personality disorders **[I]**. • Assessment for suicidality is of particular importance in patients with co-occurring alcohol and other substance use disorders **[I]**. **Providing Family Assessment and Treatment** • For children and adolescents with anorexia nervosa, family involvement and treatment are essential **[I]**. • For older patients, family assessment and involvement may be useful and should be considered on a case-by-case basis **[II]**. • Involving spouses and partners in treatment may be highly desirable **[II]**.

FMSD (2007)	**Treatment**
	
	• If the symptoms correspond to the diagnostic criteria of anorexia nervosa, the situation should be discussed with the family before treatment is arranged.
	• The adolescent and his or her family should be made aware of the seriousness of the disorder.
	• Sometimes it takes time to motivate the patient to participate in the treatment.
	• The treatment is divided into
	  • Restoring the state of nutrition
	  • Psychotherapeutic treatment

NCCMH/NICE (2004)	**Care Across All Conditions** **Assessment and Coordination of Care** **C** - Assessment of people with eating disorders should be comprehensive and include physical, psychological, and social needs and a comprehensive assessment of risk to self. **C** - The level of risk to the patient's mental and physical health should be monitored as treatment progresses because

	it may change--for example, following weight gain or at times of transition between services in cases of anorexia nervosa. **C** - For people with eating disorders presenting in primary care, general practitioners (GPs) should take responsibility for the initial assessment and the initial coordination of care. This includes the determination of the need for emergency medical or psychiatric assessment. **C** - Where management is shared between primary and secondary care, there should be clear agreement among individual health care professionals on the responsibility for monitoring patients with eating disorders. This agreement should be in writing (where appropriate using the care programme approach) and should be shared with the patient and, where appropriate, his or her family and carers. **Providing Good Information and Support** **C** - Health care professionals should acknowledge that many people with eating disorders are ambivalent about treatment. Health care professionals should also recognise the consequent demands and challenges this presents. **Getting Help Early** **C** - People with eating disorders seeking help should be assessed and receive treatment at the earliest opportunity. **C** - Whenever possible patients should be engaged and treated before reaching severe emaciation. This requires both early identification and intervention. Effective monitoring and engagement of patients at severely low weight or with falling weight should be a priority. **Additional Considerations for Children and Adolescents** **C** - Family members, including siblings, should normally be included in the treatment of children and adolescents with eating disorders. Interventions may include sharing of information, advice on behavioural management, and facilitating communication. **C** - In children and adolescents with eating disorders, growth and development should be closely monitored. Where development is delayed or growth is stunted despite adequate nutrition, paediatric advice should be sought. **C** - Health care professionals assessing children and adolescents with eating disorders should be alert to indicators

	of abuse (emotional, physical and sexual) and should remain so throughout treatment. **C** - The right to confidentiality of children and adolescents with eating disorders should be respected. **C** - Health care professionals working with children and adolescents with eating disorders should familiarise themselves with national guidelines and their employers' policies in the area of confidentiality. **Anorexia Nervosa** **Assessment and Management of Anorexia Nervosa in Primary Care** **C** - In anorexia nervosa, although weight and BMI are important indicators of physical risk they should not be considered the sole indicators (as they are unreliable in adults and especially in children). **C** - Patients with enduring anorexia nervosa not under the care of a secondary care service should be offered an annual physical and mental health review by their GP. **Identification of Eating Disorders in Primary Care** *Screening* **Initial Physical Assessment** The rationale for physical assessment is more to determine the presence and severity of emaciation and secondary physical consequences of the anorexia nervosa than to ascertain the primary diagnosis. It should include as a minimum: • Height weight and BMI • Centile charts for age less than 18 • Pulse and blood pressure. The following may also be helpful to assess the risk of physical instability: • Core temperature (this is easily done by ear thermometer) • Examination of peripheries (circulation and oedema) • Cardiovascular examination including postural

	hypotension • Situp/squat test (a test of muscle power)
Determination of Treatment Setting	
AAP (2003)	Several treatment decisions follow the initial evaluation, including the questions of where and by whom the patient will be treated. Patients who have minimal nutritional, medical, and psychosocial issues and show a quick reversal of their condition may be treated in the pediatrician's office, usually in conjunction with a registered dietitian and a mental health practitioner. Pediatricians who do not feel comfortable with issues of medical and psychosocial management can refer these patients at this early stage. Pediatricians can choose to stay involved even after referral to the team of specialists, as the family often appreciates the comfort of the relationship with their long-term care provider. Pediatricians comfortable with the ongoing care and secondary prevention of medical complications in patients with eating disorders may choose to continue care themselves. More severe cases require the involvement of a multidisciplinary specialty team working in outpatient, inpatient, or day program settings. **The Pediatrician's Role in the Treatment of Eating Disorders in Outpatient Settings** Pediatricians have several important roles to play in the management of patients with diagnosed eating disorders. These aspects of care include medical and nutritional management and coordination with mental health personnel in provision of the psychosocial and psychiatric aspects of care. Most patients will have much of their ongoing treatment performed in outpatient settings. Although some pediatricians in primary care practice may perform these roles for some patients in outpatient settings on the basis of their levels of interest and expertise, many general pediatricians do not feel comfortable treating patients with eating disorders and prefer to refer patients with anorexia or bulimia nervosa for care by those with special expertise. A number of pediatricians specializing in adolescent medicine have developed this skill set, with an increasing number involved in the management of eating disorders as part of multidisciplinary teams. Other than the most severely affected patients, most children and adolescents with eating disorders will be managed in an outpatient setting by a multidisciplinary team coordinated by a pediatrician or subspecialist with appropriate expertise in the care of children and adolescents with eating disorders. Pediatricians generally work with nursing, nutrition, and mental health colleagues in the provision of medical,

nutrition, and mental health care required by these patients.

The Role of the Pediatrician in Hospital and Day Program Settings

Criteria for the hospitalization of children and adolescents with eating disorders have been established by the Society for Adolescent Medicine (Table 6 in the original guideline document). These criteria, in keeping with those published by the American Psychiatric Association, acknowledge that hospitalization may be required because of medical or psychiatric needs or because of failure of outpatient treatment to accomplish needed medical, nutritional, or psychiatric progress. Unfortunately, many insurance companies do not use similar criteria, thus making it difficult for some children and adolescents with eating disorders to receive an appropriate level of care. Children and adolescents have the best prognosis if their disease is treated rapidly and aggressively (an approach that may not be as effective in adults with a more long-term, protracted course). Hospitalization, which allows for adequate weight gain in addition to medical stabilization and the establishment of safe and healthy eating habits, improves the prognosis in children and adolescents.

Day treatment (partial hospitalization) programs have been developed to provide an intermediate level of care for patients with eating disorders who require more than outpatient care but less than 24-hour hospitalization. In some cases, these programs have been used in an attempt to prevent the need for hospitalization; more often, they are used as a transition from inpatient to outpatient care. Day treatment programs generally provide care (including meals, therapy, groups, and other activities) 4 to 5 days per week from 8 or 9 am until 5 or 6 pm. An additional level of care, referred to as an "intensive outpatient" program, has also been developed for these patients and generally provides care 2 to 4 afternoons or evenings per week.

- It is recommended that intensive outpatient and day programs that include children and adolescents should incorporate pediatric care into the management of the developmental and medical needs of their patients.

Pediatricians can play an active role in the development of objective, evidence-based criteria for the transition from one level of care to the next. Additional research can also help clarify other questions, such as the use of enteral versus parenteral nutrition during refeeding, to serve as the foundation for evidence based guidelines.

	Note: Refer to the AAP Physical Management/Nutritional Rehabilitation section of this synthesis for specific aspects of providing treatment in these settings.
APA (2006)	**Psychiatric Management** **Choosing a Treatment Site** Services available for treating eating disorders can range from intensive inpatient programs (in which general medical care is readily available) to residential and partial hospitalization programs to varying levels of outpatient care (in which the patient receives general medical treatment, nutritional counseling, and/or individual, group, and family psychotherapy). Because specialized programs are not available in all geographic areas and their financial requirements are often significant, access to these programs may be limited; petition, explanation, and follow-up by the psychiatrist on behalf of patients and families may help procure access to these programs. • Pretreatment evaluation of the patient is essential in choosing the appropriate treatment setting **[I]**. • In determining a patient's initial level of care or whether a change to a different level of care is appropriate, it is important to consider the patient's overall physical condition, psychology, behaviors, and social circumstances rather than simply rely on one or more physical parameters, such as weight **[I]**. • Weight in relation to estimated individually healthy weight, the rate of weight loss, cardiac function, and metabolic status are the most important physical parameters to be considered when choosing a treatment setting; other psychosocial parameters are also important **[I]**. • Healthy weight estimates for a given individual must be determined by that person's physicians **[I]**. Such estimates may be based on historical considerations (often including that person's growth charts) and, for women, the weight at which healthy menstruation and ovulation resume, which may be higher than the weight at which menstruation and ovulation became impaired. • Admission to or continuation of an intensive level of care (e.g., hospitalization) may be necessary when access to a less intensive level of care (e.g., partial hospitalization) is absent because of geography or a lack of resources **[I]**. • Generally, adult patients who weigh less than approximately 85% of their individually estimated healthy weights have considerable difficulty gaining weight outside of a highly structured program **[II]**.

	• Such programs, including inpatient care, may be medically and psychiatrically necessary even for some patients who are above 85% of their individually estimated healthy weight **[I]**. • Factors suggesting that hospitalization may be appropriate include rapid or persistent decline in oral intake, a decline in weight despite maximally intensive outpatient or partial hospitalization interventions, the presence of additional stressors that may interfere with the patient's ability to eat, knowledge of the weight at which instability previously occurred in the patient, co-occurring psychiatric problems that merit hospitalization, and the degree of the patient's denial and resistance to participate in his or her own care in less intensively supervised settings **[I]**. • Hospitalization should occur before the onset of medical instability as manifested by abnormalities in vital signs (e.g., marked orthostatic hypotension with an increase in pulse of 20 beats per minute (bpm) or a drop in standing blood pressure of 20 millimeters of mercury (mmHg), bradycardia <40 bpm, tachycardia >110 bpm, or an inability to sustain core body temperature), physical findings, or laboratory tests **[I]**. • To avert potentially irreversible effects on physical growth and development, many children and adolescents require inpatient medical treatment, even when weight loss, although rapid, has not been as severe as that suggesting a need for hospitalization in adult patients **[I]**. • Patients who are physiologically stabilized on acute medical units will still require specific inpatient treatment for eating disorders if they do not meet biopsychosocial criteria for less intensive levels of care and/or if no suitable less intensive levels of care are accessible because of geographic or other reasons **[I]**. • Weight level per se should never be used as the sole criterion for discharge from inpatient care **[I]**. Assisting patients in determining and practicing appropriate food intake at a healthy body weight is likely to decrease the chances of their relapsing after discharge **[I]**. • In shifting between levels of care, it is important to establish continuity of care **[II]**. • If the patient is going from one treatment setting or locale to another, transition planning requires that the care team in the new setting or locale be identified and that specific patient appointments be made **[I]**. • It is preferable that a specific clinician on the team be designated as the primary coordinator of care to ensure continuity and attention to important aspects of treatment **[II]**. • Most patients with uncomplicated bulimia nervosa do not

require hospitalization; indications for the hospitalization of such patients include severe disabling symptoms that have not responded to adequate trials of outpatient treatment, serious concurrent general medical problems (e.g., metabolic abnormalities, hematemesis, vital sign changes, uncontrolled vomiting), suicidality, psychiatric disturbances that would warrant the patient's hospitalization independent of the eating disorder diagnosis, or severe concurrent alcohol or drug dependence or abuse **[I]**.

- Legal interventions, including involuntary hospitalization and legal guardianship, may be necessary to address the safety of treatment-reluctant patients whose general medical conditions are life threatening **[I]**.
- The decision about whether a patient should be hospitalized on a psychiatric versus a general medical or adolescent/pediatric unit should be made based on the patient's general medical and psychiatric status, the skills and abilities of local psychiatric and general medical staff, and the availability of suitable programs to care for the patient's general medical and psychiatric problems **[I]**.
- There is evidence to suggest that patients with eating disorders have better outcomes when treated on inpatient units specializing in the treatment of these disorders than when treated in general inpatient settings where staff lack expertise and experience in treating eating disorders **[II]**.
- Outcomes from partial hospitalization programs that specialize in eating disorders are highly correlated with treatment intensity. The more successful programs involve patients in treatment at least 5 days/week for 8 hours/day; thus, it is recommended that partial hospitalization programs be structured to provide at least this level of care **[I]**.
- Patients who are considerably below their healthy body weight and are highly motivated to adhere to treatment, have cooperative families, and have a brief symptom duration may benefit from treatment in outpatient settings, but only if they are carefully monitored and if they and their families understand that a more restrictive setting may be necessary if persistent progress is not evident in a few weeks **[II]**.
- Careful monitoring includes at least weekly (and often two to three times a week) weight determinations done directly after the patient voids and while the patient is wearing the same class of garment (e.g., hospital gown, standard exercise clothing) **[I]**.
- In patients who purge, it is important to routinely monitor serum electrolytes **[I]**.
- Urine specific gravity, orthostatic vital signs, and oral temperatures may need to be measured on a regular

	basis **[II]**. • In an outpatient setting, patients can remain with their families and continue to attend school or work. Inpatient care may interfere with family, school, and work obligations; however, it is important to give priority to the safe and adequate treatment of a rapidly progressing or otherwise unresponsive disorder for which hospital care might be necessary **[I]**.
FMSD (2007)	**Treatment** • If the state of malnutrition is life threatening, the patient is first treated in a somatic ward, and thereafter the adolescent is guided into therapy if possible. • A prolonged state of malnutrition and insufficient outpatient care are reasons to direct a patient into forced treatment. **Related Resources** • Evidence on inpatient versus outpatient care for eating disorders is insufficient for making firm conclusions **[D]**.
NCCMH/NICE (2004)	**Service Interventions for Anorexia Nervosa** This section considers those aspects of the service system relevant to the treatment and management of anorexia nervosa. **C** - Most people with anorexia nervosa should be treated on an outpatient basis. **C** - Where inpatient management is required, this should be provided within reasonable travelling distance to enable the involvement of relatives and carers in treatment, to maintain social and occupational links, and to avoid difficulty in transition between primary and secondary care services. This is particularly important in the treatment of children and adolescents. **C** - Inpatient treatment should be considered for people with anorexia nervosa whose disorder is associated with high or moderate physical risk. **C** - People with anorexia nervosa requiring inpatient treatment should be admitted to a setting that can provide the skilled implementation of refeeding with careful physical monitoring (particularly in the first few days of refeeding), in

	combination with psychosocial interventions. **C** - Inpatient treatment or day patient treatment should be considered for people with anorexia nervosa whose disorder has not improved with appropriate outpatient treatment, or for whom there is a significant risk of suicide or severe self-harm. **C** - Health care professionals without specialist experience of eating disorders, or in situations of uncertainty, should consider seeking advice from an appropriate specialist when contemplating a compulsory admission for a patient with anorexia nervosa, regardless of the age of the patient. **C** - Health care professionals managing patients with anorexia nervosa, especially that of the binge purging sub-type, should be aware of the increased risk of self-harm and suicide, particularly at times of transition between services or service settings. **Additional Considerations for Children and Adolescents** **C** - Admission of children and adolescents with anorexia nervosa should be to age-appropriate facilities (with the potential for separate children and adolescent services), which have the capacity to provide appropriate educational and related activities. **C** - When a young person with anorexia nervosa refuses treatment that is deemed essential, consideration should be given to the use of the Mental Health Act 1983 or the right of those with parental responsibility to override the young person's refusal. **C** - Relying indefinitely on parental consent to treatment should be avoided. It is recommended that the legal basis under which treatment is being carried out should be recorded in the patient's case notes, and this is particularly important in the case of children and adolescents. **C** - For children and adolescents with anorexia nervosa, where issues of consent to treatment are highlighted, health care professionals should consider seeking a second opinion from an eating disorders specialist. **C** - If the patient with anorexia nervosa and those with parental responsibility refuse treatment, and treatment is deemed to be essential, legal advice should be sought in order to consider proceedings under the Children Act 1989.

	Service Interventions for Bulimia Nervosa The great majority of patients with bulimia nervosa can be treated as outpatients. There is a very limited role for the inpatient treatment of bulimia nervosa. This is primarily concerned with the management of suicide risk or severe self-harm. **C** - The great majority of patients with bulimia nervosa should be treated in an outpatient setting. **C** - For patients with bulimia nervosa who are at risk of suicide or severe self-harm, admission as an inpatient or day patient, or the provision of more intensive outpatient care, should be considered. **C** - Psychiatric admission for people with bulimia nervosa should normally be undertaken in a setting with experience of managing this disorder. **C** - Health care professionals should be aware that patients with bulimia nervosa who have poor impulse control, notably substance misuse, may be less likely to respond to a standard programme of treatment. As a consequence treatment should be adapted to the problems presented.
Physical Management/Nutritional Rehabilitation	
AAP (2003)	**The Pediatrician's Role in the Treatment of Eating Disorders in Outpatient Settings** As listed in Table 4 of the original guideline document, medical complications of eating disorders can occur in all organ systems. Pediatricians need to be aware of several complications that can occur in the outpatient setting. • Although most patients do not have electrolyte abnormalities, the pediatrician must be alert to the possibility of development of hypokalemic, hypochloremic alkalosis resulting from purging behaviors (including vomiting and laxative or diuretic use) and hyponatremia or hypernatremia resulting from drinking too much or too little fluid as part of weight manipulation. • Endocrine abnormalities, including hypothyroidism, hypercortisolism, and hypogonadotropic hypogonadism, are common, with amenorrhea leading to the potentially long-term complication of osteopenia and, ultimately, osteoporosis. • Gastrointestinal symptoms caused by abnormalities in intestinal motility resulting from malnutrition, laxative

abuse, or refeeding are common but are rarely dangerous and may require symptomatic relief.
- Constipation during refeeding is common and should be treated with dietary manipulation and reassurance; the use of laxatives in this situation should be avoided.

The components of nutritional rehabilitation required in the outpatient management of patients with eating disorders are presented in several reviews. These reviews highlight the dietary stabilization that is required as part of the management of bulimia nervosa and the weight gain regimens that are required as the hallmark of treatment of anorexia nervosa.

- The reintroduction or improvement of meals and snacks in those with anorexia nervosa is generally done in a stepwise manner, leading in most cases to an eventual intake of 2000 to 3000 kcal per day and a weight gain of 0.5 to 2 lb per week.
- Changes in meals are made to ensure ingestion of 2 to 3 servings of protein per day (with 1 serving equal to 3 oz of cheese, chicken, meat, or other protein sources).
- Daily fat intake should be slowly shifted toward a goal of 30 to 50 g per day.
- Treatment goal weights should be individualized and based on age, height, stage of puberty, premorbid weight, and previous growth charts. In postmenarchal girls, resumption of menses provides an objective measure of return to biological health, and weight at resumption of menses can be used to determine treatment goal weight. A weight approximately 90% of standard body weight is the average weight at which menses resume and can be used as an initial treatment goal weight, because 86% of patients who achieve this weight resume menses within 6 months.
- For a growing child or adolescent, goal weight should be reevaluated at 3- to 6-month intervals on the basis of changing age and height.
- Behavioral interventions are often required to encourage otherwise reluctant (and often resistant) patients to accomplish necessary caloric intake and weight gain goals. Although some pediatric specialists, pediatric nurses, or dietitians may be able to handle this aspect of care alone, a combined medical and nutritional team is usually required, especially for more difficult patients.

Similarly, the pediatrician must work with mental health experts to provide the necessary psychologic, social, and psychiatric care. The model used by many interdisciplinary teams, especially those based in settings experienced in the care of adolescents, is to establish a division of labor such

	that the medical and nutritional clinicians work on the issues described in the preceding paragraph and the mental health clinicians provide such modalities as individual, family, and group therapy. It is generally accepted that medical stabilization and nutritional rehabilitation are the most crucial determinants of short-term and intermediate-term outcome. Individual and family therapy, the latter being especially important in working with younger children and adolescents, are crucial determinants of the long-term prognosis. It is also recognized that correction of malnutrition is required for the mental health aspects of care to be effective. **The Role of the Pediatrician in Hospital and Day Program Settings** • The pediatrician involved in the treatment of hospitalized patients must be prepared to provide nutrition via a nasogastric tube or occasionally intravenously when necessary. Some programs use this approach frequently, and others apply it more sparingly. Also, because these patients are generally more malnourished than those treated as outpatients, more severe complications may need to be treated. These include the possible metabolic, cardiac, and neurologic complications listed in Table 2 of the original guideline document. Of particular concern is the refeeding syndrome that can occur in severely malnourished patients who receive nutritional replenishment too rapidly. The refeeding syndrome consists of cardiovascular, neurologic, and hematologic complications that occur because of shifts in phosphate from extracellular to intracellular spaces in individuals who have total body phosphorus depletion as a result of malnutrition. Recent studies have shown that this syndrome can result from use of oral, parenteral, or enteral nutrition. • Slow refeeding, with the possible addition of phosphorus supplementation, is required to prevent development of the refeeding syndrome in severely malnourished children and adolescents.
APA (2006)	**<u>Choice of Specific Treatments for Anorexia Nervosa</u>** The aims of treating anorexia nervosa are to 1) restore patients to a healthy weight (associated with the return of menses and normal ovulation in female patients, normal sexual drive and hormone levels in male patients, and normal physical and sexual growth and development in children and

adolescents); 2) treat physical complications; 3) enhance patients' motivation to cooperate in the restoration of healthy eating patterns and participate in treatment; 4) provide education regarding healthy nutrition and eating patterns; 5) help patients reassess and change core dysfunctional cognitions, attitudes, motives, conflicts, and feelings related to the eating disorder; 6) treat associated psychiatric conditions, including deficits in mood and impulse regulation and self-esteem and behavioral problems; 7) enlist family support and provide family counseling and therapy where appropriate; and 8) prevent relapse.

Nutritional Rehabilitation

- The goals of nutritional rehabilitation for seriously underweight patients are to restore weight, normalize eating patterns, achieve normal perceptions of hunger and satiety, and correct biological and psychological sequelae of malnutrition **[I]**.
- For patients age 20 years and younger, an individually appropriate range for expected weight and goals for weight and height may be determined by considering measurements and clinical factors, including current weight, bone age estimated from wrist x-rays and nomograms, menstrual history (in adolescents with secondary amenorrhea), mid-parental heights, assessments of skeletal frame, and benchmarks from Centers for Disease Control and Prevention (CDC) growth charts (available at http://www.cdc.gov/growthcharts/) **[I]**.
- For individuals who are markedly underweight and for children and adolescents whose weight has deviated below their growth curves, hospital-based programs for nutritional rehabilitation should be considered **[I]**.
- For patients in inpatient or residential settings, the discrepancy between healthy target weight and weight at discharge may vary depending on patients' ability to feed themselves, their motivation and ability to participate in aftercare programs, and the adequacy of aftercare, including partial hospitalization **[I]**.
- It is important to implement refeeding programs in nurturing emotional contexts **[I]**.
- For example, it is useful for staff to convey to patients their intention to take care of them and not let them die even when the illness prevents the patients from taking care of themselves **[II]**.
- It is also useful for staff to communicate clearly that they are not seeking to engage in control battles and have no punitive intentions when using interventions that the patient may experience as aversive **[I]**.
- In working to achieve target weights, the treatment plan

	should also establish expected rates of controlled weight gain. Clinical consensus suggests that realistic targets are 2 to 3 lb/week for hospitalized patients and 0.5 to 1 lb/week for individuals in outpatient programs **[II]**. • Registered dietitians can help patients choose their own meals and can provide a structured meal plan that ensures nutritional adequacy and that none of the major food groups are avoided **[I]**. • Formula feeding may have to be added to the patient's diet to achieve large caloric intake **[II]**. • It is important to encourage patients with anorexia nervosa to expand their food choices to minimize the severely restricted range of foods initially acceptable to them **[II]**. • Caloric intake levels should usually start at 30 to 40 kcal/kg per day (approximately 1,000 to 1,600 kcal/day). During the weight gain phase, intake may have to be advanced progressively to as high as 70 to 100 kcal/kg per day for some patients; many male patients require a very large number of calories to gain weight **[II]**. • Patients who require much lower caloric intakes or are suspected of artificially increasing their weight by fluid loading should be weighed in the morning after they have voided and are wearing only a gown; their fluid intake should also be carefully monitored **[I]**. • Urine specimens obtained at the time of a patient's weigh-in may need to be assessed for specific gravity to help ascertain the extent to which the measured weight reflects excessive water intake **[I]**. • Regular monitoring of serum potassium levels is recommended in patients who are persistent vomiters **[I]**. • Hypokalemia should be treated with oral or intravenous potassium supplementation and rehydration **[I]**. • Physical activity should be adapted to the food intake and energy expenditure of the patient, taking into account the patient's bone mineral density and cardiac function **[I]**. • Once a safe weight is achieved, the focus of an exercise program should be on the patient's gaining physical fitness as opposed to expending calories **[I]**. • Weight gain results in improvements in most of the physiological and psychological complications of semistarvation **[I]**. • It is important to warn patients about the following aspects of early recovery **[I]**: As they start to recover and feel their bodies getting larger, especially as they approach frightening, magical numbers on the scale that represent phobic weights, they may experience a resurgence of anxious and depressive symptoms, irritability, and sometimes suicidal thoughts. These mood

	symptoms, non-food-related obsessional thoughts, and compulsive behaviors, although often not eradicated, usually decrease with sustained weight gain and weight maintenance. Initial refeeding may be associated with mild transient fluid retention, but patients who abruptly stop taking laxatives or diuretics may experience marked rebound fluid retention for several weeks. As weight gain progresses, many patients also develop acne and breast tenderness and become unhappy and demoralized about resulting changes in body shape. • Patients may experience abdominal pain and bloating with meals from the delayed gastric emptying that accompanies malnutrition. These symptoms may respond to pro-motility agents **[III]**. Constipation may be ameliorated with stool softeners; if unaddressed, it can progress to obstipation and, rarely, to acute bowel obstruction. • When life-preserving nutrition must be provided to a patient who refuses to eat, nasogastric feeding is preferable to intravenous feeding **[I]**. • When nasogastric feeding is necessary, continuous feeding (i.e., over 24 hours) may be better tolerated by patients and less likely to result in metabolic abnormalities than three to four bolus feedings a day **[II]**. • In very difficult situations, where patients physically resist and constantly remove their nasogastric tubes, feeding through surgically placed gastrostomy or jejunostomy tubes may be an alternative to nasogastric feeding **[II]**. • In determining whether to begin involuntary forced feeding, the clinician should carefully think through the clinical circumstances, family opinion, and relevant legal and ethical dimensions of the patient's treatment **[I]**. • The general principles to be followed in making the decision are those directing good, humane care; respecting the wishes of competent patients; and intervening respectfully with patients whose judgment is severely impaired by their psychiatric disorders when such interventions are likely to have beneficial results **[I]**. • For cooperative patients, supplemental overnight pediatric nasogastric tube feeding has been used in some programs to facilitate weight gain **[III]**. • With severely malnourished patients (particularly those whose weight is <70% of their healthy body weight) who undergo aggressive oral, nasogastric, or parenteral refeeding, a serious refeeding syndrome can occur. Initial assessments should include vital signs and food and fluid intake and output, if indicated, as well as monitoring for edema, rapid weight gain (associated primarily with fluid

overload), congestive heart failure, and gastrointestinal symptoms **[I]**.
- Patients' serum levels of phosphorus, magnesium, potassium, and calcium should be determined daily for the first 5 days of refeeding and every other day for several weeks thereafter, and electrocardiograms should be performed as indicated **[II]**.
- For children and adolescents who are severely malnourished (weight <70% of healthy body weight), cardiac monitoring, especially at night, may be desirable **[II]**.
- Phosphorus, magnesium, and/or potassium supplementation should be given when indicated **[I]**.

Choice of Specific Treatments for Bulimia Nervosa

The aims of treatment for patients with bulimia nervosa are to 1) reduce and, where possible, eliminate binge eating and purging; 2) treat physical complications of bulimia nervosa; 3) enhance patients' motivation to cooperate in the restoration of healthy eating patterns and participate in treatment; 4) provide education regarding healthy nutrition and eating patterns; 5) help patients reassess and change core dysfunctional thoughts, attitudes, motives, conflicts, and feelings related to the eating disorder; 6) treat associated psychiatric conditions, including deficits in mood and impulse regulation, self-esteem, and behavior; 7) enlist family support and provide family counseling and therapy where appropriate; and 8) prevent relapse.

Nutritional Rehabilitation Counseling

- A primary focus for nutritional rehabilitation is to help the patient develop a structured meal plan as a means of reducing the episodes of dietary restriction and the urges to binge and purge **[I]**.
- Adequate nutritional intake can prevent craving and promote satiety **[I]**.
- It is important to assess nutritional intake for all patients, even those with a normal body weight (or normal BMI), as normal weight does not ensure appropriate nutritional intake or normal body composition **[I]**.
- Among patients of normal weight, nutritional counseling is a useful part of treatment and helps reduce food restriction, increase the variety of foods eaten, and promote healthy but not compulsive exercise patterns **[I]**.

Eating Disorder not Otherwise Specified

- Patients with subsyndromal anorexia nervosa or bulimia

	nervosa who meet most but not all of the DSM-IV-TR criteria (e.g., weight >85% of expected weight, binge and purge frequency less than twice per week) merit treatment similar to that of patients who fulfill all criteria for these diagnoses **[II]**. **Binge Eating Disorder** *Nutritional Rehabilitation and Counseling* • Behavioral weight control programs incorporating low- or very-low-calorie diets may help with weight loss and usually with reduction of symptoms of binge eating **[I]**. • It is important to advise patients that weight loss is often not maintained and that binge eating may recur when weight is gained **[I]**. • It is also important to advise them that weight gain after weight loss may be accompanied by a return of binge eating patterns **[I]**. • Various combinations of diets, behavior therapies, interpersonal therapies, psychodynamic psychotherapies, non-weight-directed psychosocial treatments, and even some "nondiet/health at every size" psychotherapy approaches may be of benefit for binge eating and weight loss or stabilization **[III]**. • Patients with a history of repeated weight loss followed by weight gain ("yo-yo" dieting) or patients with an early onset of binge eating may benefit from following programs that focus on decreasing binge eating rather than on weight loss **[II]**. • There is little empirical evidence to suggest that obese binge eaters who are primarily seeking weight loss should receive different treatment than obese individuals who do not binge eat **[I]**.
FMSD (2007)	No specific recommendations offered. The treatment is divided into: • Restoring that state of nutrition • Psychotherapeutic treatment
NCCMH/NICE (2004)	**<u>Care Across All Conditions</u>** **Management of Physical Aspects** **C** - Where laxative abuse is present, patients should be advised to gradually reduce laxative use and informed that

	laxative use does not significantly reduce calorie absorption. **C** - Treatment of both subthreshold and clinical cases of an eating disorder in people with diabetes is essential because of the greatly increased physical risk in this group. **C** - People with type 1 diabetes and an eating disorder should have intensive regular physical monitoring because they are at high risk of retinopathy and other complications. **C** - Pregnant women with eating disorders require careful monitoring throughout the pregnancy and in the postpartum period. **C** - Patients with an eating disorder who are vomiting should have regular dental reviews. **C** - Patients who are vomiting should be given appropriate advice on dental hygiene, which should include avoiding brushing after vomiting; rinsing with a non-acid mouthwash after vomiting; and reducing an acid oral environment (for example, limiting acidic foods). **C** - Health care professionals should advise people with eating disorders and osteoporosis or related bone disorders to refrain from physical activities that significantly increase the likelihood of falls. **Additional considerations for children and adolescents** **C** - In children and adolescents with eating disorders, growth and development should be closely monitored. Where development is delayed or growth is stunted despite adequate nutrition, paediatric advice should be sought. **Anorexia Nervosa** **Physical Management of Anorexia Nervosa** Anorexia nervosa carries considerable risk of serious physical morbidity. Awareness of the risk, careful monitoring, and, where appropriate, close liaison with an experienced physician are important in the management of the physical complications of anorexia nervosa. *Managing Weight Gain* **C** - In most patients with anorexia nervosa, an average weekly weight gain of 0.5 to 1 kg in inpatient settings and 0.5 kg in outpatient settings should be an aim of treatment.

	This requires about 3,500 to 7,000 extra calories a week. **C** - Regular physical monitoring, and in some cases treatment with a multi-vitamin/multi-mineral supplement in oral form, is recommended for people with anorexia nervosa during both inpatient and outpatient weight restoration. **C** - Total parenteral nutrition should not be used for people with anorexia nervosa, unless there is significant gastrointestinal dysfunction. *Managing Risk* **C** - Health care professionals should monitor physical risk in patients with anorexia nervosa. If this leads to the identification of increased physical risk, the frequency of the monitoring and nature of the investigations should be adjusted accordingly. **C** - People with anorexia nervosa and their carers should be informed if the risk to their physical health is high. **C** - The involvement of a physician or paediatrician with expertise in the treatment of physically at-risk patients with anorexia nervosa should be considered for all individuals who are physically at risk. **C** - Pregnant women with either current or remitted anorexia nervosa may need more intensive prenatal care to ensure adequate prenatal nutrition and fetal development. **C** - Oestrogen administration should not be used to treat bone density problems in children and adolescents as this may lead to premature fusion of the epiphyses. *Feeding Against the Will of the Patient* **C** - Feeding against the will of the patient should be an intervention of last resort in the care and management of anorexia nervosa. **C** - Feeding against the will of the patient is a highly specialized procedure requiring expertise in the care and management of those with severe eating disorders and the physical complications associated with it. This should only be done in the context of the Mental Health Act 1983 or Children Act 1989. **C** - When making the decision to feed against the will of the

patient, the legal basis for any such action must be clear.

Additional Considerations for Children and Adolescents

C - Health care professionals should ensure that children and adolescents with anorexia nervosa who have reached a healthy weight have the increased energy and necessary nutrients available in their diet to support further growth and development.

C - In the nutritional management of children and adolescents with anorexia nervosa, carers should be included in any dietary education or meal planning.

Other Physical Interventions

Physical monitoring is necessary during periods of refeeding. A range of electrolyte disturbances can occur during refeeding, which are sometimes referred to collectively as the "refeeding syndrome." Hypophosphataemia may develop rapidly during refeeding; if severe, it can cause cardiac and respiratory failure, delirium, and fits. Ingestion of large quantities of carbohydrates, during rapid refeeding, may result in a precipitate drop in serum phosphate levels. Therefore, in the first few days of refeeding patients who have had very low or absent intakes for long periods, no attempt should be made to achieve net weight gain. Instead they should receive energy and protein provision at levels at or less than their estimated basal requirements with generous provision of balanced multi-vitamins and minerals especially thiamine, potassium, magnesium, and phosphate.

<u>Bulimia Nervosa</u>

Management of Physical Aspects of Bulimia Nervosa

Patients with bulimia nervosa can experience considerable physical problems as a result of a range of behaviours associated with the condition. Awareness of the risks and careful monitoring should be a concern of all health care professionals working with people with this disorder.

C - Patients with bulimia nervosa who are vomiting frequently or taking large quantities of laxatives (especially if they are also underweight) should have their fluid and electrolyte balance assessed.

C - When electrolyte disturbance is detected, it is usually sufficient to focus on eliminating the behaviour responsible. In the small proportion of cases where supplementation is

	required to restore electrolyte balance, oral rather than intravenous administration is recommended, unless there are problems with gastrointestinal absorption.
Psychological Interventions	
AAP (2003)	**The Pediatrician's Role in the Treatment of Eating Disorders in Outpatient Settings** Behavioral interventions are often required to encourage otherwise reluctant (and often resistant) patients to accomplish necessary caloric intake and weight gain goals. Although some pediatric specialists, pediatric nurses, or dietitians may be able to handle this aspect of care alone, a combined medical and nutritional team is usually required, especially for more difficult patients. Similarly, the pediatrician must work with mental health experts to provide the necessary psychologic, social, and psychiatric care. The model used by many interdisciplinary teams, especially those based in settings experienced in the care of adolescents, is to establish a division of labor such that the medical and nutritional clinicians work on the issues described in the preceding paragraph (see Physical Management section of this synthesis) and the mental health clinicians provide such modalities as individual, family, and group therapy. It is generally accepted that medical stabilization and nutritional rehabilitation are the most crucial determinants of short-term and intermediate-term outcome. Individual and family therapy, the latter being especially important in working with younger children and adolescents, are crucial determinants of the longterm prognosis. It is also recognized that correction of malnutrition is required for the mental health aspects of care to be effective.
APA (2006)	**Choice of Specific Treatments for Anorexia Nervosa** **Psychosocial Interventions** The goals of psychosocial interventions are to help patients with anorexia nervosa 1) understand and cooperate with their nutritional and physical rehabilitation, 2) understand and change the behaviors and dysfunctional attitudes related to their eating disorder, 3) improve their interpersonal and social functioning, and 4) address comorbid psychopathology and psychological conflicts that reinforce or maintain eating disorder behaviors. *Acute Anorexia Nervosa*

	• During acute refeeding and while weight gain is occurring, it is beneficial to provide anorexia nervosa patients with individual psychotherapeutic management that is psychodynamically informed and provides empathic understanding, explanations, praise for positive efforts, coaching, support, encouragement, and other positive behavioral reinforcement **[I]**. • Attempts to conduct formal psychotherapy with starving patients who are often negativistic, obsessional, or mildly cognitively impaired may be ineffective **[II]**. • For children and adolescents, the evidence indicates that family treatment is the most effective intervention **[I]**. • In methods modeled after the Maudsley approach, families become actively involved, in a blame-free atmosphere, in helping patients eat more and resist compulsive exercising and purging. For some outpatients, a short-term course of family therapy using these methods may be as effective as a long-term course; however, a shorter course of therapy may not be adequate for patients with severe obsessive-compulsive features or nonintact families **[II]**. • Most inpatient-based nutritional rehabilitation programs create a milieu that incorporates emotional nurturance and a combination of reinforcers that link exercise, bed rest, and privileges to target weights, desired behaviors, feedback concerning changes in weight, and other observable parameters **[II]**. • For adolescents treated in inpatient settings, participation in family group psychoeducation may be helpful to their efforts to regain weight and may be equally as effective as more intensive forms of family therapy **[III]**. *Anorexia Nervosa after Weight Restoration* Once malnutrition has been corrected and weight gain has begun, psychotherapy can help patients with anorexia nervosa understand 1) their experience of their illness; 2) cognitive distortions and how these have led to their symptomatic behavior; 3) developmental, familial, and cultural antecedents of their illness; 4) how their illness may have been a maladaptive attempt to regulate their emotions and cope; 5) how to avoid or minimize the risk of relapse; and 6) how to better cope with salient developmental and other important life issues in the future. • Clinical experience shows that patients may often display improved mood, enhanced cognitive functioning, and clearer thought processes after there is significant improvement in nutritional intake, even before there is substantial weight gain **[II]**. • To help prevent patients from relapsing, emerging data

	support the use of cognitive-behavioral psychotherapy for adults **[II]**. • Many clinicians also use interpersonal and/or psychodynamically oriented individual or group psychotherapy for adults after their weight has been restored **[II]**. • For adolescents who have been ill <3 years, after weight has been restored, family therapy is a necessary component of treatment **[I]**. • Although studies of different psychotherapies focus on these interventions as distinctly separate treatments, in practice there is frequent overlap of interventions **[II]**. • It is important for clinicians to pay attention to cultural attitudes, patient issues involving the gender of the therapist, and specific concerns about possible abuse, neglect, or other developmental traumas **[II]**. • Clinicians need to attend to their countertransference reactions to patients with a chronic eating disorder, which often include beleaguerment, demoralization, and excessive need to change the patient **[I]**. • At the same time, when treating patients with chronic illnesses, clinicians need to understand the longitudinal course of the disorder and that patients can recover even after many years of illness **[I]**. • Because of anorexia nervosa's enduring nature, psychotherapeutic treatment is frequently required for at least 1 year and may take many years **[I]**. • Anorexics and Bulimics Anonymous and Overeaters Anonymous are not substitutes for professional treatment **[I]**. • Programs that focus exclusively on abstaining from binge eating, purging, restrictive eating, or excessive exercising (e.g., 12-step programs) without attending to nutritional considerations or cognitive and behavioral deficits have not been studied and therefore cannot be recommended as the sole treatment for anorexia nervosa **[I]**. • It is important for programs using 12-step models to be equipped to care for patients with the substantial psychiatric and general medical problems often associated with eating disorders **[I]**. Although families and patients are increasingly accessing worthwhile, helpful information through online web sites, newsgroups, and chat rooms, the lack of professional supervision within these resources may sometimes lead to users' receiving misinformation or create unhealthy dynamics among users. • It is recommended that clinicians inquire about a patient's or family's use of Internet-based support and

other alternative and complementary approaches and be prepared to openly and sympathetically discuss the information and ideas gathered from these sources **[I]**.

Chronic Anorexia Nervosa

Patients with chronic anorexia nervosa generally show a lack of substantial clinical response to formal psychotherapy.

- Nevertheless, many clinicians report seeing patients with chronic anorexia nervosa who, after many years of struggling with their disorder, experience substantial remission, so clinicians are justified in maintaining and extending some degree of hope to patients and families **[II]**.
- More extensive psychotherapeutic measures may be undertaken to engage and help motivate patients whose illness is resistant to treatment **[II]** or, failing that, as compassionate care **[I]**. For patients who have difficulty talking about their problems, clinicians have reported that a variety of nonverbal therapeutic methods, such as the creative arts, movement therapy programs, and occupational therapy, can be useful **[III]**. Psychosocial programs designed for patients with chronic eating disorders are being implemented at several treatment sites and may prove useful **[II]**.

Choice of Specific Treatments for Bulimia Nervosa

Psychosocial Interventions

- It is recommended that psychosocial interventions be chosen on the basis of a comprehensive evaluation of the individual patient that takes into consideration the patient's cognitive and psychological development, psychodynamic issues, cognitive style, comorbid psychopathology, and preferences as well as patient age and family situation **[I]**.
- For treating acute episodes of bulimia nervosa in adults, the evidence strongly supports the value of CBT as the most effective single intervention **[I]**.
- Some patients who do not respond initially to CBT may respond when switched to either IPT or fluoxetine **[II]** or other modes of treatment such as family and group psychotherapies **[III]**.
- Controlled trials have also shown the utility of IPT in some cases **[II]**.
- In clinical practice, many practitioners combine elements of CBT, IPT, and other psychotherapeutic techniques. Compared with psychodynamic or interpersonal therapy, CBT is associated with more rapid remission of eating

symptoms **[I]**, but using psychodynamic interventions in conjunction with CBT and other psychotherapies may yield better global outcomes **[II]**.
- Some patients, particularly those with concurrent personality pathology or other co-occurring disorders, require lengthy treatment **[II]**.
- Clinical reports suggest that psychodynamic and psychoanalytic approaches in individual or group format are useful once bingeing and purging improve **[III]**.
- Family therapy should be considered whenever possible, especially for adolescent patients still living with their parents **[II]** or older patients with ongoing conflicted interactions with parents **[III]**.
- Patients with marital discord may benefit from couples therapy **[II]**.
- A variety of self-help and professionally guided self-help programs have been effective for some patients with bulimia nervosa **[I]**.
- Several innovative online programs are currently under investigation and may be recommended in the absence of alternative treatments **[III]**.
- Support groups and 12-step programs such as Overeaters Anonymous may be helpful as adjuncts in the initial treatment of bulimia nervosa and for subsequent relapse prevention, but they are not recommended as the sole initial treatment approach for bulimia nervosa **[I]**.
- Issues of countertransference, discussed above with respect to the treatment of patients with anorexia nervosa, also apply to the treatment of patients with bulimia nervosa **[I]**.

Eating Disorder not Otherwise Specified

- Patients with subsyndromal anorexia nervosa or bulimia nervosa who meet most but not all of the DSM-IV-TR criteria (e.g., weight >85% of expected weight, binge and purge frequency less than twice per week) merit treatment similar to that of patients who fulfill all criteria for these diagnoses **[II]**.

Binge Eating Disorder

Nutritional Rehabilitation and Counseling

- Behavioral weight control programs incorporating low- or very-low-calorie diets may help with weight loss and usually with reduction of symptoms of binge eating **[I]**.
- It is important to advise patients that weight loss is often not maintained and that binge eating may recur when weight is gained **[I]**.

	• It is also important to advise them that weight gain after weight loss may be accompanied by a return of binge eating patterns **[I]**. • Various combinations of diets, behavior therapies, interpersonal therapies, psychodynamic psychotherapies, non-weight-directed psychosocial treatments, and even some "nondiet/health at every size" psychotherapy approaches may be of benefit for binge eating and weight loss or stabilization **[III]**. • Patients with a history of repeated weight loss followed by weight gain ("yo-yo" dieting) or patients with an early onset of binge eating may benefit from following programs that focus on decreasing binge eating rather than on weight loss **[II]**. • There is little empirical evidence to suggest that obese binge eaters who are primarily seeking weight loss should receive different treatment than obese individuals who do not binge eat **[I]**. *Other Psychosocial Treatments* • Substantial evidence supports the efficacy of individual or group CBT for the behavioral and psychological symptoms of binge eating disorder **[I]**. • IPT and dialectical behavior therapy have also been shown to be effective for behavioral and psychological symptoms and can be considered as alternatives **[II]**. • Patients may be advised that some studies suggest that most patients continue to show behavioral and psychological improvement at their 1-year follow-up **[II]**. • Substantial evidence supports the efficacy of self-help and guided self-help CBT programs and their use as an initial step in a sequenced treatment program **[I]**. • Other therapies that use a "nondiet" approach and focus on self-acceptance, improved body image, better nutrition and health, and increased physical movement have been tried, as have addiction-based 12-step approaches, self-help organizations, and treatment programs based on the Alcoholics Anonymous model, but no systematic outcome studies of these programs are available **[III]**. *Combining Psychosocial and Medication Treatments* • For most eating disorder patients, adding antidepressant medication to their behavioral weight control and/or CBT regimen does not have a significant effect on binge suppression when compared with medication alone. However, medications may induce additional weight reduction and have associated psychological benefits

	[II]. • Adding the weight loss medication orlistat to a guided self-help CBT program may yield additional weight reduction **[II]**. • Fluoxetine in conjunction with group behavioral treatment may not aid in binge cessation or weight loss but may reduce depressive symptoms **[II]**.

FMSD (2007)	**Treatment**
	
	• The treatment is divided into
	  • Restoring the state of nutrition
	  • Psychotherapeutic treatment
	• The forms of psychotherapy vary: both individual and family therapy have brought results; in cases of bulimia cognitive therapy and medication [**C**] have been successful.
	• With adolescents between the ages of 14 and 16 years, positive results have been obtained by treating the entire family, because the adolescent's symptoms are often connected with difficulties to "cut loose" from the family.
	• With older patients, individual, supportive, and long-lasting treatment has been the best way to promote recovery.
	
	Related Resources
	
	• A combination of antidepressants and psychotherapy is more effective than psychotherapy alone, but psychotherapy appeared to be more acceptable to subjects [**C**]. There was a non-significant trend favouring single psychotherapy over single antidepressants.
	• There is no evidence from controlled trials to assess whether early intervention is beneficial in anorexia nervosa [**D**].

NCCMH/NICE (2004)	**Psychological Interventions for Anorexia Nervosa** The delivery of psychological interventions should be accompanied by regular monitoring of a patient's physical state including weight and specific indicators of increased physical risk. **Common Elements of the Psychological Treatment of Anorexia Nervosa** **C** - Therapies to be considered for the psychological treatment of anorexia nervosa include CAT, CBT, IPT, focal

	psychodynamic therapy, and family interventions focused explicitly on eating disorders. **C** - Patient and, where appropriate, carer preference should be taken into account in deciding which psychological treatment is to be offered. **C** - The aims of psychological treatment should be to reduce risk, to encourage weight gain and healthy eating, to reduce other symptoms related to an eating disorder, and to facilitate psychological and physical recovery. **Outpatient Psychological Treatments in First Episode and Later Episodes** **C** - Most people with anorexia nervosa should be managed on an outpatient basis, with psychological treatment (with physical monitoring) provided by a health care professional competent to give it and to assess the physical risk of people with eating disorders. **C** - Outpatient psychological treatment and physical monitoring for anorexia nervosa should normally be of at least 6 months' duration. **C** - For patients with anorexia nervosa, if during outpatient psychological treatment there is significant deterioration, or the completion of an adequate course of outpatient psychological treatment does not lead to any significant improvement, more intensive forms of treatment (for example, a move from individual therapy to combined individual and family work or day care or inpatient care) should be considered. **C** - Dietary counselling should not be provided as the sole treatment for anorexia nervosa. **Psychological Aspects of Inpatient Care** **C** - For inpatients with anorexia nervosa, a structured symptom-focused treatment regimen with the expectation of weight gain should be provided in order to achieve weight restoration. It is important to carefully monitor the patient's physical status during refeeding. **C** - Psychological treatment should be provided which has a focus both on eating behaviour and attitudes to weight and shape and on wider psychosocial issues with the expectation of weight gain.

	C - Rigid inpatient behaviour modification programmes should not be used in the management of anorexia nervosa. **Post-Hospitalisation Psychological Treatment** **C** - Following inpatient weight restoration, people with anorexia nervosa should be offered outpatient psychological treatment that focuses both on eating behaviour and attitudes to weight and shape and on wider psychosocial issues, with regular monitoring of both physical and psychological risk. **C** - The length of outpatient psychological treatment and physical monitoring following inpatient weight restoration should typically be at least 12 months. **Additional Considerations for Children and Adolescents with Anorexia Nervosa** **B** - Family interventions that directly address the eating disorder should be offered to children and adolescents with anorexia nervosa. **C** - Children and adolescents with anorexia nervosa should be offered individual appointments with a health care professional separate from those with their family members or carers. **C** - The therapeutic involvement of siblings and other family members should be considered in all cases because of the effects of anorexia nervosa on other family members. **C** - In children and adolescents with anorexia nervosa, the need for inpatient treatment and the need for urgent weight restoration should be balanced alongside the educational and social needs of the young person. **<u>Bulimia Nervosa</u>** **Psychological Interventions for Bulimia Nervosa** **B** - As a possible first step, patients with bulimia nervosa should be encouraged to follow an evidence-based self-help programme. **B** - Health care professionals should consider providing direct encouragement and support to patients undertaking an evidence-based self-help programme, as this may improve outcomes. This may be sufficient treatment for a limited

	subset of patients. **A** - CBT-BN, a specifically adapted form of CBT, should be offered to adults with bulimia nervosa. The course of treatment should be for 16 to 20 sessions over 4 to 5 months. **B** - When people with bulimia nervosa have not responded to or do not want CBT, other psychological treatments should be considered. **B** - Interpersonal psychotherapy should be considered as an alternative to CBT, but patients should be informed it takes 8-12 months to achieve results comparable with CBT. **Additional Considerations for Children and Adolescents** **C** - Adolescents with bulimia nervosa may be treated with CBT-BN adapted as needed to suit their age, circumstances, and level of development, and including the family as appropriate. **Atypical Eating Disorders Including Binge Eating Disorder** **General Treatment of Atypical Eating Disorders** **C** - In the absence of evidence to guide the management of atypical eating disorders (eating disorders not otherwise specified) other than binge eating disorder, it is recommended that the clinician considers following the guidance on the treatment of the eating problem that most closely resembles the individual patient's eating disorder. **Psychological Treatments for Binge Eating Disorder** **B** - As a possible first step, patients with binge eating disorder should be encouraged to follow an evidence-based self-help programme. **B** - Health care professionals should consider providing direct encouragement and support to patients undertaking an evidence-based self-help programme as this may improve outcomes. This may be sufficient treatment for a limited subset of patients. **A** - CBT-BED, a specifically adapted form of CBT, should be offered to adults with binge eating disorder. **B** - Other psychological treatments (interpersonal

	psychotherapy for binge eating disorder and modified dialectical behaviour therapy) may be offered to adults with persistent binge eating disorder. **A** - Patients should be informed that all psychological treatments for binge eating disorder have a limited effect on body weight. **C** - When providing psychological treatments for patients with binge eating disorder, consideration should be given to the provision of concurrent or consecutive interventions focusing on the management of comorbid obesity. **C** - Suitably adapted psychological treatments should be offered to adolescents with persistent binge eating disorder.
Pharmacological Interventions	
AAP (2003)	**The Pediatrician's Role in the Treatment of Eating Disorders in Outpatient Settings** Psychotropic medications have been shown to be helpful in the treatment of bulimia nervosa and prevention of relapse in anorexia nervosa in adults. These medications are also used for many adolescent patients and may be prescribed by the pediatrician or the psychiatrist, depending on the delegation of roles within the team.
APA (2006)	**Choice of Specific Treatments for Anorexia Nervosa** **Medications and Other Somatic Treatments** *Weight Restoration* • The decision about whether to use psychotropic medications and, if so, which medications to choose will be based on the patient's clinical presentation **[I]**. • The limited empirical data on malnourished patients indicate that selective SSRIs do not appear to confer advantage regarding weight gain in patients who are concurrently receiving inpatient treatment in an organized eating disorder program **[I]**. • However, SSRIs in combination with psychotherapy are widely used in treating patients with anorexia nervosa. For example, these medications may be considered for those with persistent depressive, anxiety, or obsessive-compulsive symptoms and for bulimic symptoms in weight-restored patients **[II]**. • An FDA black box warning concerning the use of bupropion in patients with eating disorders has been

	issued because of the increased seizure risk in these patients. Adverse reactions to tricyclic antidepressants and MAOIs are more pronounced in malnourished individuals, and these medications should generally be avoided in this patient population **[I]**. • Second-generation antipsychotics, particularly olanzapine, risperidone, and quetiapine, have been used in small series and individual cases for patients, but controlled studies of these medications are lacking. Clinical impressions suggest that they may be useful in patients with severe, unremitting resistance to gaining weight; severe obsessional thinking; and denial that assumes delusional proportions **[III]**. • Small doses of older antipsychotics such as chlorpromazine may be helpful prior to meals in very disturbed patients **[III]**. Although the risks of extrapyramidal side effects are less with second-generation antipsychotics than with first-generation antipsychotics, debilitated anorexia nervosa patients may be at a higher risk for these than expected. Therefore, if these medications are used, it is recommended that patients be carefully monitored for extrapyramidal symptoms and akathisia **[I]**. • It is also important to routinely monitor patients for potential side effects of these medications, which can result in insulin resistance, abnormal lipid metabolism, and prolongation of the QTc interval **[I]**. • Because ziprasidone has not been studied in individuals with anorexia nervosa and can prolong QTc intervals, careful monitoring of serial electrocardiograms and serum potassium measurements is needed if anorexic patients are treated with ziprasidone **[I]**. • Antianxiety agents used selectively before meals may be useful to reduce patients' anticipatory anxiety before eating **[III]**, but because eating disorder patients may have a high propensity to become dependent on benzodiazepines, these medications should be used routinely only with considerable caution **[I]**. • Pro-motility agents such as metoclopramide may be useful for bloating and abdominal pains that occur during refeeding in some patients **[II]**. • Electroconvulsive therapy (ECT) has generally not been useful except in treating severe co-occurring disorders for which ECT is otherwise indicated **[I]**. • Although no specific hormone treatments or vitamin supplements have been shown to be helpful **[I]**, supplemental calcium and vitamin D are often recommended **[III]**. • Zinc supplements have been reported to foster weight gain in some patients, and patients may benefit from

daily zinc-containing multivitamin tablets **[II]**.

Relapse Prevention

- Some data suggest that fluoxetine in dosages of up to 60 mg/day may help prevent relapse **[II]**.
- For patients receiving CBT after weight restoration, adding fluoxetine does not appear to confer additional benefits with respect to preventing relapse **[II]**.
- Antidepressants and other psychiatric medications may be used to treat specific, ongoing psychiatric symptoms of depressive, anxiety, obsessive-compulsive, and other comorbid disorders **[I]**.
- Clinicians should attend to the black box warnings in the package inserts relating to antidepressants and discuss the potential benefits and risks of antidepressant treatment with patients and families if such medications are to be prescribed **[I]**.

Chronic Anorexia Nervosa

- Although hormone replacement therapy (HRT) is frequently prescribed to improve bone mineral density in female patients, no good supporting evidence exists either in adults or in adolescents to demonstrate its efficacy **[II]**.
- Hormone therapy usually induces monthly menstrual bleeding, which may contribute to the patient's denial of the need to gain further weight **[II]**.
- Before estrogen is offered, it is recommended that efforts be made to increase weight and achieve resumption of normal menses **[I]**.
- There is no indication for the use of bisphosphonates such as alendronate in patients with anorexia nervosa **[II]**.
- Although there is no evidence that calcium or vitamin D supplementation reverses decreased bone mineral density, when calcium dietary intake is inadequate for growth and maintenance, calcium supplementation should be considered **[I]**, and when the individual is not exposed to daily sunlight, vitamin D supplementation may be used **[I]**. However, large supplemental doses of vitamin D may be hazardous **[I]**.

Choice of Specific Treatments for Bulimia Nervosa

Medications

Initial Treatment

	• Antidepressants are effective as one component of an initial treatment program for most bulimia nervosa patients **[I]**, with SSRI treatment having the most evidence for efficacy and the fewest difficulties with adverse effects **[I]**. • To date, fluoxetine is the best studied of these and is the only FDA-approved medication for bulimia nervosa. • Sertraline is the only other SSRI that has been shown to be effective, as demonstrated in a small, randomized controlled trial. In the absence of therapists qualified to treat bulimia nervosa with CBT, fluoxetine is recommended as an initial treatment **[I]**. • Dosages of SSRIs higher than those used for depression (e.g., fluoxetine 60 mg/day) are more effective in treating bulimic symptoms **[I]**. • Evidence from a small open trial suggests fluoxetine may be useful for adolescents with bulimia **[II]**. • Antidepressants may be helpful for patients with substantial concurrent symptoms of depression, anxiety, obsessions, or certain impulse disorder symptoms or for patients who have not benefited from or had only a suboptimal response to appropriate psychosocial therapy **[I]**. • Tricyclic antidepressants and MAOIs have been rarely used with bulimic patients and are not recommended as initial treatments **[I]**. • Several different antidepressants may have to be tried sequentially to identify the specific medication with the optimum effect **[I]**. • Clinicians should attend to the black box warnings relating to antidepressants and discuss the potential benefits and risks of antidepressant treatment with patients and families if such medications are to be prescribed **[I]**. • Small controlled trials have demonstrated the efficacy of the anticonvulsant medication topiramate, but because adverse reactions to this medication are common, it should be used only when other medications have proven ineffective **[III]**. Also, because patients tend to lose weight on topiramate, its use is problematic for normal or underweight individuals **[III]**. • Two drugs that are used for mood stabilization, lithium and valproic acid, are both prone to induce weight gain in patients **[I]** and may be less acceptable to patients who are weight preoccupied. • However, lithium is not recommended for patients with bulimia nervosa because it is ineffective **[I]**. • In patients with co-occurring bulimia nervosa and bipolar disorder, treatment with lithium is more likely to be associated with toxicity **[I]**.

Maintenance Phase

- Limited evidence supports the use of fluoxetine for relapse prevention **[II]**, but substantial rates of relapse occur even with treatment.
- In the absence of adequate data, most clinicians recommend continuing antidepressant therapy for a minimum of 9 months and probably for a year in most patients with bulimia nervosa **[II]**.
- Case reports indicate that methylphenidate may be helpful for bulimia nervosa patients with concurrent attention-deficit/hyperactivity disorder (ADHD) **[III]**, but it should be used only for patients who have a very clear diagnosis of ADHD **[I]**.

Combining Psychosocial Interventions and Medications

- In some research, the combination of antidepressant therapy and CBT results in the highest remission rates; therefore, this combination is recommended initially when qualified CBT therapists are available **[II]**.
- In addition, when CBT alone does not result in a substantial reduction in symptoms after 10 sessions, it is recommended that fluoxetine be added **[II]**.

Other Treatments

- Bright light therapy has been shown to reduce binge frequency in several controlled trials and may be used as an adjunct when CBT and antidepressant therapy have not been effective in reducing bingeing symptoms **[III]**.

<u>Eating Disorder not Otherwise Specified</u>

Binge Eating Disorder

Medications

- Substantial evidence suggests that treatment with antidepressant medications, particularly SSRI antidepressants, is associated with at least a short-term reduction in binge eating behavior but, in most cases, not with substantial weight loss **[I]**.
- The medication dosage is typically at the high end of the recommended range **[I]**.
- The appetite-suppressant medication sibutramine is effective for binge suppression, at least in the short term, and is also associated with significant weight loss **[II]**.
- The anticonvulsant medication topiramate is effective for binge reduction and weight loss, although adverse effects

	may limit its clinical utility for some individuals **[II]**. • Zonisamide may produce similar effects regarding weight loss and can also cause side effects **[III]**. *Combining Psychosocial and Medication Treatments* • For most eating disorder patients, adding antidepressant medication to their behavioral weight control and/or CBT regimen does not have a significant effect on binge suppression when compared with medication alone. However, medications may induce additional weight reduction and have associated psychological benefits **[II]**. • Adding the weight loss medication orlistat to a guided self-help CBT program may yield additional weight reduction **[II]**. • Fluoxetine in conjunction with group behavioral treatment may not aid in binge cessation or weight loss but may reduce depressive symptoms **[II]**. **Night Eating Syndrome** • Progressive muscle relaxation has been shown to reduce symptoms associated with night eating syndrome **[III]**. • Sertraline has also been shown to reduce these symptoms **[II]**.
FMSD (2007)	**Medical Treatment** • A specialist should start all drug treatment. • Different psychopharmaceuticals, for example, neuroleptics and antidepressants, have been tried in the treatment of anorexia nervosa. Controlled studies have proved them indisputably useful only if the disorder is linked to clear depression. • Most research on the medical treatment of bulimia has concentrated on antidepressants [**A**], particularly fluoxetine, which has been found to decrease binge eating and vomiting for about two-thirds of bulimic patients. **Related Evidence** • A combination of antidepressants and psychotherapy is more effective than psychotherapy alone, but psychotherapy appeared to be more acceptable to subjects [C]. There was a non-significant trend favouring single psychotherapy over single antidepressants. • Antidepressants appear to be ineffective in the treatment

	of anorexia nervosa [**B**].
NCCMH/NICE (2004)	**<u>Anorexia Nervosa</u>** **Pharmacological Interventions for Anorexia Nervosa** There is a very limited evidence base for the pharmacological treatment of anorexia nervosa. A range of drugs may be used in the treatment of comorbid conditions but caution should be exercised in their use given the physical vulnerability of many people with anorexia nervosa. **C** - Medication should not be used as the sole or primary treatment for anorexia nervosa. **C** - Caution should be exercised in the use of medication for comorbid conditions such as depressive or obsessive-compulsive features, as they may resolve with weight gain alone. **C** - When medication is used to treat people with anorexia nervosa, the side effects of drug treatment (in particular, cardiac side effects) should be carefully considered because of the compromised cardiovascular function of many people with anorexia nervosa. **C** - Health care professionals should be aware of the risk of drugs that prolong the QTc interval on the ECG (for example, antipsychotics, tricyclic antidepressants, macrolide antibiotics, and some antihistamines). In patients with anorexia nervosa at risk of cardiac complications, the prescription of drugs with side effects that may compromise cardiac functioning should be avoided. **C** - If the prescription of medication that may compromise cardiac functioning is essential, ECG monitoring should be undertaken. **C** - All patients with a diagnosis of anorexia nervosa should have an alert placed in their prescribing record concerning the risk of side effects. **<u>Bulimia Nervosa</u>** **Pharmacological Interventions for Bulimia Nervosa** **B** - As an alternative or additional first step to using an evidence-based self-help programme, adults with bulimia

	nervosa may be offered a trial of an antidepressant drug. **B** - Patients should be informed that antidepressant drugs can reduce the frequency of binge eating and purging, but the long-term effects are unknown. Any beneficial effects will be rapidly apparent. **C** - SSRIs (specifically fluoxetine) are the drugs of first choice for the treatment of bulimia nervosa in terms of acceptability, tolerability, and reduction of symptoms. **C** - For people with bulimia nervosa, the effective dose of fluoxetine is higher than for depression (60 mg daily). **B** - No drugs, other than antidepressants, are recommended for the treatment of bulimia nervosa. **Atypical Eating Disorders Including Binge Eating Disorder** **General Treatment of Atypical Eating Disorders** **C** - In the absence of evidence to guide the management of atypical eating disorders (eating disorders not otherwise specified) other than binge eating disorder, it is recommended that the clinician considers following the guidance on the treatment of the eating problem that most closely resembles the individual patient's eating disorder. **Pharmacological Interventions for Binge Eating Disorder** **B** - As an alternative or additional first step to using an evidence based self-help programme, consideration should be given to offering a trial of an SSRI antidepressant drug to patients with binge eating disorder. **B** - Patients with binge eating disorders should be informed that SSRIs can reduce binge eating, but the long-term effects are unknown. Antidepressant drug treatment may be sufficient treatment for a limited subset of patients.
EDUCATION	
AAP (2003)	No recommendations offered.
APA (2006)	Basic psychiatric management includes support through the provision of educational materials, including self-help

	workbooks; information on community-based and Internet resources; and direct advice to patients and their families (if they are involved) **[I]**
FMSD (2007)	No recommendations offered.
NCCMH/NICE (2004)	**Providing Good Information and Support** **C** - Patients and, where appropriate, carers should be provided with education and information on the nature, course and treatment of eating disorders. **C** - In addition to the provision of information, family and carers may be informed of self-help groups and support groups and offered the opportunity to participate in such groups where they exist. **Management of Physical Aspects** **C** - Patients who are vomiting should be given appropriate advice on dental hygiene, which should include avoiding brushing after vomiting; rinsing with a non-acid mouthwash after vomiting; and reducing an acid oral environment (for example, limiting acidic foods).

Selected Supporting References
Note from NGC: Bolded references are cited in more than one guideline. Refer to the original guideline document for a complete listing of supporting references.

AAP (2003)	American Psychiatric Association, Work Group on Eating Disorders. Practice guideline for the treatment of patients with eating disorders (revision). *Am J Psychiatry.* 2000;157(1 suppl):1-39 Baran SA, Weltzin TE, Kaye WH. Low discharge weight and outcome in anorexia nervosa. *Am J Psychiatry.* 1995;152:1070-1072 Birmingham CL, Alothman AF, Goldner EM. Anorexia nervosa: refeeding and hypophosphatemia. *Int J Eat Disord.* 1996;20:211-213 Castro J, Lazaro L, Pons F, Halperin I, Toro J. Predictors of bone mineral density reduction in adolescents with anorexia nervosa.

J Am Acad Child Adolesc Psychiatry. 2000;39:1365-1370

Eisler I, Dare C, Russell GF, Szmukler G, le Grange D, Dodge E. Family and individual therapy in anorexia nervosa: a 5-year follow-up. *Arch Gen Psychiatry.* 1997;54:1025-1030

Fisher M. Medical complications of anorexia and bulimia nervosa. *Adolesc Med.* 1992;3:487-502

Fisher M, Golden NH, Bergeson R, et al. Update on adolescent health care in pediatric practice. *J Adolesc Health.* 1996;19:394-400

Fisher M, Simpser E, Schneider M. Hypophosphatemia secondary to oral refeeding in anorexia nervosa. *Int J Eat Disord.* 2000;28:181-187

Fisher M, Golden NH, Katzman DK, et al. Eating disorders in adolescents: a background paper. *J Adolesc Health.* 1995;16:420-437

Geist R, Heinmaa M, Stephens D, Davis R, Katzman DK. Comparison of family therapy and family group psychoeducation in adolescents with anorexia nervosa. *Can J Psychiatry.* 2000;45:173-178

Golden NH, Shenker IR. Amenorrhea in anorexia nervosa: etiology and implications. *Adolesc Med.* 1992;3:503-518

Grinspoon S, Thomas E, Pitts S, et al. Prevalence and predictive factors for regional osteopenia in women with anorexia nervosa. *Ann Intern Med.* 2000;133:790-794

Howard WT, Evans KK, Quintero-Howard CV, Bowers WA, Andersen AE. Predictors of success or failure of transition to day hospital treatment for inpatients with anorexia nervosa. *Am J Psychiatry.* 1999;156: 1697-1702

Jimerson DC, Wolfe BE, Brotman AW, Metzger ED. Medications in the treatment of eating disorders. *Psychiatry Clin North Am.* 1996;19:739-754

Kaplan AS, Olmstead MP, Molleken L. Day treatment of eating disorders. In: Jimerson D, Kaye WH, eds. *Bailliere's Clinical Psychiatry, Eating Disorders.* Philadelphia, PA: Bailliere Tindall; 1997:275-289

Kaplan AS, Olmstead MP. Partial hospitalization. In: Garner DM, Garfinkel PE, eds. *Handbook of Treatment for*

Eating Disorders. **2nd ed. New York, NY: Guilford Press; 1997:354-360**

Kaye WH, Kaplan AS, Zucker ML. Treating eating-disorder patients in a managed care environment. Contemporary American issues and Canadian response. *Psychiatry Clin North Am.* 1996;19:793-810

Kohn MR, Golden NH, Shenker IR. Cardiac arrest and delirium: presentations of the refeeding syndrome in severely malnourished adolescents with anorexia nervosa. *J Adolesc Health.* 1998;22:239-243

Kreipe RE, Golden NH, Katzman DK, et al. Eating disorders in adolescents. A position paper of the Society for Adolescent Medicine. *J Adolesc Health.* 1995;16:476-479

Kreipe R, Uphoff M. Treatment and outcome of adolescents with anorexia nervosa. *Adolesc Med.* 1992;3:519-540

Mehler PS, Gray MC, Schulte M. Medical complications of anorexia nervosa. *J Womens Health.* 1997;6:533-541

Nicholls D, Stanhope R. Medical complications of anorexia nervosa in children and young adolescents. *Eur Eat Disord Rev.* 2000;8:170-180

North C, Gowers S, Byram V. Family functioning in adolescent anorexia nervosa. *Br J Psychiatry.* 1995;167:673-678

Palla B, Litt IF. Medical complications of eating disorders in adolescents. *Pediatrics.* 1988;81:613-623

Robin AL, Gilroy M, Dennis AB. Treatment of eating disorders in children and adolescents. *Clin Psychol Rev.* 1998;18:421-446

Rock CL, Curran-Celentano J. Nutritional disorder of anorexia nervosa: a review. *Int J Eat Disord.* 1994;15:187-203

Rock CL, Curran-Celentano J. Nutritional management of eating disorders. *Psychiatry Clin North Am.* 1996;19:701-713

Rome ES. Eating disorders in adolescents and young adults: what's a primary care clinician to do? *Cleveland Clin J Med.* 1996;63:387-395

Rome ES, Vazquez IM, Emans SJ. Nutritional problems in adolescence: anorexia nervosa/bulimia nervosa for young athletes. In: Walker WA, Watkins JB, eds. *Nutrition in Pediatrics: Basic Science and Clinical Applications.* 2nd ed. Hamilton,

	Ontario: BC Decker Inc; 1997:691-704 Russell GF, Szmukler GI, Dare C, Eisler I. An evaluation of family therapy in anorexia nervosa and bulimia nervosa. *Arch Gen Psychiatry.* 1987;44:1047-1056 Schebendach J, Nussbaum MP. Nutrition management in adolescents with eating disorders. *Adolesc Med.* 1992;3:541-558 Sigman G. How has the care of eating disorder patients been altered and upset by payment and insurance issues? Let me count the ways [letter]. *J Adolesc Health.* 1996;19:317-318 Silber TJ, Delaney D, Samuels J Anorexia nervosa. Hospitalization on adolescent medicine units and third-party payments. *J Adolesc Health.* 1989;10:122-125 Silber TJ. Eating disorders and health insurance. *Arch Pediatr Adolesc Med.* 1994;148:785-788 Solomon SM, Kirby DF. The refeeding syndrome: a review. *JPEN J Parenter Enteral Nutr.* 1990;14:900-97 Strober M, Freeman R, De Antonio M, Lampert C, Diamond J. Does adjunctive fluoxetine influence the post-hospital course of restrictortype anorexia nervosa? A 24-month prospective, longitudinal follow up and comparison with historical controls. *Psychopharmacol Bull.* 1997;33: 425-431 Walsh BT, Wilson GT, Loeb KL, et al. Medication and psychotherapy in the treatment of bulimia nervosa. *Am J Psychiatry.* 1997;154:523-531 Wong JCH, Lewindon P, Mortimer R, Shepherd R. Bone mineral density in adolescent females with recently diagnosed anorexia nervosa. *Int J Eat Disord.* 2001;29:11-16 Yager J. Psychosocial treatments for eating disorders. *Psychiatry.* 1994; 57:153-164
APA (2006)	Agras WS, Telch CF, Arnow B, Eldredge K, Wilfley DE, Raeburn SD, Henderson S, Marnell M: Weight loss cognitive-behavioral and desipramine treatments in binge-eating disorder: an addictive design. Behav Ther 1994; 25:225-238 [A-] American Psychiatric Association: Practice guideline for the assessment and treatment of patients with suicidal behaviors.

Am J Psychiatry 2003; 160(11 suppl):1-60 [G]

Appelbaum PS, Rumpf T: Civil commitment of the anorexic patient. Gen Hosp Psychiatry 1998; 20:225-230 [G]

Birmingham CL, Beumont PJV: Medical Management of Eating Disorders: A Practical Handbook for Healthcare Professionals. Cambridge, UK, Cambridge University Press, 2004 [G]

Carter JC, Fairburn CG: Cognitive-behavioral self-help for binge eating disorder: a controlled effectiveness study. J Consult Clin Psychol 1998; 66:616-623 [A-]

Carter JC, Olmsted MP, Kaplan AS, McCabe RE, Mills JS, Aime A: Self-help for bulimia nervosa: a randomized controlled trial. Am J Psychiatry 2003; 160:973-978 [A-]

Casper RC, Hedeker D, McClough JF: Personality dimensions in eating disorders and their relevance for subtyping. J Am Acad Child Adolesc Psychiatry 1992; 31:830-840 [D]

Dare C, Eisler I, Russell G, Treasure J, Dodge L: Psychological therapies for adults with anorexia nervosa: randomised controlled trial of out-patient treatments. Br J Psychiatry 2001; 178:216-221 [A-]

Eisler I, Dare C, Hodes M, Russell G, Dodge E, Le GD: Family therapy for adolescent anorexia nervosa: the results of a controlled comparison of two family interventions. J Child Psychol Psychiatry 2000; 41:727-736 [A-]

Faine MP: Recognition and management of eating disorders in the dental office. Dent Clin North Am 2003; 47:395-410 [F]

Farrell E: Lost for Words: The Psychoanalysis of Anorexia and Bulimia. New York, Other Press, 2000 [G]

Fennig S, Fennig S, Roe D: Physical recovery in anorexia nervosa: is this the sole purpose of a child and adolescent medical-psychiatric unit? Gen Hosp Psychiatry 2002; 24:87-92 [G]

Fernandez-Aranda F, Bel M, Jimenez S, Vinuales M, Turon J, Vallejo J: Outpatient group therapy for anorexia nervosa: a preliminary study. Eat Weight Disord 1998; 3:1-6 [B]

Fisher M, Golden NH, Katzman DK, Kreipe RE, Rees J, Schebendach J, Sigman G, Ammerman S, Hoberman HM: Eating disorders in adolescents: a background paper. J

Adolesc Health 1995; 16:420-437 [F]

Garfinkel PE, Garner DM: Anorexia Nervosa: A Multidimensional Perspective. New York, Brunner/Mazel, 1982 [G]

Garfinkel PE, Garner DM: The Role of Drug Treatments for Eating Disorders. New York, Brunner/Mazel, 1987 [G]

Golden NH, Katzman DK, Kreipe RE, Stevens SL, Sawyer SM, Rees J, Nicholls D, Rome ES: Eating disorders in adolescents: position paper of the Society for Adolescent Medicine. J Adolesc Health 2003; 33:496-503 [G]

Golden NH, Meyer W: Nutritional rehabilitation of anorexia nervosa: goals and dangers. Int J Adolesc Med Health 2004; 16:131-144 [F]

Goldner E: Treatment refusal in anorexia nervosa. Int J Eat Disord 1989; 8:297-306 [F]

Guarda AS, Heinberg LJ: Effective weight gain in step down partial hospitalization program for eating disorders. Paper presented at the annual meeting of the Academy for Eating Disorders, San Diego, June 11-12, 1999 [G]

Hebebrand J, Himmelmann GW, Heseker H, Schafer H, Remschmidt H: Use of percentiles for the body mass index in anorexia nervosa: diagnostic, epidemiological, and therapeutic considerations. Int J Eat Disord 1996; 19:359-369 [D]

Hornyak LM, Baker EK: Experiential Therapies for Eating Disorders. New York, Guilford Press, 1989 [G]

Hudson JI, Hudson RA, Pope HG Jr: Psychiatric comorbidity and eating disorders, in AED Review of Eating Disorders, Part 1. Edited by Wonderlich S, Mitchell J, de Zwann M, Steiger H. Oxford, UK, Radcliffe, 2005 [G]

Kaplan AS: Medical and nutritional assessment, in Medical Issues and the Eating Disorders: The Interface. Edited by Kaplan AS, Garfinkel PE. New York, Brunner/Mazel, 1993, pp 1-16 [G]

Kaye WH, Bulik CM, Thornton L, Barbarich N, Masters K: Comorbidity of anxiety disorders with anorexia and bulimia nervosa. Am J Psychiatry 2004; 161:2215-2221 [C]

Kaye WH, Gwirtsman HE, Obarzanek E, George DT: Relative importance of calorie intake needed to gain weight and level of physical activity in anorexia nervosa. Am J Clin Nutr 1988;

47:989-994 [C]

Kaye WH, Nagata T, Weltzin TE, Hsu LK, Sokol MS, McConaha C, Plotnicov KH, Weise J, Deep D: Double-blind placebo-controlled administration of fluoxetine in restricting- and restricting-purging-type anorexia nervosa. Biol Psychiatry 2001; 49:644-652 [A]

Klibanski A, Biller BM, Schoenfeld DA, Herzog DB, Saxe VC: The effects of estrogen administration on trabecular bone loss in young women with anorexia nervosa. J Clin Endocrinol Metab 1995; 80:898-904 [B]

Kohn MR, Golden NH, Shenker IR: Cardiac arrest and delirium: presentations of the refeeding syndrome in severely malnourished adolescents with anorexia nervosa. J Adolesc Health 1998; 22:239-243 [G]

Kreipe RE, Yussman SM: The role of the primary care practitioner in the treatment of eating disorders. Adolesc Med 2003; 14:133-147 [G]

Levitt JL, Sansone RA, Cohn L: Self-Harm Behavior and Eating Disorders: Dynamics, Assessment and Treatment. New York, Brunner-Routledge, 2004 [G]

Lock J: Treating adolescents with eating disorders in the family context: empirical and theoretical considerations. Child Adolesc Psychiatr Clin N Am 2002; 11:331-342 [G]

Mehler PS, Andersen AE: Eating Disorders: A Guide to Medical Care and Complications. Baltimore, Johns Hopkins University Press, 1999 [G]

Miller KK, Grinspoon SK, Ciampa J, Hier J, Herzog D, Klibanski A: Medical findings in outpatients with anorexia nervosa. Arch Intern Med 2005; 165:561-566 [G]

Okamoto A, Yamashita T, Nagoshi Y, Masui Y, Wada Y, Kashima A, Arii I, Nakamura M, Fukui K: A behavior therapy program combined with liquid nutrition designed for anorexia nervosa. Psychiatry Clin Neurosci 2002; 56:515-520 [A]

Ornstein RM, Golden NH, Jacobson MS, Shenker IR: Hypophosphatemia during nutritional rehabilitation in anorexia nervosa: implications for refeeding and monitoring. J Adolesc Health 2003; 32:83-88 [G]

Petrucelli J, Stuart C: Hungers and Compulsions: The Psychodynamic Treatment of Eating Disorders and Addictions.

Northvale, NJ, Jason Aronson, 2001 [G]

Pike KM, Walsh BT, Vitousek K, Wilson GT, Bauer J: Cognitive behavior therapy in the posthospitalization treatment of anorexia nervosa. Am J Psychiatry 2003; 160:2046-2049 [A-]

Powers PS, Bannon YS: Medical comorbidity of anorexia nervosa, bulimia nervosa, and binge eating disorder, in Clinical Handbook of Eating Disorders: An Integrated Approach. Edited by Brewerton TD. New York, Marcel Dekker, 2004, pp 231-256 [G]

Powers PS: Initial assessment and early treatment options for anorexia nervosa and bulimia nervosa. Psychiatr Clin North Am 1996; 19:639-655 [F]

Robin AL, Siegel PT, Moye AW, Gilroy M, Dennis AB, Sikand A: A controlled comparison of family versus individual therapy for adolescents with anorexia nervosa. J Am Acad Child Adolesc Psychiatry 1999; 38:1482-1489 [A-]

Rome ES: Eating disorders. Obstet Gynecol Clin North Am 2003; 30:353-377, vii [G]

Schmidt U, Tiller J, Treasure J: Self-treatment of bulimia nervosa: a pilot study. Int J Eat Disord 1993; 13:273-277 [B]

Solomon SM, Kirby DF: The refeeding syndrome: a review. JPEN J Parenter Enteral Nutr 1990; 14:90-97 [F]

Steinhausen HC: The outcome of anorexia nervosa in the 20th century. Am J Psychiatry 2002; 159:1284-1293 [E]

Strober M: Managing the chronic, treatment-resistant patient with anorexia nervosa. Int J Eat Disord 2004; 36:245-255 [G]

Thiels C, Schmidt U, Treasure J, Garthe R, Troop N: Guided self-change for bulimia nervosa incorporating use of a self-care manual. Am J Psychiatry 1998; 155:947-953 [A-]

Thompson-Brenner H, Westen D: A naturalistic study of psychotherapy for bulimia nervosa, part 1: comorbidity and treatment outcomes. J Nerv Ment Dis 2005; 193:573-584 [G]

Walsh BT, Agras WS, Devlin MJ, Fairburn CG, Wilson GT, Kahn C, Chally MK: Fluoxetine for bulimia nervosa following poor response to psychotherapy. Am J Psychiatry 2000; 157:1332-1334 [A]

	Walsh BT, Kaplan AS, Attia E, Carter J, Devlin MJ, Olmsted M, Pike KM, Woodside B, Parides M: Fluoxetine vs placebo to prevent relapse in anorexia nervosa: primary outcome of drug on time to relapse in 93 weight restored subjects. Paper presented at the 11th annual meeting of the Eating Disorders Research Society, Toronto, Canada, September 29-October 1, 2005 [A] Wells LA, Logan KM: Pharmacologic treatment of eating disorders: review of selected literature and recommendations. Psychosomatics 1987; 28:470-479 [F] Wildman P, Lilenfeld LR, Marcus MD: Axis I comorbidity onset and parasuicide in women with eating disorders. Int J Eat Disord 2004; 35:190-197 [D] Zerbe KJ: The crucial role of psychodynamic understanding in the treatment of eating disorders. Psychiatr Clin North Am 2001; 24:305-313 [G]
FMSD (2007)	Bacaltchuk J, Hay P, Trefiglio R. Antidepressants versus psychological treatments and their combination for bulimia nervosa. Cochrane Database Syst Rev 2001;(4):CD003385. Bacaltchuk J, Hay P. Antidepressants versus placebo for people with bulimia nervosa. Cochrane Database Syst Rev 2003;(4):CD003391. Claudino AM, Hay P, Lima MS, Bacaltchuk J, Schmidt U, Treasure J. Antidepressants for anorexia nervosa. Cochrane Database Syst Rev 2006;(1):CD004365. [129 references] PubMed Meads C, Burls A, Gold L, Jobanputra P. In-patient versus out-patient care for eating disorders. Birmingham, United Kingdom: Development and Evaluation Service, Department of Public Health and Epidemiology, University of Birmingham; 1999 Sep. 58 p. (West Midlands DES reports; no. 17). Schoemaker C. Does early intervention improve the prognosis in anorexia nervosa? A systematic review of the treatment-outcome literature. Int J Eat Disord 1997 Jan;21(1):1-15. [90 references] PubMed Treasure J, Schmid U. What are the effects of treatments in anorexia nervosa. Clin Evid 2005;13:1151-2. Walsh BT, Kaplan AS, Attia E, Olmsted M, Parides M, Carter JC, Pike KM, Devlin MJ, Woodside B, Roberto CA, Rockert W. Fluoxetine after weight restoration in anorexia nervosa: a

	randomized controlled trial. JAMA 2006 Jun 14;295(22):2605-12. PubMed Whittal MC, Agras WS, Gould RA. Bulimia nervosa: a meta-analysis of psychosocial and pharmacological treatments. Behav Ther 1999;30(1):117-35.
NCCMH/NICE (2004)	Agras, W.S., Walsh, B.T., Fairburn, C.G., Wilson, C.T. & Kramer, H.C. (2000a). A multi-centre comparison of Cognitive-Behavioral Therapy and Interpersonal Psychotherapy for bulimia nervosa. *Archives of General Psychiatry, 54,* 459-465. Agras, W.S., Crow, S.J., Halmi, K.A., Mitchell, J.E., Wilson, G.T. & Kraemer, H.C. (2000). Outcome predictors for the cognitive behavior treatment of bulimia nervosa: Data from a multisite study. *American Journal of Psychiatry, 157*(8), 1302-1308. **APA (1994). American Psychiatric Association Work Group on Eating Disorders. Practice guideline for the treatment of patients with eating disorders (revision 2000). *American Journal of Psychiatry, 157,* 1-39.** Arii, I., Yamashita, T., Kinoshita, M., Shimizu, H., Nakamura, M. & Nakajima, T. (1996). Treatment for inpatients with anorexia nervosa: Comparison of liquid formula with regular meals for improvement from emaciation. *Psychiatry & Clinical Neurosciences, 50,* 55-59. Arnold, L.M., McElroy, S., Hudson, J.I., Welge, J.A., Bennett, A.J. & Keck, P.E. (2002). A placebo controlled, randomised trial of fluoxetine in the treatment of binge-eating disorder. *Journal of Clinical Psychiatry, 63,* 1028-1033. Attia, E., Haiman, C., Walsh, B.T. & Flater, S.R. (1998). Does Fluoxetine augment the inpatient treatment of anorexia nervosa? *American Journal of Psychiatry, 155,* 548-551. Bachar, E., Latzer, Y., Kreitler, S. & Berry, E.M. (1999). Empirical comparison of two psychological therapies. *Journal of Psychotherapy Practise and Research, 8,* 115-128. Biederman, J., Herzog, D., Rivinus, T.M., Harper, G.P., Ferber, R.A., Rosenbaum, J.F., Harmatz, J.S., Tondorf, R., Orsulak, P.J. & Schildkraut, J.J. (1985). Amitriptyline in the treatment of anorexia nervosa: A double-blind, placebo-controlled study. *Journal of Clinical Psychopharmacology, 5,* 10-16. Birchall, H., Palmer, R.L., Waine, J., Gadsby, K. & Gatward, N. (2002). Intensive day programme treatment for severe anorexia nervosa - the Leicester experience. *Psychiatric Bulletin, 26,* 334-

336.

Brinch, M., Isager, T. & Tolstrup, K. (1988). Anorexia nervosa and motherhood: Reproduction pattern and mothering behaviour of 50 women. *Acta Psychiatrica Scandinavica, 77,* 611-617.

Brinch, M., Isager, T. & Tolstrup, K. (1988). Patients' evaluation of their former treatment for anorexia nervosa (AN). Nordisk psykiatrisk tidsskrift. *Nordic Journal of Psychiatry, 42,* 445-448.

Buston, K. (2002). Adolescents with mental health problems: What do they say about health services? *Journal of Adolescence, 25,* 231-242.

Carter, J. & Fairburn, C.C. (1998). Cognitive behavioral self-help for binge eating disorder: A controlled effectiveness study. *Journal of Consulting & Clinical Psychology, 66,* 616-623.

Castro, J., Lazaro, L., Pons, .F, Halperin, I. & Toro, J. (2001). Adolescent anorexia nervosa: The catch-up effect in bone mineral density after recovery. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 1215-1221.

Channon, S., de Silva, P., Hemsley, D. & Perkins, R. (1989). A controlled trial of cognitivebehavioural and behavioural treatment of anorexia nervosa. *Behavioural Research and Therapy,27,* 529-535.

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 *British Journal of Psychiatry, 59,* 325-333.

Dare, C., Eisler, I., Russell, G., Treasure, J. & Dodge, L. (2001). Psychological therapies for adults with anorexia nervosa: Randomised controlled trial of out-patient treatments. *British Journal of Psychiatry, 178,* 216-221.

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 & Psychiatry & Allied Disciplines, 41,* 727-736.

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*

Goldberg, S.C., Eckert, E.D., Casper, R.C., Halmi, K.A., Davis, J.M. & Roper, M.T. (1980). Factors influencing hospital differences in weight gain in anorexia nervosa. *Journal of Nervous and Mental Disease, 168(3),* 181-183.

Grinspoon, S., Thomas, E., Pitts, S., Gross, E., Mickley, D., Miller, K., Herzog, D. & Klibanski, A. (2000). Prevalence and predictive factors for regional osteopenia in women with anorexia nervosa. *Annals of Internal Medicine, 133,* 790-794.

Hay, P.J. & Bacaltchuk, J. (2003). Psychotherapy for bulimia nervosa and binging. Cochrane Database Syst Rev., (1), CD000562.

Hudson, J.I., McElroy, S., Raymond, N.C., Crow, S., Keck, P.E., Carter, M.D., Mitchell, J.E., Strakowski, M.D., Pope, H.G., Coleman, B.S. & Jonas, J.M. (1998). Fluvoxamine in the treatment of binge-eating disorder: A multicenter placebo-controlled, double-blind trial. *American Journal of Psychiatry, 155,* 1756-1762.

Journal of Psychiatry - Revue Canadienne de Psychiatrie, 45, 173-178.

Hall, A. & Crisp, A.H. (1987). Brief psychotherapy in the treatment of anorexia nervosa. Outcome at one year. *British Journal of Psychiatry, 151,* 185-191.

Loeb, K.L., Wilson, G.T., Gilbert, J.S. & Labouvie, E. (2000). Guided and unguided self-help for binge eating. *Behaviour Research and Therapy, 38,* 259-272.

Lucas, A.R., Melton, L.J. III, Crowson, C.S. & O'Fallon, W.M. (1999). Long-term fracture risk among women with anorexia nervosa: A population-based cohort study. *Mayo Clin. Proc, 74,* 972-977.

McElroy, S.L., Casuto, L.S., Nelson, E.B., Lake, K.A., Soutullo, C.A., Keck, P.E. Jr. & Hudson, J.I. (2000). Placebo-controlled trial of sertraline in the treatment of binge eating disorder. *American Journal of Psychiatry, 157,* 1004-1006.

Nauta, H., Hospers, H., Kok, G. & Jansen, A. (2000). A comparison between a cognitive and a behavioural treatment for obese binge eaters and obese non-binge eaters. *Behaviour Therapy, 31,* 441-461.

Nicholls, D. & Stanhope, R. (2000). Medical complications of anorexia nervosa in children and young adolescents. *European Eating Disorders Review, 8,* 170-178.

Nielsen, S., Emborg, C. & Molbak, A.G. (2002). Mortality in concurrent type 1 diabetes and anorexia nervosa. *Diabetes Care, 25,* 309-312.

Nielsen, S. (2002). Eating disorders in females with type 1 diabetes: An update of a meta-analysis. *European Eating Disorders Review, 10,* 241-254.

Nielsen, S. (2001). Epidemiology and mortality of eating disorders. *Eating Disorders, 24,* 201-214.

Pertschuk, M.J., Forster, J., Buzby, G. & Mullen, J.L. (1981). The treatment of anorexia nervosa with total parenteral nutrition. *Biological Psychiatry, 16,* 539-550.

Robb, A.S., Silber, T.J., Orrell-Valente, J.K., Valadez-Meltzer, A., Ellis, N., Dadson, M.J. & Chatoor, I. (2002). Supplemental nocturnal nasogastric refeeding for better short-term outcome in hospitalised adolescent girls with anorexia nervosa. *American Journal of Psychiatry, 159,* 1347-1353.

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. *American Academy of Child and Adolescent Psychiatry, 38,* 1482-1489.

Rosenvinge, J.H. & Klusmeier, A.K. (2000). Treatment for eating disorders from a patient satisfaction perspective: A Norwegian replication of a British study. *European Eating Disorders Review, 8,* 293-300.

Russell, G.F. (1985). Pre-menarchal anorexia nervosa and its sequelae. Journal of Psychiatric Research, 19, 363-369. 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,* 1047-1056.

Russell, G.F., Treasure, J. & Eisler, I. (1998). Mothers with anorexia nervosa who underfeed their children: Their recognition and management. *Psychological Medicine, 28,* 93-108.

Russell, J. & Gross, G. (2000). Anorexia nervosa and body mass index. *American Journal of Psychiatry, 157*(12), 2060.

	Russell, G.F. (2001). Involuntary treatment in anorexia nervosa. *Psychiatr Clin North Am, 24*(2), 337-349. Serfaty, M.A., Turkington, D., Heap, M., Ledsham, L. & Jolley, E. (1999). Cognitive therapy versus dietary counselling in the outpatient treatment of anorexia nervosa: Effects of the treatment phase. *European Eating Disorders Review, 7,* 334-350. Treasure, J.L., Todd, G., Brolly, M., Tiller, J., Nehmed, A. & Denman, F. (1995). A pilot study of a randomised trial of cognitive analytical therapy vs educational behavioural therapy for adult anorexia nervosa. *Behavioural Research and Therapy, 33,* 363-367. Wallin, U., Kronovall, P. & Majewski M.L. (2000). Body awareness therapy in teenage anorexia nervosa: Outcome after two years. *European Eating Disorders Review, 8,* 19-30.

TABLE 5: BENEFITS AND HARMS	
Benefits	
AAP (2003)	• Early detection, initial evaluation, and ongoing management can play a significant role in preventing eating disorders from progressing to a more severe or chronic state. • Rapid and aggressive medical stabilization and nutritional rehabilitation of patients with eating disorders will optimize short- and long-term outcomes.
APA (2006)	Appropriate treatment of eating disorders with improved clinical outcomes
FMSD (2007)	Appropriate diagnosis and treatment of eating disorders among children and adolescents
NCCMH/NICE (2004)	Consistent quality of care for patients with eating disorders including anorexia nervosa, bulimia nervosa, and related eating disorders
Harms	
AAP (2003)	**Refeeding Syndrome** Of particular concern is the refeeding syndrome that can occur

	in severely malnourished patients who receive nutritional replenishment too rapidly. The refeeding syndrome consists of cardiovascular, neurologic, and hematologic complications that occur because of shifts in phosphate from extracellular to intracellular spaces in individuals who have total body phosphorus depletion as a result of malnutrition. Recent studies have shown that this syndrome can result from use of oral, parenteral, or enteral nutrition. Slow refeeding, with the possible addition of phosphorus supplementation, is required to prevent development of the refeeding syndrome in severely malnourished children and adolescents. **Single-episode Educational Programs** Single-episode school programs aimed at making changes in the cultural approaches to weight and dieting issues (e.g., 1 visit to a classroom) are clearly not effective and may do more harm than good. Additional curricula are being developed and additional evaluations are taking place in this field.
APA (2006)	**<u>Treatment of Anorexia Nervosa</u>** • *Nutritional rehabilitation:* For some patients, giving up severe dietary restrictions and restraints appears to increase binge-eating behavior, which is often accompanied by compensatory purging. Patients may experience abdominal pain and bloating with meals from the delayed gastric emptying that accompanies malnutrition. Constipation, which may be ameliorated with stool softeners, can progress to obstipation and, rarely, acute bowel obstruction. As weight gain progresses, many patients also develop acne and breast tenderness. Many patients become unhappy and demoralized about resulting changes in body shape. A severe refeeding syndrome may occur when severely malnourished patients (generally those weighing <70% of their healthy body weight) are re-fed too rapidly, particularly in the context of enteral or parenteral feedings but also with vigorous oral refeeding regimens. This syndrome consists of hypophosphatemia, hypomagnesemia, hypocalcemia, and fluid retention. Thiamine deficiency may also be seen as a feature of this syndrome. Excessively rapid refeeding and nasogastric or parenteral feeding may be particularly dangerous because of their potential for inducing severe fluid retention, cardiac arrhythmias, cardiac failure, respiratory insufficiency, delirium, seizures, rhabdomyolysis, red cell dysfunction, and even sudden death, especially in the lowest-weight patients. Infection is always a risk with parenteral feedings in emaciated and potentially immunocompromised patients with anorexia nervosa. As patients start to recover and feel their bodies becoming larger, and especially as they

	approach frightening magical numbers on the scale that represent phobic weights, they may experience a resurgence of anxious and depressive symptoms, irritability, and sometimes suicidal thoughts. These mood symptoms, non-food-related obsessional thoughts, and compulsive behaviors, although often not eradicated, usually decrease with sustained weight gain. • *Medications:* Malnourished patients are much more prone to the side effects of medications. **<u>Treatment of Bulimia Nervosa</u>** • *Psychosocial treatments:* Patients with bulimia nervosa occasionally have difficulties with certain elements of psychotherapy. Possible adverse effects of psychotherapeutic and psychosocial interventions, steps that clinicians might take to minimize negative therapeutic reactions, and issues concerning countertransference apply to the treatment of patients with bulimia nervosa. • *Medications:* High dropout rates may also be seen in patients using SSRIs. Side effects vary widely across studies depending on the type of antidepressant medication used. In the multicenter fluoxetine trials, sexual side effects were common, and at the dosage of 60 mg/day, insomnia, nausea, and asthenia were seen in 25% to 33% of patients. For the tricyclic antidepressants, common side effects include sedation, constipation, dry mouth, and, with amitriptyline, weight gain. The toxicity and potential lethality of tricyclic antidepressant overdosage also dictate caution in prescribing this class of drug for patients who are at risk for suicide. There is a risk of spontaneous hypertensive crises in patients with bulimia nervosa taking monoamine oxidase inhibitors (MAOIs). Although there are data indicating that fluoxetine can be effective in preventing relapse in these patients, other data suggest that high rates of relapse occur while antidepressants are being taken and possibly higher rates are seen when the medication is withdrawn. The use of lithium carbonate is problematic, because lithium levels may shift markedly with rapid volume changes. Practitioners have reported several patients experiencing adverse effects with the drug, such as word-finding difficulties and paresthesias in a sizable minority of patients.
FMSD (2007)	Adverse effects associated with antidepressants
NCCMH/NICE (2004)	• Drugs that prolong the QTc interval on the ECG (for example, antipsychotics, tricyclic antidepressants, macrolide antibiotics, and some antihistamines) may compromise

	cardiac function in some patients with anorexia nervosa. • Hypophosphataemia may develop rapidly during refeeding, and if severe can cause cardiac and respiratory failure, delirium, and fits. • Ingestion of large quantities of carbohydrates, during rapid refeeding, may result in a precipitate drop in serum phosphate levels. • The risks associated with naso-gastric (NG) tube feeding, percutaneous endoscopic gastrostomy (PEG), or spoon feeding, will be increased in the context of active physical resistance. Actions such as the pulling out the (NG) tube, interfering with or pulling out the PEG, and the physical condition of the patient increase the risk involved.

TABLE 6: EVIDENCE RATING SCHEMES	
AAP (2003)	Not applicable
APA (2006)	Each recommendation is identified at falling into one of three categories of endorsement, indicated by a bracketed Roman numeral following the statement. The three categories represent varying levels of clinical confidence regarding the recommendation: [I] Recommended with substantial clinical confidence. [II] Recommended with moderate clinical confidence. [III] May be recommended on the basis of individual circumstances.
FMSD (2007)	**Classification of the quality of evidence** A. **Quality of Evidence: High.** Further research is very unlikely to change our confidence in the estimate of effect. • Several high-quality studies with consistent results • In special cases: one large, high-quality multi-centre trial B. **Quality of Evidence: Moderate.** Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

	• One high-quality study • Several studies with some limitations C. **Quality of Evidence: Low.** Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. • One or more studies with severe limitations D. **Quality of Evidence: Very Low.** Any estimate of effect is very uncertain. • Expert opinion • No direct research evidence • One or more studies with very severe limitations
NCCMH/NICE (2004)	**RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE** **Levels of Evidence** **I**: Evidence obtained from a single randomised controlled trial or a meta-analysis of randomised controlled trials **IIa**: Evidence obtained from at least one well-designed controlled study without randomisation **IIb**: Evidence obtained from at least one well-designed quasi-experimental study **III**: Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case-control studies **IV**: Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities **Strength of Recommendations** **Grade A** - At least one randomised controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation (evidence level I) without extrapolation **Grade B** - Well-conducted clinical studies but no randomised clinical trials on the topic of recommendation (evidence levels II or III); or extrapolated from level I evidence **Grade C** - Expert committee reports or opinions and/or clinical experiences of respected authorities (evidence level IV) or

	extrapolated from level I or II evidence. This grading indicates that directly applicable clinical studies of good quality are absent or not readily available.

GUIDELINE CONTENT COMPARISON

The American Academy of Pediatrics (AAP), American Psychiatric Association (APA), Finnish Medical Society Duodecim (FMSD), and National Collaborating Centre for Mental Health/National Institute for Health and Clinical Excellence (NCCMH/NICE) present recommendations for the management of eating disorders.

Some guidelines are broader in scope than others. For example, in addition to management, AAP, FMSD, and NCCMH/NICE also address the screening for and identification of eating disorders. These topics, however, are beyond the scope of this synthesis. The AAP guideline differs from the others in that it focuses specifically on the primary care pediatrician's role in the assessment and management of eating disorders. Two of the guidelines, AAP and APA, address a North American population, while FMSD and NCCMH/NICE address a European population (Finland and the United Kingdome, respectively).

While FMSD focuses on anorexia and bulimia nervosa, AAP, APA, and NCCMH/NICE also address atypical eating disorders such as binge eating disorder and eating disorders not otherwise specified (EDNOS). The APA and NCCMH/NICE guidelines address areas where more research is needed.

In formulating its conclusions, APA reviewed the NCCMH/NICE guideline and NCCMH/NICE reviewed the previous (2000) version of the APA guideline.

Guideline Development Methodology

Regarding the methods used to collect and select the evidence, all four groups performed searches of electronic databases, with FMSD and NCCMH/NICE also performing hand-searches of published literature (both primary and secondary sources). All of the groups with the exception of AAP describe relevant information about the electronic databases searched, with APA and NCCMH/NICE also providing the specific search terms used and the time range over which data were obtained.

To assess the quality and strength of the evidence, both FMSD and NCCMH/NICE weigh the evidence according to a rating scheme, while APA uses expert consensus. AAP does not specify how it assessed the evidence.

APA, FMSD, and NCCMH/NICE all performed a review of published meta-analyses to analyze the evidence, along with a systematic review (FMSD) or systematic review with evidence tables (APA, NCCMH/NICE). APA and NCCMH/NICE describe the processes used. AAP performed a review to analyze the evidence.

Both APA and NCCMH/NICE employed expert consensus to formulate their recommendations, and both use a grading scheme to indicate the strength of each individual recommendation. AAP and FMSD do not provide the methods used to formulate the recommendations.

All groups provided reference lists. APA and NCCMH/NICE stated that work group members were required to provide formal declarations of interest at the outset of the development process, while AAP and FMSD did not disclose potential conflicts of interest.

Areas of Agreement

Comprehensive Assessment/Coordination of Care

There is general agreement among the guidelines that a comprehensive initial assessment of patients diagnosed with an eating disorder should be performed and should include an evaluation of physical condition, mental status (including risk to self), and eating disorder attitudes and behaviors.

In terms of coordination of care, there is overall agreement that patients should be managed in a multidisciplinary team fashion, with all involved caregivers (physicians, psychologists, registered dietitians, social workers, physician specialists, dentists, etc.) collaborating to promote the well-being of the patient. Each team member's role should be clearly identified, and open communication between all parties should be encouraged.

Determination of Treatment Setting

There is general agreement that important factors to consider in determining the most appropriate treatment setting include the overall physical condition, psychology, behaviors, and social circumstances of the patient. APA and NCCMH/NICE are in agreement that most patients with uncomplicated bulimia nervosa can be treated as outpatients, but that patients at risk of suicide or severe self-harm or with other risk factors may warrant hospitalization. AAP similarly notes that other than the most severely affected patients, most children and adolescents will be managed in an outpatient setting by a multidisciplinary team coordinated by a pediatrician or subspecialist with appropriate expertise in the care of children and adolescents with eating disorders.

Nutritional Rehabilitation/Physical Management

The three guidelines that address nutritional rehabilitation (AAP, APA, and NCCMH/NICE) are in agreement that weight gain regimens are a key component of the treatment of anorexia nervosa. AAP recommends a stepwise caloric increase, leading to an intake of 2000 to 3000 kcal per day and a weight gain of 0.5 to 2 lb. per week. APA similarly recommends a target weight gain of 2 to 3 lbs/week for hospitalized patients and 0.5 to 1 lb/week for outpatients, with a caloric intake beginning at approximately 1,000 to 1,600 kcal/day and increasing to 70 to 100 kcal/kg per day for certain patients. NCCMH/NICE notes that 0.5 to 1 kg (1.1 to 2.2 lbs) in inpatient settings and 0.5 kg (1.1 lbs) in outpatient settings

should be aims of treatment, which requires about 3,500 to 7,000 extra calories a week.

AAP, APA, and NCCMH/NICE acknowledge that providing nutrition parentally or via a nasogastric tube may be required in inpatient settings. NCCMH/NICE states that total parenteral nutrition should not be used for people with anorexia nervosa in the absence of significant gastrointestinal dysfunction. While AAP does not distinguish between the two, APA states that nasogastric feeding is preferable to intravenous feeding.

AAP, APA, and NCCMH/NICE are in agreement that refeeding syndrome is a serious concern associated with administration of life-preserving nutrition, and that appropriate monitoring for the associated possible cardiovascular, neurologic, and hematologic complications is necessary. The guidelines agree that slow refeeding, with supplementation of vitamins and minerals as indicated, are important preventive measures to implement.

With regard to involuntary forced feeding, APA and NCCMH/NICE are in agreement that the legal basis and ramifications for doing so must be clear. NCCMH/NICE notes that it is a highly specialized procedure, only to be used as a last resort intervention in the treatment of anorexia nervosa. APA states that the clinical circumstances, family opinion, and relevant legal and ethical dimensions of the patient's treatment must be carefully considered.

Psychological Interventions

APA and NCCMH/NICE agree that appropriate goals of psychological treatment for anorexia nervosa include helping patients to cooperate with their nutritional and physical rehabilitation (including weight gain and/or maintenance), to reduce eating disorder-related behaviors, and to promote psychological recovery.

During the weight gain process, APA recommends individual psychotherapeutic management that is psychodynamically informed, noting that formal psychotherapy may be ineffective. Therapies suggested by NCCMH/NICE include CAT, CBT, IPT, focal psychodynamic therapy, and family interventions focused explicitly on eating disorders. Both groups provide recommendations regarding psychological interventions for inpatient settings, with APA noting that most inpatient-based programs incorporate emotional nurturance and a combination of reinforcers that link exercise, bed rest, and privileges to target weights, desired behaviors, feedback concerning changes in weight, and other observable parameters. NCCMH/NICE recommends a treatment regimen which focuses both on eating behavior and attitudes to weight and shape, as well as to wider psychosocial issues with the expectation of weight gain, but cautions against rigid inpatient behavior modification programs.

APA cites CBT and interpersonal and/or psychodynamically oriented individual or group psychotherapy as appropriate treatments to prevent relapse after weight restoration, adding that overlap between therapies is common. NCCMH/NICE more generally notes that following inpatient weight restoration, people with anorexia nervosa should be offered outpatient psychological treatment lasting at least 12 months that focuses both on eating behavior and attitudes to weight and

shape and on wider psychosocial issues, with regular monitoring of both physical and psychological risk.

APA and NCCMH/NICE further agree that psychosocial interventions for bulimia nervosa should be selected based on factors such as patient age, cognitive and psychological development, and family situation. APA, FMSD, and NCCMH/NICE are in agreement that CBT should be offered as the first-line psychosocial intervention. For patients who do not respond initially to CBT, APA and NCCMH/NICE agree that alternative psychological therapies should be considered, or a combination of therapies should be used. FMSD notes that CBT and medication have been successful. APA and NCCMH/NICE also both cite self-help programs as possible treatment options for bulimia nervosa. Both groups also provide recommendations regarding appropriate psychological treatments for binge eating disorder.

All four guidelines stress the efficacy and importance of family therapy and family involvement in the psychological treatment of children and adolescents at all stages of treatment and/or recovery for both anorexia and bulimia nervosa.

Pharmacological Interventions

With regard to anorexia nervosa, there is general agreement among the three guidelines that provide specific recommendations (APA, FMSD, and NCCMH/NICE), that antidepressants or other psychopharmaceuticals are only indicated for treating comorbid psychiatric conditions, such as depression. In such cases, APA notes that SSRIs in combination with psychotherapy may be effective for both weight restoration and relapse prevention. FMSD states that a combination of antidepressants and psychotherapy is more effective than psychotherapy alone, but that psychotherapy may be more acceptable to patients.

For the treatment of bulimia nervosa, APA, FMSD, and NCCMH/NICE are in agreement that the SSRI fluoxetine is the drug of first choice in terms of acceptability, tolerability, and reduction of symptoms. Both APA and NCCMH/NICE cite SSRIs as an appropriate treatment option for binge eating disorder and address the potential benefits and risks.

There is general agreement that special attention must be paid to the side effects and warnings associated with all prescribed medications, with APA and NCCMH/NICE agreeing that careful cardiac monitoring is necessary when drugs that prolong the QTc interval are prescribed.

Areas of Differences

There are no significant areas of differences between the guidelines.

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