

GUIDELINE WATCH (AUGUST 2012): PRACTICE GUIDELINE FOR THE TREATMENT OF PATIENTS WITH EATING DISORDERS, 3RD EDITION

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This guideline watch reviews new evidence and highlights salient developments since the 2006 publication of APA's *Practice Guideline for the Treatment of Patients With Eating Disorders*, 3rd Edition. The authors of this watch constituted the work group that developed the 2006 guideline. We find the guideline to remain substantially correct and current in its recommendations. The sole exception is a recommendation (with moderate-level confidence) for sibutramine for binge-eating disorder. In 2010, the U.S. Food and Drug Administration (FDA) withdrew approval for sibutramine because clinical trials showed increased risk of heart attack and stroke, and the manufacturer, Abbott Laboratories, subsequently withdrew this medication from the U.S. market.

Noteworthy recent publications about the treatment of eating disorders include systematic reviews by the Agency for Healthcare Research and Quality (Berkman et al. 2006; Bulik et al. 2007); practice guidelines from international groups, including the Catalan Agency for Health Information, Assessment and Quality (Working Group of the Clinical Practice Guideline for Eating Disorders 2009), the World Federation of Societies of Biological Psychiatry (Aigner et al. 2011), and the German Society of Psychosomatic Medicine and Psychotherapy and the German College for Psychosomatic Medicine (Herpertz et al. 2011); and a 2011 guidance statement by the Academy for Eating Disorders, which was written by some of the authors of this

From December 2011 to July 2012 (the time period during which this watch was developed), Drs. Yager, Devlin, Halmi, Herzog, Mitchell, Powers, and Zerbe report no competing interests.

The American Psychiatric Association's (APA's) practice guidelines are developed by expert work groups using an explicit methodology that includes rigorous review of available evidence, broad peer review of iterative drafts, and formal approval by the APA Assembly and Board of Trustees. APA practice guidelines are intended to assist psychiatrists in clinical decision making. They are not intended to be a standard of care. The ultimate judgment regarding a particular clinical procedure or treatment plan must be made by the psychiatrist in light of the clinical data presented by the patient and the diagnostic and treatment options available.

Guideline watches summarize significant developments in practice that have occurred since publication of an APA practice guideline. Watches may be authored and reviewed by experts associated with the original guideline development effort and are approved for publication by APA's Executive Committee on Practice Guidelines. Thus, watches represent the opinion of the authors and approval of the Executive Committee but not APA policy.

watch. In our opinion, the findings, conclusions, and recommendations of these recent reviews and guidelines are consistent with the 2006 APA guideline.

Recent textbooks provide useful practical information for clinicians who wish to learn how to deliver treatments recommended in the practice guideline. The authors of a textbook edited by Grilo and Mitchell (2010) describe therapeutic approaches and reviews supporting evidence on all aspects of eating disorders treatment, from assessment through nutritional rehabilitation to managing the chronically ill. The authors state that there is no single treatment for patients with eating disorders. Rather, a diversity of approaches is recommended. In another recent textbook, Cloak and Powers (2010) review and synthesize the small but growing evidence base for psychodynamic treatment approaches in eating disorders. As do Grilo and Mitchell, the authors recommend integration of treatment modalities. An edited manual by Yager and Powers (2007) and a

textbook by Zerbe (2008) also provide practical strategies for providing integrated treatment. These texts highlight that given the long-term nature of eating disorders, it is important to address countertransference issues, medical and psychiatric comorbidities, and quality of life.

These and other textbooks also provide practical information about psychodynamic psychotherapy. For example, Zerbe (2008) synthesizes research that demonstrates that clinicians of differing theoretical orientations have been shown to have similar countertransference reactions. Thompson-Brenner and colleagues (2010) review the growing evidence base for psychodynamic psychotherapy in patients with anorexia nervosa, bulimia nervosa, and binge-eating disorder. The studies included in their review suggest that attending to the transference, symptom symbolism, key conflicts, narcissistic vulnerabilities, and relational dynamics are important for reducing core personality and symptom difficulties.

METHODS

The literature review for the 2006 guideline ended in 2003. For this watch, we searched MEDLINE, using PubMed, for randomized, controlled trials and meta-analyses published from 2003 through December 13, 2011, using the following terms: “bulimia,” “bulimia nervosa,” “bulimic,” “anorexia nervosa,” “binge eating,” “binge eating disorder,” “binge eating episode,” “eating disorder,” “eating disordered,” and “eating disorders.” Terms for limiting the search (using Boolean “or” logic) included the following: “systematic review,” “random allocation,” “randomly allocated,” “randomly assigned,” “randomization,” “randomize,” “randomized,” “randomized controlled trial,” “placebo,” “active comparator,” “double blind,” “double blinded,” “controlled clinical trial,” “meta analysis,” “meta-analytic,” and *not* “editorial,” “letter,” “case report,” or “comment.” We limited the search to English-language articles.

We also searched the Cochrane database, using the terms “anorexia nervosa,” “bulimia,” and “binge eating” as well

as corresponding Medical Subject Headings (MeSH) for reviews published from 2003 through December 13, 2011.

These search strategies yielded 1,346 articles. Of these articles, 693 were rejected as not relating to treatment of eating disorders. We retained and reviewed 91 articles pertaining to anorexia nervosa, 84 to bulimia nervosa, 95 to binge eating, 12 to osteoporosis treatment in eating disorders, and 60 to miscellaneous topics, most of which covered more than one eating disorder.

The following discussion focuses on randomized, controlled trials identified by our search but also includes some recent open trials of which we are aware. For some topics, instead of discussing all studies, in this watch we summarize the conclusions of an available systematic review. This watch is not intended to be a comprehensive review of all possible treatments for eating disorders. Rather, we review recent research that relates to key recommendations of the 2006 APA practice guideline.

CLINICAL ASSESSMENT

DSM-5, to be published in 2013, is expected to contain some revisions of the diagnostic criteria for anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified (EDNOS). For example, amenorrhea may be

dropped as a necessary criterion for anorexia nervosa, binge-eating disorder may become a distinct diagnosis apart from EDNOS, and the frequency criteria for both bulimia nervosa and binge-eating disorder may drop from

twice per week to once per week. These changes are unlikely to affect utility of the 2006 practice guideline, which recommends that patients with subsyndromal anorexia nervosa or bulimia nervosa, such as patients with EDNOS who meet all criteria for anorexia nervosa except for being

amenorrheic for 3 months, should receive treatment similar to that of patients who fulfill all criteria for these diagnoses. Proposed revisions to the criteria are available on the DSM-5 development website, www.dsm5.org, under “Feeding and Eating Disorders.”

ANOREXIA NERVOSA

The quality of evidence for treatments for anorexia nervosa remains limited, according to recent systematic reviews and meta-analyses (e.g., Fitzpatrick and Lock 2011; Hartmann et al. 2011). There are few randomized, controlled trials, and available studies suffer from small sample sizes, short duration, and methodological problems. A contributing factor is that study recruitment is generally poor and dropout rates are high. For example, in a study of two clinical trials for anorexia nervosa, Halmi and colleagues (2005) reported that 46% of patients who had entered into the study dropped out. The only predictor of treatment acceptance Halmi et al. identified was high self-esteem, not a particularly common characteristic of patients with eating disorders. Furthermore, available studies are primarily about symptom relief rather than recovery (Strober and Johnson 2012).

Predictors of recovery from anorexia nervosa remain poorly defined. In a systematic review of studies published from 1990 to 2005 on anorexia nervosa treatments, Espindola and Blay (2009) identified 3,415 studies, of which 16 addressed recovery. The authors concluded that a complexity of factors, extending well beyond conventional treatment factors and including self-acceptance, determination, and spirituality, accounts for recovery. In another systematic review of 12 randomized, controlled trials, Crane and colleagues (2007) found that obsessive-compulsive personality disorder traits were associated with poorer outcome in patients with anorexia nervosa and opined that treatment might moderate these traits. In a study by Schebendach and colleagues (2011), 41 weight-restored patients with anorexia nervosa who had been hospitalized were followed for up to 1 year. Differences were observed in the total number of different foods selected by patients with “success” outcomes ($n=29$) versus patients with “failure” outcomes ($n=12$). The authors stated that the results suggest that a diet limited in variety may be associated with relapse.

CHOICE OF SETTING

The guideline states that it is important to consider a patient’s overall physical condition, psychology, behaviors,

and social circumstances when choosing a treatment setting. Although investigators have attempted to study the advantages of specific settings, conclusions from available research are limited because there are many local variations in the essential features of settings.

In a large multicenter, randomized, controlled trial conducted in the United Kingdom (the Trial of Outcomes for Child and Adolescent Anorexia Nervosa, or TOuCAN study), Gowers and colleagues (2007) randomly assigned 167 adolescent patients with anorexia nervosa to specialist inpatient, specialist outpatient, or routine general outpatient treatment. Improvement on outcome measures was good across all treatment groups, but full recovery rates were poor, at only 33% after 2 years (of the 96% of the sample available for follow-up). Adherence was lowest in the inpatient treatment group, at 50%, as compared with 71% for the routine outpatient and 77% for the specialist outpatient groups. Inpatient treatment predicted poor outcome (either when patients were initially randomly assigned or after they were transferred from outpatient care). Patients who did not respond to outpatient treatment did very poorly (Gowers et al. 2010). The authors concluded that first-line inpatient treatment does not provide advantages over outpatient management, and that patients who do not respond to outpatient treatment do poorly on transfer to inpatient facilities (however, it is possible that patients in these difficult cases would do poorly in any setting) (Gowers et al. 2007). This same study found no statistical differences in outcomes after 2 years, but specialist outpatient treatment was shown to be most cost-effective (Byford et al. 2007). On the whole, these investigators concluded that under the British National Health Service there is little support for long-term inpatient care, either for clinical or for health economic reasons (Gowers et al. 2010). These investigators also interviewed 215 patients and their parents to compare satisfaction with specialist versus generalist care. Levels of satisfaction were high across all types of treatment, but higher for specialist care. Parents reported higher levels of satisfaction than did adolescents (Roots et al. 2009).

In the meta-analysis by Hartmann and colleagues (2011), 57 studies, covering 84 treatment areas and involving 2,273 patients, were analyzed. With respect to choice of setting, the authors concluded that there is little high-quality evidence on which to base specific guidance, finding only that perhaps patients gain more rapidly on inpatient than on outpatient treatment settings.

NUTRITIONAL REHABILITATION

For underweight individuals with anorexia nervosa, the guideline recommends that hospital-based programs for nutritional rehabilitation should be considered. A study by Garber and colleagues (2012) lends additional support to the utility of inpatient care for underweight patients to reduce complications of nutritional rehabilitation, particularly the refeeding syndrome. In that study, 35 adolescent patients were followed during a hospital-based refeeding protocol in which calorie intake was increased every other day, from an average of 1,205 to 2,668, over an average length of stay of 16 days. No patients had refeeding syndrome, but 20% had low serum phosphorus levels. Percent mean body mass index (BMI) increased from 80.1 (11.5) to 84.5 (9.6), and overall gain was 2.10 (1.98) kg. Most of the patients (83%) initially lost weight, an important finding for clinicians who must justify the value of hospital-based nutritional rehabilitation programs to insurance companies. Mean percent BMI did not increase significantly until day 8. Higher calories prescribed at baseline were significantly associated with faster weight gain and a shorter hospital stay.

For patients who refuse to eat and require life-preserving nutrition, the guideline recommends nasogastric feeding. The utility of nasogastric feedings has been studied in open trials by Rigaud and colleagues (2007, 2011). In the first trial (2007), malnourished patients with anorexia nervosa were randomly assigned to a tube-feeding group ($n=41$) or a control group ($n=40$) groups. After 2 months, weight gain was 39% higher in the tube-feeding group, binge-eating episodes were decreased, and most patients thought the intervention improved their eating disorder. After discharge, the tube-feeding group had a longer relapse-free period (34.3 ± 8.2 weeks vs. 26.8 ± 7.5 weeks). In the second trial (2011), adult outpatients with anorexia nervosa or bulimia nervosa were randomly assigned to 2 months of cognitive-behavioral therapy (CBT) alone ($n=51$) or CBT plus tube feeding ($n=52$). By the end of treatment those receiving CBT plus tube feeding were more rapidly and frequently abstinent from binge eating and purging, had more improvement on symptoms of depression and anxiety, and had a better quality of life. These superior results were also seen 1 year later. It should be noted that the

average BMI for patients entered into the tube feeding plus CBT arm in the 2011 study was 18.2 ± 3.3 , thin but not severely underweight, and the analysis did not separate normal-weight patients with bulimia nervosa from patients with anorexia nervosa, binge-eating purging type. As described in the practice guideline, there are potential harms to nasogastric feeding, and the guideline does not specifically recommend it for normal-weight patients.

PSYCHOSOCIAL INTERVENTIONS

The practice guideline recommends psychotherapeutic management during acute refeeding and weight gain and states that psychotherapy can be helpful once malnutrition has been corrected and weight gain has begun. These recommendations were based on strong consensus but weak evidence. Research on psychotherapy for anorexia nervosa remains limited. It is difficult to carry out rigorously designed trials of psychotherapies, and as with trials of pharmacotherapy, long-term follow-up is uncommon. In addition, available studies have used a variety of psychosocial interventions, often in mixed populations (i.e., with patients with different kinds of eating disorders). As a result, the following studies do not significantly change the overall quality of evidence supporting psychosocial interventions for anorexia nervosa.

In an open trial that used a “transdiagnostic” approach and broad inclusion criteria, Byrne and colleagues (2011) administered 20–40 individual sessions of “enhanced” CBT, which included aspects of interpersonal therapy (IPT), to 125 patients at a public outpatient clinic. The investigators reported that two-thirds of those completing treatment (and 40% of the total) achieved partial remission. However, only 53% of those who entered the trial completed treatment.

Since motivation for treatment is a problem for many patients with anorexia nervosa or bulimia nervosa, several groups have examined ways to enhance motivation at the start of treatment. In general, results have not been dramatic, but some are promising. Wade and colleagues (2009) randomly assigned 47 young adult inpatients with anorexia nervosa to four sessions of motivational interviewing with a “novice” therapist ($n=22$) or treatment as usual ($n=25$). Not surprisingly, those who had started out with higher motivation did better overall. Patients receiving motivational interviewing were more likely to move from low to high readiness to change at 2- and 6-week follow-up. In a similar study by Dean and colleagues (2008), 42 inpatients were randomly assigned to receive four initial motivational interviewing sessions or treatment as usual. In this study, although no significant differences

were seen between the groups, motivational enhancement treatment appeared to foster longer-term motivation and engagement and thus promote treatment continuation.

Carter and colleagues (2011) investigated long-term outcomes of specialized psychotherapies in women with broadly defined anorexia nervosa who had participated (an average of 6.7 years prior to Carter et al.'s analysis) in a randomized, controlled trial comparing conventional CBT and a modified form of IPT in which therapists were constrained from discussing nutrition, weight, and shape issues, as well as a control condition (specialist supportive clinical management). No differences were seen in outcomes among the three groups. Only 43 of the original sample of 56 patients participated in this follow-up study, leaving the study underpowered.

Several studies have examined the impact of exercise or strength training on patients with eating disorders. In a nonrandomized study, Calogero and Pedrotty (2004) compared 127 women in a residential treatment center who participated in an exercise program plus treatment as usual with 127 nonparticipants who received treatment as usual only. Women in the exercise group who had anorexia nervosa gained more than a third as much weight and demonstrated significantly reduced obligatory attitudes toward exercise compared with those in the comparison group. The authors acknowledged that these differences may reflect initial selection biases.

In a small study, Chantler and colleagues (2006) randomly assigned 14 hospitalized adolescent females to an 8-week program of light resistance training or treatment as usual, with all participants receiving the same caloric intake. The training group showed increased knee and elbow strength. However, another small ($n=22$) study by del Valle and colleagues (2010) found few benefits for a low-to-moderate-intensity strength training program (two sessions/week for 3 months) when combined with treatment as usual (conventional psychotherapy and refeeding) compared with treatment as usual alone, even though the intervention was well tolerated and did not cause significant weight loss and no deleterious effects were seen.

Results of small randomized trials involving treatment approaches that include mindfulness training along with CBT and other therapeutic approaches have been reported. Courbasson and colleagues (2011) randomly assigned 25 outpatients with comorbid mixed eating disorders and substance abuse disorders to a 1-year program of either dialectical behavior therapy (DBT) or treatment as usual. Those patients receiving DBT showed so much greater retention (80% vs. 20% at posttreatment) that the protocol was terminated early. The authors suggest that DBT may be effective at keeping such patients in treatment. A review of eight studies of variable quality that used mind-

fulness training for the treatment of patients with eating disorders suggests that available evidence supports the value of such interventions (Wanden-Berghe et al. 2011).

Other therapies for anorexia nervosa and related conditions that have been studied include spirituality focused group therapy, eye movement desensitization and reprocessing (EMDR), yoga, and body awareness therapy. Available studies on these therapies, as described below, have design limitations.

In one randomized, controlled study conducted at a treatment center that provides Christian therapy, 122 female inpatients with mixed eating disorder diagnoses were randomly assigned to treatment as usual plus either spirituality focused group therapy or cognitive and emotional group therapy. The spirituality group was reported to have a faster therapeutic response (Richards et al. 2006). The authors noted several limitations to the study, including small sample size, small magnitude of effect, and uncertain generalizability beyond the unique study setting (a facility known for promoting spirituality in treatment). As for many psychotherapy research studies, another limitation is possible expectancy bias from both therapists and patients.

In another study, 86 women in a residential treatment program were randomly assigned to treatment as usual plus EMDR or treatment as usual only. Those receiving the addition of EMDR reported less distress related to negative body image memories and less body dissatisfaction at 3, 6, and 12 months compared with the treatment-as-usual group, but no other differences in body image measures or other clinical outcomes were seen (Bloomgarden and Calogero 2008). Limitations acknowledged by the authors include contamination effects and lack of blinding. In addition, the control group did not receive an active psychotherapy.

In a pilot study by Carei et al. (2010), 54 adolescent outpatients with mixed eating disorders were randomly assigned to treatment as usual with or without eight sessions of yoga. Although both groups maintained BMI levels and reported reduced anxiety and depression scores over time, those in the yoga group demonstrated greater sustained reduction in eating disorder symptoms and decreased food preoccupation. Limitations of this pilot study include small sample size, anticipation effects from the use of repeated measures, and uncertain generalizability to inpatient or community samples.

In a pilot study by Catalan-Matamoros and colleagues (2011), 28 outpatients with mixed eating disorders who had been symptomatic for less than 5 years were randomly assigned to treatment as usual with or without five sessions of basic body awareness therapy. Those patients in the body awareness therapy group showed modest but

consistent improvements in measures of body dissatisfaction compared with those who received treatment as usual alone. The authors acknowledged that this small study had high dropout rates and was unblinded.

In actual practice, clinicians who treat patients with eating disorders, including anorexia nervosa, use a wide array of psychosocial interventions. Tobin and colleagues (2007) surveyed 265 clinicians, who were recruited online and at professional meetings, about the treatment modalities they use. Only 6% of respondents reported they adhered closely to treatment manuals, and 98% indicated they used both behavioral and dynamically informed interventions. Factor analysis suggested theoretically linked dimensions of treatment but also dimensions that are common across models. The authors concluded that overlapping of treatment modalities is a common practice, and more studies are needed to assess what clinicians actually do.

FAMILY THERAPY

The practice guideline strongly recommends family treatment for children and adolescents with eating disorders and suggests that family assessment and involvement may be useful for older patients as well. Family therapy of various types for anorexia nervosa continues to be a focus of considerable research. Results continue to provide support for the value of family therapy, but the overall quality of the evidence remains poor.

In a Cochrane review, Fisher and colleagues (2010) evaluated the efficacy of family therapy compared with standard and other treatments. Thirteen trials were included in the analysis. The authors concluded that there is some evidence to suggest that family therapy may be more effective than treatment as usual in the short run, but they cautioned that the few available studies are small and have potential biases.

In a review of family therapy for adolescents with anorexia nervosa, Gardner and Wilkinson (2011) identified six randomized, controlled trials, the large majority with small sample sizes, and concluded that these studies were on the whole weak. In one of the stronger studies (Lock et al. 2010), 121 patients with anorexia nervosa ages 12–18 years were randomly assigned to 24 outpatient hours of family-based therapy or to adolescent-focused individual therapy delivered over 12 months. At the end of treatment no group differences in full remission were seen, but there were more patients in partial remission in the family-based therapy group, and at 6- and 12-month follow-up there were greater rates of full remission in this group.

In an earlier study of family-based therapy by Lock and colleagues (2005), 86 adolescents were randomly assigned to receive family-based therapy either short term (10 ses-

sions over 6 months) or long term (20 sessions over 12 months). There were no differences in outcome. However, patients with obsessive-compulsive personality disorder and patients from non-intact families received greater benefit from the longer-term protocol. In this study, more dropouts occurred when patients had comorbid psychiatric disorders, were older, were assigned to the longer term protocol, or had problematic family behaviors (Lock et al. 2006).

Ball and Mitchell (2004) randomly assigned 25 adolescents and young adults with anorexia nervosa who were living with their families either to a 12-month program involving 21–25 sessions of CBT or to behavioral family therapy. Sixty percent of the intent-to-treat group and 72% of completers were rated as having “good outcomes,” with no differences in outcomes seen between the groups. The majority of patients did not achieve symptomatic recovery.

In a 5-year follow-up of 40 adolescent patients with anorexia nervosa who had participated in a randomized study of two forms of family therapy (conjoint or separated), Eisler and colleagues (2007) found no differences in outcomes. Seventy-two percent of the patients had recovered. However, patients from families with elevated levels of maternal criticism gained less weight and generally did less well with conjoint family therapy. The investigators suggested that for these families, conjoint therapy should be avoided, at least early on in treatment when raised levels of parental criticism are evident.

Finally, Godart and colleagues (2012) randomly assigned 60 female adolescent patients with anorexia nervosa at time of hospital discharge either to 18 months of ambulatory treatment as usual or to treatment as usual augmented with family therapy (1.5 hours every 3–4 weeks) focusing on family dynamic issues and the “here and now” but not on eating behaviors or weight. Fifty-one of the 60 families were intact. Treatment as usual consisted of individual consultations, regular interviews involving the parents, and individual psychotherapy with another therapist if required. As necessary, psychiatrists prescribed medication, offered parental guidance regarding conflicts with daughters, and secured nutritional/dietetic advice for patients gaining insufficient weight. At 18 months, good outcomes were observed in 40% of the group receiving family therapy versus 17.2% of the group receiving treatment as usual.

Parents and other close family members of patients with anorexia nervosa have been found to have high levels of psychological distress, burden, and expressed emotion (EE) (Zabala et al. 2009). Interventions to help these individuals cope with their burdens have been studied. Grover and colleagues (2011) randomly assigned 64 caregivers of individuals with eating disorders, primarily anorexia

nervosa, to a Web-based CBT program designed to help caregivers plus limited clinician-supported guidance by e-mail or phone or to treatment as usual, consisting of usual support from caregiver organizations. At 4- and 6-month follow-up posttreatment, those patients who participated in the Web-based program reported reduced anxiety and depression, and a trend was observed in reduced EE. The same investigator group (Rhodes et al. 2009) also randomly assigned and compared 10 caregivers receiving treatment as usual with 10 who received “carer to carer” (i.e., parent-to-parent) consultations to supplement Maudsley model care. Qualitative analysis showed that those receiving parent-to-parent care felt less alone and more empowered. Further, educational workshops and skills training given to two families together was as effective as individual family therapy (Whitney et al. 2012).

PHARMACOTHERAPY

The practice guideline describes limited evidence for the use of medications to restore weight, prevent relapse, or treat chronic anorexia nervosa.

Evidence for antipsychotic medications, consisting of case series at the time the guideline was developed, now includes some randomized, controlled trials, but the studies have shown mixed results and have methodological limitations, including small sample sizes. In addition, as described in the guideline, these medications have serious potential adverse effects.

A task force on eating disorders of the World Federation of Societies of Biological Psychiatry (Aigner et al. 2011) systematically reviewed all studies for the pharmacological treatment of eating disorders published between 1977 and 2010. The task force concluded that Grade B evidence (i.e., limited positive evidence from controlled studies) supports the use of olanzapine for weight gain. Evidence for other second-generation (“atypical”) antipsychotics was determined to be Grade C (positive evidence from uncontrolled studies or case reports/expert opinion).

A review by McKnight and Park (2010) of four randomized, controlled trials and five open-label trials found limited evidence that olanzapine, quetiapine, and risperidone may have positive effects on depression, anxiety, and core eating pathology, but insufficient evidence regarding weight gain.

The olanzapine studies include a randomized, placebo-controlled trial of 34 patients with anorexia nervosa by Bissada and colleagues (2008), which demonstrated benefits for olanzapine in decreasing obsessive symptoms in addition to increasing weight. More recently, Attia and colleagues (2011) randomly assigned 23 outpatients with anorexia nervosa at two different sites either to 8 weeks of

olanzapine (2.5 mg/day, up to 10 mg/day as tolerated) or to placebo. Patients receiving olanzapine showed a significantly better gain in BMI. The medication was well tolerated, and no adverse metabolic effects were observed. However, Kafantaris and colleagues (2011) found no differences in percentage change in median body weight, rates of weight gain, or improvement in psychological measures 5 or 10 weeks after a small single-site, randomized, controlled trial of olanzapine versus placebo in 20 adolescent females, 5 of whom did not complete the study. Furthermore, these investigators saw a trend of increasing fasting glucose and insulin levels only in the olanzapine-treated group. Adverse effects were also observed in a study of the metabolic effects of olanzapine by Swenne and Rosling (2011). In this study, 47 adolescents with anorexia nervosa had increased levels of thyroid-stimulating hormone and prolactin, which the investigators attributed to medication effects rather than to weight gain.

Risperidone was studied in a double-blind randomized, controlled trial of 40 hospitalized adolescents with anorexia nervosa (Hagman et al. 2011). The investigators found no advantage for risperidone (average dose 2.5 mg/day, prescribed up to 4 weeks) over placebo for weight restoration.

The practice guideline states that although no specific hormone treatments or vitamin supplements have been shown to be helpful for weight restoration, zinc supplementation may be useful. The Task Force on Eating Disorders of the World Federation of Societies of Biological Psychiatry (Aigner et al. 2011) described the evidence for zinc supplementation as Grade B. In a meta-analysis of four randomized, controlled trials and two cohort studies, Sim and colleagues (2010) concluded that estrogen preparations have uncertain benefits for amenorrhea associated with anorexia nervosa and should therefore be avoided. In contrast, results from a randomized, controlled trial by Misra and colleagues (2011) suggest that physiologic estradiol replacement is useful in teenage (13- to 18-year-old) girls with anorexia nervosa with low bone density. In this study, 96 mature girls with anorexia nervosa (in whom statural growth was almost complete) were randomly assigned either to transdermal 17 β estradiol (100-mcg patch applied twice weekly) and cyclic progesterone or to placebo for 18 months, while 14 younger girls with anorexia nervosa were randomly assigned to receive very small incremental doses of oral ethinyl estradiol (3.75 mcg daily in the first 6 months, 7.5 mcg daily in the second 6 months, and 11.25 mcg daily in the final 6 months) or placebo. The rationale was that unlike oral estrogen, which suppresses insulin-like growth factor-1 (IGF-1) (an important bone trophic factor) when used in doses found in birth control pills, replacement doses of transdermal estradiol and very low incremental oral estrogen doses that mimic the early

pubertal rise in estrogen do not suppress IGF-1. Girls with anorexia nervosa randomly assigned to receive this form of physiologic estrogen replacement had a 2.6% increase in spine bone density in this study, compared with only 0.3% in girls randomly assigned to receive placebo. This intervention also prevented the decrease in bone density at the hip observed in girls randomly assigned to receive to placebo.

The practice guideline states that the limited available evidence on the use of antidepressants for weight gain suggests that they confer no benefit. This position is supported by a Cochrane review by Claudino and colleagues (2006) that identified four randomized, controlled trials. The studies lacked quality information, and the authors concluded that there is no evidence to support the use of antidepressants for weight, eating disorder core pathology, or associated pathology. Following publication of this review, Walsh and colleagues (2006) reported that in a two-site study, the addition of fluoxetine to CBT following weight restoration for patients with anorexia nervosa showed no benefit for fluoxetine over placebo. In this study the best predictors of weight maintenance following discharge for anorexia nervosa were the level of weight restoration at the conclusion of acute treatment and the avoidance of weight loss immediately following intensive treatment (Kaplan et al. 2009).

OTHER SOMATIC TREATMENTS

Janas-Kozik and colleagues (2011) randomly assigned 24 adolescent girls with anorexia nervosa with restrictor subtype and depressive symptoms to receive additional bright light therapy for 6 weeks. The intervention group had greater improvement in depression, but no difference in BMI was found at 6 weeks. In a randomized, controlled trial of “warming therapy” involving 21 female patients with anorexia nervosa, wearing a heating vest for 3 hours per day for 21 days offered no advantage compared with wearing the vest but with the heating function turned off (Birmingham et al. 2004).

OSTEOPENIA AND OSTEOPOROSIS

To treat physiological complications of malnutrition from

semistarvation, including osteopenia and osteoporosis, the guideline recommends weight gain through nutritional rehabilitation—namely, sufficient intake of dietary protein, carbohydrates, fats, calcium, and vitamin D. Vescovi and colleagues (2008) recommended the same in a review of 26 randomized, controlled trials, cross-sectional studies, and case series of pharmacological and nonpharmacological interventions to treat bone mineral density or bone turnover in women with functional hypothalamic amenorrhea. In another systematic review of treatment for bone loss, Mehler and MacKenzie (2009) found that no good evidence exists to guide medical interventions once loss has occurred. The authors concluded that early detection and weight restoration are therefore of utmost importance.

As described earlier in this watch, Misra and colleagues (2011) found beneficial effects of physiologic estrogen replacement on bone density in adolescent girls with anorexia nervosa. This finding is in contrast to previous studies that reported no beneficial effects of estrogen when given orally as a birth control pill (Strokosch et al. 2006).

The guideline does not recommend the use of bisphosphonates such as alendronate. Golden and colleagues (2005) conducted a randomized, placebo-controlled trial of alendronate for osteopenia in 32 adolescent females with anorexia nervosa. At 1-year follow-up, patients treated with alendronate had increased bone mineral density of the lumbar spine and femoral neck. However, body weight was the most important determinant of bone mineral density. The authors concluded that further research is needed on the efficacy and long-term safety of alendronate.

Risedronate, another bisphosphonate, was studied in a trial by Miller and colleagues (2011), in which 77 women with anorexia nervosa were randomly assigned to receive risedronate 35 mg weekly, low-dose testosterone, both, or placebo for 12 months. Compared with placebo, risedronate increased bone mineral density in the posteroanterior spine 3%, the lateral spine 4%, and the hip 2%; testosterone did not increase bone mineral density but increased lean body mass. Few side effects were seen with either therapy. Further studies are needed to weigh the benefits and harms of using risedronate clinically.

BULIMIA NERVOSA

As for studies about treatments for anorexia nervosa, recent studies about treatments for bulimia nervosa were primarily short term and focused on symptom relief rather

than recovery. As described in a randomized, controlled trial of CBT by McIntosh and colleagues (2011) that is cited in the discussion below, “a substantial group remains

unwell in the long term. Definition of recovery impacts markedly on recovery rates” (p. 32).

CHOICE OF SETTING

The practice guideline recommends outpatient treatment of bulimia nervosa, except when there are complicating factors (e.g., serious general medical problems, suicidal behavior, psychosis) or severe disabling symptoms that do not respond to outpatient treatment. Zeeck and colleagues (2009) compared two options for such patients: inpatient and day clinic treatment. In this German study, 55 patients with severe bulimia nervosa were randomly assigned to one of these two settings. At 3 months posttreatment, both settings reduced general and specific pathology. The authors noted that more deterioration in bulimic symptoms occurred following inpatient than day clinic treatment but described the results overall as comparable.

In a Korean study by Kong (2005), 43 adolescent patients with a mixture of eating disorder symptoms were randomly assigned to day treatment based on a University of Toronto model (as described, for example, by Olmsted et al. 2003) or to a traditional outpatient program that included CBT, IPT, and/or medication. Patients assigned to the day treatment group showed greater improvement with regard to BMI and binge eating and purging, as well as improved scores on the Eating Disorder Inventory–2, the Beck Depression Inventory, and the Rosenberg Self-Esteem Scale.

NUTRITIONAL REHABILITATION

Similar to recommendations for patients with anorexia nervosa, the guideline recommends that normalization of nutrition and eating habits is a central goal in the treatment of patients with bulimia nervosa. A study by Burton and Stice (2006) suggests that healthy dieting and modest weight loss may not be incompatible with this goal. In this study, 85 women with full and subthreshold bulimia nervosa were randomly assigned to a 6-session healthy dieting intervention or a wait-list control condition. At 3-month follow-up, the intervention group showed modest weight loss and significant and persistent improvement in bulimic symptoms. While these findings are preliminary and require replication and extension, they suggest that contrary to popular belief controlled dieting behaviors do not necessarily maintain bulimia nervosa.

PSYCHOSOCIAL INTERVENTIONS

The guideline recommends CBT as the most effective and best-studied intervention for patients with bulimia

nervosa. IPT is recommended for patients who do not respond to CBT. Studies have continued to demonstrate effectiveness for a variety of CBT- and IPT-oriented interventions in both individual and group settings. In addition, studies continue to investigate “self-care” psychosocial programs delivered online or via CD-ROM.

In an update of a previous Cochrane review, Hay and colleagues (2009) identified 48 studies of CBT for the treatment of bulimia nervosa. The studies included 3,054 participants. The review supported the efficacy of both CBT and a manual-based CBT designed specifically for patients with bulimia nervosa. Other psychotherapies, particularly IPT in the longer term, were also found to be efficacious. Self-help approaches that used highly structured CBT treatment manuals were described as promising. Exposure and response prevention did not enhance the efficacy of CBT, and the review found that psychotherapy alone is unlikely to reduce or change body weight in people with bulimia nervosa or similar eating disorders. The authors concluded that there is a small body of evidence for the efficacy of CBT in bulimia nervosa and similar syndromes, but the quality of trials is highly variable and sample sizes are often small.

Studies of psychotherapy for bulimia nervosa published since the 2006 practice guideline include those discussed below. Some of these studies were included in the 2009 Cochrane review by Hay and colleagues. As noted in that review, more and larger trials are still needed of all psychotherapies.

In a study conducted at two sites by Agras and colleagues (2000, referenced in the guideline), 219 patients with bulimia nervosa were randomly assigned to receive CBT or a version of IPT in which no attention was paid at any stage of treatment to eating habits or attitudes toward weight and shape. The IPT also did not contain any of the specific behavioral or cognitive procedures that characterize CBT, and there was no self-monitoring. All patients did better with CBT than with IPT. Subsequent analyses of the study data have found that among patients who received IPT, blacks did better than whites (Chui et al. 2007), and early change in the frequency of purging was the best predictor of response at 8 months (Fairburn et al. 2004).

Several studies have examined the potential value of including motivational enhancement strategies in treatment. Results have been mixed. In a two-phase study, Katzman and colleagues (2010) randomly assigned 225 patients with bulimia nervosa or EDNOS to receive either CBT or motivational enhancement (phase 1), then randomly assigned patients to 12 weeks of group or individual CBT (phase 2). At 1- and 2.5-year follow-up, patients across all interventions had improved significantly, with only minor differences among groups.

Geller and colleagues (2011) assessed 181 outpatients with eating disorders for motivation pretreatment and then randomly assigned them to five sessions of preparatory readiness and motivation therapy or to a wait-list control. At 6-week and 3-month follow-up, both the intervention group and the control group showed improvements in readiness for change, depression, drive for thinness, and bulimia symptoms. Those patients receiving readiness and motivation therapy were found to have less ambivalence toward treatment.

To examine the potential utility of a common behavioral intervention for bulimia nervosa, McIntosh and colleagues (2011) randomly assigned 135 patients with bulimia nervosa who had received eight sessions of CBT to either relaxation training or one of two types of exposure with response prevention: one type focused on pre-binge cues, and the other focused on pre-purge cues. At 5 years, those patients treated with either form of exposure with response prevention were more likely to be abstinent (43% who received the intervention focused on pre-binge cues, whereas 54% who received the intervention focused on pre-purge cues; the difference was not statistically significant) than those treated with relaxation training (27%).

Several studies have examined other factors affecting course and outcome of treatment for bulimia nervosa. Mitchell and colleagues (2004) found that simply telling patients with bulimia nervosa who have achieved abstinence after a course of CBT to return for additional sessions if they fear relapse was not effective for preventing relapse. In this multicenter trial, patients were randomly assigned to follow-up only or to a crisis intervention model. In the follow-up only group, none of the 30 individuals who had relapsed during the study period returned for additional treatment visits. The investigators suggested that planned visits or phone calls should be considered as alternative relapse prevention strategies.

Rowe and colleagues (2008) compared course and outcome in 134 females with bulimia nervosa who received CBT. Patients included 59 with bulimia nervosa alone, 38 with bulimia nervosa plus borderline personality disorder, and 37 with bulimia nervosa plus other personality disorders. No differences in eating-disorder symptomatology or general psychopathology were seen among the groups at 3-year follow-up.

Studies have examined the use of telemedicine and the Internet as routes for administration of psychotherapy for bulimia nervosa. In a randomized, controlled trial involving 128 females with bulimia nervosa, treatment with CBT delivered face-to-face or via telemedicine for 20 weeks was similarly effective (Mitchell et al. 2008), and telemedicine was more cost-effective (Crow et al. 2009). In this study, patients rated therapeutic factors more highly than did ther-

apists and accepted telemedicine CBT more easily than face-to-face CBT (Ertelt et al. 2011).

In a study of Internet-based CBT plus e-mail support, Sanchez-Ortiz and colleagues (2011) randomly assigned 76 female students with bulimia nervosa or EDNOS to an intervention group or to a wait-list group, who received the intervention after 3 months' delay. At 3- and 6-month follow-up, those students getting immediate treatment had better outcomes than those assigned to the wait list followed by treatment, suggesting the importance of providing services as soon as possible when problems are identified.

SELF-HELP PROGRAMS

As described in the guideline, a variety of self-help programs have been studied and shown to be effective for bulimia nervosa. Studies continue to support the usefulness of self-help programs as well as identify limitations.

One such program is "guided self-help," a CBT-based approach in which patients do much of the treatment on their own, using a workbook, while also receiving some counseling and support from a mental health professional. Several randomized, controlled trials have shown the value of guided self-help and its superiority to wait-list control conditions, including a study by Traviss and colleagues (2011) of 81 patients with bulimia nervosa or binge-eating disorder. The authors found that guided self-help was significantly more effective than being on the waiting list in reducing psychopathology of eating disorders, laxative abuse, exercise behaviors, and global distress, and gains were maintained 3 and 6 months after the intervention. In another study of a CBT-based self-care intervention delivered by CD-ROM, Schmidt and colleagues (2008) randomly assigned 97 patients either to the intervention without support followed by 3 months of a flexible number of therapist sessions or to a 3-month wait-list condition followed by 15 sessions of therapist-delivered CBT. At 3 and 7 months posttreatment, the authors found no significant differences between the two groups in binge eating or vomiting frequency. In an earlier study, Schmidt and colleagues (2006) randomly assigned 61 patients with bulimia nervosa or binge-eating disorder to 14 sessions of guided self-help with or without personalized feedback that was delivered in various ways. At 6 months following the intervention, those patients receiving the added feedback reported better positive outcomes with regard to self-induced vomiting and dietary restriction.

Some of the studies described above were included in a 2006 Cochrane review by Perkins and colleagues, who concluded that pure self-help and guided self-help have some value for both bulimia nervosa and binge-eating disorder.

FAMILY THERAPY

Studies continue to demonstrate the value of family therapy for patients with bulimia nervosa, particularly for adolescents, yet findings are less strong than for adolescent patients with anorexia nervosa, and there are fewer studies. Le Grange and colleagues (2007) randomly assigned 80 adolescents with full or partial bulimia nervosa to family-based treatment or to individual supportive psychotherapy. Each group received 20 visits over 6 months. At 6-month post-treatment follow-up, 29% of adolescents receiving family-based treatment, compared with 10% of those receiving individual supportive therapy, were abstinent from binge and purge episodes. Other outcome measures similarly favored family-based treatment. Notably, the supportive psychotherapy employed in this study was expressly nondirective and contained no putative active therapeutic components, such as stimulus control or problem-solving techniques, or instruction or implicit advice on changes in diet and eating patterns. The authors found that lower eating concerns were the best predictor of outcome and concluded that family-based treatment may be most effective in patients who have relatively low levels of eating-disorder psychopathology (Le Grange et al. 2008).

Finally, in a randomized, controlled trial of 85 adolescents with bulimia nervosa, Schmidt and colleagues (2007) found slight advantages for guided self-care over family therapy, including more rapid reduction of bingeing, lower cost, and greater acceptability among adolescents.

PHARMACOTHERAPY

In their systematic review for the World Federation of Societies of Biological Psychiatry, Aigner and colleagues (2011) identified 36 randomized, controlled trials of medications for the treatment of bulimia nervosa. They reported that for tricyclic antidepressants, Grade A evidence exists with a moderate risk-benefit ratio. For fluoxetine, Grade A evidence exists with a good risk-benefit ratio, and for topiramate, there is Grade A evidence with a moderate risk-benefit ratio. These findings and recommendations are consistent with the 2006 APA guideline, which recommends antidepressants, particularly the selective serotonin reuptake inhibitors, as one effective component of the initial treatment program for most patients with bulimia nervosa.

Other pharmaceutical agents, including oxcarbazepine, aripiprazole, and baclofen, have been reported to be effective for bulimia nervosa, but the results were from small case series or studies sponsored by the drug manufacturer. Citalopram was studied by Leombruni and colleagues (2006) in a small single-blind 12-week randomized, controlled trial. In this study, 37 patients with bulimia nervosa received fluoxetine (20–60 mg/day) or citalopram (20–40

mg/day). Both groups improved with respect to eating pathology. Patients receiving fluoxetine reported greater reductions in introjected anger, whereas those receiving citalopram reported greater reduction in depressive feelings.

OTHER SOMATIC TREATMENTS

At the time of guideline publication, repetitive transcranial magnetic stimulation (rTMS) had been studied in case reports for the treatment of bulimia nervosa when co-occurring with major depressive disorder. In a small trial, Walpoth and colleagues (2008) randomly assigned 14 women with bulimia nervosa to receive 3 weeks of either active rTMS or sham rTMS, after a 1-week lead-in period in which all 14 women received sham treatment. All patients improved, and no advantage was seen for the active treatment over sham rTMS. Further study of this treatment approach is needed.

COMBINING PSYCHOTHERAPY AND PHARMACOTHERAPY

The practice guideline recommends with moderate confidence the combination of antidepressant medication and CBT for bulimia nervosa. Combination treatment continues to be studied, including in a large randomized, controlled trial of stepped care. In this study, Mitchell and colleagues (2011) randomly assigned 293 patients with bulimia nervosa at four centers to either 1) 20 sessions of CBT alone over 18 weeks, with the addition of fluoxetine if nonresponse was predicted after six sessions, or 2) stepped care that started with therapist-supervised self-help and was followed by fluoxetine if nonresponse was predicted after six sessions, which in turn was followed, if necessary, by CBT. At the end of treatment no differences were found between groups in inducing recovery (no binge eating or compensatory behaviors for 28 days) or remission (no longer meeting DSM-IV criteria). However, at the end of the 1-year follow-up, the stepped-care arm was significantly superior to the CBT arm in terms of reducing binge eating and all compensatory behaviors (vomiting, laxative abuse, diuretic abuse, and excessive exercise).

INTERVENTIONS TO IMPROVE MOTHERING SKILLS

As noted in the guideline, women with eating disorders who have babies or young children may need guidance, assistance, and monitoring of their mothering skills to minimize the risk of their children developing eating problems or eating disorders. Researchers continue to study interventions to improve the mothering skills of

these patients. Stein and colleagues (2006) randomly assigned 80 mothers with bulimia nervosa or similar eating disorders to either supportive counseling or a video-feedback treatment focusing on the mothers' interactions with

their infants. The video-feedback treatment produced improvement in these interactions and in infant autonomy, suggesting the value of attending to mother-infant interactions in these patients.

BINGE-EATING DISORDER

Since publication of the 2006 guideline, multiple studies have assessed treatments for binge-eating disorder, which is currently categorized as an EDNOS. Many of the studies described above involved patients with binge-eating disorder in addition to bulimia nervosa. These "transdiagnostic" studies will not be reviewed again here. Instead, the discussion below is specifically limited to studies of binge-eating disorder.

Studies of treatments for binge-eating disorder are inherently limited by the fact that symptoms of binge eating are highly labile and placebo response rates are high in numerous studies. As a result, conclusions about effectiveness must be drawn cautiously.

PSYCHOSOCIAL TREATMENTS

The results and conclusions of recent studies and reviews have been in general agreement with the 2006 guideline, which gives a strong recommendation for individual and group CBT for binge-eating disorders as well as guided self-help programs. The guideline states that IPT and DBT may also be considered.

In a meta-analysis of 38 randomized, controlled trials with 1,973 participants specifically addressing binge-eating disorder using psychotherapy and structured self-help, both based on cognitive-behavioral interventions, Vocks and colleagues (2010) found both interventions to have large effects on the reduction of binge eating. Uncontrolled studies on weight-loss treatments demonstrated moderate reductions of binge eating. Combination treatments did not result in higher effects compared with single-treatment regimens. Except for weight-loss treatment, none of the interventions resulted in a considerable weight reduction. These reviewers concluded that psychotherapy and structured self-help, both based on cognitive-behavioral interventions, should be recommended as the first-line treatments for binge-eating disorder. Other investigators have concluded that guided self-help is not only effective (Striegel-Moore et al. 2010) but also cost-effective (Lynch et al. 2010).

In a randomized, controlled trial involving 205 male and female patients with binge-eating disorders, Wilson and

colleagues (2010) found that individuals who received 20 sessions of IPT or 10 sessions of CBT administered via guided self-help over a 6-month course of treatment had substantial reductions in binge eating compared with individuals who received a behavioral weight loss treatment. However, as demonstrated in a randomized, controlled trial in which 125 patients received group-administered CBT, behavioral weight loss treatment, or a sequence of the two, Grilo and colleagues (2011) found that whereas CBT-based approaches may be more effective for binge eating per se, behavioral weight loss treatment programs appear to be more effective for weight loss in obese binge eaters. Notably, outcomes for these studies were limited to 1-2 years following treatment.

In a study of 259 adults diagnosed with binge-eating disorder who were randomly assigned to 20 weeks of therapist-led, therapist-assisted, or self-help group treatment or a wait-list condition, Peterson and colleagues (2009) found that even though at end of treatment the therapist-led (51.7%) and the therapist-assisted (33.3%) conditions had higher binge-eating abstinence rates than the self-help (17.9%) and wait-list (10.1%) conditions, no between-group differences in abstinence rates were observed at 6- or 12-month follow-up.

Safer and colleagues (2010) conducted a trial in which 101 men and women with binge-eating disorder were randomly assigned to 20 group sessions of DBT specifically designed for binge-eating disorder or to an active comparison group therapy. The group that received DBT had a significantly lower dropout rate (4% vs. 33.3%). Although posttreatment binge-eating abstinence and reductions in binge-eating frequency were achieved more quickly in the DBT group, these differences did not persist over the 3-, 6-, and 12-month follow-up assessments (e.g., 12-month follow-up abstinence rates were 64% for the DBT group vs. 56% for the active comparison group). The lack of differential findings over follow-up suggests that the hypothesized specific effects of the DBT designed for binge-eating disorder do not show long-term impact beyond those attributable to nonspecific common therapeutic factors.

Other studies have shown that CBT-oriented treatments for binge-eating disorder are effective through in-

dividual coaching, via e-mail, and via the Internet (Car-rard et al. 2011; Robinson and Serfaty 2008).

In a study of group psychodynamic-IPT by Tasca and colleagues (2006), 135 individuals with binge-eating disorder (123 women, 12 men) were randomly assigned to receive this intervention, group CBT, or a wait-list control condition. After 16 sessions and at 12 months post-treatment, patients in both treatment groups had reduced days binged compared with individuals in the wait-list condition. No significant effects on BMI were observed, but in obese patients both therapies were associated with weight loss. One goal of the study was to compare outcomes between the two treatments, and some differences were found. In the psychodynamic-IPT group, significantly lower depression scores were observed compared with the control condition group at posttreatment, whereas scores in the CBT group and the control condition group were not significantly different. In addition, significant improvements in self-esteem were observed in the psychodynamic-IPT group at 6 months posttreatment, but not in the CBT group. Improvement in susceptibility to hunger was observed in the CBT group at post-treatment, but not in the psychodynamic-IPT group. A second goal of the study was to explore the relationship between women patients' scores on a level of attachment scale and their treatment responses and outcomes. For women who completed group psychodynamic-IPT ($n=33$), higher attachment anxiety was related to improvements in days binged by posttreatment. In contrast, for women who completed group CBT ($n=33$), lower attachment anxiety was associated with improvements in days binged by posttreatment.

PHARMACOTHERAPY

As noted earlier in this watch, sibutramine was withdrawn from the market in 2010 because of safety concerns. With respect to other medications for the treatment of binge-eating disorder, the recommendations of the 2006 guideline remain current, despite recent publication of randomized, controlled trials.

The Task Force on Eating Disorders of the World Federation of Societies of Biological Psychiatry (Aigner et al. 2011) identified 26 randomized, controlled trials of pharmacological treatments for binge-eating disorder. The task force concluded that Grade A evidence supports the use of imipramine (with moderate risk-benefit ratio), sertraline and citalopram/escitalopram (all with good risk-benefit ratios), and topiramate (with moderate risk-benefit ratio). The task force found that Grade D evidence exists for fluvoxamine and fluoxetine (i.e., inconsistent results). In their 2010 meta-analysis, Vocks and colleagues assessed essentially the same literature. The authors combined effect sizes for available randomized, controlled trials, primarily concerning antidepressants, and found overall medium effect sizes for reduction of binge eating.

Randomized, controlled trials not included in the 2011 review by the World Federation of Societies of Biological Psychiatry have failed to provide support for the utility of other medications for the treatment of binge-eating disorder, including acamprosate (McElroy et al. 2011) and lamotrigine (Guerdjikova et al. 2009).

COMBINING PSYCHOTHERAPY AND PHARMACOTHERAPY

The guideline states that for most patients, adding antidepressant medication to a behavioral weight control and/or CBT regimen does not have a significant effect on binge suppression when compared with medication alone. In a 2007 publication, Devlin and colleagues reported findings of a 2-year follow-up on 116 individuals who were studied in a randomized trial, cited in the guideline (Devlin et al. 2005), of group behavioral therapy when combined with fluoxetine, individual CBT, or placebo. Across treatment groups, there was overall improvement in binge-eating frequency and in binge-eating abstinence, with greater improvements in patients who received CBT but no significant change in weight. The authors concluded that short-term treatment may confer long-term benefits and that not all treatments are equivalent in the benefits they confer.

EATING DISORDERS IN MIDDLE AGE AND LATER LIFE

An expanding number of reports and case studies describe eating disorder in the later life of adults (Mangweth-Matzek et al. 2006; Gadalla 2008; Zerbe 2008, pp. 192–220; Patrick and Stahl 2009; Scholtz et al. 2010; Lapid et al. 2010, 2011). However, research in this area remains lim-

ited. Some such cases appear to be new onset, but the majority seem to come to psychiatric or medical attention only after many years of patient suffering. Both biological and psychosocial factors likely play a role in the etiology of late-life eating disorders. For example, subclinical and

overt anorexia nervosa and bulimia nervosa may reflect difficulties with body image and self-image as the baby-boomer generation ages. Individuals may also seek care or take it more seriously after age 40 because they are confronted with mortality and other existential issues in these

decades. Patient education and therapeutic approaches must be modified to address the medical, psychological, and social needs of this age group that are different from those of younger adults and adolescents.

REFERENCES

- Academy for Eating Disorders, Medical Care Standards Task Force: Eating disorders: critical points for early recognition and medical risk management in the care of individuals with eating disorders. AED Report 2011, 2nd edition. Available at: http://www.aedweb.org/AM/Template.cfm?Section=Medical_Care_Standards&Template=/CM/Content-Display.cfm&ContentID=2413. Accessed February 13, 2012.
- Agras WS, Walsh T, Fairburn CG, Wilson GT, Kraemer HC: A multicenter comparison of cognitive-behavioral therapy and interpersonal psychotherapy for bulimia nervosa. *Arch Gen Psychiatry* 2000; 57(5):459–466
- American Psychiatric Association. Practice guideline for the treatment of patients with eating disorders, 3rd edition. *Am J Psychiatry* 163(suppl):1–54, 2006. Available at: <http://psychiatryonline.org/content.aspx?bookid=28§ionid=1671334>. Accessed February 13, 2012.
- Aigner M, Treasure J, Kaye W, Kasper S; WFSBP Task Force on Eating Disorders: World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for the pharmacological treatment of eating disorders. *World J Biol Psychiatry* 2011; 12:400–443
- Attia E, Kaplan AS, Walsh BT, Gershkovich M, Yilmaz Z, Musante D, Wang Y: Olanzapine versus placebo for out-patients with anorexia nervosa. *Psychol Med* 2011; 41(10):2177–2182
- Ball J, Mitchell P: A randomized controlled study of cognitive behavior therapy and behavioral family therapy for anorexia nervosa patients. *Eat Disord* 2004; 12(4):303–314
- Berkman ND, Bulik CM, Brownley KA, Lohr KN, Sedway JA, Rooks A, Gartlehner G: Management of eating disorders. Evidence Report/Technology Assessment No 135. (Prepared by the RTI International–University of North Carolina Evidence-Based Practice Center under Contract No. 290-02-0016.) AHRQ Publication No. 06-E010. Rockville, MD, Agency for Healthcare Research and Quality, April 2006
- Birmingham CL, Gutierrez E, Jonat L, Beumont P: Randomized controlled trial of warming in anorexia nervosa. *Int J Eat Disord* 2004; 35(2):234–238
- Bissada H, Tasca GA, Barber AM, Bradwejn J: Olanzapine in the treatment of low body weight and obsessive thinking in women with anorexia nervosa: a randomized, double-blind, placebo-controlled trial. *Am J Psychiatry* 2008; 165(10):1281–1288
- Bloomgarden A, Calogero RM: A randomized experimental test of the efficacy of EMDR treatment on negative body image in eating disorder inpatients. *Eat Disord* 2008; 16(5):418–427
- Bulik CM, Berkman ND, Brownley KA, Sedway JA, Lohr KN: Anorexia nervosa treatment: a systematic review of randomized controlled trials. *Int J Eat Disord* 2007; 40(4):310–320
- Burton E, Stice E: Evaluation of a healthy-weight treatment program for bulimia nervosa: a preliminary randomized trial. *Behav Res Ther* 2006; 44(12):1727–1738
- Byford S, Barrett B, Roberts C, Clark A, Edwards V, Smethurst N, Gowers SG: Economic evaluation of a randomized controlled trial for anorexia nervosa in adolescents. *Br J Psychiatry* 2007; 191:436–440
- Byrne SM, Fursland A, Allen KL, Watson H: The effectiveness of enhanced cognitive behavioural therapy for eating disorders: an open trial. *Behav Res Ther* 2011; 49(4):219–226
- Calogero RM, Pedrotty KN: The practice and process of healthy exercise: an investigation of the treatment of exercise abuse in women with eating disorders. *Eat Disord* 2004; 12(4):273–291
- Carei TR, Fyfe-Johnson AL, Breuner CC, Brown MA: Randomized controlled clinical trial of yoga in the treatment of eating disorders. *J Adolesc Health* 2010; 46(4):346–351
- Carrard I, Crépin C, Rouget P, Lam T, Golay A, Van der Linden M: Randomised controlled trial of a guided self-help treatment on the Internet for binge eating disorder. *Behav Res Ther* 2011; 49(8):482–491
- Carter FA, Jordan J, McIntosh VV, Luty SE, McKenzie JM, Frampton CM, Bulik CM, Joyce PR: The long-term efficacy of three psychotherapies for anorexia nervosa: a randomized, controlled trial. *Int J Eat Disord* 2011; 44(7):647–654
- Catalan-Matamoros D, Helvik-Skjaerven L, Labajos-Manzanaras MT, Martinez-de-Salazar-Arboles A, Sanchez-Guerrero E: A pilot study on the effect of basic body awareness therapy in patients with eating disorders: a randomized controlled trial. *Clin Rehabil* 2011; 25(7):617–626
- Chantler I, Szabo CP, Green K: Muscular strength changes in hospitalized anorexic patients after an eight week resistance training program. *Int J Sports Med* 2006; 27(8):660–665
- Chui W, Safer DL, Bryson SW, Agras WS, Wilson GT: A comparison of ethnic groups in the treatment of bulimia nervosa. *Eat Behav* 2007; 8(4):485–491
- Claudino AM, Silva de Lima M, Hay PPJ, Bacaltchuk J, Schmidt UUS, Treasure J: Antidepressants for anorexia nervosa. *Cochrane Database of Systematic Reviews* 2006, Issue 1. Art No: CD004365. DOI: 10.1002/14651858.CD004365.pub2.
- Cloak NL, Powers PS: Science or art? Integrating symptom management into psychodynamic treatment of eating disorders, in *Treatment of Eating Disorders: Bridging the Research-Practice Gap*. Edited by Maine M, McGilley B, Bunnell D. San Diego, CA, Elsevier, 2010, pp 143–161

- Courbasson C, Nishikawa Y, Dixon L: Outcome of dialectical behavior therapy for concurrent eating and substance use disorders. *Clin Psychol Psychother* March 18, 2011 [epub ahead of print]
- Crane AM, Roberts ME, Treasure J: Are obsessive-compulsive personality traits associated with a poor outcome in anorexia nervosa? A systematic review of randomized controlled trials and naturalistic outcome studies. *Int J Eat Disord* 2007; 40(7):581–588
- Crow SJ, Mitchell JE, Crosby RD, Swanson SA, Wonderlich S, Lancaster K: The cost effectiveness of cognitive behavioral therapy for bulimia nervosa delivered via telemedicine versus face-to-face. *Behav Res Ther* 2009; 47(6):451–453
- Dean HY, Touyz SW, Rieger E, Thornton CE: Group motivational enhancement therapy as an adjunct to inpatient treatment for eating disorders: a preliminary study. *Eur Eat Disord Rev* 2008; 16(4):256–267
- del Valle MF, Perez M, Santana-Sosa E, Fiuza-Luces C, Bustamante-Ara N, Gallardo C, Villasenor A, Graell M, Morande G, Romo GR, Lopez-Mojares LM, Ruiz JR, Lucia A: Does resistance training improve the functional capacity and well-being of very young anorexic patients? A randomized controlled trial. *J Adolesc Health* 2010; 46(4):352–358
- Devlin MJ, Goldfein JA, Petkova E, Jiang H, Raizman PS, Wolk S, Mayer L, Carino J, Bellace D, Kamenetz C, Dobrow I, Walsh TB: Cognitive behavioral therapy and fluoxetine as adjuncts to group behavioral therapy for binge eating disorder. *Obes Res* 2005; 13:1077–1088
- Devlin MJ, Goldfein JA, Petkova E, Liu L, Walsh TB: Cognitive behavioral therapy and fluoxetine for binge eating disorder: two-year follow-up. *Obesity* 2007; 15:1702–1709
- Eisler I, Simic M, Russell GF, Dare C: A randomised controlled treatment trial of two forms of family therapy in adolescent anorexia nervosa: a five-year follow-up. *J Child Psychol Psychiatry* 2007; 48(6):552–560
- Ertelt TW, Crosby RD, Marino JM, Mitchell JE, Lancaster K, Crow SJ: Therapeutic factors affecting the cognitive behavioral treatment of bulimia nervosa via telemedicine versus face-to-face delivery. *Int J Eat Disord* 2011; 44(8):687–691
- Espindola CR, Blay SL: Anorexia nervosa treatment from the patient perspective: a metanalysis of qualitative studies. *Ann Clin Psychiatry* 2009; 21(1):38–48
- Fairburn CG, Agras WS, Walsh BT, Wilson GE, Stice E: Prediction of outcome in bulimia nervosa by early change in treatment. *Am J Psychiatry* 2004; 161(12):2322–2324
- Fisher CA, Hetrick SE, Rushford N: Family therapy for anorexia nervosa. *Cochrane Database of Systematic Reviews* 2010, Issue 4. Art No: CD004780. DOI: 10.1002/14651858.CD004780.pub2.
- Fitzpatrick KK, Lock J: Anorexia nervosa. *Clin Evid (Online)* April 11, 2011
- Gadalla TM: Eating disorders and associated psychiatric comorbidity in elderly Canadian women. *Arch Womens Ment Health* 2008; 11(5/6):357–362
- Garber AK, Michihata N, Hetnal K, Shafer MA, Moscicki AB: A prospective examination of weight gain in hospitalized adolescents with anorexia nervosa on a recommended refeeding protocol. *J Adolesc Health* 2012; 50(1):24–29
- Gardner J, Wilkinson P: Is family therapy the most effective treatment for anorexia nervosa? *Psychiatr Danub* 2011; 23 (suppl 1):S175–S177
- Geller J, Brown KE, Srikameswaran S: The efficacy of a brief motivational intervention for individuals with eating disorders: a randomized control trial. *Int J Eat Disord* 2011; 44(6):497–505
- Godart N, Berthoz S, Curt F, Perdereau F, Rein Z, Wallier J, Horreard AS, Kaganski I, Lucet R, Atger F, Corcos M, Fermanian J, Falissard B, Flament M, Eisler I, Jemmet P: A randomized controlled trial of adjunctive family therapy and treatment as usual following inpatient treatment for anorexia nervosa adolescents. *PLoS One* 2012; 7(1):1–9
- Golden NH, Iglesias EA, Jacobson MS, Carey D, Meyer W, Schenbendach J, Hertz S, Shenker IR: Alendronate for the treatment of osteopenia in anorexia nervosa: a randomized, double-blind, placebo-controlled trial. *J Clin Endocrinol Metab* 2005; 90(6):3179–3185
- Gowers SG, Clark A, Roberts C, Griffiths A, Edwards V, Bryan C, Smethurst N, Byford S, Barrett B: Clinical effectiveness of treatments for anorexia nervosa in adolescents: randomized controlled trial. *Br J Psychiatry* 2007; 191:427–435
- Gowers SG, Clark AF, Roberts C, Byford S, Barrett B, Griffiths A, Edwards V, Bryan C, Smethurst N, Rowlands L, Roots P: A randomized controlled multicenter trial of treatments for adolescent anorexia nervosa including assessment of cost-effectiveness and patient acceptability—the TOuCAN trial. *Health Technol Assess* 2010; 14(15):1–98
- Grilo CM, Mitchell JE (eds): *The Treatment of Eating Disorders: A Clinical Handbook*. New York, Guilford, 2010
- Grilo CM, Masheb RM, Wilson GT, Gueorguieva R, White MA: Cognitive-behavioral therapy, behavioral weight loss, and sequential treatment for obese patients with binge-eating disorder: a randomized controlled trial. *J Consult Clin Psychol* 2011; 79(5):675–685
- Grover M, Naumann U, Mohammad-Dar L, Glennon D, Ringwood S, Eisler I, Williams C, Treasure J, Schmidt U: A randomized controlled trial of an Internet-based cognitive-behavioural skills package for carers of people with anorexia nervosa. *Psychol Med* 2011; 20:1–11
- Guerdjikova AI, McElroy SL, Welge JA, Nelson E, Keck PE, Hudson JI: Lamotrigine in the treatment of binge-eating disorder with obesity: a randomized, placebo-controlled monotherapy trial. *Int Clin Psychopharmacol* 2009; 24(3):150–158
- Hagman J, Gralla J, Sigel E, Ellert S, Dodge M, Gardner R, O'Lonergan T, Frank G, Wamboldt MZ: A double-blind, placebo-controlled study of risperidone for the treatment of adolescents and young adults with anorexia nervosa: a pilot study. *J Am Acad Child Adolesc Psychiatry* 2011; 50(9):915–924
- Halmi KA, Agras WS, Crow S, Mitchell J, Wilson GT, Bryson SW, Kraemer HC: Predictors of treatment acceptance and completion in anorexia nervosa: implications for future study designs. *Arch Gen Psychiatry* 2005; 62(7):776–781
- Hartmann A, Weber S, Herpertz S, Zeeck A: Psychological treatment for anorexia nervosa: a meta-analysis of standardized mean change. *Psychother Psychosom* 2011; 80(4):216–226
- Hay PJ, Bacaltchuk J, Stefano S: Psychotherapy for bulimia nervosa and bingeing. *Cochrane Database Syst Rev* 2004, Issue 3. Art No: CD000562.
- Hay PPJ, Bacaltchuk J, Stefano S, Kashyap P: Psychological treatments for bulimia nervosa and bingeing. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art No: CD000562. DOI: 10.1002/14651858.CD000562.pub3.

- Herpertz S, Hagenah U, Vocks S, von Wietersheim J, Cuntz U, Zeeck A. Clinical practice guideline: the diagnosis and treatment of eating disorders. *Dtsch Arztebl Int* 2011; 108(40): 678–685. doi: 10.3238/arztebl.2011.0678. PMID: PMC3221424.
- Janas-Kozik M, Krzystanek M, Stachowicz M, Krupka-Matuszyk I, Janas A, Rybakowski JK: Bright light treatment of depressive symptoms in patients with restrictive type of anorexia nervosa. *J Affect Disord* 2011; 130(3):462–465
- Kafantaris V, Leigh E, Hertz S, Berest A, Schebendach J, Sterling WM, Saito E, Sunday S, Higdon C, Golden NH, Malhotra AK: A placebo-controlled pilot study of adjunctive olanzapine for adolescents with anorexia nervosa. *J Child Adolesc Psychopharmacol* 2011; 21(3):207–212
- Kaplan AS, Walsh BT, Olmsted M, Attia E, Carter JC, Devlin MJ, Pike KM, Woodside B, Rockert W, Roberto CA, Parides M: The slippery slope: prediction of successful weight maintenance in anorexia nervosa. *Psychol Med* 39(6):1037–1045
- Katzman MA, Bara-Carril N, Rabe-Hesketh S, Schmidt U, Troop N, Treasure J: A randomized controlled two-stage trial in the treatment of bulimia nervosa, comparing CBT versus motivational enhancement in Phase 1 followed by group versus individual CBT in Phase 2. *Psychosom Med* 2010; 71(7):656–663
- Kong S: Day treatment programme for patients with eating disorders: randomized controlled trial. *J Adv Nurs* 2005; 51(1):5–14
- Lapid MI, Prom MC, Burton MC, McAlpine DE, Sutor B, Rummans TA. Eating disorders in the elderly. *Int Psychogeriatr* 2010; 22(4):523–536
- Lapid MI, McAlpine DE, Zerbe KJ, Rumman TA: Eating disorders in the elderly. *Am J Geriatr Psychiatry* 2011; 19 (suppl 1):S41
- Le Grange D, Crosby RD, Rathouz PJ, Leventhal BL: A randomized controlled comparison of family-based treatment and supportive psychotherapy for adolescent bulimia nervosa. *Arch Gen Psychiatry* 2007; 64(9):1049–1056
- Le Grange D, Crosby RD, Lock J: Predictors and moderators of outcome in family-based treatment for adolescent bulimia nervosa. *J Am Acad Child Adolesc Psychiatry* 2008; 47(4):464–470
- Leombruni P, Amianto F, Delsedime N, Gramaglia C, Abbate-Daga G, Fassino S: Citalopram versus fluoxetine for the treatment of patients with bulimia nervosa: a single-blind randomized controlled trial. *Adv Ther* 2006; 23(3):481–494
- Lock J, Agras WS, Bryson S, Kraemer HC: A comparison of short- and long-term family therapy for adolescent anorexia nervosa. *J Am Acad Child Adolesc Psychiatry* 2005; 44(7):632–639
- Lock J, Couturier J, Bryson S, Agras S: Predictors of dropout and remission in family therapy for adolescent anorexia nervosa in a randomized clinical trial. *Int J Eat Disord* 2006; 39(8):639–647
- Lock J, Le Grange D, Agras WS, Moye A, Bryson SW, Jo B: Randomized clinical trial comparing family-based treatment with adolescent-focused individual therapy for adolescents with anorexia nervosa. *Arch Gen Psychiatry* 2010; 67(10):1025–1032
- Lynch FL, Striegel-Moore RH, Dickerson JF, Perrin N, Debar L, Wilson GT, Kraemer HC: Cost-effectiveness of guided self-help treatment for recurrent binge eating. *J Consult Clin Psychol* 2010; 78(3):322–333
- Mangweth-Matzek B, Rupp CI, Hausmann A, Assmayr K, Mariacher E, Kemmler G, Whitworth AB, Biebl W: Never too old for eating disorders or body dissatisfaction: a community study of elderly women. *Int J Eat Disord* 2006; 39(7):583–586
- McElroy SL, Guerdjikova AI, Winstanley EL, O'Melia AM, Mori N, McCoy J, Keck PE Jr, Hudson JI: Acamprosate in the treatment of binge eating disorder: a placebo-controlled trial. *Int J Eat Disord* 2011; 44(1):81–90
- McIntosh VV, Carter FA, Bulik CM, Frampton CM, Joyce PR: Five-year outcome of cognitive behavioral therapy and exposure with response prevention for bulimia nervosa. *Psychol Med* 2011; 41(5):1061–1071
- McKnight RF, Park RJ: Atypical antipsychotics and anorexia nervosa: a review. *Eur Eat Disord Rev* 2010; 18(1):10–21
- Mehler PS, MacKenzie TD: Treatment of osteopenia and osteoporosis in anorexia nervosa: a systematic review of the literature. *Int J Eat Disord* 2009; 42(3):195–201
- Miller KK, Meenaghan E, Lawson EA, Misra M, Gleysteen S, Schoenfeld D, Herzog D, Klibanski A: Effects of risedronate and low-dose transdermal testosterone on bone mineral density in women with anorexia nervosa: a randomized, placebo-controlled study. *J Clin Endocrinol Metab* 2011; 96(7):2081–2081
- Misra M, Katzman D, Miller KK, Mendes N, Snelgrove D, Russell M, Goldstein MA, Ebrahimi S, Clauss L, Weigel T, Mickley D, Schoenfeld DA, Herzog DB, Klibanski A: Physiologic estrogen replacement increases bone density in adolescent girls with anorexia nervosa. *J Bone Miner Res* 2011; 26(10):2430–2438
- Mitchell JE, Agras WS, Wilson GT, Halmi K, Kraemer H, Crow S: A trial of a relapse prevention strategy in women with bulimia nervosa who respond to cognitive-behavior therapy. *Int J Eat Disord* 2004; 35(4):549–555
- Mitchell JE, Crosby RD, Wonderlich SA, Crow S, Lancaster K, Simonich H, Swan-Kremeier L, Lysne C, Myers TC: A randomized trial comparing the efficacy of cognitive-behavioral therapy for bulimia nervosa delivered via telemedicine versus face-to-face. *Behav Res Ther* 2008; 46(5):581–592
- Mitchell JE, Agras S, Crow S, Halmi K, Fairburn CG, Bryson S, Kraemer H: Stepped care and cognitive-behavioral therapy for bulimia nervosa: randomized trial. *Br J Psychiatry* 2011; 198(5):391–397
- Olmsted MP, Kaplan AS, Rockert W: Relative efficacy of a 4-day versus a 5-day day hospital program. *Int J Eat Disord* 2003; 34(4):441–449
- Patrick JH, Stahl ST: Understanding disordered eating at midlife and late life. *J Gen Psychol* 2009; 136(1):5–20
- Perkins SS, Murphy RRM, Schmidt UUS, Williams C: Self-help and guided self-help for eating disorders. *Cochrane Database of Systematic Reviews* 2006, Issue 3. Art No: CD004191. DOI: 10.1002/14651858.CD004191.pub2.
- Peterson CB, Mitchell JE, Crow SJ, Crosby RD, Wonderlich SA: The efficacy of self-help group treatment and therapist-led group treatment for binge eating disorder. *Am J Psychiatry* 2009; 166(12):1347–1354
- Rhodes P, Brown J, Madden S: The Maudsley model of family-based treatment for anorexia nervosa: a qualitative evaluation of parent-to-parent consultation. *J Marital Fam Ther* 2009; 35(2):181–192
- Richards PS, Berrett ME, Hardman RK, Eggett DL: Comparative efficacy of spirituality, cognitive, and emotional support groups for treating eating disorder inpatients. *Eat Disord* 2006; 14(5):401–415

- Rigaud D, Brondel L, Poupard AT, Talonneau I, Brun JM: A randomized trial on the efficacy of a 2-month tube feeding regimen in anorexia nervosa: a 1-year follow-up study. *Clin Nutr* 2007; 26(4):421–429
- Rigaud DJ, Brayer V, Roblot A, Brindisi MC, Verges B: Efficacy of tube-feeding in binge-eating/vomiting patients: a 2-month randomized trial with 1-year follow-up. *JPEN J Parenter Enteral Nutr* 2011; 35(3):356–364
- Robinson P, Serfaty M: Getting better byte by byte: a pilot randomised controlled trial of email therapy for bulimia nervosa and binge eating disorder. *Eur Eat Disord Rev* 2008; 16(2):84–93
- Roots P, Rowlands L, Gowers SG: User satisfaction with services in a randomized controlled trial of adolescent anorexia nervosa. *Eur Eat Disord Rev* 2009; 17(5):331–337
- Rowe SL, Jordan J, McIntosh VV, Carter FA, Bulik CM, Joyce PR: Impact of borderline personality disorder on bulimia nervosa. *Aust N Z J Psychiatry* 2008; 42(12):1021–1029
- Safer DL, Robinson AH, Jo B: Outcome from a randomized controlled trial of group therapy for binge eating disorder: comparing dialectical behavior therapy adapted for binge eating to an active comparison group therapy. *Behav Ther* 2010; 41(1):106–120
- Sanchez-Ortiz VC, Munro C, Stahl D, House J, Startup H, Treasure J, Williams C, Schmidt U: A randomized controlled trial of internet-based cognitive-behavioural therapy for bulimia nervosa or related disorders in a student population. *Psychol Med* 2011; 41(2):407–417
- Schebendach JE, Mayer LE, Devlin MJ, Attia E, Contento IR, Wolf RI, Walsh BT: Food choice and diet variety in weight-restored patients with anorexia nervosa. *J Am Diet Assoc* 2011; 111:731–736
- Schmidt U, Landau S, Pombo-Carril MG, Bara-Carril N, Reid Y, Murray K, Treasure J, Katzman M: Does personalized feedback improve the outcome of cognitive-behavioural guided self-care in bulimia nervosa? A preliminary randomized controlled trial. *Br J Clin Psychol* 2006; 45(1):111–121
- Schmidt U, Lee S, Beecham J, Perkins S, Treasure J, Yi I, Winn S, Robinson P, Murphy R, Keville S, Johnson-Sabine E, Jenkins M, Frost S, Dodge L, Berelowitz M, Eisler I: A randomized controlled trial of family therapy and cognitive behavior therapy guided self-care for adolescents with bulimia nervosa and related disorders. *Am J Psychiatry* 2007; 164(4):591–598
- Schmidt U, Andiappan M, Grover M, Robinson S, Perkins S, Dugmore O, Treasure J, Landau S, Eisler I, Williams C: Randomised controlled trial of CD-ROM-based cognitive-behavioural self-care for bulimia nervosa. *Br J Psychiatry* 2008; 193(6):493–500
- Scholtz S, Hill LS, Lacey H: Eating disorders in older women: does late onset anorexia nervosa exist? *Int J Eat Disord* 2010; 43(5):393–397
- Shapiro JR, Berkman ND, Brownley KA, Sedway JA, Lohr KN, Bulik CM: Bulimia nervosa treatment: a systematic review of randomized controlled trials. *Int J Eat Disord* 2007; 40(4):321–336
- Sim LA, McGovern L, Elamin MB, Swiglo BA, Erwin PJ, Montori VM: Effect on bone health of estrogen preparations in premenopausal women with anorexia nervosa: a systematic review and meta-analyses. *Int J Eat Disord* 2010; 43(3):218–225
- Stein A, Woolley H, Senior R, Hertzmann L, Lovel M, Lee J, Cooper S, Wheatcroft R, Challacombe F, Patel P, Nicol-Harper R, Menzes P, Schmidt A, Juszcak E, Fairburn CG: Treating disturbances in the relationship between mothers with bulimic eating disorders and their infants: a randomized, controlled trial of video feedback. *Am J Psychiatry* 2006; 163(5):899–906
- Striegel-Moore RH, Wilson GT, DeBar L, Perrin N, Lynch F, Rosselli F, Kraemer HC: Cognitive behavioral guided self-help for the treatment of recurrent binge eating. *J Consult Clin Psychol* 2010; 78(3):312–321
- Strober M, Johnson C: The need for complex ideas in anorexia nervosa: why biology, environment, and psyche all matter, why therapists make mistakes, and why clinical benchmarks are needed for managing weight correction. In *J Eat Disord* 2012; 45:155–178
- Strokosch GR, Friedman AJ, Wu SC, Kamin M: Effects of an oral contraceptive (norgestimate/ethinyl estradiol) on bone mineral density in adolescent females with anorexia nervosa: a double-blind, placebo-controlled study. *J Adolesc Health* 2006 39(6):819–827
- Swenne I, Rosling A: No unexpected adverse events and biochemical side effects of olanzapine as adjunct treatment in adolescent girls with eating disorders. *J Child Adolesc Psychopharmacol* 2011; 21(3):221–227
- Tasca GA, Ritchie K, Conrad G, Balfour L, Gayton J, Lybanon V, et al: Attachment scales predict outcome in a randomized controlled trial for binge eating disorder: an aptitude by treatment interaction. *Psychotherapy Research* 2006; 16(1):106–121
- Thompson-Brenner, H., Weingeroff J, Westen D: Empirical support for psychodynamic psychotherapy for eating disorders, in *Handbook of Evidence-Based Psychodynamic Psychotherapy*. Edited by Levy RA, Ablon JS. New York, Humana Press, 2010, pp 67–92
- Tobin DL, Banker JD, Weisberg L, Bowers W: I know what you did last summer (and it was not CBT): a factor analytic model of international psychotherapeutic practice in eating disorders. *Int J Eat Disord* 2007; 40:754–757
- Traviss GD, Heywood-Everett S, Hill AJ: Guided self-help for disordered eating: a randomized control trial. *Behav Res Ther* 2011; 49(1):25–31
- Vescovi JD, Jamal SA, De Souza MJ: Strategies to reverse bone loss in women with functional hypothalamic amenorrhea: a systematic review of the literature. *Osteoporos Int* 2008; 19(4):465–478
- Vocks S, Tuschen-Caffier B, Pietrowsky R, Rustenbach SJ, Kersting A, Herpertz S: Meta-analysis of the effectiveness of psychological and pharmacological treatments for binge eating disorder. *Int J Eat Disord* 2010; 43(3):205–217
- Wade TD, Frayne A, Edwards SA, Robertson T, Gilchrist P: Motivational change in an inpatient anorexia nervosa population and implications for treatment. *Aust N Z J Psychiatry* 2009; 43(3):235–243
- Walpoth M, Hoertnagl C, Mangweth-Matzek B, Kemmler G, Hinterholz J, Conca A, Hausmann A: Repetitive transcranial magnetic stimulation in bulimia nervosa: preliminary results of a single-centre, randomized, double-blind, sham-controlled trial in female outpatients. *Psychother Psychosom* 2008; 77(1):57–60

- 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; 295(22):2605–2612
- Wanden-Berghe RG, Sanz-Valero J, Wanden-Berghe C: The application of mindfulness to eating disorders treatment: a systematic review. *Eat Disord* 2011; 19(1):34–48
- Whitney J, Murphy T, Landau S, Gavan K, Todd G, Whitaker W, Treasure J: A practical comparison of two types of family intervention: an exploratory RCT of family day workshops and individual family work as a supplement to inpatient care for adults with anorexia nervosa. *Eur Eat Disord Rev* 2012; 20(2):142–150
- Wilson GT, Wilfley DE, Agras WS, Bryson SW: Psychological treatments of binge eating disorder. *Arch Gen Psychiatry* 2010; 67(1):94–101
- Working Group of the Clinical Practice Guideline for Eating Disorders: Clinical Practice Guideline for Eating Disorders (Clinical Practice Guideline in the NHS: CAHTA; No. 2006/05-01). Madrid, Quality Plan for the National Health System of the Ministry of Health and Consumer Affairs, Catalan Agency for Health Technology Assessment and Research, February 1, 2009
- Yager J, Powers P (eds): *Clinical Manual of Eating Disorders*. Washington, DC, American Psychiatric Press, 2007
- Zabala MJ, Macdonald P, Treasure J: Appraisal of caregiving burden, expressed emotion and psychological distress in families of people with eating disorders: a systematic review. *Eur Eat Disord Rev* 2009; 17(5):338–349
- Zeeck A, Weber S, Sandholz A, Wetzler-Burmeister E, Wirsching M, Hartmann A: Inpatient versus day clinic treatment for bulimia nervosa: a randomized trial. *Psychother Psychosom* 2009; 78(3):152–160
- Zerbe KJ: *Integrated Treatment of Eating Disorders: Beyond the Body Betrayed*. New York, WW Norton, 2008