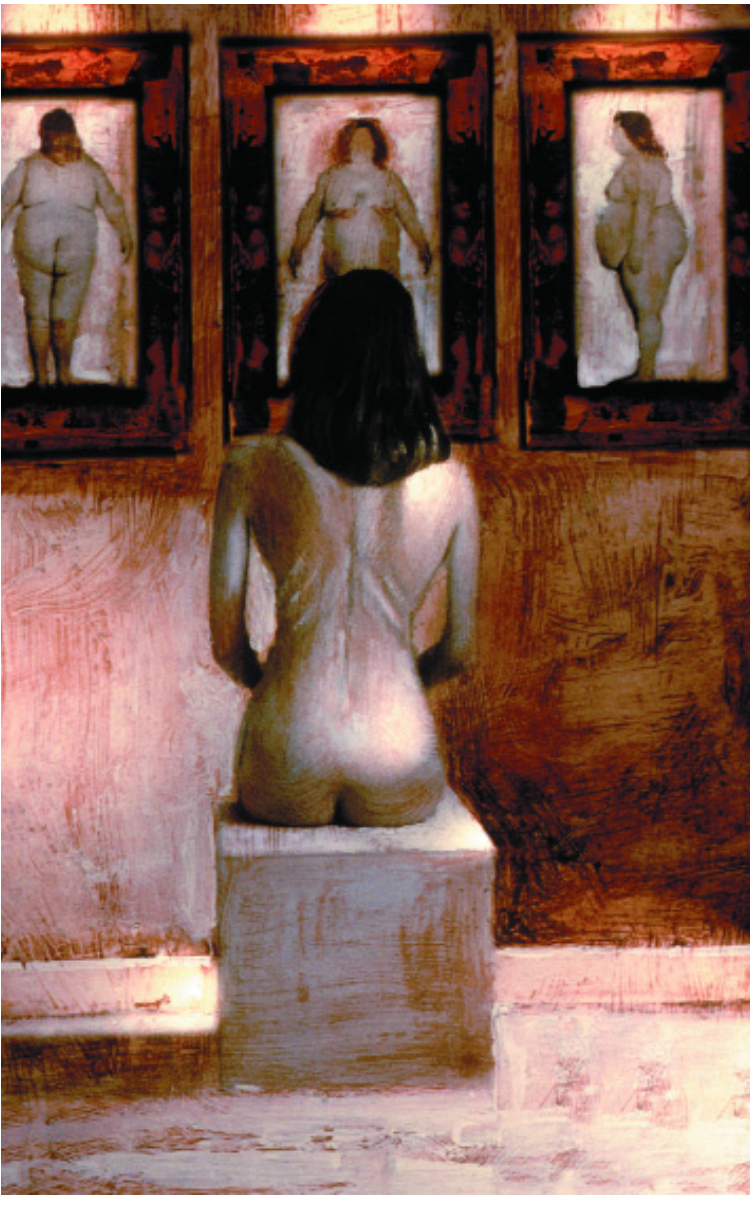
Current PSYCHIATRY

Anorexia nervosa

Dual therapy can bring patients back from the brink



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Ms. J started losing weight deliberately at age 14 while attending boarding school. She lost 25 lbs by jogging 6 miles per day, exercising another 2 hours, avoiding meat, abusing laxatives, and drinking large quantities of coffee.

She was referred to a school counselor because of her weight loss and returned home. She was happier at a local high school and recovered to normal weight. In college, however, she reverted to compulsive exercising and preoccupation with her weight after the break-up of her first intimate relationship.

Now at age 22, Ms. J has persistently failed to gain weight during outpatient therapy for anorexia nervosa. At 5'7" she weighs 98 lbs. On the day she was to be hospitalized involuntarily, she took 25 diphenhydramine tablets, which her psychiatrist viewed as a suicide threat. The overdose was treated in the emergency room with ipecac syrup, and she was admitted for inpatient eating disorder treatment.

Like Ms. J, patients with anorexia nervosa resist treatment and deny having most diagnostic signs and symptoms. Based on the evidence and my 30

Table 1

Diagnostic criteria for anorexia nervosa

Underweight (<85% of normal for age and height)

Fear of gaining weight or becoming fat, even though underweight

Disturbed conceptualization of body shape and weight, denial of seriousness of low body weight, or overemphasis on body shape and weight in self-evaluation

Amenorrhea. Subtypes:
- Restricting type (does not binge or purge)
- Binge-eating/purging type

Source: Adapted with permission from *Diagnostic and statistical manual of mental disorders (4th ed. text revision)*.

years of treating anorectic patients,[1] this article offers suggestions to help you:

- gather accurate histories from patients and their families
- identify common psychiatric comorbidities
- gain the patient's trust during treatment
- provide effective dual therapy, with cognitive-behavioral and pharmacologic components.

MAKING THE DIAGNOSIS

Anorexia nervosa is characterized by underweight, fear of gaining weight, disturbed body concept, and amenorrhea *(Table 1)*. Its core psychological symptoms have been described as:

- relentless pursuit of thinness
- denial of cachexia
- and feelings of general ineffectiveness.[2]

The patient may say she feels fat even though emaciated or that parts of her body are too large. This disturbed experience of body weight or shape may represent sublimation and displacement for feelings of inadequacy. Because anorectic patients stay thin so effectively, they may feel a sense of accomplishment by evaluating themselves in terms of their thinness. Cognitive therapy focuses on correcting patients' pervasive sense of inadequacy, as manifest in maturity fears and lack of confidence in coping with life's problems.[3]

Subtypes. Anorexia nervosa has two subtypes—restricting and binge eating/purging—that differ in behavioral and medical symptoms.[4] Patients with binge eating/purging show:

- higher rates of impulsivity (suicide attempts, self-mutilation, stealing, and alcohol and other substance abuse)
- more-prevalent impulsive personality disorders (borderline personality disorder, hysterical personality disorder)
- medical problems caused by purging.

Restricting-type patients are often dependent and submissive, with difficulty separating from parents. These patients may be preoccupied with orderliness, perfectionism, and control.

Recommendation. A structured interview to diagnose anorexia nervosa is summarized in *Table 2*. Because the patient will likely deny her symptoms, it is usually necessary to also interview family members or close friends.

PSYCHIATRIC COMORBIDITY

Case report continued: A 'perfectionist.'

School for Ms. J required great effort, and she spent many hours studying. Her upper-middle-class parents described her as "a perfectionist." The family placed considerable emphasis on doing the "correct" thing.

During adolescence, Ms. J developed a major depressive episode that lasted 4 months. She also developed obsessions and compulsions unrelated to her eating disorder. She obsessively ruminated about the correct things to say in social circumstances and devoted 4 hours per day to cleaning and checking compulsions. She felt she had to wash her car every time before going out; if she could not, she would cancel her social plans.

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Table 2

Diagnosis of anorexia nervosa: Questions to ask*

Weight history	- What was her highest weight and lowest weight (after weight loss) - At what ages did these weights occur? - Ask about her present weight before you weigh her
Eating behavior	- What does she eat and when from morning awakening to bedtime? - Does she eat with the family less often than in the past? - Is she binging?
Purging behavior	- Is she inducing vomiting? - Is she using laxatives, diuretics, ipecac, or enemas?
Preoccupations and rituals concerning food and weight	- Does she constantly count calories and express concern about fat content in foods? - Does she often gaze in the mirror and comment about being fat? - How often does she weigh herself? - Does she express fear of being unable to stop eating?
Activity	- Is she jogging, bike riding, or doing aerobics? - How often, and for how long? - Is she overactive at home, such as pacing?
Menstrual history	- At what age did menses begin? - What was the date of her last period? - How regular is her cycle?
Psychiatric comorbidity	- Does she have symptoms of depression? - Impulsive behavior (suicide attempts or self-mutilation)? - Drug or alcohol abuse? - Anxiety (obsessive-compulsive behaviors, social phobia, generalized anxiety, fearfulness)? - Personality disorders?

* Because patients with anorexia nervosa often deny their symptoms and conceal their food intake, it is usually necessary to interview family members or close friends as well as the patient.

In college, she began abusing alcohol and was arrested once for driving while intoxicated.

Depression is the most common comorbidity in anorexia nervosa. Two-thirds of anorectic patients in a 10-year follow-up study reported a history of major depressive disorder.[5] Suicide, starvation, and electrolyte imbalance are the three major causes of death. Among severely ill patients who require hospitalization, 10% to 20% die, though the suicide rate is undocumented.

Compulsions. Anorectics' preoccupations about food and eating rituals have been compared with compulsions, though less than 20% of patients meet diagnostic criteria for obsessive-compulsive disorder.[6]

Substance abuse. Bulimic anorectics report more alcohol and substance use and abuse than restricting anorectics.[7] The most common substances of abuse are cannabis, cocaine, stimulants, and over-the-counter pills such as diet aids.

Personality disorders. Up to 50% of patients with

Table 3

Diagnostic signs of emaciation and purging in patients with anorexia nervosa

Emaciation

- Dry, cracking skin
- Lanugo hair
- Bradycardia
- Hypotension
- Leukopenia with relative lymphocytosis
- Anemia
- Hypercholesterolemia
- Reduced bone density

Purging

- Calluses on dorsum of hand, produced by hand friction from self-induced vomiting
- Perioral dermatitis
- Enlarged parotid glands ("chipmunk" face)
- Tooth enamel erosion, caries, periodontitis
- Cardiac arrhythmias (hypokalemia from purging)
- Hypochloremic metabolic alkalosis
- Hyperamylasemia
- QT interval and T-wave changes on ECG

anorexia nervosa—particularly the binge/purge subtype—have personality disorders. Borderline personality disorder is especially common among binge/purge types,[8] and avoidant personality disorder is more common among restricting types.

Personality disorders usually reflect instability in interpersonal relationships, poor self-image, or fluctuating affect. Patients may show a pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation.

Sexuality. Psychosocial and sexual development is often delayed in adolescent anorectics. In adults, interest in sex often plummets with anorexia onset, although binge/purge-type patients occasionally become promiscuous.

MEDICAL SIGNS

Case report continued: Abnormal ECG.

Ms. J was hospitalized after her weight dropped below 75% of normal for her age, height, and body build. She showed signs of electrolyte disturbance, including severe bradycardia (pulse rate 40) and ST-segment abnormalities on ECG.

Clinical signs of emaciation and purging can assist with diagnosis and in making decisions about medical treatment, including hospitalization *(Table 3)*. Patients who purge are often weak and have puffy cheeks or parotid gland enlargement. They may have fainting spells and scars on their hands from stimulating vomiting. Laxative abuse may decrease colon motility and worsen constipation.

Neuroendocrine changes secondary to dieting and weight loss include:

- increased corticotropin-releasing hormone secretion
- blunted diurnal cortisol fluctuation
- decreased follicle-stimulating hormone (FSH) secretion
- impaired growth hormone regulation
- decreased luteinizing hormone (LH) secretion
- mildly decreased triiodothyronine
- erratic vasopressin secretion.

Measuring these changes is unnecessary, as general nutritional rehabilitation with weight gain will correct them.

Neurotransmitter function. Emaciated anorectics have a blunted response to pharmacologic probes for dopamine, reduced CSF norepinephrine turnover, and decreased CSF serotonin. Neuroimaging studies suggest that serotonin dysfunction may persist after weight is restored, although these findings require replication.

TREATMENT PRIORITIES

Effective therapies. Open studies indicate that multidimensional treatment—medical management, psychoeducation, and individual cognitive-behavioral therapy (CBT)—is most effective for anorexia nervosa. The fewer than 10 controlled trials that address anorexia nervosa treatment show:

- the more severe the illness, the more intense the treatment required
- outpatient therapy is most successful in patients who have had the illness <6 months, are not binging and vomiting, and have parents who participate in family therapy.

Hospitalization. An emaciated patient who is irritable, depressed, preoccupied with food, and sleep-deprived is unlikely to make progress toward behavioral change. The first goal, therefore, is to restore her nutritional state to normal.

Severely ill anorectic patients require hospitalization for daily monitoring of weight, calorie intake, urine output, and serum electrolytes and amylase (to assess purging behavior). Hospitalization is indicated for:

- loss of >20% of normal weight for age, height, and bone structure
- >6 months of repeated hospitalizations and underweight
- psychotic depression or serious suicide attempt
- incapacitating obsessions and compulsions, related or not to the eating disorder
- serious comorbid medical conditions, such as edema, hypoproteinemia, severe anemia, cardiac arrhythmia, or hypokalemic alkalosis (serum K+ < 2.5 mEq/L).

Keeping a patient in the hospital long enough to provide effective medical and psychological therapy has become difficult, however, because of medical insurance restrictions *(Box)*. The result: poorer outcomes and increased relapse rates compared with 10 years ago.[9-12]

Nutritional rehabilitation and behavior changes can often correct the medical complications of emaciation and purging. Lost bone density is seldom restored, but nutritional rehabilitation can prevent further bone loss.[13] Women who remain amenorrheic for several years after weight restoration tend to be more psychologically disturbed than those who resume menses rapidly.[14]

Box

Shorter hospitalizations, worse outcomes for patients with eating disorders

Hospital treatment of eating disorders has shifted from long-term care of a chronic disorder to stabilization of acute episodes. For some patients, this change has been deleterious and not cost-effective.

A decade ago, eating disorder hospitalizations were covered primarily by private insurance. Today, health maintenance organizations, managed care oversight of private insurance, and public funding are the primary sources of payment. These insurers often limit payment for eating disorder hospitalization, the most costly aspect of psychiatric care.

Poor outcomes and a high relapse rate have been documented in anorexia nervosa patients who left the hospital while underweight.[9-11] From 1984 to 1998:

- average hospital stays for anorexia nervosa decreased from 150 days to 23.7 days
- readmissions increased from 0% to 27% of total admissions
- anorectic patients' average body mass index at discharge dropped from 19.3 to 17.7, a statistically significant difference.[12]

For psychiatrists, this trend means many outpatients with anorexia nervosa will require repeated hospitalizations that will not substantially improve their anorectic behaviors.

COGNITIVE-BEHAVIORAL THERAPY

Other authors have discussed CBT for anorexia nervosa.[3,15] In general, the key tasks—operationalizing beliefs, evaluating autonomic thoughts, testing prospective hypotheses, and examining underlying assumptions—are accomplished by assessing anorexia's distorted cognitions. No satisfactory controlled studies have examined any other type of individual psychotherapy for treating anorexia nervosa.

Alliance building. Patients with anorexia find it difficult to participate in therapeutic relationships. They are terrified of gaining weight and readily drop out of treatment. To build a therapeutic alliance:

- begin by helping the patient develop a history of her significant life events
- proceed slowly, praising her for every small attempt at changing her behavior
- set realistic therapy goals, considering her degree of resistance.

Monitoring. Behavior therapy consists primarily of positive reinforcements for weight gain. For this, we weigh outpatients weekly and inpatients daily. Outpatients are taught to keep diaries of daily food intake, stressful events, and emotional responses to them. The therapist begins each session by examining the patient's diary with her and discussing how life events affect her eating behavior.

Cognitive restructuring helps patients identify their disturbed cognitions and challenge core beliefs about self-image. In this process, they become aware of their negative thoughts and develop arguments and evidence to support and refute the thoughts' validity. They then form a reasoned conclusion based on the evidence.

Even if patients do not accept this logical conclusion, we encourage them to behave as if they believe it to be true. By doing this repeatedly, they eventually obtain some symptom relief.

Response-prevention techniques can help stop binging and purging. For example, we may require inpatients to sit together for 1 hour after eating. Because most patients will not vomit in front of each other, they learn how to resist vomiting and eventually experience reduced anxiety without vomiting after a meal.

Problem solving helps patients to reason through difficult food-related or interpersonal situations. The patient states the problem, then generates as many solutions as possible with the therapist's assistance. She chooses one solution and puts it into effect, usually for 1 week. She then discusses the results with her therapist and decides whether to try another solution.

Family therapy. A family analysis—including a brief psychiatric history and evaluation of interactions—is recommended for all patients who live at home. This analysis can help you decide what type of family therapy or counseling to recommend.

> Proceed slowly, praising the patient for every small attempt to change her behavior

Some families respond well with the parents and patient together in therapy sessions, whereas others are more comfortable with separate counseling. In a recent controlled study, anorectic patients younger than age 18 did equally well whether they were counseled with the family or separately.[16]

Brief therapy sessions are sometimes the most effective method to address family issues. When this is not possible, you and the patient can discuss family relationships in individual therapy.

MEDICATIONS

Many medications have been used to treat anorexia nervosa, though few randomized, placebo-controlled studies exist. Because evidence does not support using psychotropics as monotherapy for anorexia nervosa, medication is considered adjunctive to CBT.

Chlorpromazine can help the hospitalized, severe-

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ly ill patient who is overwhelmed with uncontrollable behavioral rituals and thoughts of losing weight. This antipsychotic helps reduce anorectic preoccupations and anxiety and helps make patients more amenable to therapy.

Start chlorpromazine at 10 mg tid and increase gradually until the patient can eat without extreme anxiety. Usual maximum dosage is 50 mg tid. Monitor blood pressure, tardive dyskinesia, and decreased white blood cell count.

Olanzapine may help induce weight gain and reduce anxiety in anorectic patients.[17] Controlled and open-label studies are under way.

We start olanzapine at 2.5 mg/d and increase gradually to 10 or 15 mg/d. At this dosage, patients' anxiety about eating is usually substantially reduced. Sedation is the most common side effect.

Anorexia patients often refuse to take olanzapine for fear of weight gain. If a patient's emaciation is life-threatening, we may seek court permission to medicate her involuntarily. We reassure her that we will discontinue olanzapine when she reaches her target weight.

Serotonin in anorexia. Central serotonin pathways modulate feeding behavior. Serotonin antagonists—such as cyproheptadine—increase food intake and weight gain, whereas serotonin agonists—such as selective serotonin reuptake inhibitors (SSRIs)—decrease food intake.

Serotonin pathways also may modulate obsessive-compulsive and impulsive behaviors. Both serotonin agonists and antagonists can be useful adjuncts in treating anorexia nervosa.

In a double-blind, placebo-controlled trial, cyproheptadine, 4 to 8 mg tid, was associated with weight gain and reduced depressive symptoms in anorexia nervosa patients.[18] Unlike tricyclic antidepressants, cyproheptadine does not reduce blood pressure or increase heart rate, which makes it attractive for emaciated anorectic patients. Dosages up to 28 mg/d can be used safely.

The SSRI fluoxetine may help prevent weight loss relapse in anorexia nervosa and reduce obsessive-compulsive behaviors.[19] In open studies of low-weight anorectics, however, fluoxetine had little impact on weight or other clinically meaningful variables.[20] Thus, this agent is recommended for preventing weight-loss relapse only in patients who are within 10% to 15% of ideal body weight.

OUTPATIENT CARE

Case report continued: Ongoing therapy

During hospitalization, Ms. J participated in all therapeutic modalities but had difficulty eating enough to gain weight. She reached her target weight of 127 lbs in about 7 weeks but gained no sense of purpose in life.

She is starting an intensive outpatient program using CBT to maintain her weight and further address the core psychopathology of her illness. Her maintenance therapy includes attending Alcoholics Anonymous meetings, ongoing fluoxetine (20 mg/d) to prevent weight-loss relapse, and CBT for obsessions and compulsions not related to her eating disorder.

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continued

Anorexia nervosa

Related resources

- Halmi KA. Eating disorders: Anorexia, bulimia nervosa and obesity. In: Hales RE, Yudofsky SC (eds). *Textbook of clinical psychiatry, 4th ed.* Washington, DC: American Psychiatric Publishing, 2003:1001-21.
- Academy of Eating Disorders. www.aedweb.org
- Anorexia Nervosa & Associated Disorders (ANAD). www.anad.org

DRUG BRAND NAMES

Chlorpromazine • Thorazine
Cyproheptadine • Periactin
Fluoxetine • Prozac
Olanzapine • Zyprexa

DISCLOSURE

The author reports no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.

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Bottom Line

Anorexia nervosa patients deny obvious emaciation, resist treatment, and have high rates of psychiatric comorbidity. Hospitalization is required in severe cases to prevent death from starvation, electrolyte imbalance, or suicide. Cognitive-behavioral therapy is most effective; SSRIs, antipsychotics, and other drugs are useful adjuncts.