

EATING DISORDERS REVIEW®



Infection-Triggered Anorexia Nervosa

Mae S. Sokol, MD • Creighton Univ. School of Medicine • Omaha, NE

Recent evidence suggests that transmissible agents may cause or contribute to some psychiatric illnesses. The idea that psychiatric disorders and infectious disease are related is not new. Neurosyphilis was frequently treated as a mental disorder until the 1940s, when it was found that penicillin could successfully treat the causative spirochete, *Treponema pallidum*. Peptic ulcers were believed to be caused by stress and spicy food until the 1980s, when it was learned that many ulcers are caused by infection with *Helicobacter pylori*, and can be treated with antibiotics. Case reports suggesting that tics can be linked with infection have been reported in the medical literature for decades (*Arch Neurol* 1929; 22: 1163; *Arch Pediatr* 1957; 74:39).

Infection-triggered Disorders

Clinical and research observations have led to the hypothesis that a post-infectious and autoimmune process may cause or exacerbate certain cases of obsessive-compulsive disorder (OCD), with or without tic disorders (*Am J Psychiatry* 1998;155: 264), autism (*Am J Psychiatry* 1999;156: 317), and anorexia nervosa (AN) (*J Child & Adolesc Psychiatry* 1997;36:1128). These disorders are described by the acronym PANDAS (**P**ediatric **A**uto-immune **N**europsychiatric **D**isorders **A**ssociated with **S**treptococcus), when they occur in children and when the causative agent is Group A Streptococcus, the bacterium that causes strep throat.

PANDAS may be part of a larger category: PITANDs (**P**ediatric, **I**nfection-**T**riggered, **A**utoimmune **N**europsychiatric **D**isorders). PITANDs may be caused by a number of infectious agents, such as bacteria and viruses.

The link between group A streptococcal infection and rheumatic fever (RF) and Sydenham's chorea (SC, the neurologic form of RF) is well known. RF and SC are believed to be due to molecular mimicry. That is, antibodies directed against pharyngitis-causing strep bacteria in the patient's throat mistakenly attack other body tissues. In RF, cardiac cells are attacked. In SC, damage to basal ganglia neurons and other brain tissue is believed to cause abnormal movements and behavioral disturbances.

It is hypothesized that in PANDAS conditions, antistreptococcal antibodies mistakenly act as anti-brain antibodies, cross-reacting with neurons in the basal ganglia, which may influence emotions and behavior, presumably disrupting function there. Alternatively, cytokines, which are proteins that transmit information among the immune system, the brain, and endocrine organs, may be involved. Cytokines may have a possible
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Update

Media Now Targeting Young Men

The same types of advertising that women have been exposed to for many years, including impossibly thin, perfect models and magical diets, are now being aimed at young men, according to Drs. Divya Kakaiya of Healthy Within, Inc., San Diego, and Mohey Mowafy, of Northern Michigan University, Marquette, MI. Already, American men spend \$2 billion per year on commercial gym memberships and more than \$2 billion on home exercise equipment. The media messages for men promise greater popularity and sexual attractiveness, along with a trim, muscular body. As a result, body dissatisfaction is increasing and appearing in ever-younger boys. This trend increases the risk of eating disorders, particularly body dysmorphic disorder. People with body dysmorphic disorder become preoccupied with an imagined defect in their appearance, which seriously disrupts with their family life and work. Early education about the dangers of steroids and extreme dieting may be one way to counteract this trend. The clinicians presented their session at the International Association of Eating Disorder Professionals (IADEP) meeting, August 10-13, in San Diego.

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role in the pathogenesis of AN (*Int J Eat Disord* 2000;28:293).

At the National Institute of Mental Health, Susan Swedo and colleagues described the clinical characteristics of a group of 50 children with OCD, with or without tics, in whom onset or worsening of symptoms was preceded by infection (*J Am Acad Child Adolesc Psychiatry* 1995;34:307). Upon testing, these children often express the lymphocyte B marker D8/17. This antigen is seen in most children who develop RF and SC, and is thought to be a trait marker for susceptibility to RF (*J Clin Invest* 1989;83:1710).

D8/17 expression also has been reported to be elevated in youngsters with OCD (*Am J Psychiatry* 1997;154:110; *Am J Psychiatry* 1997;154:402); tics (*Am J Psychiatry* 2001;158:605); autism (*Am J Psychiatry* 1999;156:317); and in four cases of AN where clinical characteristics of PANDAS were present (*J Child & Adol Psychopharmacol* 2000;10:133). Although the diagnostic value of D8/17 remains uncertain, it may provide insight into the underlying processes in these illnesses.

Immunologic Treatment: Promising Results

Encouraging results have followed immunologic treatment—plasma exchange and intravenous immunoglobulin—for PANDAS OCD and tic disorders (*Lancet* 1999;354:1153), as well as some benefit from antibiotic treatment and prophylaxis for these disorders (*Biol Psychol* 1999;45:1564). An excellent review of the research, assessment, and management of PANDAS OCD and tics is provided by Hamilton and Swedo in *Clinical Neuroscience Research* (2001;1:61).

Infection-triggered AN

OCD and AN may be related, as evidenced by phenomenology, comorbidity, neurotransmitters, and central nervous system functional metabolism (*J Psychiatry Neurosci* 1996;121:36). AN patients frequently have obsessive thoughts

(about food, calories, and weight) and compulsive behaviors (over-exercise and/or odd eating behaviors, for example). This, along with clinical observation of certain cases of AN, which clinically appeared to be triggered by infections, led to the hypothesis that there is a pediatric, infection-triggered, autoimmune type of AN that is similar to PANDAS OCD. In this variant, children experience either onset or dramatic worsening of eating disorder symptoms following a group A streptococcal infection.

Four years ago we studied three patients with AN in whom there was a possible PITANDS etiology (*J Am Acad Child Adolesc Psychiatry* 1997;36:1128). Two of the cases of possible PITANDS may have had PANDAS AN. Amoxicillin may have been effective in decreasing eating disorder symptoms in one patient whose anorectic symptoms severely worsened following a bout with strep throat.

More recently, we have studied three other youngsters (11 to 15 years of age) with possible PANDAS AN, who may have benefited from an open trial of antibiotics (*J Child & Adol Psychopharm* 2000;10:133). Evidence of a temporal relationship between the onset of eating disorder symptoms and streptococcal infection came from clinical evaluation, throat cultures, and two serologic tests for Streptococcus: anti-deoxyribonuclease B (anti-DNase B) and anti-streptolysin O (ASO) titers.

Henry and colleagues described several children with sudden-onset eating obsessions, which appeared to be triggered by strep infection (*J Am Acad Child Adolesc Psychiatry* 1999; 38:228). Harel et al. recently reported the presence of anti-brain antibodies (ABA) in several adolescents with AN (*Int J Eat Disord* 2001;29:463). ABA were detected in the blood of 6 of 22 adolescent girls with AN (27%), compared to only 1 of 22 healthy adolescent controls (5%). These ABA were directed against the putamen, part of the brain's basal ganglia, suggesting an underlying immune process in the basal ganglia in AN.

In summary, available evidence indicates a possible link between infectious disease and some cases of AN, which raises the possibility of new treatment.

Characteristics of PANDAS AN

As a working model, the following characteristics of PANDAS AN have been developed (*See the enclosed Patient Information Sheet*):

1. Prepubertal onset of AN.
2. Acute onset or exacerbation of eating disorder symptoms.
3. Evidence of a prior or concomitant streptococcal infection, with a temporal relationship to the onset of eating disorder symptoms.
4. Increased symptoms that do not occur exclusively during stress or physical illness (fever and other stressors of physical illness can decrease appetite and increase psychiatric symptoms).
5. Minor neurologic abnormalities during psychiatric symptom exacerbation, including irregular movements and motor hyperactivity.

Clinical Implications

The possibility of infection-triggered AN raises questions about the management of youngsters with AN. It suggests that a history of infectious disease should be evaluated in relation to eating disorder symptoms. If there is a temporal association between onset or exacerbation of AN and a strep infection, the following are recommended: physical examination, throat culture, and serologic tests (anti-deoxyribonuclease B [anti-DNase B] and anti-streptolysin O [ASO] titers) for streptococci. Careful monitoring and treatment of strep infection are beneficial for all children. This may be particularly important for children with AN who have PANDAS characteristics. The D8/17 laboratory test is still a research test, and not recommended for use in clinical practice.

Further Investigation is Needed

Future research is needed to investigate the possible existence of the subtype of PANDAS AN, not only because these patients may

benefit from careful monitoring for streptococcal and other infections, but for the potential benefit that new treatment options might offer. Early intervention could theoretically limit immune response and potentially thwart the onset or worsening of AN in these individuals. In other words, damage as well as dysfunction could be prevented.

Studies are underway to determine whether children with PANDAS will respond to antibiotic and immunomodulatory therapy (plasma exchange or intravenous immunoglobulin). These treatments are still in the experimental stage. Double-blind, placebo-controlled studies are needed to determine if these treatments are effective in treating or preventing AN symptoms. Further, the risks of antibiotic use must be weighed against the possible benefits, because antibiotic overuse contributes to the emergence of resistant bacteria, causes unnecessary adverse drug reactions, and is costly (*Pediatrics* 1999; 104:1251).

It is important to have a healthy skepticism about the link between infections and psychiatric disorders, but it is equally important to consider new possibilities such as this, as it may lead to better treatment.

Suggested Reading

- Hooper J. A new germ theory. *The Atlantic Monthly* 1999; 41.
- Lorber B. Are all diseases infectious? Another look. *Ann Intern Med* 1999; 131: 989.
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- Swedo SE, Garvey M, Snider L, et al. The PANDAS subgroup: recognition and treatment. *CNS Spectrums* 2001; 6:419.
- Swedo SE, Leonard HL, Garvey M, et al. Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS): A clinical description of the first fifty cases. *Am J Psychiatry* 1998; 155: 264.

Conference Explores Better Access to Care for Minority Populations, Part 2

Mary K. Stein, Managing Editor

Rachael Bryant-Waugh, PhD, of the Great Ormond Street Hospital for Children, London, told the audience at a plenary session at the Academy for Eating Disorders annual meeting that a series of barriers cause children with eating disorders to be underserved in clinical settings and in research studies. According to Dr. Bryant-Waugh, the problem begins with the varied and sometimes confusing definitions of the term "child."

An additional barrier, according to Dr. Bryant-Waugh, is that many children don't fit neatly into the current *Diagnostic and Statistical Manual-IV* definitions for anorexia nervosa and eating disorders not otherwise specified (EDNOS). "We have real difficulties placing children into the current diagnostic criteria because children can present differently from adults," Dr. Bryant-Waugh pointed out.

In addition, children have a wide variety of disordered eating patterns. Among children 7 to 12 years of age, clinicians may see patterns ranging from anorexia for boys and girls, overeating and childhood obesity, eating extremely fatty foods, very restricted eating, and phobias, such as a diarrhea or vomit phobia. Bulimia nervosa is rarely seen in this age group.

Barriers to treatment

The evidence base for treatment of children with eating disorders is tiny or inferred, and there are no treatment manuals designed for treatment of young patients, she said, adding, "The range of current treatment practices is a reflection of our collective lack of scientifically based evidence about what works and what doesn't work."

Successful treatment can also be difficult because when children are stressed, it is developmentally normal for them to "dig in their heels and refuse to budge," she said. Then, evaluating and treating children may prove to be challenging due to communication problems and difficulties in assessment.

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Assessing children, especially younger children who have to be interviewed, can be very time-consuming, Dr. Bryant-Waugh added. Then there are ethical and funding problems. In addition, clinicians must work with the child and family and the wider system, including schools and primary care staff.

A more consistent approach to diagnosis, terminology, and a better classification system would be a good start, according to Dr. Bryant-Waugh. She also called for clearer guidelines for treating children with eating disorders. While there is a good body of research on normal school-age children and early feeding problems, there are few long-term studies about how early feeding problems relate to anorexia nervosa and bulimia nervosa. One important area is discovering what consequences follow the interruption of normal puberty with starvation, she noted.

Males with Eating Disorders: Many Strikes Against Them

Stereotypes, lack of appropriate diagnostic criteria, bias, and the fact that most treatment programs are designed exclusively for females all work to interfere with treatment of males with eating disorders, according to Dr. Arnold Andersen, Director of the Eating Disorders Program at the University of Iowa School of Medicine, Iowa City, IA.

Few programs specifically designed for men exist, Dr. Andersen said, and many centers and groups bar men from their programs. When men are included, they may be treated like teenage girls, he said. Almost all weight reduction programs are also female-oriented, he pointed out. Instead, men need programs that are athletically oriented and that include other men, Dr. Andersen stressed. To succeed, weight reduction programs need to be convenient and to appreciate men's needs.

New study shows eating disorders are not rare among men.

Dr. Andersen cited a recent study by the Toronto group (*Am J Psychiatry* 2001;158:570—see July-August *EDR*) that established that eating disorders are more common among men than previously thought. The Toronto researchers found that for the full anorexia syndrome, the ratio of females to males was 4:1; for

the partial anorexia syndrome, the ratio was 4.0:1.5. As for bulimia nervosa, following the classic DSM-IV definition, the ratio of cases of women to men was 11:4; for the more common partial bulimia nervosa syndromes, the ratio dropped to 1.8:1.0. Dr. Andersen said, "We are doing a lousy job of bringing men, who make up 1 of 3 cases, into treatment." There is good evidence that the gender ratio of clinic cases is much lower than the population ratio, he added.

Another reason why ED males may be underserved

Socially and culturally, there is a stigma from the illness, Dr. Andersen said. In addition, our culture is putting the same burdens of weight and shape on men as on women, he noted. Men are also underserved because of their personal concerns and their discomfort, lack of knowledge, shame, and fear.

Problems with the DSM-IV

The DSM-IV is an extraordinarily important and worthy document, he said, but it also needs to be revised because it is biased against men with eating disorders. For example, one of the three main criteria for the diagnosis of anorexia nervosa is amenorrhea. Dr. Andersen added that the Toronto Group has shown that amenorrhea is a totally inadequate and archaic criterion for diagnosing anorexia nervosa. In addition, he feels that the weight loss criterion of 15% is inappropriate for men.

Bias from health-care professionals

Not only do social and cultural institutions show bias against males by creating impossible standards, according to Dr. Andersen, but it's not uncommon for clinicians and insurance companies to insist that men don't get eating disorders.

According to Dr. Andersen, health-care workers frequently miss the extreme distress in males with eating disorders. Males with eating disorders have high degrees of depression and general psychopathology, but don't seem to be ill enough or to have many telltale symptoms of an eating disorder. Clinicians may not ask the right questions, specifically those about body image concerns and concerns about weight, he said.

Dr. Andersen challenges the idea that men with eating disorders don't do well in treatment. "We've put firmly to rest the

idea that somehow men are sicker and respond less well than women," he added.

More studies needed

Dr. Andersen was optimistic about the future, and called for more studies of the genetics and comorbidity of eating disorders, the male social learning process, and medical symptoms among men. Awareness of men with eating disorders is improving, he said, and more crossover books, such as *The Adonis Complex: The Secret Crisis of Male Body Obsession* (Pope, Phillips, and Olivardia) and *Making Weight: Healing Men's Conflicts with Food, Weight and Shape* (Andersen, Cohn, Holbrook) are dealing with the topic of men and eating disorders.

He said, "We need to particularly appreciate the genetic substrate, individual development and experiences, the family functioning style, and even the way dads relate to boys, for example.

Gay and Lesbian Patients: Unknown Territory for Many Clinicians

James Lock, MD, PhD, of Stanford University School of Medicine, Palo Alto, CA, told the audience that among the underserved populations, clinicians probably know the least about gay and lesbian eating disorders. However, he added, gays and lesbians are affected by all the same types of issues that affect minorities, males, and children, including false assumptions, biases, and lack of information.

Dr. Lock posed three questions to the audience: "What evidence do we have that suggests that gay men and lesbians are at increased risk of developing an eating disorder? Why might gay men and lesbians be vulnerable to eating disorders? What should we do about eating disorders in gay men and lesbians?"

A small but growing literature on sexual orientation and eating disorders.

Dr. Lock reported that there is a small, developing literature examining the role of sexual orientation in the development of eating disorders. Case reports by David Herzog and others have suggested that gays and lesbians are at higher risk of developing an eating disorder. Other studies have failed to document this. Still other studies have suggested that gay

males and heterosexual women with eating disorders share common features, such as binge eating and body dissatisfaction.

As for lesbians, study results have varied widely, suggesting that lesbians are at higher risk, lower risk, and the same risk for eating disorders, he said. Overall, Dr. Lock concluded that thus far the data are inconclusive, but some study results suggest that lesbians have increased risk for eating disorders.

High levels of abuse increase risk

Why are gay men and lesbians at risk for eating disorders? Part of the problem lies within the stigma of being gay, Dr. Lock said. In addition, 30% to 40% of gay men and women have high levels of physical, emotional, and verbal abuse in their routine lives, he said. Disordered eating may follow betrayal, lowered self-esteem, and victimization, Dr. Lock said.

Dr. Lock also pointed out that coping styles usually depend upon resources a person can build upon, such as family and a personal sense of worth. He said, "Unlike any other minority group we have discussed today, gay and lesbian persons are most often not accepted in their families, and 20% or so are kicked out of their families as teens." Thus, they lose a fundamental resource for building esteem and for developing positive coping styles. This leaves them vulnerable to all sorts of illnesses, including eating disorders, he added.

Improving awareness of gay patients

Clinicians spend little time learning about homosexuality, Dr. Lock said. For example, as reported in a study in 1992, the average time spent teaching U.S. medical students about homosexuality was 3 hours and 27 seconds, even though homosexuals make up 3% to 5% of the population.

According to Dr. Lock, a good place to start is with pilot studies at a basic level, with case studies and reports. He suggested that clinicians recognize that a percentage of their patients are gay, and not to assume patients' sexual orientation. Better interviewing techniques will also help. One simple measure is to include materials aimed at gay patients, such as pamphlets from a gay men's support group or lesbian support group, in the waiting room. This can send a signal, making it

easier for gay patients to seek help. Clinicians can develop more sensitivity to gay issues, do more reading, and become better educated about these patients.

Clinical Mentors: A Bridge to Recovery

At an Israeli eating disorders treatment center, adding clinical mentors to an intensive care multidisciplinary treatment team has enabled patients to receive a high degree of care while remaining in the community.

The clinical mentors at the Sachet-Eating Disorders Intensive Treatment Center, Rehovet, Israel, are social workers, art therapists, and graduate-level psychology students trained to connect with clients in an informal but intensive manner, for 10 to 40 hours a week. The mentors help patients work on regaining healthy attitudes about food, eating, and life in general, while dealing with the pain and loss associated with the disorder. They accompany patients as meal companions and are described as "calming figures."

Drs. M. Golan and T. Gogol-Ostrowsky report that the relationship that develops between the mentor and patient diminishes the isolation eating disorders patients usually experience. The mentors get involved in most areas of the patient's life, and help them examine other possibilities for themselves.

The two researchers recently reported the results of their 2.5-year experience with 17 patients who participated in the clinical mentor program (*Harefuah* 2001;140:487; [in Hebrew]). At the end of the study, the researchers assessed body mass index and general outcome (Eckert scales) of all the patients.

Most patients recovered

Seventeen patients, who had been ill for 6 or more years, completed the program. One year after completing the program, 76% of the patients were defined as recovered and 12% were close to recovery (defined as having only a

few remaining symptoms). All patients were able to function well in the community, both socially and at work. Six percent were judged to be partially recovered, and 6% regressed during the first year of follow-up. The authors note that the clinical mentor program allows clinicians to provide the same intensive treatment inpatient care provides, but enables patients to remain in the community and to maintain those activities that survive the disorder.

Serotonin Levels and Self-Destructiveness

Patients with bulimia nervosa have been found to have changes in brain serotonin (5-hydroxytryptamine; 5-HT) activity, and to have an increased propensity for risk of suicide and self-injury. Because of the inverse association between 5-HT activity and the potential for self-harm, Canadian researchers recently examined the connection between 5-HT status and self-destructiveness in normal patients and those with bulimia nervosa.

Structured interviews and self-report questionnaires were used to assess 40 bulimic women and 21 women with normal eating patterns (*Psychiatry Res* 2001;103:15). The researchers evaluated the following: a history of parasuicidal actions or self-injury, and problems in mood or impulse regulation. They then tested both groups to establish 5-HT function and serial prolactin and cortisol responses after administration of a partial 5-HT agonist, meta-chlorophenylpiperazine (m-CCP).

In comparison to nonbulimic women, the bulimic women had blunting of serial prolactin and cortisol responses after receiving m-CCP. This was most marked among bulimic women who had a history of self-destructiveness. The authors suggest that some serotonergic anomalies reported in BN patients, such as reduced neuroendocrine response after m-CCP, may be characteristic of persons showing a clear-cut potential for self-destructiveness.

Nasogastric Tube Feeding

“Food First” is a motto I use in clinical practice. As much as possible, I recommend food, as opposed to supplements, to support nutritional rehabilitation of patients with eating disorders. However, to be honest, there are times when this motto is unrealistic; for example, for the patient who does not permit herself to have any oral intake, or the client who is able to eat but cannot tolerate the volume of food she needs for weight gain.

In these cases, nasogastric tube feeding (NGTF) has been the most practical treatment option. A liquid supplement provided by NGTF can be the client’s sole source of nutrients or it can complement her oral nutritional intake. Compared with other methods of refeeding, such as total parenteral nutrition, gastrostomy, or jejunostomy, NGTF has the lowest risk of complications and is the most cost-effective method.

But, in spite of its potential benefits, NGTF is infrequently used in North America. Like me, many health-care providers tend to view NGTF as a “last-resort” refeeding method. Not surprisingly, clinicians generally have the impression that NGTF is invasive, with profound psychological implications for the patient.

A Thought-Provoking Presentation

At the 2001 Academy for Eating Disorders annual meeting in Vancouver this spring, I saw a thought-provoking poster presentation, “Nasogastric Tube Feeding in Anorexia Nervosa,” by Juliet Zuercher, RD, Edward J. Cumella, PhD, and Brenda Woods, MD, from the Remuda Ranch Center for Anorexia and Bulimia in Wickenburg, AZ. While there is a considerable amount of literature addressing the ethical issues of involuntary tube feeding of pa-

tients, the researchers emphasize that there are few published studies that have investigated the efficacy of NGTF, or that have explored appropriate applications of voluntary use of NGTF. In addition, few published data confirm negative psychological effects of NGTF.

In their study, Zuercher, Cumella, and Woods looked at the efficacy of nocturnal NGTF in 430 adult inpatient women and adolescents diagnosed with anorexia nervosa. Their objective was to assess the effect of voluntary NGTF on patients’ weight gain, psychological recovery, and medical complications of refeeding.

Study Methods

The researchers measured the efficacy of treatment using admission and discharge percent ideal body weight and admission and discharge scores from the Eating Disorders Inventory-2 (EDI-2). Ratings from a Patient Satisfaction Questionnaire, completed at discharge, were used to measure psychological recovery. Medical complications were measured by tracking the frequencies of the five most common medical complications of refeeding.

Of the 430 females (age range: 12-57 years) with a DSM-IV diagnosis of anorexia nervosa, 37% voluntarily accepted NGTF in addition to oral refeeding. Sixty-three percent received oral refeeding alone. Patients received NGTF for a mean of 36 days. To reduce the risk of medical complications from refeeding, all patients were monitored for symptoms of potential medical problems by primary care physicians and a 24-hour nursing staff.

Nasogastric Tube Feeding Protocol

At Remuda Treatment Centers, NGTF is generally recommended to any patient who meets the strict DSM-IV weight criteria for the diagnosis of anorexia nervosa (e.g., less than 85% of expected weight). NGTF is also recommended to patients who are above 85% of

expected weight but who meet two or more of the following criteria: (1) severe food restriction, defined as <500 kcal/day for at least 30 days prior to admission; (2) severe fluid restriction; or (3) a calorie count that reveals poor oral intake for three consecutive days during treatment.

Nasogastric tube feeding at Remuda Treatment Centers is never used punitively or against the patient’s will. Once inserted, the tube remains in place unless the patient chooses to permanently discontinue its use or if there is no longer a medical need for it. Patients are informed that NGTF allows the treatment team to introduce needed nutrition without excessive food volume. Instead of receiving NGTF during an 8-to 10-hour period during the day, patients have the option of either having it over 18 to 20 hours or receiving nocturnal feedings. The Remuda Treatment Centers staff inform patients that psychologically it is often more comfortable to receive nocturnal feedings while they are sleeping instead of multiple daily supplements in addition to meals and snacks. All the patients in Zuercher, Cumella, and Woods’ study chose nocturnal NGTF.

While they are receiving NGTF, patients are always expected to eat balanced meals and snacks. Their daily energy intake is based on their nutritional needs, determined by the staff dietitians, and does not differ if they are receiving NGTF. All patients are expected to gain at least 2 lb/week. Once patients reach their maintenance weight range, they are asked to consume calories orally; tube feeding is typically only used to provide adequate energy for weight gain.

What the Researchers Found

The results suggest that adjuvant nocturnal nasogastric tube feeding may be more effective than oral feeding alone in promoting the nutritional rehabilitation of inpatient females with anorexia nervosa. When admission body mass index (BMI), caloric intake, DSM-IV anorexia subtype, and length of

stay were controlled, the researchers discovered that patients receiving NGTF demonstrated a greater change in percent ideal body weight from admission to discharge than similar patients who did not receive tube feeding (14% vs. 10%, respectively). According to post-treatment analyses, patients who received NGTF gained 1.8 lb/week, while those without gained 1.5 lb/week ($p=0.05$). Post-treatment analyses also revealed that patients receiving NGTF for most of their hospital stay gained 0.5 lb more per week than patients who did not have NGTF or those who received NGTF for less than half of their stay ($p=0.006$).

Possible explanations for the greater weight gain with NGTF may include less resistance to eating due to smaller volumes of oral calories presented to patients receiving tube feeding, an extended period of refeeding due to nighttime use of the tube, and/or greater motivation to improve among those patients willing to accept NGTF in the first place. Because patients with anorexia nervosa may be inclined to surreptitiously evade foods at meals and snacks, their energy intake may be more consistent and predictable with NGTF compared with oral refeeding.

After controlling for severity-of-illness differences between the two patient groups, those with and without tube feeding demonstrated equivalent levels of satisfaction with treatment, experienced equivalent EDI-2 changes from admission to discharge, and showed the same frequencies of medical complications from refeeding. Thus, previous suggestions that tube feeding may have substantial negative psychological or physiological effects on anorexic patients were not substantiated in this study and under these conditions.

— **Linda M. Watts, MA, RD**

To learn more about this study, contact: Edward J. Cumella, PhD, Director, Research Dept., Remuda Ranch Center for Anorexia and Bulimia, One East Apache Street, Wickenburg, AZ 85390.

BOOK REVIEW

When the Body is the Target: Self Harm, Pain & Traumatic Attachments

(Sharon Klayman Farber, PhD, and Jason Aronson, Northvale, NJ; 2000; 580 pp; \$60.00)

Here is a deep, richly textured book by a psychoanalyst-psychotherapist-clinical social worker who loves to write, written primarily for clinicians who love to read. In a fluent, literary style, Farber engages in a thick brew of theory and clinical narrative.

Her own clinical background includes experience as a drug counselor, working with patients damaged in cults, conducting psychotherapy with children and adults, and engaging in specialized work with eating disorders patients. Through this, she came to study the relationship between eating disorders symptoms, self-mutilation, other forms of self-harm involving drug and alcohol abuse, compulsive sex, shoplifting, compulsive shopping, compulsive risk-taking and related phenomena. Data from her own formal study of 99 patients with bulimia nervosa, 75 of whom were severe self-mutilators and 24 of whom self-mutilated mildly or not at all, provide systematic findings. Material from her clinical practice provides detailed, nuanced vignettes.

To understand these phenomena, Farber calls upon a wide array of perspectives. These include sources from many schools of thought, including biological psychiatry, psychobiology, neuropsychology, ethology (the scientific study of animal behavior), evolutionary psychology, ethnology (the anthropologic study of cultural origins and factors influencing cultural change), anthropology, and culture. So broad a spectrum of images, allusions and points of reference are called upon that you sometimes feel that you're taking a survey course in the humanities focusing on self-harm in the arts, literature, and through the ages.

Farber's primary focus on adaptation and attachment theory is informed by all these sources. Her core premise is that self-harm can be understood as a "creative unconscious solution to formidable problems of living," i.e., adaptive solutions, the best adaptation of which the patient is capable at the time. The chapters on attachment are scholarly and bring the

reader up to date, beyond Bowlby and Mahler, to include illuminating perspectives afforded by the developmentally based work of Myron Hofer, the systematic interactive observational research of Mary Ainsworth, new developments in self-psychology, and the increasingly influential synthetic writings of Allan Shore, among others. Her good chapters on traumatic attachment and "addiction" to these attachments link to rich conceptualizations of the self as prey and predator, primitive sadomasochism, and destructive narcissism. She deals with issues of symbolic use of the body, and sadomasochism and its relation to body image, gender and perversion. She sees self-harming behaviors as attempts to deal with "hunger disease," an "addiction to wanting" what these individuals cannot have, through which these individuals are driven to possess and consume people or things in an addictive manner. They never feel full or satisfied because their fundamental desires for closeness and warmth, never sufficiently experienced as children, now form holes that cannot be filled.

The clinical implications of these views are spelled out: therapists have to do a lot of attachment repair to help these individuals experience and develop supportive attachments. Farber's chapters on diagnosis and assessment of self-harming patients are intelligent, thorough, and go beyond the *DSM* to areas of destructive narcissism, masochism. Beyond individual therapy, family and group approaches are discussed. The wrap-up chapter, "From Self-Harm to Self-Reflection," portrays some of the detailed therapeutic processes occurring in the patient, and between the patient and therapist, in the course of treatment.

There's a lot to read here—580 pages—in relatively small type. All in all, this is a book that psychodynamically oriented therapists will enjoy and value. The clinical insights offered will push the thinking of experienced clinicians. However, the extent to which these treatment approaches, alone or in combination with other psychosocial and biological intervention, lead to sustained improvements in large numbers of patients dealing with these very difficult to treat problems remains to be demonstrated.

—J.Y.

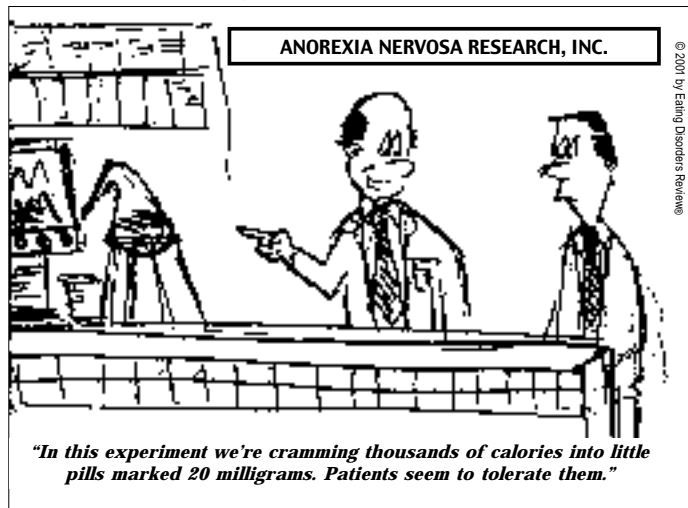
Questions & Answers

Why Don't All Sisters Develop Anorexia Nervosa?

Q. I've seen several families in which one girl has anorexia nervosa but her sister or sisters don't. Since these girls are raised in the same family, I wonder what accounts for the fact that they don't all develop eating disorders. (*Betty K., Miami*)

A. The fact is, sisters of girls with anorexia nervosa are at increased risk of developing this disorder themselves, because it does run in families. Fortunately, only a few sisters of girls with anorexia nervosa also develop it. What differentiates these sisters is still a matter of debate and research. A recent study of 45 sister-pairs suggests that those developing anorexia nervosa differed from their healthy sisters in several ways: They were more likely to be perfectionistic and/or compliant, have feeding difficulties in childhood, be subject to higher parental expectations, report sexual abuse, be highly competitive with their sisters, perceive their sisters to be their parents' favorite, and perceive their sister's appearance and shape to be superior to their own. Thus, intrinsic temperamental traits, parental pressure and external events such as sexual abuse all

Nibbles, by Hunter



Editors' note: In the last issue, the caption for "Nibbles" was garbled. Here is the cartoon as it should have appeared.

appear to be important. In this group, no differences were found between sisters who were healthy and those with anorexia nervosa with respect to the percentages having various alleles for several suspected genetic markers involving two different serotonin receptors, the DRD4 dopamine receptor or catecholomethyltransferase (*Psychological Medicine* 2001; 31:317).
—**J.Y.**

The EDE and EDE-Q: How Do They Compare?

Some features of bulimia nervosa are more accurately evaluated with the Eating Disorders Examination (EDE) than with its self-report version, the Eating Disorders Examination Questionnaire (EDE-Q), according to results of a recent study (*Int J Eat Disord* 2001;187).

Dr. J. C. Carter and colleagues at Toronto General Hospital compared the level of agreement between the EDE and the EDE-Q in a clinic sample of patients with bulimia nervosa. Sixty women who met DSM-IV criteria for bulimia nervosa (purging type) participated in the study. Fifty-seven completed both the EDE and EDE-Q. The researchers recorded the patients' self-reported weight during a telephone screening interview.

The EDE generated higher scores

The EDE generated higher scores than the EDE-Q for the frequency of binge eating and vomiting episodes,

and concerns about shape and weight. According to the authors, the findings suggest that some core features of eating disorders may be more accurately measured with the live interview than the self-report questionnaire.

In the Next Issue

Does Olanzapine Affect the Rate of Weight Gain Among Inpatients with Eating Disorders?

By Jill A. Gaskill, MSN, CRNP, Teresa A. Treat, PhD, Elizabeth B. McCabe, MSW, and Marsha D. Marcus, PhD

The atypical antipsychotic medication, olanzapine (Zyprexa®), is often associated with significant weight gain in treated patients with psychotic disorders. A larger study of patients led to a very different result.

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Infection-Triggered Anorexia Nervosa (PANDAS AN)

by Mae Sokol, MD • Creighton Univ. School of Medicine • Omaha, NE

Definition:

There is evidence of a rare type of anorexia nervosa (AN) in children that is triggered by infection. This may be one of the **P**ediatric **A**uto-immune **N**europsychiatric **D**isorders **A**ssociated with **S**treptococcus (**PANDAS**). Obsessive-compulsive disorder, tics, and Tourette's disorder are also included in this group. This type of AN is sometimes called PANDAS AN.

Characteristics of PANDAS AN:

1. This type of anorexia nervosa occurs before a child reaches puberty. (AN is a serious illness marked by refusal to eat, weight loss and obsessive fears of getting fat.)
2. The child has a rapid onset of symptoms and/or worsening of disordered eating.
3. The child may have signs of an previous or current streptococcal infection, which occurs at about the same time as the onset of eating disorder symptoms (*Please note: Strep infections are common among youngsters; not all strep infections are PANDAS-related*). With PANDAS, most children have the following:
 - a. A history of streptococcal illness: pharyngitis, sinusitis, or a flu-like syndrome
 - b. A positive throat culture
 - c. Positive findings on blood tests:
 - 1) Anti-deoxyribonuclease B (anti-DNase B) titer
 - 2) Anti-streptolysin O (ASO) titer
4. Increased symptoms do not occur exclusively during stress or illness.
5. Neurologic (nerve) abnormalities, with restlessness and/or erratic movements

Laboratory Tests:

If the above clinical characteristics are present, the following laboratory tests may be helpful:

1. Throat culture
2. Anti-DNase B (anti-deoxyribonuclease B)
3. ASO titer (anti-streptolysin O)
4. ANA (anti-nuclear antibody)
5. CRP (C-reactive protein)
6. Sedimentation rate
7. Immunoglobulin screen

Treatment:

A variety of antibiotics, including amoxicillin, have been helpful. Researchers are currently studying the effectiveness of plasma exchange or use of intravenous immunoglobulin.

For further information, contact Mae Sokol, MD, Eating Disorders Program, Children's Hospital, 8200 Dodge Street, Omaha, Nebraska 68114; Telephone: (888)-216-1860; e-mail:sokolms@aol.com