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UPDATE

Exercise Dependence in Anorexia Nervosa

For some individuals with anorexia nervosa, the overwhelming need to exercise can be compared to substance dependence. According to Andrew Bennett, MD, and colleagues at New York State Psychiatric Institute, a syndrome of exercise dependence may exist for some anorexia nervosa (AN) patients. The researchers adapted a questionnaire used to measure the severity of substance dependence to study exercise dependence in AN. Eighteen women who met the criteria for AN and who had been admitted to an inpatient research center filled out the questionnaire. The criteria for exercise dependence included loss of control over exercise, attempts to cut down or stop exercising, excessive amount of time spent exercising, and exercising instead of important social activities. Although 22% of the women met at least 5 criteria for dependent behavior in exercising, 50% met at least 3 criteria. The two most common areas were excessive time spent exercising (61%), and exercising instead of engaging in important social activities (42%). Dr. Bennett and his colleagues presented their findings at the Eating Disorders Research Society meeting in Charleston, SC, last November.

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Eating Disorders and Self-Harm: A Chaotic Intersection

By Randy A. Sansone, MD, John L. Levitt, PhD & Lori A. Sansone, MD

There is clear empirical evidence that a subgroup of individuals with eating disorders (ED) engage in self-harm behavior (SHB). Individually these disorders are difficult to treat; in combination they represent a chaotic intersection. SHB ranges from various non-lethal forms of self-injury to genuine suicide attempts. Some examples of non-lethal self-injury include hitting, burning, scratching, or cutting oneself; pulling out one's hair and eyelashes; purposefully precipitating harmful "accidents," and participating in physically abusive relationships.

SHB may also manifest as overt eating disorder symptoms, such as abusing laxatives, inducing vomiting, or exercising excessively with the expressed or primary intent to experience pain or cause self-injury. Therefore, when assessing ED symptoms, it is essential to determine the intent or function of the symptoms (i.e., food, body, and weight issues vs. purposeful self-harm).

The Prevalence of SHB Among Eating Disorders Patients

The prevalence of non-lethal self-injury among ED patients is approximately 25%, regardless of the type of eating disorder or the treatment setting (*Eating Disorders* 2002; 10:205). As for suicide attempts, the prevalence rates appear to vary, depending on the ED diagnostic subgroup and study setting. The prevalence of suicide attempts is lowest among outpatients with anorexia nervosa (16%). Prevalence rates are higher for bulimic individuals treated as outpatients (23%) and inpa-

tients (39%). The highest rates of suicide attempts are reported among bulimic individuals who have comorbid alcohol abuse (54%) (*Eating Disorders* 2002; 10:205).

Causes of SHB Among Those with ED

The precise etiology of self-harm behavior among those with ED is unknown, but it is suspected to be complex, with many underlying causes. It is also known to vary between individuals. About 25% of self-harming individuals with ED appear to meet the criteria for borderline personality disorder (BPD).

Variables that contribute to BPD include temperament, traumatic triggering events, family-of-origin dysfunction (e.g., inconsistent treatment by a caretaker, a negative family environment, or "biparental failure"), and various biological abnormalities, including possible aberrations in serotonin levels. Because BPD is frequently associated with a history of abuse during childhood (e.g., sexual, physical, and emotional abuse and witnessing violence), it is difficult to ascertain if associated biological findings are the causes of and/or outcomes of early developmental trauma. However, early violation of body boundaries appears to foster dissociative defenses in young victims, as well as a separation of body self and psychological self ("You can hurt my body, but not me"). These processes appear to subsequently lower the threshold for SHB in adulthood.

Multi-Impulsive Bulimia

A related construct, multi-impulsive bulimia, also involves impulsive SHB

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(e.g., suicide attempts), in addition to other forms of impulsivity such as substance abuse and sexual promiscuity. Compared with BPD, considerably less is known about multi-impulsive bulimia in terms of etiology. It may be that this syndrome is actually made up of a subset of individuals with BPD.

Assessment

When assessing an individual with suspected SHB and an eating disorder, it is crucial to explore in depth not only ED symptoms, but also the presence of concomitant SHB. These may include: (1) past suicide attempts; (2) repetitive, ongoing, non-lethal self-harm behavior; and (3) ED symptoms that do not appear to be related to concerns about food, body, and/or weight. An example of the latter could include self-injury equivalents such as inducing vomiting without food in one's stomach.

Although proven thresholds for various symptoms have not been established, an ongoing pattern of SHB is the conceptual benchmark. Several instruments to help detect and measure self-harm are now available to clinicians, including the Self-Harm Inventory (*J Clin Psychol* 1998; 54:973), the Self-Injury Survey (1994; Providence, RI), and the Impulsive and Self-Harm Questionnaire (*Dissert Abstr Int* 1997; 58:4469).

Treatment Strategies

There is no consistent, empirically proven treatment strategy for SHB in those with ED. However, a variety of interventions, used in assorted combinations, appear to offer promise.

Psychotherapy. Many psychotherapeutic techniques for SHB have been described for years in the literature on borderline personality disorder. Here are some of the approaches:

(a) Cognitive restructuring (eliciting and restructuring faulty cognitions that promote SHB).

(b) Dynamic approaches (e.g., uncovering the deeper dynamic themes around SHB, such as self-punishment or eliciting caring responses from others, and bringing these themes into the patient's conscious awareness).

(c) Sublimation (defined as rechanneling SHB into more socially acceptable alternatives, such as drawing or writing

out self-destructive urges in detail).

(d) Interpersonal restructuring (using a consistent verbal phraseology at the time of a crisis that restructures the meaning and function of self-harm behavior in an interpersonal relationship).

(e) Family intervention (i.e., uncovering and translating what the patient may be trying to communicate through SHB).

(f) Various forms of contracting (i.e., encouraging personal control, establishing limits around the treatment).

(g) Group therapy.

Again, none of these approaches alone is effective, whereas combinations appear to promote some degree of stabilization in most patients.

Dialectical Behavior Therapy is a formal approach that includes a combination of techniques, including individual and group intervention, cognitive and dynamic therapy, and psychoeducation. Like other forms of combination treatment, this systematized approach holds promise for the treatment of these complex patients.

Psychotropic medication. Three clinical issues are relevant when considering whether to use psychotropic medications in this population: (1) the meaningful reduction of SHB; (2) selection of medications that are reasonably weight-neutral; and (3) avoidance of medications that are dangerous in overdose.

Most prescribing clinicians initially choose treatment with a weight-neutral selective serotonergic reuptake inhibitor (SSRI). As caveats, both sertraline (Zoloft®) and fluoxetine (Prozac®) appear to be relatively weight-neutral, whereas paroxetine (Paxil®) is frequently associated with weight gain. In addition, citalopram (Celexa®) overdose is associated with cardiac conduction changes that may foreshadow an arrhythmia, which can be lethal.

When there is no meaningful response with an SSRI, a second medication may be added. We typically choose an anti-convulsant. Gabapentin (Neurontin®; 100-600 mg per day) is seemingly weight-neutral at lower doses, and is safe in overdose. Topiramate (Topamax®) is associated with weight loss, and may be particularly helpful among those with binge eating disorder. Safety in overdose with topiramate is not well studied, but reports indicate no adverse effects.

Low-dose, atypical antipsychotic drugs

may also be used as an augmentation strategy, either with the SSRI alone, or with the combination of an SSRI and anticonvulsant. Ziprasidone (Geodon®) is weight-neutral at all doses (e.g., 20 mg once or twice daily) and low-dose risperidone (Risperdal®; e.g., 0.25-0.5 mg per day) also appears to be reasonably weight-neutral. In contrast, olanzapine (Zyprexa®), quetiapine (Seroquel®), and clozapine (Clozaril®) are noted for producing weight gain in susceptible patients. These latter three atypical antipsychotics may also cause metabolic abnormalities such as elevated serum glucose, cholesterol, and triglyceride levels.

Finally, several studies indicate that eicosapentaenoic acid (EPA), an omega-3 fatty acid found in fish oil, may reduce depressive and aggressive symptoms as well as suicidal ideation (*Am J Psychiatry* 2003; 160:167; *Am J Psychiatry* 2002; 159:477). In the empirical literature, the suggested dosage of EPA has been 1000 mg/day, although this explicit formulation is not seemingly available over-the-counter (e.g., a 432-mg softgel capsule is available). EPA appears to be weight-neutral and safe, even in overdoses.

Given the preceding pharmacologic suggestions, medications appear to offer

modest yet meaningful reductions in SHB (an estimated 30% reduction in symptoms). As is the case with any trauma-based syndrome, including post-traumatic stress disorder, full remission is unlikely with the use of medications alone. The outcome data for the combination of psychotherapy strategies and medications varies, of course, from moderate remissions to refractory courses.

Conclusions

Patients with SHB constitute a substantial minority of individuals with eating disorders. While our understanding of the causes for SHB in this population remain somewhat elusive, it is likely that this phenomenon has many causes. Assessment of all ED patients should include clinical inquiry into the presence of SHB. In addition, formal measures of SHB are available.

Treatment approaches need to be individualized, and consist of a combination of psychotherapeutic strategies and medications. A reduction in SHB is a reasonable expectation, but a full and sustained remission is less likely to occur in the short term. Whether full remission occurs with longer follow-up periods is unknown. Clearly, these patients

remain complex enigmas in our clinical realms.

Suggested Reading

1. Wonderlich S, Myers T, Norton M, et al. Self-harm and bulimia nervosa: A complex connection. *Eating Disord* 2002; 10:257.

2. Sansone RA, Levitt JL. Self-harm behaviors among those with eating disorders: An overview. *Eating Disord* 2002; 10:205.

3. Sansone RA, Sansone LA. Assessment tools for self-harm behavior among those with eating disorders. *Eating Disord* 2002; 10: 193.

4. Sansone RA, Levitt JL, Sansone LA. Self-harm behavior and eating disorders. *J Prof Counselor* (in press).

5. Levitt JL, Sansone RA, Cohn LS. *Self-Harm Behavior and Eating Disorders*. New York: Brunner-Routledge (in press).

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Self-Harm: Evaluating Patients with BED and BN

Researchers have tried to define differences and similarities between patients with bulimia nervosa (BN) and those with binge eating disorder (BED). Two recent studies have looked at both groups and their risk of self-harm.

Substance use and self-harm

Researchers using data from the New England Women's Health Project evaluated whether there are differences in the likelihood of concomitant self-harm and substance use between women with BN and women with BED (*Int J Eat Disord* 2002;32;389). The New England Women's Health Project is an ongoing community-based study of the risk factors associated with BED in women.

The researchers evaluated a history of self-harm and substance abuse ("impulsive behavior") among women with BN-purging type and those with BED, to determine if women with BN had a greater likelihood of using such behav-

ior than did women with BED. The final group included 71 Black and 144 White women 18 to 40 years of age. Fifty-three met the criteria for BN-purging type and 162 met the criteria for BED.

All the women had a brief telephone interview, and the diagnosis was confirmed in an in-person structured diagnostic interview. Eating disorders were established based on the Eating Disorders Examination (EDE, 12th ed.) and the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-IV). Rates of substance dependence were also examined, and the presence of abuse and substance dependence were determined by the SCID. The group also assessed the rates of four combinations of harmful behaviors: 1) self-harm plus an alcohol problem; 2) self-harm plus a drug problem; 3) alcohol problem plus a drug problem; and 4) self-harm, an alcohol problem, and a drug problem (multiple impulsive behavior).

Most had a history of abuse

Of the 215 women in the study group, 152, or 70%, had a history of either sexual or physical abuse. There was no significant difference between the women with BED who reported a history of abuse and the women with BN who had a history of abuse. They could not be differentiated based on substance use, abuse, dependence, or self-harm. The only difference was in lifetime abuse of sedatives/hypnotics.

The authors' data suggest that higher rates of self-harm and substance use may not be unique to BN patients but may be related to BED status or another as yet unidentified characteristic that is shared by women with BN and BED.

Differences by race

Overall, rates of substance use were

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Improving Teens' Eating and Exercise Patterns

According to epidemiologists, most adolescents in the U.S. eat far too much fat and far too few fruits and vegetables, and don't get enough daily exercise. The result has been an alarming rise in the number of overweight and obese teens. Recently, researchers from San Diego State University and the University of California, San Diego, designed several interventions to improve dietary and exercise patterns in middle-school students (*Am J Prev Med* 2003;24:209).

In the Middle School Physical Activity and Nutrition (M-SPAN) study, Dr. James F. Sallis and colleagues designed nutrition and physical activity interventions for 24 middle schools (grades 6 to 8) in San Diego (CA) County. Physical education classes were required daily for all students, and efforts were made to increase physical activity in PE classes and physical activity on campus before school, during lunchtime, and after school.

Since middle school cafeterias offer government-reimbursable lunches and breakfasts along with unregulated a la carte foods, the researchers worked with school food service staff and managers to provide more low-fat choices. One strategy was to identify food vendors who could provide tasty, low-fat foods at competitive prices. Since about a third of students brought lunches from home, educational materials were designed to encourage students to bring lower-fat lunches. None of the schools had vending machines.

Steps were taken to organize student health committees of 9 to 12 students, who were supervised by a faculty member. The goal was to plan a health-related activity at least once a month, such as assisting with taste tests, announcing after-school activities and creating posters promoting healthy lunch choices. The researchers also tried to educate parents about nutrition and activity through newsletters, posters, and by providing a brochure at open house and PTA meetings.

And the result of all this effort?

As a result of these interventions,

physical activity at school increased for some students, but had no effect upon total and saturated dietary fat in foods purchased at, or brought to, school. All the efforts to increase physical activity at school did bring a significant change for boys, but not for girls.

It was unclear why the girls did not exercise more. The authors theorized that girls are normally less active than boys at these ages, and the educational efforts apparently made no difference in that pattern. Even though volunteers designed a variety of activities they thought would be attractive to girls, the approach did not work.

Unfortunately, there also was no change in the amount of fat in foods the students ate at school. Even though the authors sought to train school food service staff to modify recipes and to use methods that would reduce the fat in dishes sold in the school cafeteria, the new ideas often weren't implemented. In addition, for some schools food was prepared by a central kitchen system, which made it impossible for individual schools to control ingredients or to change the ways food was prepared.

The single largest barrier was the requirement that food services be financially self-supporting. This policy created financial incentives to serve products students already preferred, especially processed foods advertised heavily in the mass media.

Schools took a financial risk when they tried to introduce new products, especially perishable fruits. Despite the in-school advertising and marketing efforts, the schools could not compete with the large commercial companies that advertised widely and effectively.

According to the authors, priorities for future research include improving school physical activity interventions for girls, working on the barriers that affect school food choices, and planning different approaches to school-health interventions. Financial incentives for schools, which might increase the amount and types of healthier foods available to students, may prove to be a necessary part of the equation.

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lower for Black women than for White women, even though rates of physical/sexual abuse were higher in Black women than White women. Black women in the study were less likely than White women to report using at least one substance, substance problems, or self-harm. This finding underscored the importance of considering demographics in studies of psychopathology and of allowing for the possibility that there may be different pathways to development of psychological disorders or to resistance to the onset of psychological disorders among Black and White women.

Sexual orientation and self-harm

Researchers at the University of Otago School of Medicine, Dunedin, New Zealand, have uncovered a link between increasing degrees of same-sex attraction and self-harm in both men and women. The researchers evaluated a birth cohort of 1,019 New Zealand young adults; 946 participated in the final study.

Recent studies of homosexual populations have consistently shown higher rates of nonfatal suicidal behaviors than are found among heterosexual populations. A key question has been whether gender makes a difference. In this birth cohort of young adults, women as well as men who had experienced same-sex attraction had a higher risk of self-harm behaviors. Both sexes had a higher-than-normal risk of self-harm behaviors, and both men and women also had high odds for suicidal ideation and deliberate self-harm.

The association between sexual orientation and self-harm was slightly different among men and women. The odds ratios for suicidal ideation in the past year were 3.1 for men and 2.9 for women. Odds ratios for a history of self-harm were 5.5 for men and 1.9 for women. Men with any same-sex attraction were at a greater risk of deliberate self-harm than were women with same-sex attraction. This difference could have been due to chance but more likely is explained by differences between the sexes in readiness to admit to same-sex attraction. As a whole, the cohort was more accepting of same-sex relationships between women than between men.

Gender Differences in Eating Disorder Symptoms

Because anorexia nervosa and bulimia nervosa are far more common in women than in men, most studies in the field focus exclusively upon women. Much less is known about patterns of disordered eating among men.

In a study at Oregon Research Institute, Eugene, OR, Peter M. Lewinsohn, PhD and co-workers used a self-report questionnaire (Eating Disorders Symptoms Questionnaire, or EDSQ) and interviews to survey eating behaviors and attitudes among a community sample of 1,056 students from 14 to 18 years of age at nine senior high schools in western Oregon (*Int J Eat Dis* 2002;32:458). Most students were White (89%), with 1.1% Black, 3.0% Hispanic, and 2.6% Asian or American Indian, and 1.8% other.

The authors sought to answer four basic questions: (1) Do women have more eating disorders than do men? (2) Are certain eating disorder symptoms specifically increased in men and others specifically elevated in women? (3) Is the structure of eating disorder symptoms different among men than among women? (4) Are men with comparable levels of disordered eating less likely to seek treatment than women?

Differences on the EDSQ

Significant gender differences were noted on all five EDSQ scales. Women scored higher than men on Drive for Thinness, Bulimia, Body Dissatisfaction, and Inappropriate Compensatory Behaviors. Men had elevated scores on the Excessive Exercise Subscale.

Compared with women, men were significantly more likely to report an overeating episode within the past 3 months (28% vs. 14%, respectively). However, of the 205 students who reported an overeating episode, only 36% were confirmed to have had an objective overeating episode. As for reports of overeating and binge eating in the 3-month period, several interesting gender effects were found. Although comparable rates of overeating were found among men and women, women were more likely than men to report that overeating was asso-

Nutritional Counseling in the Treatment of Eating Disorders

(By Marcia Herrin, RD. New York: Brunner-Routledge; 2003. 284 pp; \$34.95)

Within a brief time, the eating disorders field has been gifted with several fine books by registered dietitians. Now Marcia Herrin, RD, founder and co-director of the Dartmouth Eating Disorders Center (and co-author of *The Parent's Guide to Childhood Eating Disorders: A Nutritional Approach to Solving Eating Disorders*, previously reviewed in *EDR*) has written an excellent book that all nutritionists working with eating disordered patients will want to own and study. The book takes practitioners through the clinical processes necessary to establish and maintain friendly and effective clinical rapport and appropriate professional boundaries.

Early chapters focus on relationship building, and offer nutritionists who may not be very familiar with psychiatric syndromes information about common developmental and psychopathological findings in these patients. Readers are provided with an informed introduction to the premises and conduct of the psychotherapeutic and psychosocial treatments, including counseling, cognitive behavior, dialectical behavior, psychodynamic, and family therapies, they're likely to encounter in the care of eating disorder patients. The

major "educational themes" clinicians need to understand and to discuss to increase motivation and to have impact on gaining trust and adherence are laid out, including issues such as the impact of under-nutrition and purging on bones, brains, menses, and other physiological functions. Common myths held by eating disorder patients are also debunked.

The middle chapters on food planning and establishing, maintaining and revising the food plan, and on the use of food plan templates are, pardon the pun, the bread and butter of the book. The sections on managing weight restoration, binge eating, purging, and exercise are all thoroughly and intelligently written. The large number of appendices include very helpful details on weight calculation (including BMI tables), energy need calculation, details on nutritional components of meals, several excellent patient handouts, and a number of professional tools, including food plan templates, self-monitoring diaries and other assessment tools.

This book will be an exceptionally helpful source of information for those entering the field, and will be a useful and an informed, sensible review for veterans as well, including non-nutritionist clinicians who wish to learn more about these essential aspects of our work.

—J.Y.

ciated with a sense of loss of control, to feel bad about these episodes, and to consider their eating habits as abnormal. The authors hypothesize that female gender role socialization (especially the emphasis on thinness) contributes to the higher risk for women to feel bad about overeating because of its association with weight gain; this might explain why women are at relatively greater risk of developing bulimia nervosa.

Women were significantly more likely than men to report ever wanting to have treatment (16% vs. 2%, respectively) and to report having been treated for an eat-

ing problem in the past (5% vs. 1%, respectively).

A suggestion for one subscale

According to the authors, the significantly lower correlation between Body Dissatisfaction and BMI for men compared with women suggests that this particular subscale may be better suited for measuring weight dissatisfaction among women than among men. Future studies need to add questions pertaining to feeling fat that are less oriented toward female fat patterns, according to Dr. Lewinsohn.

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Videoconferencing: Bringing Family Therapy to Remote Areas

Treating patients with anorexia nervosa usually requires a multifaceted approach that includes psychopharmacology, nutritional, and psychological and medical management programs, among others.

Family therapy is a critical component of treatment, particularly for young patients, but it requires that all family members participate when possible. This can be especially challenging when the family lives in a remote rural area because most comprehensive hospital-based treatment programs for eating disorders are located in large urban centers.

Two physicians at Children's Hospital of Eastern Ontario, Canada, have used modern technology to allow a rural family to have access to their hospital's family therapy program (*Telemedicine Journal and e-Health* 2003; 9:111). Gary S. Goldfield, PhD and Ahmed Boachie, MD, used the hospital's Telehealth program to conduct family therapy with a 16-year-old patient with restricting-type anorexia nervosa and her family. The family lives in a small city in Northern Ontario, far from Ottawa.

An emergency admission

The girl was first admitted to the hospital on an emergency basis, with a body mass index (BMI) of 15.4, blood pressure of 98/60, and hypothermia. Nutritional therapy was begun.

After the patient's condition stabilized, Drs. Goldfield and Boachie arranged a face-to-face family assessment conducted with all family members, to learn more about the family dynamics and to encourage the parents to take charge of their daughter's problems. The family agreed to try the hospital's Telehealth videoconferencing program. The communications system has a feature that allows camera control by family members and by the hospital. The ability to control each other's cameras and to pan around the room allowed the therapist as well as the family to see facial expressions and to read body language from both locations.

All 8 sessions were held with the patient's father and sister in their own community and the patient and her mother and the therapist in the hospital. Sessions were conducted once a week and lasted about an hour.

By the end of the eighth session, the patient felt closer to her family, particularly to her father. At discharge, she had gained significant weight and had a BMI of 19.5. She accepted the fact that she had an eating disorder and was taking responsibility for her recovery. She also was now aware of the many emotional issues that were involved in her illness. As for the family, all members reported being highly satisfied with the arrangement, and had no concerns about confidentiality.

Vitamin K2 Supplementation May Slow Bone Loss in AN

Decreased bone mineral density (BMD) is one of the more serious complications of anorexia nervosa (AN). Weight recovery and resumption of menses may take a prolonged period, during which bone loss can continue. Japanese researchers recently reported that use of vitamin K2 supplements might help reduce BMD loss in AN patients (*Psychiatry Res* 2003; 117:259).

Vitamin K is essential for the carboxylation of osteocalcin, a protein produced by osteoblasts (bone-producing cells) and used as an integral process of bone formation. Vitamin K has also been shown to inhibit the natural cell death of, and maintain the number of, osteoblasts. Although both vitamin D and vitamin K are important for bone growth, vitamin K may be more effective. Women with low vitamin K levels but high vitamin D intakes have been shown to have a greater risk of hip fracture than women with high vitamin K and low vitamin D intakes (*Curr Opin Clin Nutr Metab Care* 2001; 4:483).

A soy product studied for more than a century

Vitamin K1 is commonly found in dark green plants such as lettuce and spinach, while vitamin K2 is found in fermented foods such as blue cheese and natto, a common dish in Japan. Natto is a fermented soy product and contains a significant amount of food-based K2, which seems to be better absorbed than vitamin K1. Circulating K2 levels measured after consumption of natto have been shown to be about 10 times higher than those of vitamin K1 after eating spinach. For more than 100 years, Japanese researchers have studied natto and its effects on osteoporosis. The current RDA of vitamin K is 1 mcg/kg; a dosage of 1-5 mg daily (1000-5000 mcg) would approximate the levels seen in Japanese women who regularly eat natto or fermented foods and dark green vegetables.

The current study: vitamin K2 helped maintain BMD

Dr. T. Iketani and colleagues from Osaka City University Medical School conducted a nonrandomized one-year follow-up study of the effects of menatetrenone (vitamin K2) on bone loss in 10 AN patients who received K2 treatment and 11 patients who did not. Bone mineral density among the K2-treated group decreased significantly less than that of those who did not receive vitamin K2 (-2.8% and -6.9%, respectively). Lumbar bone mineral density was measured with dual energy x-ray absorptiometry.

The authors report that their results suggest that menatetrenone may be beneficial in preventing bone loss in patients with AN. Dr. Neil Binkley and colleagues at the University of Wisconsin Medical School, Madison, are comparing vitamin K1 and K2 and placebo in postmenopausal women with normal bone density. Their hope is that they will find a low-cost, side-effect-free approach to preventing osteoporosis.

(Note: The response to vitamin K probably depends on the baseline status of the patient. Most AN patients have a large intake of vitamin K from vegetables. If their vitamin K status is sufficient, giving them more, through supplements or other foods, should not be expected to have any effect on bone density.)

Bulimia Nervosa and Child Abuse

The connection between sexual abuse during childhood and subsequent development of bulimia nervosa (BN) has been widely studied. However, other types of abuse during childhood—emotional, psychological, or physical, for example—also frequently play a role in the complex picture of bulimia nervosa. For example, with the self-medication hypothesis, binge eating may be an effort to regulate anxiety and depression that stem from the abuse. Alcohol or drug use may also have a self-medicating effect.

A team of researchers from the Netherlands found that a history of psychological or multiple types of abuse was a specific risk factor for dual-diagnosis disorder (cases with psychiatric and substance abuse disorders) and for BN (*Int J Eat Disord* 2002; 32:381).

The study group included 1987 women ranging in age from 18 to 45 years. Of these, 11 (29%) were regarded as “pure” BN cases. Seventy-one percent of this group had an anxiety or a mood disorder, or both.

The other groups included: (1) a psychiatric control group of 476 women with a history of at least one DSM-III-R disorder but no substance use disorder and no eating disorder; (2) a substance use disorder control group of 62 women who met at least one criterion for substance use disorder, and (3) a dual-diagnosis control group consisting of 61 women who had at least one mental disorder and who also met the criteria for at least one substance use disorder.

High levels of abuse among BN patients

Reports of exposure to psychological and multiple abuse were about twice as high in the BN group as in the psychiatric control group (women who had a history of at least one DSM-III-R disorder but no substance abuse and no eating disorder), and similar to that in the dual-diagnosis group. Moreover, 94% of the BN cases who experienced psychological or multiple abuse developed BN with comorbid psychiatric Axis I disorders.

According to the authors, future research should concentrate on the sequence of the onset of depression,

anxiety disorder, eating disorders and substance use disorder. According to the self-medication hypothesis, the expected sequence of the disorders is abuse, followed by anxiety or mood disorders, and then by BN or substance use disorders, in an attempt to cope with the abuse.

Teasing By Family Members Takes a Toll

When family members tease a girl about her appearance, it can affect her body dissatisfaction, depression, and self-esteem. Teasing by family members has also been linked to the development of restrictive eating, according to eating disorders researchers at the University of Minnesota and the University of South Florida.

Helene Keery and colleagues reported at the recent Academy for Eating Disorders meeting in Denver that paternal teasing was a significant predictor of thin-ideal internalization, social comparison, body dissatisfaction, depression, self-esteem and restrictive and bulimic eating behaviors.

Maternal teasing was a significant predictor of restriction. Teasing by at least one brother or sister led to significantly higher levels of internalization, comparison, body dissatisfaction, restriction, bulimic behaviors, and depression and to significantly lower levels of self-esteem than among girls who weren't teased by one or more siblings.

The study included 325 girls 11 to 14 years of age, 85% of whom were Caucasian. Eighteen percent of the girls reported that their fathers teased them about their appearance; 12% reported that their mothers teased them about their looks, and 28% with older brothers were teased about their looks. At least 20% of the girls reported that their younger brothers or younger sisters said or did things to make them feel bad about their appearance.

The researchers noted that the results have implications for treatment and prevention of eating disorders, and can also help parents better understand the harmful impact of negative teasing within the family.

Binge Eating Can Begin Early in Life

Binge eating without purging appears to affect from 20% to 50% of obese adults seeking treatment for obesity. Only a few studies have addressed binge eating disorder (BED) in obese children and teens. In these studies, the incidence of binge eating problems has ranged from 18% to 35% among boys, and 27% to 37% among girls.

Drs. V. Decaluwé and C. Braet, of Ghent University, Ghent, Belgium, recently assessed 196 obese children and teens (10 to 16 years of age) who were seeking inpatient or outpatient weight-loss treatment (*Int J Obesity* 2003; 27:404). To evaluate the children, the investigators used the Child Eating Disorders Examination (ChEDE), which was designed for children. The first sample of 65 boys and 93 girls was recruited from a medical practice and included youngsters seeking inpatient treatment. The second sample included 13 boys and 25 girls seeking outpatient weight loss treatment at the Ghent University Hospital.

BED was rare, but disordered eating was common.

BED was rarely found among the study's participants; in contrast, inappropriate compensatory behaviors were common. Only 2 subjects, both female, met the diagnostic criteria for BED, but 18(9%) had experienced at least one objective binge-eating episode during the previous 3 months. Seven study participants (3 females, 4 males) reported they had tried to control their shape or weight by self-induced vomiting, laxative or diuretic misuse or intense exercising over the previous 3 months.

Binge eating was more common among girls than among boys. Unlike the substantial gender differences noted in anorexia nervosa and bulimia nervosa, gender differences are less common among obese binge eaters.

The authors found that children with binge-eating problems have greater-than-normal concerns about their eating and shape and weight than children without such concerns. This underscores the importance of recognizing binge eating in obese children.

QUESTIONS & ANSWERS

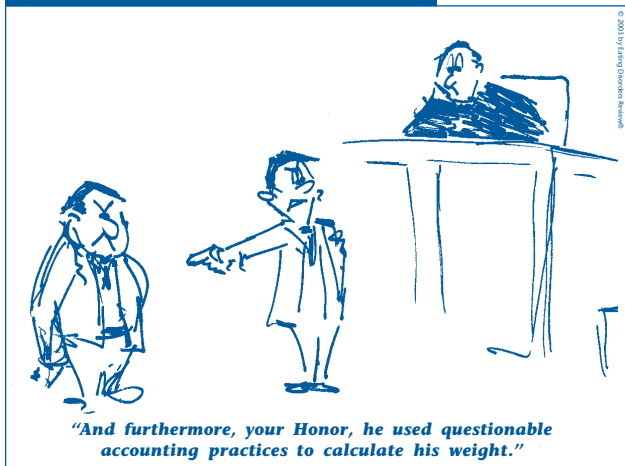
Low Bone Density and Psychiatric Disorders

Q I know that women with anorexia nervosa often have decreased bone density. Does this problem occur with any other psychiatric disorders? (L.L., Akron, Ohio)

A This is an interesting question because several factors thought to contribute to osteopenia are present in psychiatric disorders other than eating disorders. Studies have shown, for example, that normal-weight, normally menstruating premenopausal women with depression and no known eating disorders have lower bone densities in the lumbar, femoral, and other skeletal regions than do age-matched controls. Although increased levels of serum cortisol have been thought to contribute to osteopenia in both anorexia nervosa and depression, in one recent study there were no significant differences in levels of serum cortisol between depressed women and controls. However, depressed women did have slightly lower levels of osteocalcin, a marker of bone growth activity (Yazici KM et al, *Psychiatry Research* 2003;117:271). Of note, smokers also have decreased bone mass and increased risk of fractures, and rates of smoking are known to be elevated in depressed individuals. Thus, it's important to consider that both depression and smoking may contribute to osteopenia in patients with eating disorders as well.

—JY

Nibbles by Hunter



"And furthermore, your Honor, he used questionable accounting practices to calculate his weight."

Years of Life Are Lost Due to Obesity

Although public health officials and organizations have widely publicized the dangers of obesity, the U.S. and other developed countries continue to report ever-increasing incidences of obesity. For example, the National Institutes of Health reports that more than 64% of adults in the U.S. are overweight or obese. Obesity can affect many aspects of general health, and according to results of a recent study, can take the ultimate toll—shortening life span.

Kevin R. Fontaine, PhD, and colleagues at Johns Hopkins University and the University of Alabama recently used epidemiological data, including that from the National Health and Nutritional Epidemiologic Follow-up Study (NHANES I and II) and mortality data to estimate the years of life lost among adults aged 18 to 85 years (*JAMA* 2003;289).

Dr. Fontaine and coworkers found marked race and gender differences in estimated years of life lost. Among Whites, a marked association was found between overweight or obesity and shortened life span. Interestingly, for any degree of overweight, obesity had a stronger impact among young adults than older adults. The maximum years of life lost for White men aged 20 to 30 years with a severe level of obesity (BMI greater than 45) is 13; for severely obese White Women, 20 to 30, this was 8 years.

For men, this could represent a 22% reduction in expected years of life remaining. Among Black men and women older than 60, overweight and moderate obesity were generally not linked to a shorter lifespan; only severe obesity resulted in shortened longevity. Blacks younger than 60 who were severely obese had a maximum loss of years of life of 20, compared to 5 for women.

The optimal BMI, or that associated with the best longevity, was between 23 to 25 for Whites and 23 to 30 for Blacks.

IN THE NEXT ISSUE

Psychosocial Treatment of Binge Eating Disorder: An Update

By Michele D. Levine, PhD and Marsha Marcus, PhD

Binge eating may affect as many as one-third of individuals who seek treatment in university-based weight control clinics. Drs. Levine and Marcus catch us up to date on the latest in treatment approaches, including cognitive behavior therapy and interpersonal psychotherapy.

PLUS

- Highlights of the 2003 International Conference on Eating Disorders
- Alternative Therapies for Anorexia Nervosa
- Premature Termination of Inpatient Treatment of Anorexia Nervosa and much more...

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