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Disordered Eating Patterns Among Adolescents

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Dieting for weight control is a common and widespread practice among adolescents. National studies show that approximately two-thirds of girls and about one quarter of boys are actively attempting to control their weight. The potential negative impact of episodic and continual dieting on psychosocial and health outcomes is of concern to health and education professionals.

Research is showing that the root of disordered eating patterns can in fact, be found earlier than adolescence—in pre-adolescence (Maloney, et al, 1989; Mellin, Irwin & Scully, 1992). Among children, dieting behaviors can compromise a preadolescents' growth, physical development and physiologic functioning as well as increase the risk for the development of eating disorders (Crago, 1996). Although researchers do not agree on many of the specifics of disordered eating, they do agree that this is a problem that is not only not going away but is expanding.

Disordered eating is the umbrella term for eating problems or disturbances related to excessive weight preoccupation or management. Disordered eating is often cognitive in nature initially, and may later become behavioral. The term encompasses a wide spectrum of eating and weight concerns. Mild disordered eating includes one or more of the following: fear of weight gain, obsession with body weight and fatness, distorted body image, purging behaviors with laxatives or diuretics, occasional binge eating, occasional fasting, or excessive exercise for weight control.

Severe disordered eating includes medical diagnoses of an eating disorder: anorexia nervosa, bulimia nervosa and binge eating disorder. Anorexia nervosa encompasses a distorted body image, intense fear of gaining weight and refusal to maintain a normal body weight. Instead anorexic adolescents become underweight by refusing to eat.

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They also may engage in binge eating or purging behaviors. Bulimia nervosa encompasses the regular use of purging which includes self-induced vomiting, laxatives and diuretics. To be diagnosed with the disorder, the bulemic adolescent engages in purging, fasting or excessive exercise regularly—at least twice a week for the previous three

months. Binge eating disorder, on the other hand, is closely related to the other two eating disorders, but applies to adolescents who struggle with recurrent episodes of binge eating. These adolescents do not regularly engage in vomiting or fasting. To be diagnosed with the disorder, the adolescent must engage in binge eating at least two days a week for six months.

To understand the cause of disordered eating is to recognize that eating disorders are sometimes referred to as CULTURE-BOUND SYNDROMES.

Cognitive problems of disordered eating include fear of weight gain; obsessions with body weight, body size and body fatness; and distorted body image. Behavioral problems of disordered eating include continual or episodic dieting; binge eating; purging (i.e. self-induced vomiting, use of laxatives or diuretics); intentional meal skipping or 24 hour fasting to control weight; and excessive exercise practices for weight loss purposes. Since these eating problems usually do not occur in isolation but with several occurring successively or simultaneously, the phrase DISORDERED EATING PATTERN is a useful description.

One example of a developmental sequence of events with cyclical pathways for girls diagnosed with bulimia nervosa is shown below.

Low self-esteem
↓ ↑
Extreme concerns about body shape and weight
↓ ↑
Strict dieting
↓ ↑
Binge eating behaviors
↓ ↑
Self-induced vomiting (purging)

However, although dieting/dietary restraint can be a prelude to anorexia nervosa and bulimia nervosa, most adolescent dieters do not develop these eating disorders (Patton, et al, 1990). Also, disordered eating patterns vary with age. For example, anorexia nervosa has its highest incidence (new cases) at the beginning of adolescence and bulimia nervosa has its highest incidence at the end of it (Attie & Brooks-Gunn, 1989).

What is the cause?

To understand the cause of disordered eating is to recognize that eating disorders are sometimes referred to as CULTURE-BOUND SYNDROMES. They are prevalent in Western cultures, but are rare in non-Westernized countries (Gowen, 1999; Neumark-Sztainer, 1995). What could be happening in the United States and other Western cultures that would predispose the adolescent to a disordered eating pattern? The answer is complex and unclear.

Television represents a major source of influence and information in the lives of children and adolescents (Zukerman & Zuckerman, 1985). The subtle implications of sex role stereotyping in TV commercials influence female self-concept and achievement aspirations (Geis, et al, 1984). Commercials may be instrumental in creating the culture of our society (Collins, 1988). Downs and Harrison (1985) reported that children and adults are exposed to more than 5,260 attractiveness commercial messages per year, 1850 that deal directly with beauty. In one of every 10 commercials, viewers are confronted with a direct message that beauty is important (Downs & Harrison, 1985). Children accept what appears on television as real, with messages about attractiveness consequently going unchallenged. Advertisements that constantly imply adolescents must 'make up and make over' to be acceptable, eventually may undermine the self-confidence of the adolescent struggling for identity. Today's youth have been exposed to an extremely thin standard of attractiveness since they were children.

Cultural pressure for dieting and thinness currently experienced in America may be a

predisposing factor for the development of excessive weight management and consequently disordered eating patterns among adolescents. Weight management is an important concern of adolescents primarily for physical appearance. Many adolescents become preoccupied with it to the point of obsession. Contributing to the problem is that children are taught at a young age to favor thin body shapes. (Cavior & Lombard, 1973). Overweight children are treated differently not only by their peers but also by adults (Lerner & Lerner, 1977). Overemphasis on thinness in adolescence can lead to unhealthy weight loss practices contributing to the development of disordered eating patterns (Herzog & Copeland, 1985). This cultural pressure to be thin is not an insignificant problem for adolescents and there are possible ramifications that are startling and unexpected.

The model that is most widely accepted today showing the development of and the mechanism for disordered eating is based on the following scenario. A girl faces unrealistic expectations for body size and shape and a serious prejudice against fatness, placing her under intense pressure to diet and / or exercise in order to become thin. So she begins to restrict her food intake. But here in lies the rub—her body weight is generally resistant to change because it is defended physiologically around a set point. Deviations from this set point trigger physiological mechanisms that will attempt to return her body weight to its previous weight. But for this girl (as well as for many others), the body's set point is higher than our current cultural ideals and fashion mandate. Thus, her restrictive dieting patterns can eventually lead her to binge eating, which in turn can lead to experimentation with vomiting as a weight management strategy. If this happens, bingeing and vomiting may escalate, since the intentional vomiting allows her to continue to give in to the urge to eat without having to worry about weight gain. So, unknown to her, restrictive dieting is not only an ineffective means of weight control, it can be the pathway to eating disorders.

How prevalent is disordered eating?

The prevalence among adolescents is high. Studies presented here estimate the prevalence of excessive weight management and disordered eating patterns among adolescents. However, measurement of dieting behavior is ambiguous and inconsistent across studies. For example, 'dieting to lose weight' may refer to weight concerns, a desire to lose weight or reflect actual weight loss. Questions about eating a large amount of food to examine binge eating behaviors raise issues of the subjective meaning of a large amount of food. Because of these and other limitations, the reader should be aware that rates vary from one study to another. Keeping these limitations in mind, this author suggests that the reader not focus on rates of disordered eating but consider that multiple studies report results that indicate a problem exists—a problem that is not going away.

Studies show that the desire for thinness can lead to unsound weight loss methods. About one quarter of girls in high school who considered themselves to be the 'right weight' reported that they were nonetheless trying to lose weight. Although use of vomiting or diet pills in the past week was reported by four percent of the girls, a much higher proportion reported ever having used these methods (e.g. fourteen percent had tried vomiting and twenty one percent had used diet pills). Because intentional vomiting and diet pill use may be considered secretive behaviors, the prevalence of these practices may be greatly underestimated (Serdula, et al, 1993).

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Are there differences among groups of adolescents?

Researchers surveyed five hundred children and adolescents in San Francisco in grades 3 through 12. Among girls, dieting was reported by forty-five percent of third graders, eighty percent of fourth and fifth graders and sixty five percent of sixth graders.

GENDER DIFFERENCES. It is important to recognize that there are disordered eating patterns among boys, but a much higher prevalence occurs among girls. Girls were more than twice as likely as boys to consider themselves to be "too fat" (thirty four and fifteen percent**,** respectively). In a study of a nationally representative sample of over eleven thousand teens in grades 9 through 12, forty- four percent of the girls reported that they were currently trying to lose weight, and twenty-six percent were trying to keep from gaining weight. Only twenty-three percent said they were not trying to do anything about their weight. For boys, fifteen percent reported that they were trying to lose weight, fourteen percent were trying to keep from gaining weight**,** twenty-six percent were trying to gain weight and forty four percent were not trying to do anything about their weight (Serdula, et al, 1993). In contrast, the 1988 National Adolescent and School Health Survey of 8th and 10th grade students indicated that sixty-one percent of female students and twenty-eight percent of boys reported "dieting" during the previous year (The National Adolescent and School Health Survey, 1989).

In a Northern California study, six hundred fifty girls in the tenth grade were surveyed in 1987 to assess the prevalence of binge eating and purging behaviors (Killen, et al**,** 1987). At that time, ten percent of these girls met the criteria for bulimia nervosa and an additional ten percent reported purging behaviors for weight control. The girls who met the criteria were heavier than the other girls in the study and reported higher rates of other riskier health behaviors (e.g. smoking and use of marijuana or illegal drugs).

PRE-ADOLESCENCE. The studies on pre-adolescents are particularly startling and thought provoking for parents and educators. Researchers surveyed five hundred children and adolescents in San Francisco in grades 3 through 12. Among girls, dieting was reported by forty-five percent of third graders, eighty percent of fourth and fifth graders and sixty-five percent of sixth graders. Purging was reported by ten percent of nine and ten year olds (Mellin, Irwin & Scully**,** 1992). In another study of children living in Cincinnati Ohio, dieting behaviors and attitudes about eating were examined in over three hundred middle income children in grades 3 through 6. Nearly half the children wanted to be thinner, and thirty-seven percent said they had tried to lose weight. To control weight, forty percent had exercised, twelve percent had restricted energy intake, and one percent had vomited. Dieting behavior**s** and the desire to lose weight increased with age and these behaviors were more prevalent among girls than boys (Maloney, et al, 1989). Among fourth graders in rural Iowa, weight-related behaviors and concerns increased with increasing weight-for-age and body mass index (weight / height^2). Sixty percent of girls and thirty-eight percent of boys expressed a desire to be thinner (Gustafson-Larson & Terry, 1992). These studies suggest that dieting behaviors and disordered eating patterns for many begin in childhood, not adolescence, as originally thought.

CULTURAL AND ETHNIC DIFFERENCES. Findings reported here should be considered preliminary, and reviewed with caution, particularly for Native and Asian Americans, since relatively few studies of eating disturbances among minority groups have been reported. The reader should also keep in mind that there are tremendous differences among adolescents within an ethnic group as well

as differences between ethnic groups. Keeping these caveats in mind, some studies at this time do suggest that eating disturbances may be less frequent among African American girls than their White counterparts. For example, Emmons (1992) found that significantly more White than African American girls used vomiting for weight management (sixteen percent versus three percent). However, one study of African American and White high school students in Cleveland, Ohio did find that significantly more black than white girls used laxatives (eighteen percent versus seven percent) and diuretics (eleven percent versus seven percent). Researchers who suggest that eating disturbances are less frequent among African Americans hypothesize that these differences could be due to the greater weight tolerance of African Americans, who not only appear to experience less body dissatisfaction but also appear to rely less on dieting or dietary restraint.

Compared to White girls, and again keeping the above caveats in mind, eating disturbances appear to be equally common among Hispanics, more frequent among Native Americans and less frequent among Asian Americans (Crago, Shisslak & Estes, 1996). Among female students, thirty-seven percent of both Whites and Hispanics considered themselves to be "too fat" compared with twenty- five percent among African American girls. Risk factors for disordered eating appear to be greater among minority females who are younger, heavier, well-educated and more identified with white, middle-class values indicating that acculturation plays a role in the development of disordered eating patterns.

Acculturation is a process of adaptation to a new society. Cultural, psychological, social, economic and political changes are involved in this adaptation. However, in social and cross-cultural research, the number of generations in the United States and language spoken at home are widely accepted as a surrogate for level of acculturation. In a study of the effects of acculturation on weight and weight concerns, girls in the ninth grade were followed through their high school years. Results indicate that acculturation is positively associated with disordered eating in Hispanic girls (a little over thirteen percent in more acculturated girls versus zero percent in the less acculturated Hispanic girls). Thus, it appears as Hispanic adolescents adapt to the cultural patterns of the United States, disordered eating patterns increase. This study demonstrates that level of acculturation can influence the rates of disordered eating in Hispanic adolescents (Gowen, 1999).

What are consequences of disordered eating patterns?

Children who exhibit characteristics of disordered eating patterns face several health risks. Disordered eating is a risk factor for anorexia and bulimia nervosa, decreased growth velocity, and delayed maturation. However, the biggest public health threat may be the potential link between disordered eating and the development or exacerbation of obesity and its effects on long term health (Mellin, Irwin & Scully, 1992) In spite of all the dieting among adolescents, obesity is increasing, with the prevalence of overweight reaching twenty-five percent among adolescent girls in the United States (Gortmaker, et al, 1987). With all the dieting, how is this possible? As noted earlier, dieting during early adolescence appears to not only produce undesirable patterns of eating behavior, but also disturbs food intake regulatory mechanisms.

Restrictive dieting has been associated with decreased basal energy needs and obesity in adolescents. Dieting may predispose

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the young to binge eating and then consequential weight gain. Therefore if disordered eating is widespread in children, it may be a contributing factor in the observed increase in the prevalence of pediatric obesity in the United States. Because early obesity and disordered eating may persist, disordered eating during childhood may influence the health of adults (Mellin, Irwin & Scully, 1992). Some evidence supporting this position is found in a health behavior survey that was administered to over thirty-six thousand students in grades 7 through 12 in the state of Minnesota (French, et al, 1995). The 'never' dieters reported the most healthful pattern of psychosocial characteristics and health behaviors. The boys and girls who dieted frequently (defined as ten or more times or always) reported the most negative pattern of health behaviors, which may be precursors to negative patterns of health behaviors in adulthood.

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Longitudinal studies which follow subjects over a longer period of time could help to provide clearer understanding of the processes involved in a continuum of disordered eating patterns. They provide more definitive evidence for causation. Longitudinal studies can answer the question: Does dieting lead to the development of eating disorders and obesity? However, because longitudinal studies are more difficult to conduct and are more expensive, very few have been conducted. Marchi and Cohen (1990) tracked eight hundred children longitudinally and found that dieting in early adolescence was strongly associated (r=0.67) with the eventual development of extreme bulimia nervosa symptoms during later adolescence. The ramifications of the high prevalence of characteristics of disordered eating in girls is not clear. Additional longitudinal studies are needed to substantiate these findings and clarify a causal model. More importantly, longitudinal studies are needed to determine whether the presence of characteristics of disordered eating during childhood persist to and through adulthood and if these characteristics predict obesity and eating disorders (Mellin, Irwin & Scully, 1992).

Nevertheless, findings of French and colleagues (1995) discussed above support the idea of a continuum of dieting behaviors, with the use of increasingly severe weight control behaviors associated with greater involvement with other substance use and with a more general pattern of negative social and psychological perceptions. The Minnesota findings (French, et al, 1995) support the idea that dieting is widespread in the general population of adolescent females and dieting behaviors are so prevalent adolescents consider them normal behavior. Sadly, this misconception of "normal" is associated with wide-ranging negative risk factors for health. The results of these surveys suggest that frequent dieting and disordered eating patterns are not isolated behaviors, but occur in the broader social context of adolescent health and risk-taking behaviors.

In summary, adolescents feel tremendous pressure to shape their bodies into the popular and desirable mold of the IDEAL BODY. Increasing percentages of girls and boys are dieting and purging in an attempt to accomplish this. Studying these cultural pressures and their resulting behaviors is in its infancy, and the results from the studies vary. However, despite the limitations of the studies presented, certain conclusions can be drawn.

- First, excessive weight preoccupation and management are common among adolescent girls.
- Weight-related behaviors and concerns exist among boys, but the prevalence is not as high as among girls.

- These weight concerns are first reported in the elementary grades for some youth. This does not mean that they do not begin in preadolescence for most youth; only that few researchers have documented prevalence among this young age group.
- Disordered eating behaviors and weight concerns are reported by children and adolescents at all levels of relative weight with heavier youth reporting more concerns and weight-related behaviors than lighter youth.
- There are harmful consequences resulting from disorder eating. Child and adolescent dieting cannot be viewed as a harmless pursuit.
- The extremes of disordered eating are three eating disorders: anorexia nervosa, bulimia nervosa and binge eating disorder.
- The implementation of educational programs aimed at prevention of excessive and unhealthy dieting may be beneficial although little empirical work in the evaluation of such programs has been reported.

What can be done?

The ultimate intervention to combat fear of obesity and disordered eating among growing children must be at the societal level (Gustafson-Larson & Terry, 1992). Parents, professionals working with children and youth and the media must alter their expectations for children's body sizes and shapes and help children feel that they are loved and respected regardless of physical appearance. Adults should treat overweight youngsters the same as those of normal weight. Professionals can foster positive attitudes toward normal growth and development and help overcome stereotypes associated with obesity. They can teach children and parents about the normal body changes that occur during growth and development and explain the difference between obesity and the temporary weight gain that precedes the adolescent growth spurt for many children (Neumark-Sztainer, 1995).

Research has been published on the primary prevention of disordered eating. The school is the most commonly recommended site for primary prevention efforts (Neumark-Sztainer, 1995). Schools have large captive audiences and can reach most adolescents in the community. Programs are integrated into already existing health education, home economics, or physical education classes. Inclusion of techniques used in substance abuse programs have been found to be useful. These include the use of peer leaders in discussion groups, the use of persuasion techniques to deliver the messages more effectively, and interventions at the family and community levels to help generalize and maintain the effects of these programs. Although support and involvement from all school staff are desirable, a key to success for programs appears to be strong support and high involvement from specific staff at the school site (Neumark-Sztainer, Story & Coller, 1999). This suggests that staff training to encourage involvement can be an important part of school-based programs. Since school staff have ongoing contact with many students, they are in a unique position to help with obesity prevention efforts and to help overweight students feel better about themselves in a thin-oriented society.

Some schools have already introduced school-based programs aimed at the primary prevention of eating disorders (Neumark-

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Researchers concluded that more emphasis needs to be placed on self-esteem and body image issues.

Sztainer, 1995). However, existing programs that have been evaluated with results published in the research literature are scant. One education program, "The Weigh to Eat", was evaluated for changes in knowledge and behavior. The results indicate a moderate effect on the prevention of unhealthy dieting and bingeing behaviors. Researchers concluded that more emphasis needs to be placed on self-esteem and body image issues. They recommended that primary prevention programs in schools be supplemented by more intensive interventions for high-risk groups.

Youth programs, especially 4-H programs can effectively deliver these educational messages as well. Specific topics suggested for inclusion in education programs aimed at primary prevention of eating disorders in children and adolescents include information about:

- normal physiological, social and psychological changes during puberty
- the to-be-expected increase in deposition of fat tissue, and the diversity that occurs among adolescents during puberty
- overall nutrition, meal skipping and other eating habits, and the possible connection between dieting and obesity
- information on anorexia and bulimia nervosa.
- the connection between eating patterns and emotions
- physiological (normal) vs. cognitive (undesirable) control of eating and the consequences of each
- physical activity and its role in weight maintenance
- safe methods of weight control and realistic goals for weight change
- body image issues including role of media
- skills for coping with stress and social pressures

The focus of prevention and intervention should always be on healthful weight management. Behaviors that would be considered healthy and appropriate for weight management are long term in nature and are considered to be lifestyle changes. These include avoidance of sweets as snacks and desserts, an increase of fruit and vegetables for snacks and meals, a decrease in fat-rich foods particularly fried foods and maintenance of regular physical activity. Healthful lifestyle changes should be the cornerstone of all health programs. All adults, but parents especially, can play a huge role in promoting healthy and active lifestyles not only by modeling healthy behaviors but my making it easy for children to eat well. Children may not always choose to do so, but a pattern can eventually be established that leads to a lifetime of healthful eating and living well.

GLOSSARY OF DISORDERED EATING TERMS

DISORDERED EATING: Disordered eating is the umbrella term for eating problems related to excessive weight management. It encompasses both cognitive and behavioral aspects of excessive weight management. Mild disordered eating includes fear of weight gain, obsession with body weight, distorted body image, purging behaviors with laxatives or diuretics, occasional binge eating or occasional fasting among others. Severe disordered eating includes medical diagnoses of an eating disorder: anorexia nervosa, bulimia nervosa or binge eating disorder.

ANOREXIC BEHAVIOR: A term used by the public referring to 'habitual restrictive dieting' or 'restriction of food intake'.

ANOREXIA NERVOSA: A formal eating disorder defined by the American Psychiatric Association. The definition encompasses a distorted body image, intense fear of gaining weight or becoming fat even though underweight, and refusal to maintain weight that is above the lowest weight considered normal for age and height (85 percent of that expected). The definition also includes the absence of at least three consecutive menstrual cycles. Adolescents with anorexia nervosa also may regularly engage in binge eating or purging behaviors.

BINGEING; BINGE EATING BEHAVIORS, BINGE EATING: These three terms refer to the same phenomenon and can be defined in several ways: uncontrolled overeating of large amounts of food; eating beyond satiety; compulsive overeating; overeating for reasons other than hunger. Feelings of guilt are often associated with the binge eating.

BINGE EATING DISORDER: Binge eating disorder is now a diagnosis in the American Psychiatric Association's Diagnostic and Statistical Manual, 4th edition along with anorexia nervosa and bulimia nervosa. The definition applies to people who struggle with recurrent episodes of binge eating but who do not regularly engage in the extreme compensatory weight-control practices that characterize bulimia nervosa such as self-induced vomiting and fasting. The adolescent who meets the criteria for binge eating disorder engages in extreme compensatory behavior on an irregular basis only. Although many who suffer this disorder are overweight, obesity is not part of the definition. This disorder occurs in normal weight people and in almost as many males as females. By definition, binge eating occurs, on average, at least two days a week for six months (Yanovksi, 1993). One teen described it this way, "I think it is binge eating basically when you starve yourself for a long while and then at one point in time you eat a lot and then starve yourself again."

BULIMIA NERVOSA: This eating disorder encompasses the regular use of purging (i.e. self-induced vomiting, laxatives and diuretics), fasting, or excessive exercise. To be medically diagnosed with bulimia nervosa, a person must meet the criteria defined by the American Psychiatric Association. A person must have engaged in inappropriate compensatory behavior (purging, fasting or excessive exercise) regularly—at a minimum of twice a week for the previous three months.

PURGING; PURGING BEHAVIORS: These terms include self-induced intentional vomiting, use of laxatives or diuretics for the purpose of weight management.

BODY IMAGE: This term refers to a person's subjective experience with his or

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her body and the way he organizes this experience. Body image plays a major role in self-concept. The aspect of body image that females most frequently distort is body size.

DIETING; DIETARY RESTRAINT; RESTRAINED EATING: These three terms refer to restriction of food intake to control body weight though cognitive overriding of physiological needs. In lay terms, this means allowing 'thought processes' instead of hunger signals to dictate meal/snack times. The same terms are casually defined by adolescents and adults as 'controlling food intake'—a positive goal to be achieved, not a behavior to avoid.

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