

# Should Adolescents With Eating Disorders Be Allowed To Exercise?

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Clinicians experienced with eating disorders agree that most eating disorder patients have serious issues with exercise. Typically, these take the form of over-exercise, with patients engaging in exercise behavior that is relentlessly driven in an effort to expend as many calories as possible. We see this in dramatic form with the patient who sets her alarm for 3 a.m. in order to perform hundreds of sit-ups or who continues to run for hours each day despite a stress fracture. More subtly, there is the patient who engages in nonstop pacing while on a hospital inpatient unit or incessantly jiggles her leg throughout a therapy session.

The phenomenon of over-exercise in the context of eating disorders was recognized as far back as 1874 when Sir William Gull wrote, "it seemed hardly possible that a body so wasted could undergo exercise so agreeably" (as cited in Bliss, 1982). In general, clinicians have been fearful that encouraging exercise in eating disorders patients will serve to promote the problem. On the other hand, the benefits of healthy exercise are widely acknowledged (Haskell, 1984), and there is some evidence that it may aid the eating disorders recovery process (Calogero & Pedrotty, 2003). This leads us to the question of whether eating disorders treatment programs should include opportunities for patients to exercise. This is a controversial issue (Rosenblum & Forman, 2003; Thien, et. al., 2000), which has not been resolved by professionals in the field. Our sense is that it is not common for treatment programs to allow patients to exercise, and that the question of what is best to do about exercise cannot be answered with a simple yes or no. Instead we need to be asking, what type of exercise and under what circumstances? This article will consider these issues as well as examine the risks and benefits of allowing adolescent eating disordered patients to exercise.

## The Risks of Exercise

Until recently, the presumed risks associated with exercise have precluded the establishment of exercise programming in most eating disorder treatment centers. An obvious risk to any recovering patient is the potential for further weight loss or lack of weight gain when exercise is not carefully monitored (Michielli et al., 1994). In addition, patients with bulimia nervosa are susceptible to hypokalemia, which can lead to muscle cramps, weakness and cardiac rhythm disturbances (Silber & Mayer, 1995). Patients with anorexia nervosa may also experience manifestations of hypokalemia resulting in serious consequences such as inadequate cardiac output and death (Pomeroy & Mitchell, 1992).

Both anorexia nervosa and bulimia nervosa can predispose patients to dehydration, orthostatic blood pressure changes and hypotension, which can lead to serious balance problems during exercise. These problems can be counteracted by educating patients to move slowly from the prone to standing position, as well as by teaching them about the importance of remaining hydrated.

Disordered eating, amenorrhea, and osteoporosis highlight the effects and risks of excessive exercise (Otis & Goldingay, 2000). This phenomenon is known as the "female athlete triad." Female athletes with amenorrhea have decreased bone mineral density (BMD) and increased rates of stress fracture compared to female athletes with their menses. Gordon et al. (2002) studied young women with anorexia and found that "exercise, height and weight are positive predictors of BMD in anorexia nervosa, and duration of disease and amenorrhea are negative predictors." They suggested that cautiously prescribed exercise might be a factor that could augment bone density in adolescent girls.

## The Benefits of Exercise

Well-planned, appropriate exercise for adolescents with eating disorders can have numerous physical and psychological benefits (Fox, 1999). One important factor is the incentive to eat and accordingly gain weight. In the Children's & Women's Health Centre of British Columbia Eating Disorders Program (CWEDP) we offer patients the opportunity to exercise in a structured group format. In general, patients report that being able to exercise helps to increase morale. Thien et al. (2000) found that patients in a supervised exercise program had increased quality of life in a variety of domains compared to a non-exercising control group. In addition, the exercise program participants gained more percent body fat compared to the control group. In another study, patients in a supervised exercise program were found to have gained twice as much weight as those patients who chose not to exercise (Calogero & Pedrotty, 2003). This result may have been due to increased comfort with gaining weight.

Iketani et al. (1999) investigated changes in regional body composition during weight gain. They reported that most of the weight gained by patients recovering from anorexia nervosa was due to fat mass, which was centralized in the trunk and pelvis rather than evenly distributed in the trunk and limbs as body weight returned to a pre-morbid level. This suggests that physical exercise, in particular strength training, may help improve body image and convey a sense of well-being during weight gain (Szabo & Green, 2002) because this kind of activity is likely to create more lean body mass than fat mass.

Within the general population the benefits of physical activity are well known (Gibbons, et al, 1999). Among many other things, exercise is known to buffer the effects of anxiety and depression, and it has been shown to positively affect how girls do in school in terms of memory, observation and problem-solving, as well as

attitude, discipline, behavior and creativity (Keays & Allison, 1995).

CWEDP aims to prepare adolescent patients to safely return to physical activity in their schools and communities. As such, our intent is to enable patients to reap the rewards of regular exercise and by doing so, reconnect to their bodies (Friedman, 2002). As a result, girls in particular begin to feel more secure with their bodies and experience them in a more functional manner, as opposed to being a difficult-to-control decoration.

### What Type of Exercise?

In general, physical fitness is considered to consist of five components: cardiovascular fitness, muscular strength and endurance, flexibility, and body composition (Canadian Fitness Education Services Ltd., 1999). We feel that adolescents with eating disorders need to have psychoeducation about all of these components and direct supervised experience in the first four. We address patients' concerns regarding body composition. The rationale for teaching flexibility is that it promotes awareness of the body and encourages patients to experience bodily sensations in a mindful manner. This helps patients to reestablish a sense of connectedness with their bodies. We feel exercise abuse by definition entails a disconnection with one's self, which makes it impossible for someone to live "with" her body (Calogero & Pedrotty, 2003).

Several articles have appeared on strength training in children and adolescents (e.g. American Academy of Pediatrics, 1990; 2001), and even in the area of eating disorders (Szabo & Green, 2002; Calogero & Pedrotty, 2003). While there are concerns regarding possible growth plate damage (Beumont et al., 1994), it is generally recognized that children and adolescents can participate safely in weight training with proper supervision. At CWEDP, we feel weight training is very important with adolescent girls. Often, it is erroneously perceived as contributing to the development of "big" muscles, a myth that many of our patients subscribe to when they first enter our program.

Progress in strength training is concrete evidence to girls that they are becoming stronger, and we encourage them to focus on the wonderful things that their bodies are capable of doing, rather than concentrating only on their appearance.

What about cardiovascular training? Beumont et al. (1994) have reported that in their program "impact activities such as jogging are totally discouraged..." yet Silber and Mayer (1995) have indicated "...even some sprinting could be recommended." Cardio or aerobic training activities must be addressed during treatment because this is the main form of exercise female patients are likely to abuse. We feel it is very important to bring up issues about aerobic training early in treatment in order to challenge unhealthy attitudes and beliefs about exercise and encourage a graduated approach to undertaking any cardio activity. We have, for example, utilized aspects of a graduated walk/run program for patients who have expressed interest in learning to run a 10 kilometre race. We have also done walking, cycling, and swimming with patients, as well as various sports such as soccer.

### Under What Circumstances?

The circumstances under which specific patients are allowed to participate in supervised fitness activities needs to be carefully considered. Empirically based guidelines are not available at this time. Screening is important, and patients need to be medically stable, although CWEDP has not found it helpful to have rigidly specified criteria in this regard. Clearly, patients who participate in exercise should not be experiencing orthostasis and should not have any metabolic and electrolyte disturbances. All patients need to be assessed for injury history, particularly those related to exercise or sports involvement, and their cognitive attitudes and beliefs about exercise need to be evaluated. CWEDP administers a "History of and Attitudes Towards Exercise Questionnaire" which we use as a basis for an individual clinical interview. We utilize a responsibility "level system" in the intensive treat-

ment service and patients typically join the fitness program within two to three weeks of a planned, voluntary admission. In order to continue with the program patients must be progressing in treatment, including making the required weekly weight gain as part of their broader nutritional rehabilitation and also be hydrating sufficiently. Progress in treatment is assessed through reports from members of the multidisciplinary team and includes evaluation of how everyone is doing in individual, family, and group psychotherapy.

The issue of a supervised and graduated exercise program is critical. Furthermore, from a risk management point of view, the staff involved need to have the skills to design a program that ensures patients will progress safely. This means staffing the program with individuals who have the appropriate certifications and clinical training. Patients should begin an exercise program with activities that encourage them to increasingly "sense" their bodily feelings (Calogero & Pedrotty, 2003), that is, develop greater body awareness through exercises that emphasize balance and mindfulness (Hayes, Follette, & Linehan, 2004). Patients who progress well in this area can then be assessed for their capacity to move on to more demanding cardiovascular and strength training activities (Manley, Standish, & Chercecki, 2004). This phase may include a walk/run program, swimming, and visits to a gym to help patients deal with the presence of mirrors and feelings of competition with others.

### The Challenge for Programs

Beumont et al. (1994) have asked: "Is it realistic to expect our patients to be completely inactive when moderate exercise is generally accepted as necessary for a healthy lifestyle?" We would take this question a step further and ask: Is it ethical treatment to not offer a venue for learning appropriate exercise attitudes and behaviors as part of an overall eating disorders treatment program? Is there any basis to continue to restrict patients' physical activity if they are progressing well in treatment? The development

of exercise initiatives for individuals with eating disorders is a new field, and we stress that caution is a necessity. All programs will need to work on developing their own “bottom lines” and non-negotiables in the area of patient safety. However, we must recognize that the abuse of exercise is unlikely to remit spontaneously in the absence of treatment (Calogero & Pedrotty, 2003), and being driven to exercise has been reported to predict earlier relapse (Strober, Freeman, & Morrell, 1997). Consideration as to the most ethical way to address these issues is a responsibility for all programs in the service of delivering the most efficacious treatments to our young patients and their families.

### Conclusions

In this paper we have reviewed what appear to be the main risks and benefits of having adolescents with eating disorders participate in a structured and graduated exercise program. We feel that the benefits exceed the risks although the latter need to be carefully considered and monitored. In our experience, patient satisfaction with a structured exercise program is high. Such a program can serve to increase motivation to modify and attenuate exercise and eating disordered behaviors, as well as encourage patients who do not typically exercise to take up a program of regular and appropriate physical activity.

### Recommendations

- 1) It is important for any adolescent eating disorder program to consider the issues raised in this paper and this volume.
- 2) Adolescents in treatment for eating disorders should have the opportunity to participate in structured groups that deal explicitly with exercise issues. Such groups should have both a psychoeducational component and a practical, experiential component.
- 3) Patients need to be carefully screened before entry into structured exercise groups and throughout their participation.
- 4) Exercise programs/structured groups must be graduated, so that patients can learn body awareness and mindfulness skills before progressing

- to more challenging fitness activities.
- 5) Exercise programs must attend to the major components of physical fitness and adhere to principles of exercise program design.
- 6) Exercise programs should include staff trained to help patients design a suitable, individualized exercise program during and after discharge from intensive treatment.
- 7) Further research is needed, especially in regard to the cardiac status of patients who participate in graded exercise activities and the psychological aspects of healthy and obligatory exercise. ■

### References

- American Academy of Pediatrics. (1990) Strength training, weight and power lifting, and bodybuilding by children and adolescents. *Pediatrics*, 86, 801-803.
- American Academy of Pediatrics. (2001) Strength training by children and adolescents. *Pediatrics*, 107, 1470-1472.
- Beumont, P.J.V., Arthur, B., Russell, J.D., & Touyz, S.W. (1994) Excessive physical activity in dieting disorder patients: Proposals for a supervised exercise program. *International Journal of Eating Disorders*, 15, 21-36.
- Bliss, E.L. (1982) History of anorexia nervosa. In Gross, M. (Ed.). *Anorexia nervosa*. The Collamore Press, D.C. Heath and Company, Toronto, 5-7.
- Calogero, R. & Pedrotty, K.N. (2003) Targeting exercise abuse in women with eating disorders: A test of an innovative treatment program. *The Renfrew Perspective, Summer*, 12-14.
- Canadian Fitness Education Services Ltd. (1999) *The fitness knowledge classroom program, student resource manual*. Summerland, British Columbia.
- Fox, K. (1999) The influence of physical activity on mental well-being. *Public Health and Nutrition*, 2(3A), 411-418.
- Friedman, S. S. (2002). *Body thieves: Help girls reclaim their natural bodies and become physically active*. Salal Books, Vancouver, B.C.
- Gibbons, S., Higgon, J.W., Gaul, C. & Van Gyn (1999) Listening to female students in high school physical education. *Avante*, 5 (2) 1-20.
- Gordon, C.M., Goodman, E., Emans, S.J., Grace, E., Becker, K.A., Rosen, C.J., Gundberg, C.M., & LeBoff, M.S. (2002) Physiologic regulators of bone turnover in adolescents with anorexia nervosa. *Journal of Adolescent Health*, 30, 92.
- Haskell, W.L. (1984) Overview: Health benefits of exercise. In Matarazzo, J.D., Weiss, S.M., Herd, J.A., Miller, N.E., and Weiss, S.M. (Eds.). *Behavioral health: A handbook of health enhancement and disease prevention*. Chapter 28, 409-423, John Wiley & Sons, N.Y.
- Hayes, S.C., Follette, V.M., & Linehan, M.M. (Eds.). (2004) *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition*. The Guilford Press, N.Y.
- Iketani, T, Kiriike, N., Nagata, T., & Yamagami, S. (1999) Altered body fat distribution after recovery of weight in patients with anorexia nervosa. *International Journal of Eating Disorders*, 26(3), 275-282.
- Keays, J.J. & Allison, K.R. (1995) The effects of regular moderate to vigorous physical activity on student outcomes: A review. *Canadian Journal of Public Health*, 86, 62-65.
- Manley, R.S., Standish, K., & Chernecki, L. (2004) The treatment of exercise abuse in adolescents with eating disorders through psychoeducation and graduated physical fitness programming. Workshop presented at the Academy for Eating Disorders 2004 International Conference on Eating Disorders, “Finding Common Ground: Integrating Clinical Practice & Research”, April 29-May 2, Orlando, Florida.

Michielli, D.W., Dunbar, C.C. & Kalinski, M.I. (1994) Is exercise indicated for the patient diagnosed as anorectic? *Journal of Psychosocial Nursing and Mental Health Services*, 32, 33-39.

Otis, C. & Goldingay, R. (2000) *The athletic woman's survival guide: how to win the battle against eating disorders, amenorrhea and osteoporosis*. Human Kinetics: Champaign, Il.

Pomeroy, C. & Mitchell, J.E. (1992) Medical issues in the eating disorders. In Brownell, K.D., Rodin, J. & Wilmore, J.H. (Eds.). *Eating, body weight and performance in athletes: Disorders in modern society*, Chapter 14, 202-221, Lea & Febiger, Philadelphia.

Rosenblum, J. & Forman, S.F. (2003) Management of anorexia nervosa with exercise and selective serotonergic reuptake inhibitors. *Current Opinion in Pediatrics*, 15, 346-347.

Silber, T.J. & Mayer, N.S. (1995) Eating disorders. In Goldberg, B. (Ed.). *Sports and exercise for children with chronic health conditions*, Chapter 22, 323-334, Human Kinetics.

Strober, M., Freeman, R., & Morrell, W. (1997) The long-term course of severe anorexia nervosa in adolescents: Survival analysis of recovery, relapse, and outcome predictors over 10-15 years in a prospective study. *International Journal of Eating Disorders*, 22, 339-360.

Szabo, C.P. & Green, K. (2002) Hospitalized anorexics and resistance training: Impact on body composition and psychological well being. A preliminary study. *Eating and Weight Disorders*, 7, 293-297.

Thien, V., Thomas, A., Markin, D. & Birmingham, C.L. (2000) Pilot study of a graded exercise program for the treatment of anorexia nervosa. *International Journal of Eating Disorders*, 28, 101-106.

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## Let's Get Physical: Challenging Exercise Abuse in Two Case Studies

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*"Exercise is a dirty word... Every time I hear it, I wash my mouth out with chocolate."*

*- Lucy (Peanuts, Charles Schulz)*

Exercise does not have to be a dirty word, but it can have detrimental effects when misused and abused, particularly for individuals with eating disorders. Exercise abuse has been described as a prominent and prevalent feature in women with eating disorders since the early 1970's (Bruch, 1973; Davis et al., 1997; Solenberger, 2001; Strober, 1997). However, despite the significance of this problem, exercise abuse has not

been systematically addressed in eating disorder treatment programs (Beumont et al., 1994). Part of the difficulty in treating exercise abuse involves a lack of clarity as to how it should be defined. Based on research and clinical observations, we consider exercise abuse to include any of the following patterns of behavior: exercising solely for weight loss; self-punishment; inappropriate regulation or avoidance of affect; acquiring "permission" to eat; identity maintenance; all-or-nothing exercise patterns; in obsessive, rigid patterns; to avoid social interactions; when sick, in pain, injured, physically

fatigued, malnourished/undernourished, and/or dehydrated. The exercise program at The Renfrew Center of Philadelphia (RCP) was created specifically to target and treat this broad conceptualization of exercise abuse in women undergoing residential treatment for eating disorders (Calogero & Pedrotty, 2004).

The women who participate in the program are provided with the opportunity to experience, practice, and process healthy exercise. The women progress through three different levels of the program with the guidance and supervision of Exercise Coordinators. Within a supervised group format that