Clinical eating disorders such as anorexia nervosa, bulimia nervosa, and binge eating disorder as well as subclinical issues including anorexia athletica involve severely unhealthy emotions, attitudes, and behaviors surrounding body weight and caloric intake. Eating disorders are serious psycho-emotional-physical problems that can have life-threatening consequences for both sexes, but the prevalence of these issues is much higher among females. These disorders can create many health problems due to reduced energy availability and micronutrient deficiencies. For highly active female clients in particular, inadequate intake of calcium, iron, and select B vitamins can become serious concerns. Eating disorders have explicit negative effects on a client’s psychological mood state, overall growth and maturation, reproductive functions and bone health. There is also a correlation between eating disorders and an increased risk for mortality (anorexia nervosa range is reported at 1-8% due to cardiac arrest or suicide).

The disorder of focus, bulimia nervosa, is usually characterized by repeat cycles of binge eating (consumption of large quantities of energy-dense foods) followed soon after by purging of the stomach contents (vomiting) before the majority of nutrients can be absorbed. It should be emphasized that this is not a negative behavior engaged by all bulimics. In any case, the sufferer will often eat in secrecy and/or disappear from view shortly after a meal to purge the stomach. Other key compensatory behaviors include prolonged fasting, excessive exercise and use of laxatives or diuretics. The major challenge with a bulimic client is the fact that many maintain a normal body weight; therefore, many can go undetected unless the personal trainer is able to identify physical symptoms and psychological characteristics.

The precise cause of bulimia nervosa and other eating disorders is not conclusively agreed upon, but they are generally believed to progress from an initial desire or requirement to lose weight that develops into a pathological fear of gaining weight. Highly motivated and hard-driven young female clients are at the highest risk.

Research demonstrates the major factors that increase the risk for eating disorders include gender, lifestyle habits, dieting habits, and specific personality traits:

- Gender is the most significant factor, with females demonstrating a 10x greater risk than males. It also appears that bulimia nervosa is more prevalent among female athletes and those who are very active when compared to their sedentary counterparts. In fact, research clearly shows that eating disorders in general are the most common among females who compete in endurance, weight-category and aesthetics-based sports when compared with all other populations.
- Lifestyle and dieting habits certainly have a

<table>
<thead>
<tr>
<th>Physical Symptoms</th>
<th>Psychological Characteristics</th>
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<tbody>
<tr>
<td>• Calluses, sores, or abrasions on fingers</td>
<td>• Binge eating; secretive eating and agitation</td>
</tr>
<tr>
<td>or back of hand used to induce vomiting</td>
<td>when binging is interrupted</td>
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<tr>
<td>• Dental or gum problems</td>
<td>• Disappearing after eating meals</td>
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<tr>
<td>• Edema, complaints of bloating, or both</td>
<td>• Evidence of vomiting unrelated to illness</td>
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<tr>
<td>• Dehydration; electrolyte abnormalities</td>
<td>• Dieting</td>
</tr>
<tr>
<td>• GI problems</td>
<td>• Excessive exercise</td>
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<tr>
<td>• Low weight despite intake of excessive</td>
<td>• Depression</td>
</tr>
<tr>
<td>food</td>
<td>• Self-critical concerning body image and weight</td>
</tr>
<tr>
<td>• Frequent and often extreme weight</td>
<td>• Substance abuse</td>
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<tr>
<td>fluctuations</td>
<td>• Use of laxatives and/or diuretics</td>
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<tr>
<td>• Muscle cramps and/or muscle weakness</td>
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</tr>
<tr>
<td>• Swollen parotid salivary glands</td>
<td></td>
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<tr>
<td>• Menstrual irregularities in females</td>
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</tbody>
</table>
large part to play in overall risk. As just mentioned, competing in a sport where being thin or maintaining a low body weight places any individual (of either gender) at a higher risk. As it relates to dieting, one key study showed that young girls who engaged in a severe dieting plan were an astounding 18x more likely to be diagnosed with a clinical eating disorder in the six-month period afterwards.

- As it relates to personality, most sufferers are reported to have low self-esteem and be excessively self-critical about their body image. They also tend to have significant “control issues” where they feel food/exercise is one of the only controllable factors in their life. Interestingly, bulimia sufferers consistently show high levels of impulsivity and their addictiveness scores actually resemble those of drug addicts. Specific personality traits to look out for in a client who a personal trainer suspects may be bulimic include perfectionism, extreme dedication, a willingness to work excessively hard, and the ability to withstand significant discomfort. These are not indicators in themselves, but rather factors that tie in if the client has an excessive preoccupation with their physique or level of body fat.

Recent research published in the European Eating Disorders Review (2013) gave greater insight into the factors that influence the outcome of bulimia nervosa among sufferers in the general population. In the study, 59 female Finnish twins were screened for lifetime indicators of bulimia nervosa via the use of questionnaires and the Structured Clinical Interview from the Diagnostic and Statistical Manual of Mental Disorders. Out of the women who presented with lifetime bulimia nervosa, the following were more common than among the unaffected women: current major depressive disorder, lifetime major depressive disorder, and heavy drinking. Decreased likelihood of recovery was associated with a history of lifetime major depressive disorder and a high drive for thinness at the time of assessment. The data suggested that heavy drinking and depression present significant recovery-related challenges for women with bulimia nervosa, while major depressive disorder was the only statistically significant prognostic factor.

A personal trainer with all of the insight detailed in this discussion must still remember that they cannot self-diagnose a suspected client with any eating disorder or related psychological issue. Furthermore, they must use great tact during any related inquiry so as to limit the chance of creating additional psychological damage. In all cases, one must stay within their scope of practice. Moreover, trainers should consider the impact they may have on a client’s eating and weight-control behaviors in case one is inadvertently exacerbating the problem. Remember, exercise dependence is commonly related to eating disorders. This all being said, the most effective means of preventing or treating eating disorders among highly active clients is education. Risks, negative effects on health and performance, balanced meal planning, and normal eating patterns should be addressed with the client as preventative measures. Understand that many exercise enthusiasts with bulimia nervosa go unnoticed until they realize how negatively the disorder is affecting their performance and they come forward to gain formal assistance. If the client is highly competitive and cares about performance outcomes for a given sport or related event/race, the trainer should clearly explain the following negative effects associated with their behaviors as motivation for change. Essentially, short-duration, high-intensity and endurance performance are negatively affected.

The trainer should inform the client that eating disorders can promote:

- Diminished glycogen stores (lower work capacity)
- Chronic dehydration and electrolyte imbalances
- Impaired thermoregulation during exercise
- Anemia (extreme fatigue due to low oxygen transport)
- Significant muscle loss (impaired strength and power)
• Psychological issues that impact performance (e.g. depression, anxiety)
• An increased risk for bone fractures later in life
• Reproductive issues

Eating disorders can persist even after appropriate education as they are often complex examples of psychological dysfunction as detailed earlier. When education falls short, clinical intervention involves first addressing any related depression with behavioral therapy and medication, and then treating the bulimia itself with the use of cognitive-behavioral therapy. A dietician should also be used for comprehensive nutrition counseling. Obviously, a personal trainer must effectively work alongside other health professionals to expedite full recovery and the development of new lifestyle, emotional, dietary and physical activity patterns among this client population. (European Eating Disorders Review, 2013)
Understanding Clients with Bulimia Nervosa

CEU Quiz

1. Which of the following describes why an individual with bulimia nervosa is at a relatively high risk for nutrient deficiencies?

   a. Bulimia nervosa sufferers generally refuse to eat food for 3-4 hours after a training session
   b. Bulimia nervosa sufferers generally self-dehydrate due to fear of fluid-induced bloating
   c. Bulimia nervosa sufferers generally engage in repeat cycles of binge eating
   d. Bulimia nervosa sufferers generally purge the contents of the stomach before many nutrients can be absorbed

2. Which of the following is not a common physical symptom of bulimia nervosa?

   a. Chronic dehydration
   b. Dental or gum problems
   c. BMI <17.5
   d. Muscle cramps and weakness

3. Which of the following is a common psychological characteristic of an individual suffering from bulimia nervosa?

   a. Secretive eating habits
   b. Depression
   c. Substance abuse
   d. All of the above

4. Which of the following is considered to be the most significant risk factor for being diagnosed with an eating disorder?

   a. Lifestyle habits
   b. Dieting habits
   c. Personality traits
   d. Gender

5. Which of the following factors which would negatively impact exercise performance is not associated with bulimia nervosa?

   a. Electrolyte imbalance
   b. Diminished phosphocreatine stores
   c. Significant muscle loss
   d. Impaired thermoregulation
6. **True or False?** Those with bulimia nervosa tend to have significant “control issues” where they feel food intake and/or exercise is one of the only controllable factors in their life.

   a. True  
   b. False

7. **True or False?** A personal trainer who identifies at least three major signs of bulimia nervosa in a suspected client can provide the individual a preliminary diagnosis before sending them to a qualified registered dietician and psychologist for further analysis.

   a. True  
   b. False

8. Clinical eating disorders promote a number of health problems due to reduced ________________ and associated micronutrient deficiencies.

   a. Sex hormone concentrations  
   b. Energy availability  
   c. Blood myoglobin content  
   d. None of the above

9. In addition to binge eating and subsequent purging, what other compensatory behaviors do bulimics commonly engage in?

   a. Prolonged fasting  
   b. Excessive exercise  
   c. Laxative use  
   d. All of the above

10. The most effective means by which a personal trainer can help prevent disordered eating habits among at-risk clients is ________________.

    a. Negative reinforcement  
    b. Education  
    c. Proactive psychological assessment  
    d. None of the above