Lecture 20:

Eating Disorders

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Eating Disorders:

- **They refer to a broad spectrum of complex behaviors characterized by severe disturbances of eating behavior, coping strategies, and disordered body image.**

- **Anorexia Nervosa (AN).**
- **Bulimia Nervosa (BN).**
- **Binge Eating Disorder (BED).**
- **Anorexia Athletica (AA).**

Anorexia Nervosa (AN):

- **It is voluntary restriction of food intake leading to extreme weight loss (15% or more of normal body weight).**

- **People with AN have intense fear of weight gain or becoming fat, resulting in spending inappropriately much time at the Gyms and fitness clubs.**

Epidemiology:

- **Lifelong prevalence is about 1%.**
- **AN is seen in females 10 times more than males.**
- **Incidence has increased in recent decades.**

- **AN is more prevalent in cultures where food is plentiful and being thin is associated with attractiveness.**

- **Females involved in ballets and modeling are at greater risk.**

Etiology:

- **The exact cause is unknown, but appears to involve a combination of psychological, biologic and cultural risk factors.**

- **Genetic factors contribute to the risk of developing AN.**

Potential risk factors for developing eating disorders:

- a) Family history of mood disorders.
- b) Sexual or physical abuse.
- c) Diabetes type I.
- d) Cultural factors.

- **e) Imbalance between ghrelin (hunger hormone) and leptin (appetite-controlling hormone).**

- **f) Serotonin imbalance.**

- **g) Nutritional factors:**

  - Dieting.

  - Nutritional deficiencies, such as zinc, iron, and B vitamins.

Clinical Features of AN:

- AN typically begins in mid to late adolescence.
- Rarely begins after age 40.

- **1) Intense fear of weight gain or becoming fat despite being under weight.**
- **2) They have body image problems.**
- **3) Clients with AN rarely complains of fatigue and hunger and often exercise extensively.**

- **4) Tend to become socially withdrawn and increasingly committed to work or study.**
- **5) Lack of interest in sex is a common symptom.**
- **6) Severe shifts in mood.**
- **7) Guilt about eating.**

- **8) Episodes of binging and purging.**
- **9) Prefers to eat in isolation.**
- **10) Wear baggy clothes to disguise thin – looking appearance.**

Physical Findings:

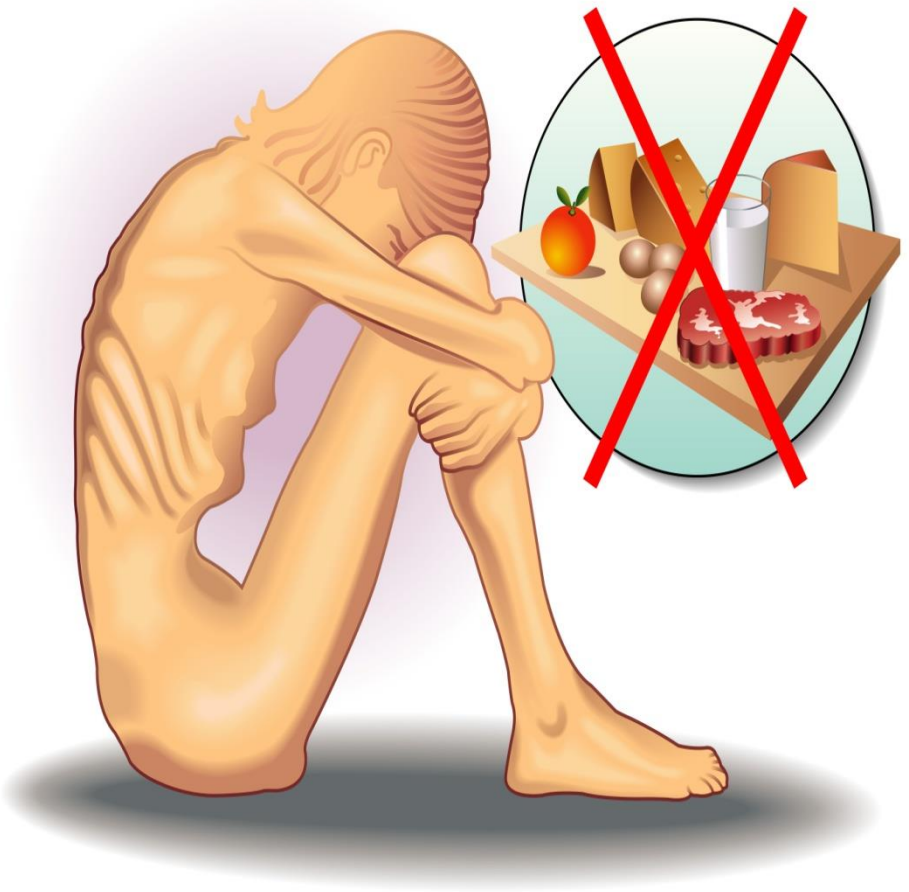
- 1) Cold intolerance.
- 2) Constipation.
- 3) Amenorrhea.
- 4) Mild hypothermia.
- 5) Lanugo hairs: soft, downy hair growth.
- 6) Salivary gland enlargement.
- 7) Peripheral edema.
- 8) Consumption of large amounts of vegetables containing vitamin A can result in yellow tint to the skin (*hypercarotenemia*) notably on the palms.

Laboratory Abnormalities:

- **Anemia.**
- **Leukopenia.**
- **The level of serum proteins is usually normal.**
- **Low blood levels of potassium, sodium, phosphate, and magnesium.**
- **Low level of leptin due to under nutrition and decreased body fat mass.**
- **Cortisol level is high in blood and urine.**
- **Decreased bone density.**
- **Cardiac abnormalities on ECG, such as bradycardia.**

Diagnostic Criteria of AN:

- 1) Refusal to maintain body weight at or above a minimally normal weight for age and height.
- 2) Intense fear of weight gain or becoming fat.



- **3) Distortion of body image (e.g., feeling fat despite being underweight).**

- **4) Amenorrhea.**

Prognosis of AN:

- **The course and outcome of AN are highly variable.**
- **About 25 – 50% of clients eventually recover fully.**
- **The long term mortality of AN is among the highest associated with any psychiatric disorder.**
- **Approximately 5% of patients die per decade of follow up, primarily due to the physical effects of chronic starvation or by suicide.**

Management of AN:

- **Needs a multidisciplinary team of psychiatrist, sports psychologist, and sports nutritionist.**
- **The primary goal is to restore weight to at least 90% of predicted weight.**
- **Management of AN is often associated with frustration for the client, the family and the physician, as the client resists.**
- **They may need to be hospitalized.**

Your Responsibilities as a Sports Nutrition Advisor:

- **Communicate with other members of managing team.**
- **Try to gain your client`s trust by:**

- Not being judgemental.

- Being supportive.

- Reflecting their feelings.

- **Avoid making them scared about complications.**
- **Assure them that weight gain will not be permitted to get out of control.**
- **Educate them about the importance of normalizing nutritional status.**

Nutritional Support in AN:

- **Apply dietary changes gradually.**
- **Ask them to visit you on a regular basis.**
- **Ask them to keep the food journal.**
- **Start supplementation.**

AN Supplementation:

- **Omega – 3 Fatty Acids:** 2 – 3 grams a day.
- **Multivitamins – Multiminerals:** A high potency product.
- **Vitamin B – Complex:** A high potency product.
- **Zinc:** 50 – 100 mg a day.
- **Vitamin K2, subtype MK7:** 45 – 90 mcg a day.
- **Vitamin D:** 3000 – 5000 IU day.
- **Vitamin E:** 400 – 800 IU a day.
- **Iron:** 100 – 300 mg a day.
- **Magnesium:** 400 mg a day.

- **Spirulina:** as a tablet: 2000 – 3000 mg a day, or as a powder: 2 – 3 teaspoons a day. Spirulina is a powerhouse of nutrients, providing different vitamins, minerals, amino acids, and antioxidants.
- **Gentian Root Extract:** as a capsule, 100 – 200 mg about 15 minutes before each meal, or as a tincture, 10 drops about 15 minutes before each meal. Gentian contains the glycosides gentiopicrin and amarogentin that improve appetite and aid digestion.
- **French Maritime Pine Bark Extract:** 100 – 200 mg a day.

Bulimia Nervosa (BN):

- **BN is characterized by recurrent episodes of binge eating of high calorie foods followed by self-induced vomiting or other purging behavior to avoid weight gain.**

Self – induced vomiting after binge eating is a cardinal symptom of bulimia nervosa. *Image: Copyright©Depositphotos.com/Piotr Marcinski*

- **BN is seen in 1 – 3 % of women during late adolescence or early adulthood.**
- **Women are affected 10 times more than men.**
- **It is a multi-factorial disorder.**

Clinical Features:

- **Typically, BN is a woman of normal weight in her mid – twenties who reports binge eating and purging 5 – 10 times a week for 5 – 10 years.**

- **During binge episode: consume large amounts of sweet foods with high fat contents, such as desserts.**

- **During purging episode: self – induced vomiting and laxative abuse.**

Other signs and symptoms of BN include:

- **Depressed mood.**
- **poor body image.**
- **Enlargement of the salivary glands.**
- **Callouses and abrasions on the back of their hands from the teeth (due to use of the hands to induce gag reflex).**
- **Tooth enamel erosion (due to gastric acid in the mouth).**
- **Menstrual irregularities.**

Laboratory Abnormalities:

- **Infrequent.**
- **Electrolyte imbalances: potassium, sodium, and chloride.**
- **Increased amylase enzyme.**
- **Abnormalities in ECG.**

Diagnostic Criteria of BN:

- 1) Recurrent episodes of binge eating.
- 2) Recurrent inappropriate behavior to compensate for the binge eating such as self – induced vomiting.
- 3) The occurrence of both binge eating and purging behavior at least twice a week for 3 months.
- 4) Overconcern with body image and weight.

Prognosis of BN:

- **The prognosis of BN is much more favorable than that of AN.**
- **Mortality rate is low.**
- **Full recovery occurs in about 50% of clients within 10 years.**
- **Few clients progress from BN to AN.**

Binge Eating Disorder (BED):

- **It is a recently described syndrome characterized by recurrent episodes of binge eating, similar to those of bulimia nervosa, without self-induced vomiting or purging.**

Binge Eating.

- **It is more common than anorexia nervosa and bulimia nervosa, affecting 4% of men and women.**

- **They are overweight and have usually normal menstruations.**

Management of BN and BED:

- **Needs a multidisciplinary team of psychiatrist, sports psychologist, and sports nutritionist.**
- **Cognitive Behavioral Therapy (CBT) is more successful in BN than AN.**
- **CBT induces remission in 25 – 50% of cases.**
- **They may need to be hospitalized.**

Nutritional Support in BN and BED:

- **Apply dietary changes gradually.**
- **Ask them to visit you on a regular basis.**
- **Ask them to keep the food journal.**
- **Start supplementation.**

BN Supplementation:

- **Omega – 3 Fatty Acids:** 2 – 3 grams a day.
- **Multivitamins – Multiminerals:** A high potency product.
- **Vitamin B – Complex:** A high potency product.
- **5 – Hydroxtryptophan:** 200 – 300 mg a day. 5 – HTP regulates serotonin level and reduces depression and anxiety.
- **Vitamin B6:** 100 – 300 mg a day.

- **French Maritime Pine Bark Extract:** 100 – 200 mg a day.
- **Grape Seed Extract:** 50 -100 mg a day.
- **Spirulina:** as a tablet: 2000 – 3000 mg a day, or as a powder: 2 – 3 teaspoons a day. Spirulina is a powerhouse of nutrients, providing different vitamins, minerals, amino acids, and antioxidants

	Anorexia Nervosa	Bulimia Nervosa	Binge Eating Disorder
Onset	Mid adolescence	Late adolescence Early adulthood	Late adolescence Early adulthood
Female: male	10:1	10:1	2:1
Lifetime prevalence	1% of women	1 – 3% of women	4% of men and women
Weight	Markedly decreased	Usually normal	Usually obese
Menstruation	Absent	Usually normal	Usually normal
Binge eating	25 – 50%	Required for diagnosis	Required for diagnosis
Mortality	5% per decade	Low	Low

Anorexia Athletica (AA):

- **It is a subclinical eating behaviour in athletes who do not meet the criteria for a true eating disorder.**
- **It is also called "*Hypergymnasia*".**
- **Athletes with AA demonstrate at least one unhealthy method of controlling weight, such as fasting, vomiting, or using diet pills, laxatives and water pills.**
- **Disordered eating behaviors are common among athletes up to 50%.**

- **Most athletes suffer from a sort of disordered eating behaviours during the competitive season. Those behaviours disappear when the season ends.**

- **Preoccupation with body weight to achieve optimum physiologic function and competitive performance is not an indicator of true eating disorder.**

- **For a small number of athletes, the season never ends and they may develop a full-blown eating disorder.**

- **There may be a correlation between Anorexia Athletica and FAT (Female Athlete Triad).**

Homework:

- **1) List diagnostic criteria for anorexia nervosa and bulimia nervosa.**

- **2) Describe the long term complications of eating disorders .**