Anorexia in a Runner

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Objectives

• Learn how to recognize and diagnose anorexia nervosa in patients
• Learn which studies to obtain at initial diagnosis and during treatment
• Develop a comprehensive treatment plan
• Decide which patients can and cannot participate in sports activities/events
13 yo female presents with fatigue

- Started 1 month ago
- Associated with changes in sleep and appetite
- Previously was running 3-4 miles 5 days a week, but stopped due to fatigue
- Decreased appetite due to increased sleep
- Poor sleep, decreased appetite, feelings of guilt due to mood swings, low energy, agitation. Denies SI/HI

Physical Exam

- T97.4, P76, BP100/60, RR16, H5’3”, W89.2lb
- Gen: NAD, thin
- HEENT: NCAT, EOMI, TM intact B, MMM
- Neck: No LAD, No thyromegaly
- Resp: CTAB
- CV: RRR, No murmurs
- Skin: No lesions or rashes
Change in Eating Habits

- Friend recently told her parents they were concerned about her eating habits
- Restricts what she eats, avoids certain foods
- Afraid of gaining weight
- If she eats something ‘bad’ she feels like she needs to run to burn off the calories, or she will make herself vomit (about 1x/month)
- Used to be bullied about her weight
Initial Plan

- CMP, CBC and TSH
- Follow up psychotherapy session for concern for depression and eating disorder
- Provide parents with information about ED
- Local and national resources

Diagnosis

- **Anorexia Nervosa**
  - Restriction of food intake with significantly low body weight
  - Fear of gaining weight
  - Disturbance in the way one’s body weight or shape is experienced
- Type: **Restrictive**
- Severity: **Severe/Extreme**
Anorexia in a Runner
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Did you know...?

Prevalence of Eating Disorders

30 Million People

- 33% Women
- 67% Men
Did you know...?

Eating Disorder Prevalence

(Hudson et al., 2007; Wade et al., 2011).

How do ED affect families?

• Parents report feelings of confusion, concern and helplessness
• Question how to handle behaviors
• Pt has had increase in yelling/screaming, isolating herself, threatening not to eat
• Pt reports feelings of guilt
• Track season is starting soon, and she would like to participate
Female Athletic Triad

Low Energy Availability

Relative Energy Deficiency in Sports

Menstrual Dysfunction

Low Bone Mineral Density

Low Energy Availability (EA)
Relative Energy Deficiency in Sports RED-S

• With or without disordered eating
• EA: The amount of dietary energy remaining after exercise training for all other physiological functions each day [28]

Pathology of Low EA

- Metabolic rate
- Menstrual function
- Bone health
- Immunity
- Protein synthesis
- Cardiovascular health
- Psychological health


Screening

Pre-participation Sports Physical
- Do you want to weigh more or less than you do now?
- Do you lose weight regularly to meet weight requirements for your sport?
- Have you begun menstruation?
- If yes, are you experiencing any problems (irregularity, pain, etc)?

Kansas State High School Activities Association: Pre-Participation Physical Examination
Screening

- Are you on a special diet or do you avoid certain types of foods or food groups?
- Have you ever had an eating disorder?
- Have you ever had a stress fracture?
- Have you ever been told you have low bone density?


Treatment: Teamwork!

- Physician
- Sports Dietician
- Mental Health Professional
- Patient
- Coach
- Athletic trainer
- Family

Goals of Treatment

• Restore or normalize body weight
• Modification of unhealthy attitudes, behaviors, and emotions related to food and body image

Forming a Treatment Plan

• Assessment of baseline energy needs
• Food diary/Meal plans
• Periodic monitoring of body weight
• Cognitive behavioral therapy
• Make a contract
Academy of Eating Disorders
Medical Management Protocol

• Orthostatic heart rate and blood pressure
• EKG
• CBC, CMP, Mg, TSH
• Gonadotropins and sex steroids
• Assess psychiatric risk
• Bone mineral density study

Treatment Contract

• Include specific recommendations from each team member
• Frequency of visits
• Consequences of not meeting expectations

Participation in Sports

Risk stratification

- Low risk – Full clearance
- Moderate risk – Provisional/limited clearance
- High risk – restrict training and competition

Risk stratification table

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Low Risk = 0 points</th>
<th>Moderate Risk = 1</th>
<th>High Risk = 2 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low EA with or without DE/ED</td>
<td>No dietary restriction</td>
<td>Some dietary restriction; current/past h/o DE</td>
<td>Meets DSM V criteria for ED</td>
</tr>
<tr>
<td>Low BMI</td>
<td>BMI ≥ 18.5 or ≥90% EW or weight stable</td>
<td>BMI 17.5 &lt; 18.5 or &lt;90% EW or ≥5 to &lt;10% wt loss/month</td>
<td>BMI ≤ 17.5 or &lt;85% EW or ≥10% wt loss/month</td>
</tr>
<tr>
<td>Delayed Menarche</td>
<td>Menarche &lt; 15 years</td>
<td>Menarche 15 to &lt;16</td>
<td>Menarche ≥ 16 yrs</td>
</tr>
<tr>
<td>Oligomenorrhea and/or Amenorrhea</td>
<td>&gt;9 menses in 12 months</td>
<td>6-9 menses in 12 months</td>
<td>&lt;6 menses in 12 months</td>
</tr>
<tr>
<td>Low BMD</td>
<td>Z-score ≥ -1.0</td>
<td>Z-score -1.0 &lt; -2.0</td>
<td>Z-score ≤ -2.0</td>
</tr>
<tr>
<td>Stress Reaction/Fracture</td>
<td>None</td>
<td>1</td>
<td>≥2; ≥1 high risk or trabecular bone</td>
</tr>
</tbody>
</table>

Clearance to Play

<table>
<thead>
<tr>
<th>Cumulative Risk Score</th>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Clearance</td>
<td>0-1 point</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>Provisional/ Limited Clearance</td>
<td>2-5 points</td>
<td>□ Provisional Clearance</td>
<td>□ Limited Clearance</td>
</tr>
<tr>
<td>Restricted from Training and Competition</td>
<td>≥ 6 points</td>
<td></td>
<td>□ Restricted from Training/Competition - Provisional □ Disqualified</td>
</tr>
</tbody>
</table>


Treatment Expectations

Our Patient: Goals of Treatment

- Cannot lose weight
- Must gain 2 pounds per month
- Involve coach
- No exercise outside of track
- Drink sport drinks pre/post work out
- Blind weigh-ins during appointments

Results

- Patient attended psychotherapy sessions on a weekly basis
- BMI percentile went from 3% to almost 15%
- Restricted eating and bingeing had improved
- Anxiety about eating and excessive exercising had improved
Concerns

- Poor coping mechanisms – tends to internalize
- Easily influenced by others’ thoughts of her
- Connects self worth to body image
- Feels she is better and no longer desires to attend psychotherapy
- Poor follow up
References

- Academy for Eating Disorders: Critical Points for Early Recognition and Medical Risk Management in the Care of Patients with Eating Disorders. *AED Report* 2012.
- Hudson et al., 2007
- Wade et al., 2011