

INSTRUCTION FOR LEADER

Complete outlined tasks in preparation for training. During training, you will read the script directly and complete an AAR. The script includes optional check on learning activities to verify Soldiers understand the lesson.

PREPARATION

1. Print and review this leader guide to ensure subject familiarity.
2. Print enough handouts for number of Soldiers in training.

OBJECTIVE

1. Soldiers will be able to describe low energy availability and understand its impact on Soldier readiness and performance. Soldier will be able to identify nutrition patterns associated with low energy and how to combat low energy availability.

SCRIPT TO BE READ DIRECTLY**1. Introduction to Low Energy Availability and Performance Impact:**

- a. A calorie is a form of energy from eating food. Calories are used as energy to fuel vital organ systems that include the brain, lungs, and heart. Our bodies need additional energy to perform exercise, job-related tasks, and activities of daily living. Energy availability is the energy left over after physical work to fuel the body's essential functions. Soldiers need optimal energy from calories in food to fuel physical exercise and job duties. When not enough energy is eaten, there is not enough energy available to sustain the body. This results in low energy availability, which leads to negative health and performance consequences. In low energy availability, the body will take away from other organ systems to function.
- b. Low energy availability is associated with complications in reproductive hormones that may include decreased testosterone in men and lowered estrogen in women. Additional complications include poor bone health and immune function, impaired cognitive performance, and decreased strength and endurance. Those in low energy availability are at a high risk for injuries, which affects Soldier readiness.

2. Common Eating Patterns Associated with Low Energy Availability:

- a. Low energy availability may be intentional or unintentional. Intentional low energy availability occurs with severe calorie restriction. An individual may severely restrict calories with the hope to become leaner and improve performance or physical appearance. Unintentional low energy availability occurs when one fails to meet their calorie intake to match higher training demands.
- b. Restricting calorie intake may look like skipping meals or decreasing portion sizes at mealtimes. Consuming one large meal, usually later in the day, or excessive nighttime snacking is a sign of failing to meet energy needs throughout the day. Other disordered eating patterns associated with low energy availability includes

obsessive thoughts around food, constant food cravings, dissatisfaction with one's body image, constant feelings of fatigue, and alterations in mood.

3. Nutrition strategies to Prevent Low Energy Availability:

- a. Eating 3 balanced meals and 2-3 functional snacks per day is important to execute to eat enough calories. Balanced eating is done by following the athlete plate model during mealtimes. Functional snacks involve pairing 2 to 3 of the macronutrients (carbohydrates, proteins, fats) to aid in meeting calorie needs. Other strategies include listening to hunger and fullness cues. Eat when feeling hungry, or every 2-4 hours. Stop eating when feeling full, but not uncomfortably full, to allow the body to digest. It is important to slow down when eating meals and avoid distractions, which may prevent hunger and fullness communication.
- b. All foods serve as a strategy to achieve energy balance and nourishment. Fun foods, commonly labeled as "bad" or "unhealthy foods," provide energy to meet high calorie needs. Functional foods, commonly labeled as "healthy" or "clean foods" contain the macronutrients to help the body repair, refuel and provide important vitamins and minerals. Find the balance between functional and fun foods where functional foods are prioritized to meet nutritional fueling needs.

Figure 1. Low Energy Availability

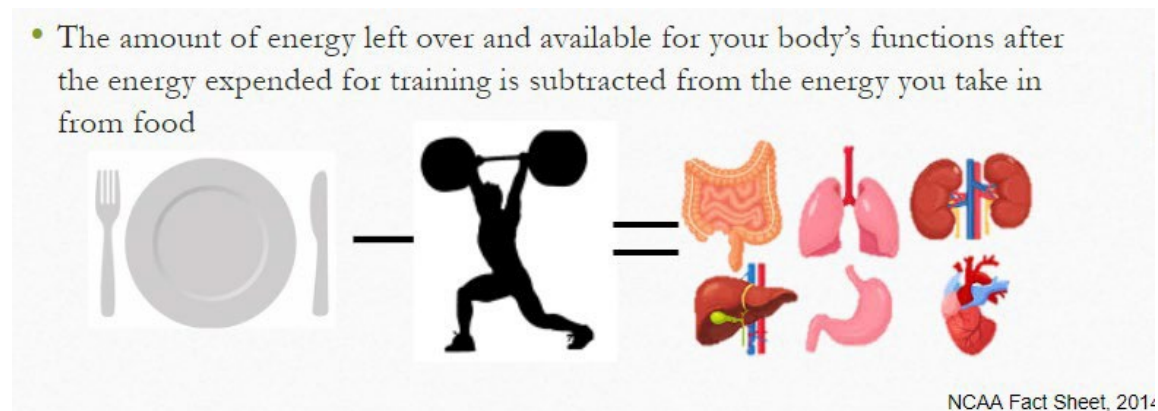


Figure 2. Performance Effects of Low Energy Availability



OPTIONAL CHECK ON LEARNING

1. **Group Discussion:** Describe low energy availability and eating patterns that are associated with low energy availability.
2. **Group Discussion:** Discuss your current fueling habits and describe nutrition strategies to avoid low energy availability.

AAR

1. What were the pros and cons of this training?
2. What, if any barriers are there to preventing low energy availability? How can these barriers be overcome?

SUPPORTING RESOURCES

1. Warfighter Nutrition Guide Chapter 1, 2, and 6. [Warfighter Nutrition Guide | HPRC \(hprc-online.org\)](https://www.hprc-online.org/Warfighter-Nutrition-Guide)
2. FM 7-22 Chapter 8, 8-4 through 8-16, 8-37 through 8-45
3. Fort Drum Nutrition Foundation Day Performance Plates Module
3. H2F Nutrition Team and Dietitians at Guthrie