



## USA Climbing Protocol for Health Screening and Underweight Athletes 2023

### A. Purpose:

The purpose of this protocol is to identify and support any USA Climbing National Team or National Development Team member that is underweight and may be at risk for Relative Energy Deficiency in Sport, Disordered Eating or Eating Disorder.

### B. Definitions:

- 1. Relative Energy Deficiency in Sport (RED-S):** RED-S describes a syndrome of poor health and declining athletic performance that can occur when an athlete does not get enough nutritional fuel to support the energy demands of daily life and training. RED-S can cause impairments of reproductive health, bone health, immunity, metabolism, cardiovascular health, and psychological health. Performance effects of RED-S include decreased muscle strength, decreased endurance, decreased coordination, decreased concentration, increased risk of injury and impaired judgement. Additional symptoms of RED-S may include fatigue, weight loss, menstrual dysfunction, frequent illnesses, hair loss, trouble staying warm, irritability and depression.
- 2. Disordered Eating (DE):** DE includes a wide range of irregular behaviors such as restrictive dieting, fasting, bingeing, skipping meals, inflexible eating patterns, compulsive exercise and the occasional use of medications or supplements to lose weight. DE behaviors stem from a distorted relationship with food, eating, exercise and body image. DE sits somewhere on the spectrum between healthy "normal" eating behavior and a clinically diagnosable eating disorder.
- 3. Eating Disorder (ED):** Serious mental and physical illness that involves complex and damaging relationships with food, eating, exercise and body image. EDs are critical, potentially life-threatening conditions that affect physical, psychological, and social function. Persons with untreated EDs can experience grave and long-lasting negative effects on nearly every organ system in the body. Common types of EDs include Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder and Avoidant Restrictive Food Intake Disorder.
- 4. Body Mass Index (BMI), "Underweight" and "Thinness":** BMI is a simple index of weight-to-height that is commonly used to classify "underweight", "overweight" and "obesity". It is defined as the weight in kilograms divided by height in meters squared ( $\text{kg}/\text{m}^2$ ). The World Health Organization (WHO) and the United States Centers for Disease Control and Prevention (CDC) define "underweight" as a BMI equal to or below 18.5 for adult men and adult women. For adolescents under age 20, the CDC defines "underweight" as a BMI equal to or below the 5% for age and gender and the WHO defines "thinness" as a BMI more than 2 standard deviations below the mean for age and gender. BMI screening is an imperfect tool, but it is a straightforward and inexpensive way to identify underweight athletes, prompt further assessments and allow for intervention as necessary.

### C. Procedures:

- 1. PPE-** Every USA Climbing National Team and USA Climbing National Development Team member shall undergo a required, standardized, and confidential Preparticipation Physical Exam (PPE) with the USA Climbing Team physician in Salt Lake City, UT, or, if unable to be examined in Salt Lake

City, UT, with the athlete's local primary care physician (results must be submitted to the USA Climbing Team physician for further review). The required PPE includes a complete medical and mental health history, a comprehensive physical exam (including height, weight, body mass index, vital signs, and musculoskeletal exam), and the International Olympic Committee Sports Mental Health Assessment Tool (which includes RED-S/DE/ED screening questions). **All necessary PPE documents and instructions for confidential submission of these documents to the USA Climbing Team physician will be provided to the athlete by USA Climbing. A PPE will be required annually, before the start of each IFSC competition season. No athlete will be allowed to participate in an IFSC event until a complete PPE has been submitted and reviewed by the USA Climbing Team physician.**

2. In addition to the required PPE, the USA Climbing Team physician or USA Climbing High Performance staff may, at any point, request or require follow-up medical or mental health assessment with the USA Climbing Team physician or with another appropriate medical or mental health care provider.
3. After review of the PPE and any further requested or required medical or mental health evaluations, the USA Climbing Team physician, in consultation with a physician representative from the USA Climbing Medical Committee, the USA Climbing Medical Manager and the USA Climbing VP of Sport, may choose to withhold an athlete from training or competition until the athlete is deemed medically and mentally fit for participation.
4. **BMI Evaluation:** To ensure the continued health and safety of USA Climbing Team and National Development Team members, height, weight, and BMI measurements will be obtained during the required PPE.
  - a. Weight and Height measurements must be obtained in light-weight clothing (such as a tank top and shorts similar to the team competition uniform or a hospital gown), with empty pockets and no shoes.
  - b. In March of 2023, the IFSC published the [IFSC Athlete Health Screening Policy and Procedures](#). This policy states that the IFSC will use BMI measurements as a “marker” for RED-S and as part of a multifaceted evaluation to determine competition eligibility for underweight athletes. The IFSC has set an “observation zone” and a “critical zone” for BMI numbers based on age and gender. **Any athlete that has a BMI below the “critical zone” number will be required to undergo further medical and mental health assessments in order to compete in an IFSC event. These assessments must be submitted to the IFSC prior to the start of the IFSC competition season or, at a minimum, 10 days prior to the first day of the athlete’s first IFSC competition of the season. If this documentation is not received by the IFSC in a timely manner, the athlete will be withdrawn from competition until the documentation is submitted and reviewed.**

IFSC BMI Threshold Numbers:

Females: 18 years and older- observation 18 to 18.5, critical below 18

15-17 years- observation 17.5 to 18, critical below 17.5

Males: 18 years and older- observation 18.5 to 19, critical below 18.5

15-17 years- observation 18.0 to 18.5, critical below 18

**The IFSC will conduct BMI screening of athletes at “selected stages of selected disciplines at selected IFSC events during the competition season”. Screening will take place in isolation, in a discrete location.**

- c. **USA Climbing has opted to use the higher end of the IFSC’s BMI observation range to trigger further assessments as defined below in section C.6. This decision was made primarily to ensure the health and safety of USA Climbing National Team and National Development Team members, and secondarily to ensure that no USA Climbing National Team or National Development Team member is sanctioned or disqualified from competition for a “critical” BMI by the IFSC during the 2023 season.**

**USA Climbing BMI Threshold Numbers:**

**Females: 18 years and older- BMI equal to or below 18.5**

**15-17 years- BMI equal to or below 18**

**Males: 18 years and older- BMI equal to below 19**

**15-17 years- BMI equal to or below 18.5**

- 5. **Athletes of High Concern:** Any USA Climbing National Team or USA Climbing National Development Team member, at ANY BMI, may be required to undergo further assessment for RED-S, DE, or ED if significant concerns for these disorders are uncovered during the PPE or the athlete exhibits ongoing and concerning behaviors (such as rapid weight change, chronically skipping meals, purging, fainting) at any time during the season.
- 6. **Required Evaluations for Athletes Found to be Underweight or Athletes of High Concern:**
  - a. Laboratory Assessments
    - Comprehensive Metabolic Panel (CMP): to include sodium, potassium, chloride, carbon dioxide, albumin, bilirubin total, alkaline phosphatase, aspartate aminotransferase (AST), alanine aminotransferase (ALT), protein total, calcium, glucose, blood urea nitrogen (BUN) and creatinine
    - Magnesium
    - Phosphorus
    - Complete Blood Count with Differential (CBC with diff)
    - Ferritin
    - Thyroid Stimulating Hormone (TSH)
    - Free Thyroxine (Free T4)
    - Vitamin D, 25-Hydroxy
    - Vitamin B-12
    - Lipase
    - Gamma-glutamyl Transpeptidase (GGT)
    - Cholesterol Panel: to include total cholesterol, low density lipoprotein (LDL), high density lipoprotein (HDL) and triglycerides
  - b. Electrocardiogram (ECG)
  - c. Orthostatic Vital Signs (blood pressure and heart rate obtained supine and standing)
  - d. Dual-Energy X-Ray Absorptiometry (DEXA Scan): to evaluate bone mineral density, body fat and muscle mass
  - f. BEDA-Q Eating Disorder and/or the LEAM-Q or LEAF-Q RED-S Screening Questionnaires
  - f. Screening consultation with a mental health professional with expertise in RED-S/ DE/ED
  - g. Screening consultation with a dietitian with expertise in RED-S/DE/ED

**D. Additional Testing or Referral to Specialist:**

- 1. Any abnormalities uncovered during the PPE or the additional RED-S/DE/ED screening may require further testing and evaluation. If appropriate, this further investigation may be handled by the USA Climbing Team physician or by the athlete’s primary care physician. However, if necessary,

the USA Climbing Team physician or an athlete's primary care physician may refer the athlete to a medical or mental health care specialist for a higher level of care and/or ongoing care.

2. Examples of conditions that may require further evaluation and/or referral include:
  - a. Anemia and/or Iron Deficiency (further laboratory evaluation)
  - b. Thyroid Dysfunction (further laboratory evaluation, endocrinology referral)
  - c. Amenorrhea (further laboratory evaluation, gynecology and/or endocrinology referral)
  - d. Nutritional Deficiencies (further laboratory evaluation, ongoing treatment plan with dietician)
  - e. Depression or Anxiety (ongoing treatment plan with appropriate mental health professional)
  - f. RED-S/DE/ED Diagnosis or High-Risk Score on RED-S/DE/ED Screening Questionnaires (ongoing treatment plan with dietitian, mental health professional and a medical doctor experienced in the care of athletes diagnosed with RED-S/DE/ED)

**E. Determination of Athlete Eligibility for Training and Competition:** Any athlete found to be "underweight" AND at risk for or diagnosed with RED-S/DE/ED based on this extensive screening protocol will be evaluated for eligibility on a case-by-case basis by the USA Climbing Team physician, a physician representative from the USA Climbing Medical Committee, the USA Climbing Medical Manager, and the USA Climbing VP of Sport.

1. Any athlete with a condition that is deemed by this committee to be life-threatening or significantly dangerous to the physical or mental health of the athlete will be immediately suspended from training and competition.
2. Examples of conditions that may result in suspension from training and competition
  - a. Hemodynamic Instability:
    - bradycardia (heart rate less than 50 bpm while awake or 45 bpm while asleep)
    - hypothermia (body temperature less than 96 degrees F)
    - hypotension (systolic blood pressure less than 90 mm Hg)
    - orthostatic hypotension (drop in systolic BP more than 20 mm Hg, drop in diastolic BP more than 10 mm Hg, heart rate change more than 20 bpm, dizziness/fainting)
    - history of repeated fainting or loss of consciousness
  - b. ECG abnormalities including severe bradycardia and prolonged QTc syndrome
  - c. Electrolyte abnormalities (decreased Na, decreased K, decreased phosphorus, evidence of metabolic acidosis or alkalosis)
  - d. Evidence of low bone mineral density via DEXA scan (Z-score more than 2 standard deviations below age/gender matched controls)
  - e. Evidence of low bone mineral density via persistent or recurrent bone stress injuries
  - f. Laboratory evidence of solid organ (kidney, liver, pancreas) injury due to malnutrition
  - g. Severe depression, anxiety and/or suicidal ideation or attempt
  - h. Rapid/ongoing weight loss or failure to restore weight despite adequate intervention
  - i. Persistent non-compliance with treatment plan despite adequate intervention
  - j. Ongoing RED-S/DE/ED behavior that profoundly and negatively affects Teammates

**F. Schedule for Reevaluation/ Return to Training and Competition for Athletes with RED-S/DE/ED or Athletes of High Concern:**

1. The USA Climbing Team physician will determine the schedule for reevaluation of abnormal PPE findings, laboratory tests, DEXA scan and ECG. The USA Climbing Team physician may consult with other involved medical and mental health care providers to determine the appropriate timing for reevaluation.
2. Input from the involved dietitian and mental health care professional will be heavily considered when making return to training/competition decisions.

3. Final return to training and competition decisions will be made by the USA Climbing Team physician in consultation with a physician member of the USA Climbing Medical Committee, the USA Climbing Medical Manager, and USA Climbing's VP of Sport.

**G. Responsibilities of Athletes with Low BMI/RED-S/DE/ED or Athletes of High Concern:**

1. The athlete must adhere to the treatment plan agreed upon by the USA Climbing Team physician, the involved dietitian, and the involved mental health care professional.
2. The athlete must attend regularly scheduled visits with members of the treatment team as deemed necessary by the USA Climbing Team physician, the involved dietitian, and the involved mental health care professional.
3. The athlete must modify his or her training and competition schedule as recommended by the USA Climbing Team physician, the involved dietitian, and the involved mental health care professional.
4. The athlete must sign a contract agreeing to the above measures.

**H. Responsibilities of USA Climbing:**

1. USA Climbing has the legal and ethical responsibility to protect the privacy of any athlete that is required to undergo a PPE and/or any additional medical or mental health evaluations. Special consideration will go to the privacy of minor athletes (under 18 years old).
2. USA Climbing and the involved medical and mental health professionals will safeguard the private Protected Health Information of athletes and will protect this information from loss, theft, destruction, modification, unauthorized use, unauthorized access, or unauthorized disclosure.
3. USA Climbing has the responsibility to provide ongoing support to all athletes in the form of information and education about the PPE process, the BMI Screening Protocol and about RED-S/DE/ED.
4. USA Climbing has the responsibility to facilitate access to medical and mental health care and remove financial barriers to care whenever possible.
5. USA Climbing will utilize the medical, nutrition and mental health resources made available to Olympic level athletes by the United States Olympic and Paralympic Committee.
6. The USA Climbing Team physician must provide a copy of the results of the PPE, any further medical or mental health screening evaluations, and any treatment plans to the athlete (or the minor athlete's parent or guardian) upon request.
7. USA Climbing must provide a copy of any communication with the IFSC about a specific athlete to that specific athlete (or the minor athlete's parent or guardian) upon request.
8. USA Climbing will continue to actively engage with the IFSC as they refine their IFSC Athlete Health Screening Policy and Procedures. USA Climbing will notify athletes of any changes to the IFSC Health Screening Policy and Procedures as soon as possible.
9. USA Climbing will update and amend the USA Climbing Protocol for Health Screening and Underweight Athletes 2023 as necessary and appropriate based on evolving best medical and mental health care practices.