

# **Body Composition Measurement and Athlete Weighing Protocol**

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Sports Medicine/Performance Nutrition/ Athletic Performance  
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### Introduction:

Body composition measurements and body weights can be important components of an athlete's performance evaluation and plan. Monitoring weight changes while training may help detect poor hydration practices or medically significant weight gain or loss that may impact an athlete's overall well-being. Weight monitoring may also be important in contact sports to ensure athlete safety. Body composition testing can measure changes in muscle mass and adipose tissue over time and in relation to student-athlete's physical training; appropriate changes in muscle mass and adipose tissue can be beneficial to one's health and performance, while excessive changes can be detrimental to one's health.

However, there is not one ideal weight or body composition for performance.<sup>2,5</sup> Weight and body composition are affected by a variety of factors, including stage of development/maturation, weight and growth history, genetics, nutrition, and hydration.

Research clearly documents that an overemphasis on weight or body composition can lead to harmful behaviors such as disordered eating, the overuse of supplements, skipping meals, avoiding hydration, and over-exercising; these behaviors can compromise both health and performance. For this reason, messages and practices around weigh ins and body composition should be standardized without an emphasis on ideal weight or body composition.<sup>1-5</sup>

Additionally, mandatory weigh-ins have been found to cause distress, as well as lead to increased weight control behaviors in athletes: 75% of NCAA division I (female) athletes who participated in mandatory weigh ins reported using at least one weight control method in preparation for the weigh in.<sup>2,3</sup> Mandatory weigh-ins can also cause athletes to believe that they should weigh far less than is realistic.<sup>2,3</sup> Furthermore, weights taken more than weekly can communicate that weight is more important than overall health.<sup>3</sup> Distress from mandatory weigh-ins leading to inappropriate weight control behaviors will additionally compromise sport performance.

Bodyweight collection and monitoring is only one component of a comprehensive process to guide student-athlete health and performance and should NOT be done in isolation. It is essential that all coaches and staff should promote the development of healthy lifestyle behaviors, and should not focus on weight or body composition as a measure of performance or "progress." Healthy lifestyle behaviors include appropriate/balanced eating, adequate sleep, stress management, the inclusion of rest days in training, and the avoidance of alcohol/drugs.

In order to ensure the appropriate and healthy use of weights and body composition testing, these measurements should be performed with a protocol and be managed by a multidisciplinary team that

includes Sports Medicine (Athletic Trainers//Head Team Physician), Registered Dietitians, and Athletic Performance Coaches.

### **Body Composition Measurement**

#### Purpose:

To measure changes in muscle mass and adipose tissue over time and in relation to athletic training.

#### Participation

All athletes are eligible to have body composition assessments completed.

Body composition testing is **optional** for all student athletes, and any athlete may choose to decline testing.

- Athletes must be told of the optional nature of this testing

The Registered Dietitian and Sports Medicine staff will determine in advance if any high-risk athlete (those at risk of an eating disorder or in recovery) will participate in body composition testing, based on the athlete's current plan of care.

#### Scheduling

Team body composition measurements are to be completed at specific times during the season based on the phase of training as predetermined by an Athletic Performance Coach, Registered Dietitian, and head coach (when applicable). Athletic Performance Coaches will determine testing dates/times for their respective teams. Suggested times are quarterly:

- Pre-season
- Mid-season
- Post-season
- End of off season

The dates and times for body composition evaluation will be reserved on bCal Agenda by each team's Athletic Performance Coach. These times will be communicated with the designated Registered Dietitian with a bCal invite.

#### Privacy

Weight data is considered personal information and should be taken in a private manner.<sup>2</sup> All data pertaining to weight and body composition testing should be kept confidential. All weight-related data is managed by the Registered Dietitian, Sports Medicine, and Athletic Performance.

#### Procedure/Protocol

- Body composition testing is done by the In-Body bioelectrical impedance (BIA)
- All measurements will be taken in the Simpson Center Nutrition Laboratory, according to standardized procedures.

- Only Athletic Performance Coaches, Registered Dietitians, Performance Nutrition intern (pending approval of the Registered Dietitian) or member of the Sports Medicine Staff may measure an athlete's body composition
- Any staff who performs body composition testing must be trained prior to taking measurements.
  - A Registered Dietitian will provide annual body composition training prior to each academic year.
- Body composition education, as developed by a Registered Dietitian, will be given annually to all athletes who undergo regular/yearly measurements.
- Body composition education, as developed by a Registered Dietitian, will be given annually to all coaches whose team undergoes regular/yearly measurements.
- A High Performance Team meeting, which includes the team's designated Athletic Performance Coach, Registered Dietitian, Athletic Trainer, Head Coach or designated representative, and other support staff (as appropriate) must take place prior to any and all body composition testing.
  - **The purpose of this performance team meeting is to ensure both the athlete's performance and health needs are considered.**
  - In this meeting, the body composition testing goals for the team will be set, and any individual goals (as appropriate) will be determined and reviewed.
- Both a Registered Dietitian and an Athletic Performance Coach will be present during all body composition testing.
- Body composition measurements should be taken no more than four times per year, and no less than 8 weeks apart on any individual athlete.<sup>1,2</sup>
  - Additional or more frequent measurements may be considered as deemed appropriate by the Sports Medicine team.
- Only an Athletic Performance Coach and Registered Dietitian may discuss/interpret individual results as it pertains to both performance and health.
- Coaches should not discuss weights or body composition data with athletes.
- The Registered Dietitian and Athletic Performance Coach will work together to determine appropriate training and dietary adjustments for performance based on an athlete's body composition results.
- After an athlete's body composition test is completed, they will meet with their Athletic Performance Coach and Registered Dietitian to discuss the results as they pertain to performance and health.
  - For high-risk athletes who are participating in testing, the Registered Dietitian, Athletic Trainer and Head Team Physician will determine beforehand if providing results is appropriate in the interest of protecting the student-athlete's well-being.
- If body composition results are **not** within a range considered to be beneficial for health and/or performance, athletes will be referred to their Registered Dietitian and/or team physician for further evaluation.

#### Data Communication with Coaches

- If requested by the head coach, after all of the measurements are completed for a team, the Registered Dietitian will provide the coach a summary of the results via standardized excel format and the Performance Team will meet with the coach to discuss those trends.
- Coaches may receive information on trends of change and the treatment plan/goals for individual athletes when deemed appropriate by the Sports Nutrition staff.
- Coaches will not receive any specific information on an athlete's body composition or weight
- Coaches with any specific questions or concerns about an athlete's body composition should discuss these with the Registered Dietitian, Athletic Performance Coach or Athletic Trainer; as needed, Athletic Performance/ Athletic Training may choose to direct the coach to the Registered Dietitian for further discussion.

### **Weigh-Ins:**

#### Purpose

For medical concern (per Sports Medicine) for unhealthy weight loss or gain, hydration evaluation, and when necessary for specific performance assessment measures.

#### Participation

Regular weigh-ins are always **optional**, and an athlete may decline being weighed at any time.

- Athletes must be told of the optional nature of this testing

**The Sports Medicine team may recommend that an athlete not participate in team weigh-ins at any time to protect the athlete's well-being.**

#### Privacy

Weight data is considered personal information and should be taken in a private manner.<sup>2</sup> All data pertaining to weight and body composition testing should be kept confidential. All weight-related data is managed by the Registered Dietitian, Sports Medicine and Athletic Performance

#### Procedure/Protocol

- Any team conducting regular weigh-ins must have prior approval from Sports Medicine and Sports Nutrition.
- Additional performance testing such as body composition and athletic performance metrics must be performed and tracked for all athletes undergoing regular weigh-ins
- Nutrition education, as developed by a Registered Dietitian, will be given annually to all athletes who undergo regular weighing.
- Nutrition education, as developed by a Registered Dietitian, will be given annually to all coaches whose team undergoes regular weighing.
- A Performance Team meeting, which includes the team's designated Athletic Performance Coach, Registered Dietitian, Athletic Trainer, and other support staff (as appropriate) must take place prior to implementing weigh-ins for a team, and annually thereafter.
  - **The purpose of this performance team meeting is to ensure both the athlete's performance and health needs are considered.**

- In this meeting, any individual goals (as appropriate) will be determined and reviewed.
- Only Athletic Performance Coaches, Registered Dietitians, Performance Nutrition intern (pending approval of the Registered Dietitian) or member of the Sports Medicine Staff may measure an athlete's weight
- The number of weigh-ins per year will be determined with the direct input of the Sports Nutrition and Sports Medicine staff
  - Weigh-ins will not be taken more than once a week unless specifically approved by the Sports Nutrition and Sports Medicine staff.<sup>1,2</sup>
- Weigh-ins will emphasize:
  - The role of tracking hydration
  - Trends of change<sup>2</sup>
- Discussion regarding weigh-ins will be kept neutral, as both positive or negative comments regarding weight can be harmful to an individual
- *At no time should an ideal, target or goal weight for optimal performance be emphasized.*<sup>2,5</sup>
- Any concerning weight changes should be communicated to a Registered Dietitian.
  - Weight concerns will be managed by the Performance team

#### Data Communication with Coaches

- Coaches should not discuss weights with athletes
- Coaches may receive information on trends of change and the treatment plan/goals for individual athletes when deemed appropriate by the Sports Nutrition staff
- Coaches will not receive any specific information on an athlete's weight
  - Exceptions may be made by the sports Performance Team if weight information is deemed necessary to perform coaching duties, the athletes have provided consent to share, AND the team is not considered high-risk for eating disorder behaviors
    - Sports categorized as increased risk for eating disorder behaviors are Endurance Sports, Weight Category Sports, and Aesthetic Sports<sup>6-8</sup>
    - If this data is misused in any way outside of the policy (goal weights being set, recommendations for change, etc.), that coach will no longer receive weight data and will face disciplinary actions
- Coaches with any specific questions or concerns about an athlete's body composition or weight should discuss these with the Registered Dietitian, Athletic Performance Coach or Athletic Trainer; as needed, Athletic Performance/ Athletic Training may choose to direct the coach to the Registered Dietitian for further discussion.

#### **References**

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