

British
Gymnastics



ENGLISH
INSTITUTE
OF SPORT

Weighing Gymnasts

British Gymnastics Position Statement

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British Gymnastics has developed the following position statement in conjunction with the English Institute of Sport. After reading this document, if you have any questions or concerns, please contact British Gymnastics Integrity team.

British Gymnastics receive regular communication from gymnasts, parents and coaches who have questions and/or concerns about the practice and validity of weighing gymnasts.

The position statement has been developed to provide current recommendations for best practice and address some of the misconceptions around weight.

British Gymnastics acknowledges the complexities surrounding weighing in gymnastics. We have a duty of care to safeguard the physical and mental health of the gymnasts.

The weighing of gymnasts should only be undertaken with clear reasoning and with the gymnast's optimal long-term development in mind.

Key Recommendations

1. If clubs choose to weigh gymnasts for the purpose of measuring growth and development (i.e., to identify growth spurts), weight should be monitored alongside height, no more than monthly and ideally at the same time each month. There is no requirement to weigh a gymnast under the age of 9.
2. Coaches/clubs must seek consent from parents/guardians and gymnasts. Data should be recorded and stored appropriately. Parents/guardian and gymnast has the right to refuse/withdraw consent at any time without any consequence.
3. Coaches should agree with the gymnast the most appropriate method for obtaining the individual's weight. This may be weighing at the club or at home, and through self-reporting. Whichever method is agreed, the gymnast has the right to keep their data private. Tact and discretion must always be prioritised when monitoring weight.
4. It is inappropriate to weigh gymnasts for performance purposes without combining with other measures (e.g. power produced from a countermovement jump). If there is a clear rationale, it is recommended that standardised protocols and qualified practitioners are used to ensure valid interpretation.
5. Where there are health, performance, or injury concerns regarding weight and/or body composition, clubs and coaches should liaise with parents and seek advice from appropriately qualified practitioners, for example GPs, nutritionists, physiotherapists etc.

Further Recommendations

1. Clubs must educate gymnasts about the reasons for weighing.

Seven Factors to Consider

1. Body weight is not the same as body composition

The terms body weight and body composition are often incorrectly used interchangeably. Body weight is a measure how much mass an individual has, measured typically in kilograms. Body composition is a description of what the human body is made of; and includes measures of body fat and muscle mass.

Accepted methods of measuring body composition are through Dual energy X-ray absorptiometry (DXA) and International Society for the Advancement of Kinanthropometry (ISAK) by qualified professionals.

Why does this matter?

Whilst a gymnast could lose or gain weight, we would not know from which area/s this change has occurred from just weighing a gymnast.

For example, if a gymnast gained weight this could be due to a combination of the following;

- decreased body fat and increased muscle mass
- increased body fat and increased muscle mass
- increased body fat and decreased muscle mass
- increased skeletal mass through growth and development, with any of the above combinations

A weight measurement does not provide information about the breakdown of body composition.

Furthermore, the weight of one gymnast can't be compared to another. Two gymnasts may have the same body weight but very different body compositions. One gymnast may have a greater muscle mass and less body fat mass than the other, but they will still weigh the same amount.

2. Body weight can change day to day

Body weight can and does change day to day and over the course of a training session. This could be due to changes such as hydration, body water stores, food intake, fasting for religious purposes, stool weight and the menstrual cycle. Daily fluctuation can be as much as 2 kg.

Why does this matter?

Weighing a gymnast too frequently (more than once a month) is not an effective way of assessing long term changes in body weight. Long term changes in body weight are due to changes to the major components of body composition: bone, muscle and body fat mass.

Tracking body weight more frequently will most likely show short term fluctuations from the reasons described above.

3. Body weight and body composition will change during adolescence

As a gymnast grows in height, their body weight will also increase. This will be more apparent during the adolescent growth spurt (occurring between the ages of 9 and 15 in girls and between 12 and 16 in boys).

A gymnast's body composition will also change during the adolescent growth spurt.

Why does this matter?

The changes in body weight and body composition during adolescence will likely influence gymnastics performance.

Body weight taken along with height can be measured once a month to monitor growth and development.

4. It cannot be assumed that an increase in weight will cause an injury in gymnasts

There is insufficient evidence that an increase in body weight will put a gymnast at risk of injury. Injury is complex and can be caused by a combination of risk factors such as inadequate fitness, insufficient recovery and poor technique.

Why does this matter?

An increase in body weight could be for a number of reasons such as an increase in muscle mass, which may actually positively influence gymnastics performance and act as a protective mechanism against injury.

5. Being overweight or underweight increases the risk of injury and poor health

Being overweight can have a negative influence on injury risk and poor health, however BMI is not an effective measure in an athletic population.

If a gymnast is categorised as underweight (BMI of 18.5 or below), they are at risk of relative energy deficiency in sport (RED-S). RED-S is a result of insufficient calorie intake and/or excessive energy expenditure.

Note: A gymnast cannot be categorised as being clinically overweight or underweight through weighing alone.

Why does this matter?

Some of symptoms of RED-S include impaired concentration, anaemia, low bone mineral density and fertility problems. This may result in loss of training days and training quality from injury and illness.

If a gymnast's energy intake is low there is a high probability that there will also be nutrient deficiencies required for optimal body functions.

Any health concerns around weight should be alerted to parents/ guardians and medical advice should be sought out from appropriately qualified practitioners (e.g. GP's, nutritionists and physiotherapists).

6. A decrease in body weight will not necessarily improve a gymnast's power-to-weight ratio

Power-to-weight ratio term used in gymnastics as indication of performance capability. The rationale behind this is that if power increases and/or weight decreases this will improve performance. Just as weight varies on a daily basis, so too does power.

It therefore cannot be assumed that a decrease in body weight will improve performance.

To determine the power-to-weight ratio, both a measure of power and weight is required. Power can be measured using a variety of sport science tests (e.g. countermovement jump test), and it is recommended that these tests are administered by qualified practitioners to ensure standardisation of protocols.

Why does this matter?

A decrease in a gymnast's body weight could be a result of a loss in muscle mass. This may cause a decrease in a gymnast's power-to-weight ratio. Therefore, weight alone cannot be used to determine a gymnast's power-to-weight ratio.

Power can also be affected by factors such as fatigue, muscle soreness, food intake and hydration status.

7. Body weight is not a measure of aesthetics

Whilst there is an aesthetic element to gymnastics; body weight just measures how much mass an individual has.

The way the gymnast looks is a subjective matter influenced by many factors.

Therefore, body weight should not be used as measure for aesthetic purposes in gymnasts.

Why does this matter?

Aesthetics is influenced by a number of visual cues which cannot be simplified to one number such as weight. A gymnast's aesthetics can also be influenced by genetic factors such as body type and skeletal structure.

World Class Performance Programme (WCPP) Practices

The following information highlights the practices of the WCPP in regard to weighing gymnasts.

- Gymnasts on the pathway squads (Foundation, Development and Junior *or equivalent*) have their height and weight monitored on one occasion per camp. This is done before morning training and is in order to track growth and development of the gymnast. Along with parent's heights, this information is used to flag whether a gymnast is in a growth spurt; which is considered to be a period of time where gymnasts are found to be more at risk to injury.
- Based on their individual preferences, senior and junior gymnasts on WCPP have the option to track and record their own weight whilst at the national training centre.
- Some senior or junior gymnasts choose to weigh themselves alongside taking their morning hydration status, and others utilise a pre and post training weight (alongside monitoring fluid intake) to calculate their rehydration requirement to aid their recovery.
- For performance purposes, weight is taken alongside a measurement of power (e.g. countermovement jump or time of flight) to calculate the power-to-weight ratio.
- The performance nutritionist will ask for a weight from a senior gymnast as part of measuring body composition (DXA/ISAK). This is always used in conjunction with performance markers.
- If there are any concerns regarding weight of a gymnast this is flagged to the doctor and is discussed with relevant sports science and medical staff taking into account confidentiality. Any body composition strategies are developed and monitored by qualified practitioners.

Definitions

Body Weight or Body Mass is a measure how much mass an individual has, measured typically in kilograms.

Body Composition: is a description of what the human body is made of; and includes measures of body fat and muscle mass.

Power-to-Weight ratio: Measurement of performance. Power output divided by body weight

Body Fat Mass: The portion of the body that is composed of fat.