

Hydration Testing in Athlete

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Editorial

Hydration testing is a protocol used to decide an athlete's frame fluid stability. An athlete with a everyday frame fluid stability is stated to be euhydrated. This euhydrated reputation isn't always a particular point, however instead a kingdom of everyday frame water. Disturbances to an athlete's frame fluid stability can purpose extreme overall performance and fitness defects consequently why hydration checking out may be a beneficial thing of athletic programmes. When the athlete is of their euhydrated kingdom, they may be much more likely in an effort to carry out at their complete potential than if they may be dehydrated.

Many hydration testing methods have been developed and implemented, the most common of which include:

- Body Weight Changes
- Bioelectrical Impedance Analysis
- Urine Specific Gravity
- Urinary indices
- Blood Indices

Why is Hydration testing important?

It is crucial to keep the frame's nation of homeostasis as an awful lot as feasible before, in the course of and after exercising, as this facilitates to make certain the athlete can carry out at their very excellent and get better adequately. In phrases of fluid balance, the purpose previous to exercising is to have the frame in its euhydrated nation. Pre-performance (e.g. schooling or competition) hydration checking out can, therefore, decide if the athlete is in a enough nation of hydration, and therefore prepared to take part at their absolute optimum. There are a number of different ways to measure an athlete's hydration status, each with their own levels of validity, reliability and practicality.

Urine Specific Gravity (USG)

Urine Specific Gravity (USG) is the density of a urine pattern in comparison to the density of water. The density of the pattern is decided with the aid of using its osmolality, in addition to the awareness of some of molecules which includes urea, protein and glucose. There are three principal techniques of trying out an individual's USG

1. Hydrometry: The density of the pattern can examined the usage of a weighted glass float. This technique is taken into consideration to be erroneous and impractical because of a day by day calibration being needed, a big urine pattern, and additionally due to the fact it's far temperature.

2. Refractometry: This includes a mild being handed via the pattern and measuring how plenty the beam has refracted. In evaluation to hydrometry, it calls for a smaller pattern and internally corrects for the temperature; making it an extra sensible and cheaper alternative for measuring hydration.

3. Reagent Strips: These strips provide a greater easy method than refractometry and hydrometry. The strips react to the quantity of hydrogen ions launched with inside the sample, which in the long run influences the pH and is detected with the aid of using the Bromthymol blue contained with inside the strip. As the pH decreases (indicated an boom in H⁺ ions), the strip modifications shade to a greater yellow-green. A shade package can then be used to estimate the samples USG.

Bioelectrical Impedance Analysis (BIA)

Bioelectrical Impedance Analysis testing can take the form of many types, these include:

- Single Frequency BIA
- Multi-Frequency BIA
- Bioelectrical spectroscopy (BIS)
- Segmental BIA
- Localized BIA
- Bioelectrical impedance vector analysis (BIVA).