

Rehydration after exercise

If sweat loss is significantly greater than 1 L h^{-1} , dehydration is inevitable since the volume likely to be comfortably ingested is around 1 L h^{-1} . The first opportunity to rehydrate is immediately after exercise. This is particularly important in tournaments when there is a relatively short recovery period between bouts. The rules of thumb for **rehydration** after exercise are to consume an amount of fluid 1.5 times greater than the fluid loss undergone (i.e. 1.5 L imbibed after a 1 L sweat loss), for the drink to contain sodium as an electrolyte (up to 1 g L^{-1}), and not to worry if there is a significant carbohydrate content in the drink. A player should be weighed before and after exercise, where the body weight loss in kg is equivalent to the water loss in liters.

The importance of sodium in the drink is to ensure that the fluid ingested is not excreted via urine. It must be remembered that the control of **water excretion** by the kidney is regulated by the hormone **ADH**, secreted from the **posterior pituitary** gland. Receptors in the posterior pituitary are able to detect changes in plasma volume and the sodium content of blood. If the plasma volume is increased, sodium content of the blood is diluted and so ADH is not released. The consequences are that the kidney fails to reabsorb some of the water passing through, and produces a copious, dilute urine. This happens when plain water is ingested. If the drink contains sodium however, then at least the sodium concentration of the blood is not compromised and some ADH may be secreted to conserve body water. *Fig. 3* shows how an increase in sodium content of a drink ingested after dehydrating exercise affects fluid balance after 6 hours recovery.