



## Referee Analysis - Hydration



Dehydration, that is body water loss, is commonly observed in officials participating in Gaelic Games. During exercise, body water is lost through the process of sweating, which occurs to facilitate the removal of excess heat from the body. The evaporation of sweat acts as a cooling mechanism and helps to regulate body temperature. Dehydration occurs when the fluid lost via sweating is not replaced and this condition is made worse by environmental factors that increase fluid loss (e.g. heat, humidity, lack of wind etc) and by fluid restriction. Negative effects on physical performance have been shown with modest dehydration (i.e. greater than 2% loss in body mass). Moreover, dehydration is associated with a more rapid depletion of energy stores and an earlier onset of fatigue. In addition, mental performance is also impaired when dehydration and hyperthermia (increase in core body temperature) are present, which can have implications for the decision making aspect of refereeing. These negative affects can have a detrimental impact on performance, particularly in the second half, when officials are more susceptible to experiencing this condition.

### **Process**

The specific gravity of urine is used as an indicator of hydration status. Pre- and post-exercise body mass is also examined to determine fluid losses. The volume of fluid consumed is also measured to assist in developing individualised hydration strategies.

### **Results**

The initial specific gravity result of 1.003 indicates that you were appropriately hydrated prior to the start of the game, and this level of hydration was maintained almost the same till half time, being just a small bit higher (1.005). A specific gravity score of 1.000-1.010 indicates appropriate hydration (see chart opposite for explanation). The post-game sample (1.026) indicated that you were in the very high dehydration category, towards the end of the game. In summary, your hydration strategy was okay. You should try to get more fluids on board at half time and throughout the second half, if possible. It is important to arrive at the game hydrated as you did. It can be refined a little to ensure appropriate hydration leading up to and throughout the game. This can be achieved by following the recommendations provided overleaf.



### Specific Gravity of Urine - Interpretation

- 1.000-1.010 = hydrated
- 1.011-1.020 = low dehydration
- 1.021-1.023 = moderate dehydration
- 1.024-1.025 = high dehydration
- 1.026-1.027 = very high dehydration
- 1.028-1.031 = extreme dehydration
- >1.031 = severe dehydration

### Recommendations

- Daily fluid requirements = body mass x 35 mls (e.g.  $\sim 77 * 35 = 2.7$  litres)
- During exercise additional fluids are needed to address those lost via sweating
- Start well hydrated 400 – 600 mls within 2 hours of exercise
- Drink 150 – 250 mls immediately before exercise
- Drink regularly during exercise, starting early
- Drink 250-500 mls during half-time interval
- Drink 250-500 mls straight after exercise
- Drink 1-1.5 litres for every kg weight lost
- Carbohydrate containing drink with sodium (helps to refuel)
- Alcohol and caffeine do not promote hydration/rehydration