Dehydration and Alertness

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When your body is low on water, it tries to conserve what you have left. It does this by reducing your activity and making you relax and slow down. When you are relaxed, you may even fall asleep.

A sure sign of dehydration is a headache, and you may also feel dizzy when standing up. This is usually after the loss of just 800 ml, which is 2% of your body's normal water volume of 40 litres.

Symptoms of mild dehydration (1% to 2% water loss) include thirst, tiredness, irritability, dry mouth, and decreased urine volume, with abnormally dark urine. The symptoms become increasingly severe with greater water loss.

In people over age 50, the body's thirst sensation diminishes with age. For senior aviators, low levels of fluid and over-stressing the body can, just like your aircraft, lead to serious trouble.

Dehydration can be caused by a wide range of factors. These include;

- Prolonged physical activity with sweating, without consuming adequate water, especially in hot and/or dry environments – long, summer flights and gliding (especially competitions)
- Long hours at high altitudes with low humidity (5% to 12%) – gliders again
- Vomiting, diarrhoea
- Excessive consumption of alcohol
- Use of methamphetamine, amphetamine and other stimulants
- Fasting, recent rapid weight loss – 1 litre of fluid results in a weight loss of 1 kg.

Prevention is better than cure

So how do we prevent dehydration?

Simply drink enough water to replace what you lose during the day.

Depending on how fit you are; what the temperature and humidity are; what type of activity you are engaged in; the quantity needed to replace lost fluid is 2 to 2.5 litres – 8 glasses per day.

In warm or humid weather or during heavy physical exertion, such as agricultural aviation flying, the water loss can increase by a factor of ten or more through perspiration; all of which must be quickly replaced.

A useful rule of thumb for avoiding dehydration in these conditions involves monitoring the frequency and character of urination – going to the loo; peeing. A full bladder every 3 to 5 hours and light coloured urine, suggests dehydration is not occurring. If the urine is deeply coloured and the bladder fills after many hours or not at all, this suggests that water uptake may not be adequate to maintain proper hydration.

If you feel thirsty, take a drink. If your water loss is significant, replacing this with water may not be enough as the electrolyte balance may also be disturbed. You might consider a suitable beverage that can help restore the balance. Fruit juice and water combined is a good source of re-supply too.

As always, be prepared and plan your food and water uptake based on conditions of the day and the duration of the intended flight.