

Do you need a drink?

It's a good question to ask in the bar once the aeroplane is safely tucked away. But at this time of the year, it's also a very relevant question when you're planning to go flying.

The effects of dehydration

On a normal day you lose 2 to 3 litres of water, through sweating, breathing and urine. If you're exerting yourself on a hot day you can lose a lot more than that. Exertion can mean going for a run, but it can also mean physically hard flying such as aerobatics or agricultural work. And as for passengers, taking them flying on a hot bumpy day and getting them to fill sickbags is a great way to dehydrate them.

Headache is a symptom of fairly severe dehydration. That's why a good hangover includes a headache – if you drink an excess of alcohol, you urinate an even greater excess of water, which leaves you dehydrated.

More importantly for a pilot, your brain is very sensitive to dehydration. Even small levels of fluid loss, before you feel thirsty, and well before you get to the symptoms of severe dehydration, can affect brain function. Like hypoxia, dehydration can be insidious (creeping up on you), and like hypoxia, it's likely to affect the higher-order brain functions first. That means it will affect your alertness and decision-making and, critically, the ability to recognize that your performance is degraded, even before you're thirsty. Flying on a hot bumpy summer day can be strenuous enough without adding degraded performance to the equation. That's why it's important to keep your fluid levels up.

Sweating

It's not just something you do before an exam or a flight test. It's the body's way of cooling itself. Your body gives off latent heat to evaporate sweat from your skin, which keeps you cool. But when the sweat starts running down your face and body, that means there's no evaporation going on, meaning your body is losing water without gaining the cooling benefit. On a humid day, when the air around you can't hold as much of the water vapour that your skin is giving off, more of the water ends up running down your body.

Drink more than thirst dictates

Most people get thirsty after they lose about 1.5 litres of fluid (more or less, depending on your body weight). Your thirst mechanism then tells you to drink a good few hundred ml of water. However, it's easy to switch off the thirst mechanism just by wetting your mouth with a small amount of liquid. You need to drink more than just the little bit that will quench your thirst.

You should drink 2 to 3 litres of water every day, and obviously more if you're losing more on a hot day or through exertion. Sipping small amounts often allows your body to absorb the water, which is much better than drinking 3 litres all at once, filling your bladder and subsequently wasting some of the water. Sipping small amounts and allowing your body to absorb the water also gives you more chance of your bladder endurance exceeding your flight time. In a 737 or an A330 that's obviously not a drama, but in a 172 it matters.

Ration your sweat, not your water

A key means of avoiding dehydration is to reduce the amount of water you're losing, especially in hot conditions. It's good to drink it, but it makes sense to do what you can to avoid losing it in the first place. Some tips include:

- Wear light coloured, loose fitting, long clothing.
- All food requires water to digest. Some food, including many types of fruit, contains enough of that water, but meat and fatty food use up a lot of water for digestion.
- The best fluid for hydration is water. Anything else, including coffee, sports drinks or soft drinks, requires some of the water you're drinking to process it. Also, caffeine is a diuretic, and while urinating is an essential part of cleaning your body out, it obviously defeats the purpose of hydration.
- Stay out of the sun if possible. It's easier said than done, but as an example, a couple of considerations we often use at Northam are to do the external preflight before pulling the aeroplane out of the hangar, and to think about where the sun is and to park the aeroplane so the cockpit will be in the shade at the start of the next flight.
- Move slowly. Give yourself plenty of time to do your refueling and preflight, so you don't need to rush around and exert yourself.

Happy flying, and make sure both you and the aeroplane have had sufficient fluid intake!
