

Get some air

Remember to breathe. Simple, yes? Yet in stressful situations it is possible to either forget to breathe - not good - or to over-breathe, leading to hyperventilation, which affects blood chemistry.

Breathing is the first and last thing we do, but how many of us do it right and what are the implications of getting it wrong?

Rule 101 is that **nose breathing is king**. It cleans and warms the air and filters particles such as dust and pollen. It also regulates the amount of air entering the lungs. When you breathe through your nose the sinuses work to filter the air. They also create pressure in the lungs on the "out" breath, giving them time to extract adequate oxygen. A proper oxygen-carbon dioxide (CO₂) exchange is necessary for your blood to maintain a balanced pH level, which is key to good health.

Chronic mouth breathing is considered less healthy and can exacerbate allergies and lead to other health issues such as insomnia, sleep apnoea, dental problems, dry mouth and fatigue.

The average healthy adult at rest breathes in and out about 10-15 times a minute (one breath being an inhalation and an exhalation), which works out to be five litres to eight litres of air ingested. If you are running or doing physical exercise, you will obviously take in more.

Associate Professor David McKenzie is head of respiratory and sleep medicine at Sydney's Prince of Wales Hospital. He says one way you can tell you are breathing well is by not noticing. To breathe well, he says, is to not think about it and to let the body's automatic control systems work for you.

However, sometimes even the most natural systems need a hand. Breath training can be useful for athletes, or for those suffering with asthma, stress and anxiety issues - which can all be brought on by improper breathing.

Anxiety sufferers can feel breathless. Sometimes this is triggered by overthinking or misinterpreting normal breathing patterns, such as sighing.

McKenzie says sighs are normal and helpful. They "reinflate the alveoli and redistribute the surfactant material on the inside of the alveoli, which reduces surface tension and so reduces the work of breathing".

But he says people who are anxious tend to sigh more often and sometimes they'll attach catastrophic significance to it and think there is something wrong with them.

"Then they get more anxious, suddenly they start hyperventilating and that's when other symptoms occur, which are often a result of bad breath technique," he says.

Hyperventilation causes carbon dioxide levels in the blood to drop, reducing blood flow to the brain. Symptoms include dizziness, tingling in the hands, numbness around the lips, confusion and a crawling sensation on the back of the neck.

"These symptoms can then be misinterpreted catastrophically and so the cycle continues," McKenzie says. "Psychologists are good at working with these problems through cognitive behavioural therapy."

He says the Russian Buteyko breathing method, which trains people to slow their breathing, can help those with breathing problems, such as asthma. But he warns against practitioners who suggest asthma sufferers discard their medication.

Naturopath and author Mim Beim became a Buteyko practitioner after she found the practice helped her asthma.

Beim says that when you feel anxious, the body does, too. "The adrenal glands pump out adrenalin and cortisol, the nervous system is frantically sending electrochemical messages, muscles become loaded with tension, breathing rates increase and the immune system just tries to cope. Poor breathing affects your immune system and so many other things."

The autonomic nervous system (ANS) is beyond our conscious control. The ANS is divided into two parts, the sympathetic (flight and fight) and the parasympathetic (relax and digest). The sympathetic nervous system is switched on by adrenalin, the stress hormone produced by the adrenal glands that is the predominant driver of anxiety. The parasympathetic nervous system helps the body to relax.

Beim says the Buteyko breathing technique teaches people how to access the parasympathetic nervous system.

"The method reduces airway inflammation, constriction and spasm, allowing the patient to breathe freely," she says.

Lao Tzu was a Chinese philosopher about 500BC. He said "the perfect man breathes as if he does not breathe". Beim agrees. "In some cases we are retraining people to breathe the way they did as children, before stress, habits and often poor lifestyle choices got in the way."

Physiotherapist, molecular biologist and yoga teacher Simon Borg-Olivier travels the world teaching breathing techniques.

He believes learning how to master your breathing can boost athletic performance and alleviate many ailments.

Borg-Olivier cites Australian Olympic snowboarding gold medallist Torah Bright as an example. He says he taught her how to use her breathing to maximum effect.

"We taught her how to take the air from the abdomen in a conscious way until it became a reflex," he says. "This triggered a neuromuscular release of muscles that tend to over-tighten the spine, disallowing people to reach peak performance; when spinal muscles are released you get better power transfer."

Siobhan Moylan (Canberra Times) - June 3, 2013