Most of us have felt stress at some time. It's an every day part of life and can sometimes be motivating but, when left unchecked, it can do more harm than good. Here are simple, everyday ways to help keep stress in check

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HOW STRESS CAN AFFECT YOUR...
HORMONES

The stress response is an ancient inbuilt mechanism designed to keep you safe.

This network of finely tuned brain-based wires and hormonal signals helped your ancestors escape saber-toothed tigers and fight infection. But in today's competitive world, this intricate system can harm more than it helps—if left unmanaged. Much of our stress response is intended for acute situations, such as meeting a work deadline or dodging a traffic accident. Once the threat's averted, your body sets about calming itself down. When a stressor lasts for months or even years, however, it can result in chronic stress. Excessive job demands, lengthy commutes, unhelpful thoughts and feeling socially isolated can all be sources of long-term stress to us. Certain situations can put stress hormones on loop, which can mess with your mind and body, and potentially contribute to adverse health conditions. ▸

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THE SCIENCE OF STRESS

Stress arises when an internal or external event or situation—a thought or a physical danger—sparks a series of biochemical reactions. It all starts in the brain.

When you perceive a threat, your senses send information to the amygdala, the brain region that helps process emotions and interprets images and sounds. The amygdala then shouts "danger" by sending alarm signals to the hypothalamus.

Think of the hypothalamus as your body's command centre. It communicates with the rest of the body through a combination of nerves and hormonal signals.

When your amygdala presses the alarm, the hypothalamus activates the sympathetic nervous system. This drives the 'fight, flight or freeze' response that prompts you to act.

It tells the adrenal glands perched atop your kidneys to pump adrenaline into your bloodstream, putting your body on high alert. Your senses sharpen, oxygen and energy supplies increase, and blood gets diverted from your reproductive organs and stomach to your muscles.

Once the adrenaline surge subsides, the hypothalamus activates stage two of the stress response—known as the HPA axis—to keep you revved up.

If the threat persists, the hypothalamus sends corticotropin-releasing hormone (CRH) to the pituitary gland, triggering a release of adrenocorticotropic hormone (ACTH). This travels to the adrenal glands, prompting them to release cortisol.

Your cortisol levels fall when the danger disappears and the parasympathetic nervous system kicks in with its 'rest and digest' response, calming you down.

According to neuroscientist Professor Selena Bartlett, there's another piece to the puzzle of how we process stress.

"Our genetics and epigenetics preset our systems in the brain and body," she says. You inherit your stress response, and you can pass it on to your children —and partner.

"We come into the world pre-wired for reactions to stress. Everyone's HPA axis, and how hormones activate it, is different."

External factors also play their part, Professor Bartlett continues: "It's not just your genetic blueprint. Lifetime experience and environment also changes the way your genes are expressed."

Understanding adrenal fatigue

'Adrenal fatigue' is when stress overwhelms your body. The theory is prolonged stress can exhaust the adrenal glands and stop them producing essential hormones, such as cortisol. When this happens, symptoms, like brain fog, low energy and immunity, and cravings for food may appear.

Despite its prevalence in modern times, a review of 58 studies published in *BMC Endocrine Disorders* in 2016 found no evidence to support adrenal fatigue as a medical condition. But the authors also found the studies were limited, indicating more research is needed into the underlying drivers of low-cortisol states.

What can you do if you think you may have adrenal fatigue symptoms? First, see your GP to rule out underlying medical conditions. If you're feeling worried, that may be a sign you're overstressed, so take time to be kind to yourself.

Words Danielle Kirk

STRESS AND THE HEALTH IMPACT

Stress, in small doses, can sometimes be a good thing. This beneficial stress, or 'eustress', delivers the push you need to get to work on time or perform in an exam.

Long-term, negative stressors are the ones that can do harm. "These are the small, negative things we focus on that build up over time, like people cutting you off in traffic," explains Professor Bartlett.

Your amygdala registers these and puts the stress response on a loop, which may wreak havoc on your health if left unchecked.

A body focused on escaping danger shuts down aspects used for long-term functioning: immune function, sex drive, reproduction and growth. If you constantly feel under attack, it may put you at greater risk of illnesses, such as anxiety, diabetes and hyperthyroidism.

Mental stress, for example, leads to a sustained release of cortisol, causing blood sugar levels to rise so your body is ready to battle whatever is stressing it. This can, in turn, promote deposits of visceral fat around your belly, and also affect hunger and satiety hormones. By comparison, acute stress may reduce your appetite, whereas chronic stress may make you eat more.

It may also start to degrade the brain's prefrontal cortex, the area of your brain that helps you make healthy food choices, Professor Bartlett says.

SUPPORT WHEN YOU NEED IT

How can you stop your stress hormones running riot and set yourself—and your family—up for good health? It's about learning to override your amygdala. "That part of the brain comes pre-wired with stress that's inherited and accumulated over time, so a way we can do this is to get on top of your amygdala and in control," Professor Bartlett says. "Stress management is like drinking eight glasses of water a day, in my opinion. It's the absolute epicentre of our lives, and we can choose to do it or not."

Come to your own rescue with these proven strategies...

1

Take five minutes when you wake up each morning to set the brain up in a good direction, advises Professor Bartlett. "If you wake up feeling like you have a hundred things to do and you go straight to your emails, the brain's been set up in a loop of stress," she explains. Instead, do some deep breathing exercises, practise gratitude—whatever it takes to get your parasympathetic system fired up.

2

Breathe into your belly. It's a highly effective technique you can do at any time: on the bus, at your desk and even when your kids start to play up. "The amygdala needs deep breathing to stop it from over-reacting," Professor Bartlett says.

3

Meditate. This has been proven to reduce stress and may help with associated conditions, such as high blood pressure and heart disease. It can also help you be more mindful in your food choices. With practice, meditation creates space for you to better notice the impulse to eat when you're not hungry—and intervene. You can access a range of great Headspace meditations via the WW app.

4

Reduce your sugar intake. Numerous studies have shown physical or emotional distress drives us to eat fat- and sugar-laden food, as it relieves stress—but it can also add to your stress load. "We now know that sugar super-activates the brain, making it more stressed out," Professor Bartlett says.

5

Get moving. Studies show regular physical activity—like walking, running and yoga—eases stress symptoms and protects the brain, possibly favouring recovery. More and more research shows surrounding yourself with nature dampens the stress response, so try to get yourself moving and outdoors, wherever possible.