

FITNESS & WELL-BEING



Sweating can sometimes lead to dehydration. Photo: Corbis

Many people find sweating inconvenient and uncomfortable but it is vital to our health, writes Rachel Jacqueline

Ever exercised alongside someone sweating so profusely they've left a puddle around their feet? Ever been stuck next to an odiferous companion? Or have you ever been that person? Sweating; we all do it. It's a vital human biological process. If we didn't sweat we would sizzle in our skin, says Professor Ko Wing-hung of Chinese University's school of biomedical sciences.

DAY DRIPPERS

Ko says: "When our body temperature rises, we need to dissipate heat. The hypothalamus – the part of our brain responsible for controlling body temperature – senses a rise in temperature and shoots a message to the sweat glands to signal the release of sweat.

"Sweating releases water, combined with some salts and other chemical substances, which then evaporates, having a cooling effect and helping to lower our body temperature," says Ko. "If we didn't sweat, we would overheat and die."

Sweating is our bodies' natural reaction to anxiety and stress. "Sweating is affected by your nervous system. If someone gets nervous, they may find they sweat a lot," says Ko.

We each have a different number of sweat glands, ranging from two to four million. Some have more sweat glands per centimetre of skin than others,

and therefore produce more sweat.

The number and size of our sweat glands is influenced by a variety of factors, including genetics, ethnicity and gender.

Men have a higher sweat output than women. A study by researchers from South Africa's University of Pretoria, published in 2006 in the *Journal of Strength & Conditioning Research*, put 14 men and 12 women through a 90-minute spinning class. The men had a significantly higher sweat rate of 1.12 litres per hour, compared to 0.57 litres per hour in the women.

The density of our sweat glands also relates to race, and

has been found to be higher in Caucasians than Asians, correlating with Ko's research. "My observation is that Westerners have bigger and more sweat glands than Asian people," he says.

Environmental factors also impact how much and how often you sweat. "There is no 'normal' when it comes to sweating," says Ko. "It varies depending on the temperature, humidity and whether you are exercising. You can sweat several litres in a day in Hong Kong," he says. Under severe heat stress, we can lose up to 10 litres of sweat a day.

But some people sweat too much due to overactive sweat glands. About 2 per cent to 4 per cent of people in the world have the condition, called hyperhidrosis, according to the British Medical Journal website BMJ Best Practice.

In Hong Kong, Dr Stephen Chan at the Life Clinic treats a few clients each month with the condition, but he believes many more are likely sufferers.

"I'm sure it's a bigger problem than most people are willing to admit," he says. "If you're having one or two big sweats a week, like soaking through your clothes, and it's affecting your day to day life – it's a problem."

In addition to over the counter remedies such as stronger aluminium-based antiperspirants, Chan treats his patients with Botox injections. "[Botox] operates at the signalling point of our sweating – blocking the signals to sweat."

But our own eau de parfum is within our control, explains

Chan. Sweat doesn't inherently smell, he says. "It is only when the sweat from certain glands gets colonised with certain bacteria on the skin and 'goes off', so to speak, that it produces an odour."

There are different sweat glands in the body: the eccrine sweat gland, found all over the skin, and the apocrine gland, located in the underarms, genitals, breasts, and the belly button.

"Sweat released from eccrine glands is made up mostly of water and salt and doesn't tend to produce a smell," says Chan. The apocrine gland, however, is the reeky culprit. Men tend to have more than women, explaining why men tend to be smellier.

The key to pleasant body odour is good personal hygiene and keeping the body free from stench-producing bacteria. Reducing body hair in odour-producing areas may also help, as hair collects sweat, debris and bacteria.

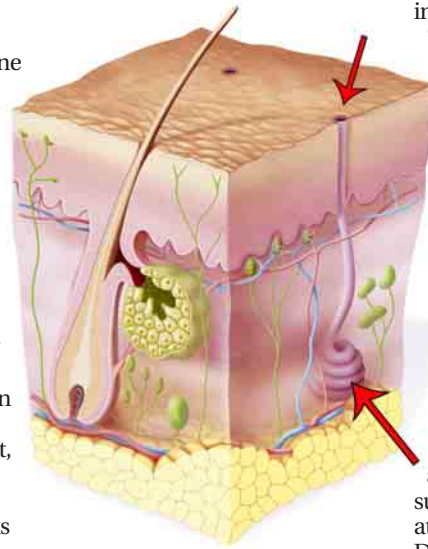
A change in diet may also ward off unpleasant aromas, as certain foods – such as onions and garlic, certain dairy products, fermented foods and curries – may contribute to body odour.

"But, of course, there's only so many times in a day one can shower. If you are someone who sweats more, you have a higher chance of producing an odour," says Chan.

If you sweat a lot while you exercise, chances are you're getting fitter. "You sweat more as you get fitter because your body gets more efficient at releasing heat, thus cooling your body, as

Sweating is part of our excretion system, to rid our body of waste products

PROFESSOR KO WING-HUNG



your body adapts to more exercise," says Dr Michael Tse of the Active Health Clinic at Hong Kong University's Institute of Human Performance.

But heavy sweaters require greater preparation pre-exercise, according to Rowley Aird, whose excessive sweating during Hong Kong ultramarathons has landed him in hospital twice.

"I need to start taking on board more salt before a race and build up my magnesium and potassium levels. I take supplements for this," he says.

"I also avoid humid conditions – anything above 80 per cent humidity on the Hong Kong Observatory website and I get scared for my safety," says Aird, 37, a banker. The risks of overheating include failure of vital organs, including liver and kidney failure.

So, is sweat a good thing? Apart from being a vital function, "sweating it out" can indeed be good for you, says Ko. "Sweating is part of our excretion system, to rid our body of waste products."

But Tse says that rehydration when sweating is critical, especially in hot, humid environments.

"Dark urine is a sign you are dehydrated. You need to replace the electrolytes lost through sweating to avoid hyponatraemia, an electrolyte imbalance condition that can cause death," Tse explains.

Sweating is also linked to a variety of health conditions, such as an impending heart attack or an infection. Diabetes sufferers have a reduced ability to sweat, putting sufferers at risk of heat-related illnesses.

Sweating a lot during exercise can also increase your risk of sunburn, as perspiration on the skin lowers the "minimal erythema dose" – the lowest UV exposure needed to turn the skin barely pink.

Ultimately, the way you sweat is unique. So if you're a puddle-producer in the gym – embrace it. You're probably getting fitter. life@scmp.com

HEALTH BITES

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Age no excuse not to start endurance training

Research from France shows that it's never too late to start endurance training. The study, which involved 40 healthy men aged between 55 and 70 years, found that "relatively intensive" endurance exercise confers benefits on the heart, irrespective of the age at which training began. Ten of the subjects had never exercised for more than two hours a week. "Benefits are known to be greater if training was started early in life," says lead researcher David Matelot.

Exercise especially important for women over 30

From the age of 30, physical inactivity exerts a greater impact on a woman's lifetime risk of developing heart disease than the other well-known risk factors, suggests research published online in the *British Journal of Sports Medicine*. Physical inactivity, along with excess weight, smoking and high blood pressure are the four risk factors that account for over half the global prevalence of heart disease. The study used data from more than 32,000 women aged 36 to 93 from the Australian Longitudinal Study on Women's Health, which has been tracking the women since 1996.



Stress from relationships boosts risk of death

Frequent arguments with partners, relatives or neighbours may boost the risk of death from any cause in middle age, suggests a study in the *Journal of Epidemiology & Community Health*. Researchers quizzed almost 10,000 men and women aged 36 to 52. Frequent arguments with anyone in the social circle were associated with a doubling to tripling in the risk of death from any cause compared with participants who said these incidents were rare.



Sweating during exercise increases the risk of sunburn. Photo: Corbis

LIFESTYLE

Experts focus on women's health

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There's a baffling amount of health advice out there from a variety of sources. At a slight risk of adding to the clutter, a forthcoming charity event aims to bring various experts together to provide Hong Kong women with a consistent health, diet and lifestyle message, featuring a broad range of actionable information and demonstrations.

The launch event of Mayya Movement, at the W Hotel on May 24 and 25, is the brainchild of New York native Nealy Fischer, whose background in fitness led her to study yoga, with a particular focus on pre-natal yoga; to become an expert in healthy eating, and to look for a range of broader health options for her clients.

A mother of four, Fischer named the movement after a baby girl she had miscarried a few years ago. Mayya, she says, represented the seed of potential life that was never given a chance to be fulfilled.

"I've long had my own obsession with trying to find the very best solutions for clients and myself," she says, an obsession that grew into what

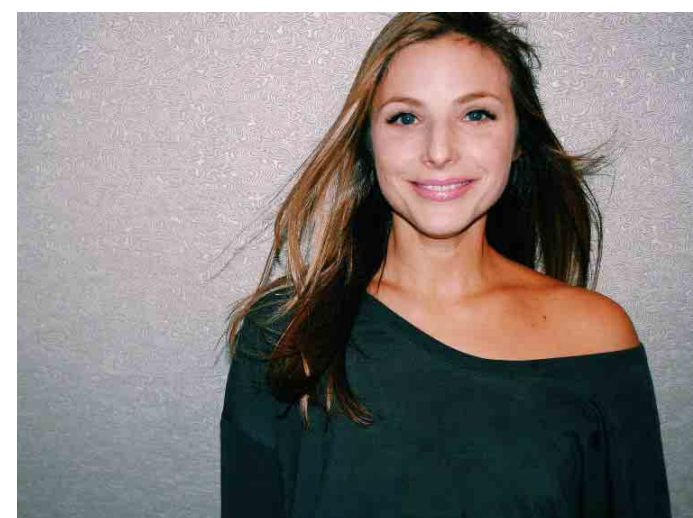
she calls her "A-list team", who will be at the event.

The keynote lecture will be given by Mark Hyman, medical editor of *The Huffington Post*; celebrity life coach Lauren Zander will provide what Fischer calls some "modern-day psychology", and New York yoga guru Lauren Imparato will give classes and advice.

Raw-food chef Priscilla Soligo, will provide cooking classes, and participants can follow the event with a modified version of Hyman's 10-day detox programme.

As you get older, you realise that health is not about fitting into your jeans

NEALY FISCHER (BELOW), MAYYA MOVEMENT



The event is limited to 100 people, and costs HK\$3,900 but all profits are going to the Karen Leung Foundation. The gynaecological cancer charity was started by Fischer's husband to honour Leung, who died from cervical cancer aged 34 in 2011. "Karen was a friend, and her dying wish was for women not to have to go through what she went through," says Fischer.

She's not ruling out a similar event for men. "I believe in men's health. But women, I very strongly believe, have different requirements to men. We have different bodies. We need to eat differently, and we need to work out differently, even more so after pregnancy."

The importance of food can't be overstated, she says, and everyone's top priority should be a healthy diet and lifestyle that they can stick with. "People want everything to work now, but they also want long-lasting solutions. There are fixes to your eating and movement habits that can work quickly, but they have to be sustainable.

"As you get older, you realise that health is not about fitting into your jeans."

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