

Keeping colds and flu at bay is easier said than done, yet it is possible to thrive rather than simply survive during the season of sniffles and sneezes. **Sally Parr** writes

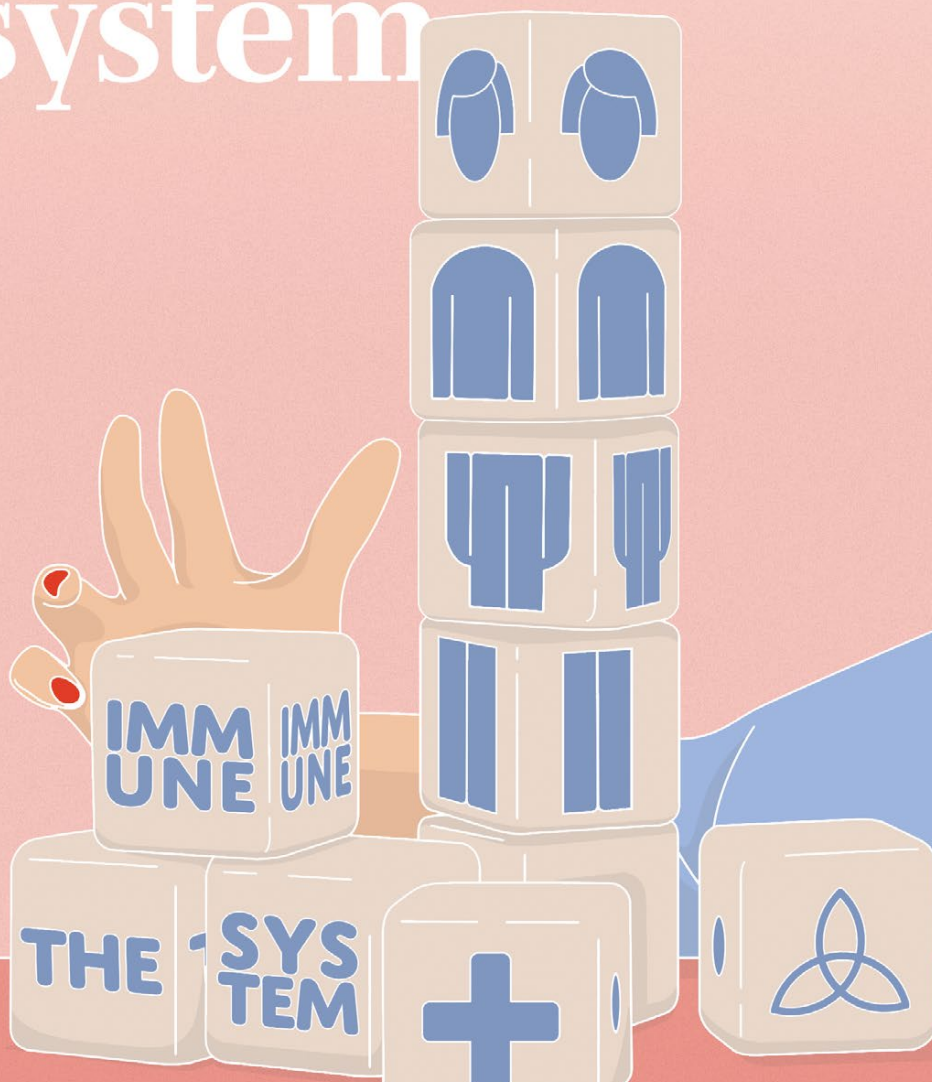
Last year's flu season was reported to be one of the worst ever, due to a particularly virulent strain and its ability to rapidly affect younger and middle aged adults. But even during milder bouts it can be difficult to avoid being struck down with a bug, as many of us dose up and turn up to work regardless — only to share our germs. Known as presenteeism, this is thought to impact work efficiency and lost productivity in much the same way as absenteeism does.¹ In 2018, commenting on a British Lung Foundation (BLF) survey that had found more than 50 per cent of UK workers suspected they had become ill as a direct result of being exposed to spluttering, sneezing colleagues, BLF chief executive Dr Penny Woods stated that "people definitely shouldn't feel guilty about being ill".

Whether it's at work, school, home or (especially) in hospital, the real risk lies in cross contamination from the objects that we touch (including those smartphones that get taken into the loo!). A handle on a door or kettle, a button on a printer or photocopier, a computer mouse and keyboard, or a desk where lunch is eaten — and which may be shared because of the culture of 'hot desking' — can quickly become a melting pot of germs and viruses which are easily passed on. So if you want to build up your reserves, here are some factors to consider.

EAT WELL

Poor nutrition has been found to increase the risk of infection and lead to compromised immunity, so limit sugary snacks and highly processed meals. Selected micronutrients play a fundamental role in how well (or not) our immune system works,² and it's much easier to fit these into meals if you're not filling up with empty calories (i.e. foods that are low in nutrients) every few hours. Micronutrients identified for a well-functioning immune system include vitamins A, C, D, E, B2, B6 and B12 as well as folic acid, iron, selenium and zinc. Replenish micronutrients by eating a rainbow diet over the course of the week (or a day whenever possible).

Building up the immune system



TEMPERATURE

Temperature has its part to play, too. Around a decade ago, researchers identified a phenomenon whereby at lower temperatures the outer covering of the flu virus hardened to form a coating that was perfect for protecting it as it travelled from one person to the next. Once back in warm respiratory passages this covering would 'melt' back into a liquid state, which could then enter and infect the cells of the new host. Warmer temperatures, however,

would cause the virus to dry out and become weaker. This, researchers surmised, could explain the end of the flu season.³

These findings were backed up in 2015 when it was found that cooler temperatures enabled the common cold virus to replicate more easily — with colder weather also making the immune response less effective.⁴ Whilst these studies were carried out in labs, they do give an interesting insight into why Granny might suggest wrapping up warmly to avoid catching a bug.

FRUIT AND VEG

Choose winter seasonal varieties such as turnip, swede and carrots as well as sweet peppers, spinach and kale, and fruits including pink grapefruit (note that grapefruit can clash with some prescription drugs), blood oranges, mango and papaya.

A benefit to eating this way is that it feeds helpful bacteria in the gut, which play a fundamental part in regulating a healthy immune response,⁵ ensuring the body can recognise invaders and, most importantly, can distinguish them from healthy body tissue.

VITAMINS C AND A

Infections significantly deplete the body's vitamin C stores, due to inflammation onset as well as the body's increased metabolic requirements in times of illness.⁶ Sugar competes with vitamin C for uptake into cells,⁷ so replace sugary sweet treats with citrus fruit (the chocolate orange in your stocking doesn't count unfortunately). Other vitamin C-rich foods such as berries, kiwi, mango and sweet peppers, in addition to eating your greens at meal times (e.g. broccoli, Brussels sprouts, kale and mustard or collard greens), will mean that you are instantly adding more immune-supporting vitamins, minerals and antioxidants to your diet — whilst cutting out the foods that can leave you feeling lethargic an hour later. For dessert, choose berries — these are rich in polyphenols — served with natural, organic yoghurt to feed beneficial gut bacteria. As well as providing lots of vitamin C in the diet, opting for yellow, orange, red and green, leafy veg will also mean a good supply of beta-carotene and it can also help you work towards your 10 (you read that right!) a day. Beta-carotene can be converted to vitamin A, which helps support the body as it fights off infection and illness. It's also important for skin and mucous membrane health, enhancing the body's initial barriers against infection.

VITAMIN D

Vitamin D deficiency is more likely to be a problem during winter, when there are fewer daylight hours. It is thought that vitamin D deficiency may be associated with sub-optimal immune function and an increased risk of infection. Consult with your GP or a registered nutritional therapist before supplementing vitamin D. Good food sources include oily fish such as mackerel, sardines and salmon, as well as egg yolks. Vegetarians and vegans can get vitamin D through some mushrooms (check the label) and some fortified foods such as plant milks or nutritional yeast.

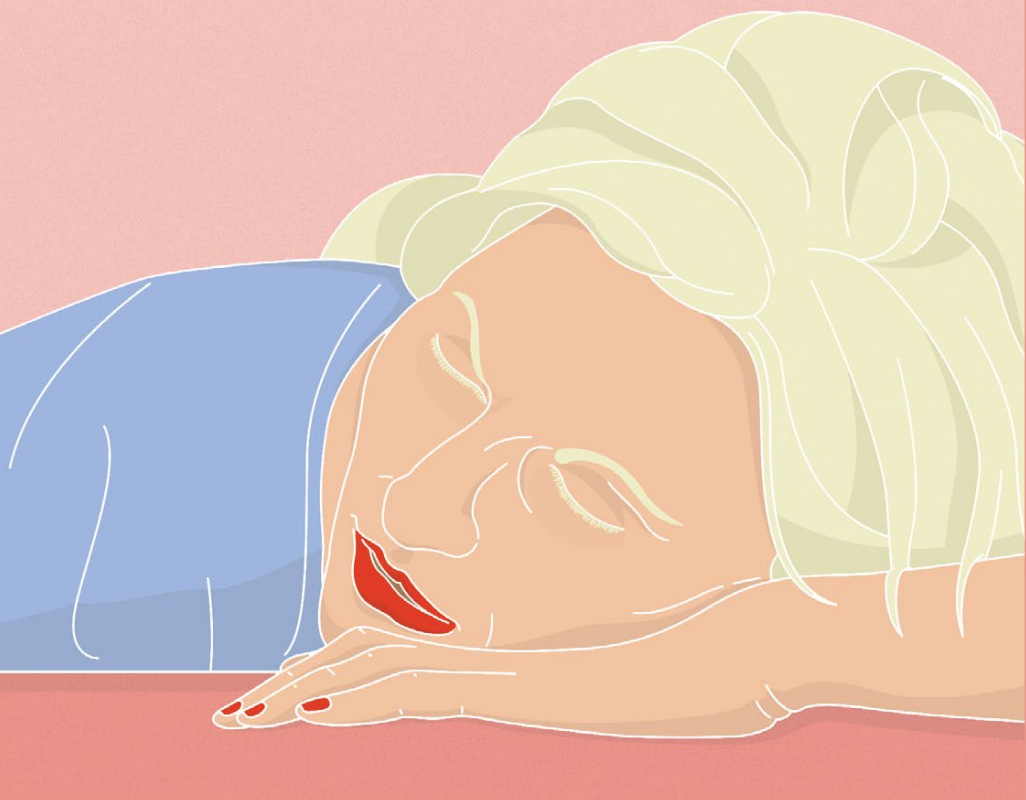
FEELING RUN DOWN

Commuting to and from work in the dark, dreary weather, crowded shops, and (on a more fun note) festive parties and late nights means that winter can quickly go from being an enjoyable social whirl to leaving you feeling exhausted. Chronically raised levels of the stress hormone cortisol can result in the immune system becoming resistant to the stress response, with raised production of inflammatory

markers compromising its efficiency further. Swollen glands, a sore throat and aching limbs are all signs that the body is working hard to cope — and a good indicator to take time to relax. Allowing enough time for a proper recovery can help.

The good news is that there is a lot that can help to shore up the body's defences — aka the immune system. Fundamental to survival, and derived from the Latin

immunis (which translates as 'untouched' or 'free'), the immune system is made up of tissues, organs, cells and soluble substances that have evolved to act rather like platoons of special forces positioned throughout the body, primed to repel advances by the enemy — in this case, viruses, bacteria and fungi, environmental toxins and other pathogens including our own old or damaged cells and foreign bodies.



WHEN ANTIBIOTICS ARE NOT THE ANSWER

Because flu is a virus, taking antibiotics (designed to treat bacterial infections) won't be effective and could actually make the illness worse. Research carried out at the Frances Crick Institute in London, and published in *Cell Reports*, discovered that eight out of 10 mice with a healthy microbiome survived being infected with flu because beneficial bacteria in the gut signalled to the lining of their lungs, providing an effective initial defence against the virus. Problems

occurred, however, in mice that were given an antibiotic before infection, with survival rates plummeting to one in three. Andreas Wack who led the research said: "We found that antibiotics can wipe out early flu resistance, adding further evidence that they should not be taken or prescribed lightly.

"Inappropriate use not only promotes antibiotic resistance and kills helpful gut bacteria, but also leaves us more vulnerable to viruses."⁸

FABULOUS FOODS

Garlic contains compounds that help support immune function. In a study designed to assess the effectiveness of aged garlic extract (AGE) supplements, a group of healthy volunteers who took AGE suffered less severe colds and flu, with fewer school or work days missed. This is thought to be due to the AGE increasing immune-supporting cell proliferation and activation.⁹

Echinacea, long used as a defence against the common cold, may shorten the duration of a cold but there is no evidence to suggest that it can prevent us from catching a cold in the first place. One study in 2012 from the Common Cold Centre at Cardiff University found that healthy adults who took three doses of echinacea for four months had colds for shorter duration compared to a control group. However, as pointed out by an NHS analysis of the study, there were several weaknesses in the study and no declaration of funding or conflict of interest was stated.¹⁰

Curcumin, which is found in turmeric, may also have potential benefits for improved immune function.¹¹ When adding turmeric to soups, stews, stir-fries

and warmed plant milks, add a sprinkle of black pepper. This is because curcumin needs piperine, which is found in pepper, to absorb.

Zinc (found in lentils, beans, chickpeas, hemp, pumpkin, squash and sesame seeds, cashews, almonds, pine nuts, oats and grass-fed red meat) is also thought to be beneficial in cold prevention.¹² However the NHS advises caution against taking zinc supplements because high doses can reduce the amount of copper the body can absorb. Instead, it suggests that adequate zinc can be obtained through a varied and balanced diet.

Green tea may help to fight off colds, but if you don't like drinking it then gargling with it may do. According to one review, although further research is needed into the benefits of green tea, a meta-analysis has suggested that gargling with tea catechins "confers lower risks of influenza infection".¹³

Other nutrients to consider are beta-glucans (found in oats, barley, shiitake mushrooms and seaweed), which may help up-regulate and enhance the immune system, since it identifies them as 'invaders'¹⁴ and swings into action.

NATURAL DEFENCES

We're born with what's known as innate immunity, which acts as our first line of defence. Also called the non-specific immune system, fast-acting 'scavenger-type' cells defend the body, predominantly against bacterial infections. Invading pathogens also have a variety of physical barriers to overcome before they can infect the body, since part of the innate immune system includes skin, mucous membranes in the mouth, nasal passages, lungs and gut, as well as antibacterial enzymes in saliva and tears plus stomach acid and beneficial microbiota in the gut. Anything that manages to sneak past this first stage is then dealt with by the adaptive (or acquired) immune response. The body's ability to protect itself becomes more highly tuned as we grow older, as it is constantly exposed to different 'threats'; all of which ensure antibodies develop. The body continually updates its 'reference catalogue', so when the same trigger comes around again, immunological memory (when our immune system remembers previous pathogens and knows exactly how to deal with them by mounting a specific response) comes into play. If the pathogen is new to the body, or is a particularly severe strain of infection, the immune system may become compromised, causing illness.

NB: A varied diet should increase your intake of a range of vitamins and minerals. However, if you do think that you need a boost, rather than self-supplementing, seek advice from a registered nutritional therapist who is a member of BANT and the CNHC — they can advise on brand, dosage and drug and nutrient interactions. Consult your GP or a pharmacist if taking prescribed medications.

Additional reporting: Louise Wates

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HOW TO SLEEP WELL THIS AUTUMN



Getting quality sleep is essential for maintaining a healthy immune system. Whilst many

of us can end up burning the candle at both ends, especially during the run up to Christmas, keeping regular bedtimes — as much as possible — will help to maintain energy levels and make us less vulnerable to illness. It is even thought that skimping on sleep — or having too much sleep — can put us at a higher risk of heart attack, even for those of us who do not smoke and who do exercise; demonstrating that there may be a 'Goldilocks' effect when it comes to getting the right amount of forty winks.

A study of nearly a half-million people, by researchers at CU Boulder, USA, found that people who had a high genetic risk for heart attack could offset that risk by getting between six and nine hours sleep a night.

Senior author Celine Vetter, an assistant professor of Integrative Physiology, said: "This provides some of the strongest proof yet that sleep duration is a key factor when it comes to heart health, and this holds true for everyone."¹

The Sleep Council says that as nights draw in and days turn cool, autumn brings its own set of sleep challenges for those who struggle to snooze; and while the last of the long, light nights and hot stuffy bedrooms ends one set of problems, it can mean the start of others for some people.

Lisa Artis, sleep chief at The Sleep Council, says: "While autumn's cool

nights provide a nice bedtime break from summer's hot and humid evenings, a host of other sleep issues can crop up at this time of year and disrupt shuteye."

Here, The Sleep Council offers some advice on how to make sure that autumn doesn't leave you fatigued:

- Shorter days can mean less exposure to sunlight. This means lower levels of vitamin D and increased feelings of fatigue — and also disruption of the circadian rhythm, which regulates feelings of wakefulness and sleepiness. Getting plenty of sun on your face in the morning can help, so be sure to open the curtains as soon as you wake up and, if possible, go for a morning walk. After sunset, do the opposite and dim indoor lights to get your body back on track.
- While crisp, chilly air can make it tempting to light the fire and crank up the heating, it's actually best to keep the home — or at least the bedroom — between 16 and 18C (between 60.8 and 64.4F). Letting the bedroom get too warm can mess with sleep: too hot and the body struggles to bring its temperature back down, causing wakefulness. Too cold and the body will eventually wake you up — demanding extra layers of warmth and insulation!
- Seasonal affective disorder (SAD), a type of depression that can set in when daylight hours grow shorter, is thought to affect one in 15 people between the months of September and April in the UK each year. While

the cause of SAD is still unknown, the disorder is associated with altered melatonin levels, which play a role in the sleep/wake cycle and cause daytime sleepiness and oversleeping.

To re-establish a normal sleep schedule, exercise regularly, ensure the bedroom is conducive to sleep (strictly no gadgets and gizmos) and keep bedtime/waking times consistent — even at weekends. Getting as much natural daylight as possible is key, too, because it suppresses melatonin levels and boosts serotonin production.

- Colder weather can also tempt us to eat more than we should. While it's easy to stick to salads and lighter foods during warm summer months, avoid the temptation to comfort eat heavier meals as the temperatures drop — particularly close to bedtime. Overload the tum at your peril! Too much food too close to bedtime is a sure-fire recipe for wake-up level heartburn and indigestion.
- Make sure your bed is comfortable and still supportive. Indoor furniture can be forgotten about during the lazy, hazy, outdoor furniture days of summer. With the focus firmly back on interiors, it might be time to re-appraise the piece you use more than any other in the home — and if your bed is seven years old or more, then a new one could definitely be on the cards.

Reference:

1. www.sciencedirect.com/science/article/pii/S0735109719359492?via%3Dihub

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