

Can your DIET make you YOUNGER?

According to the latest science, it could actually be possible... You can't stop the chronological clock from ticking forwards, but new research suggests that diet tweaks can help us to control and even reverse the signs of ageing, as Anita Bean reports

Want to look and feel younger than your years? That may be a real possibility. A groundbreaking study in the US has found that making simple changes to your diet and lifestyle can knock more than three years off your biological age in only eight weeks. Researchers discovered that a diet rich in green leafy vegetables, cruciferous vegetables and berries dramatically reduced the biological age of a group of middle-aged participants. 'Our study is the first randomised, controlled study to show that biological age reversal may be possible through diet and lifestyle changes,' says Dr Kara Fitzgerald, a researcher in nutritional

biochemistry at the Institute for Functional Medicine in Washington, who led the study. 'In addition to lowering biological age, triglycerides (a type of fat in the blood), LDL (bad) cholesterol and total cholesterol all got lower.'

So what does 'biological age' mean?

Biological age is how rapidly you are ageing physically

You have two different ages: chronological and biological. Chronological age is how long you've been on the planet - so the age you'd have in your passport - and biological age is how rapidly you are ageing physically. It's a measure of the level of damage and loss of function that your cells,

tissues and organs have accumulated. Some people age faster than their chronological age, while others experience ageing at a much more gradual pace. This is partly down to genetics, but is also impacted by lifestyle, including diet, sleep, exercise, smoking and stress.

It's already well noted that eating lots of ultra-processed foods, being physically inactive, experiencing chronic stress or smoking can lead to your biological age being higher than your chronological age. This, say researchers, puts you at greater risk of developing chronic age-related diseases, such as heart disease, type 2 diabetes, dementia and certain cancers.

MEASURING BIOLOGICAL AGE

Scientists can accurately predict biological age using scientific 'clocks' that measure DNA methylation, which, as its name suggests, is the addition of methyl groups (a carbon atom with three hydrogen atoms attached to it) to strands of DNA. It's this process that switches genes on or off. As we age, some sections of our DNA become over-methylated, while the rest may be under-methylated, creating an imbalance and loss of cell function. 'DNA methylation is deeply connected to biological ageing,' explains Dr Fitzgerald. So in her study, she wanted to find out if these changes in DNA methylation could be reversed by adopting a healthy diet.



STRESS MANAGEMENT: THE REAL FOUNTAIN OF YOUTH

Chronic stress speeds up the ageing process by shortening each DNA strand's length. Maintaining a positive outlook will help lower stress as will staying close to family and friends, regular exercise, meditation, breathing exercises and practices such as yoga.

The diet was also supplemented daily with a probiotic. The participants were encouraged to exercise for 30 minutes daily, five days a week, as well as doing daily breathing exercises to reduce stress and get at least seven hours of sleep a night. 'All together, the methyl donors, methylation adaptogens and lifestyle changes help gene expression,' explains Dr Fitzgerald.

The results of the study astounded even Dr Fitzgerald and her team. When they measured the biological age of the volunteers, they found that those on the anti-ageing diet had reduced their

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biological age by 3.23 years on average during the eight-week trial compared with the volunteers in the control group who had eaten as they normally would. Although there needs to be more research on a bigger sample, these results are incredibly positive.

Dr Fitzgerald has been tracking her own biological age and following the same diet and lifestyle changes used in the study. She is delighted to report that, at '50', she is at her youngest biological age yet (relative to her chronological age of 54). She is now biologically younger than 82% of people her age. Want to eat to turn back your own biological clock? Turn the page for some of her recommendations:

'Biological ageing is the number one predictor of most chronic diseases. By slowing or even reversing biological ageing, you can improve your lifespan and reduce your risk of developing these diseases,' explains Dr Fitzgerald.

The great experiment

Over eight weeks, researchers monitored 43 healthy participants aged between 50 and 72 on a treatment programme focusing on diet, sleep, exercise and relaxation. The diet was

mostly plant-based and included foods rich in 'methyl donor' nutrients. These include folate and vitamin B12, which are found in abundance in dark green leafy vegetables, pumpkin seeds, beetroot, mushrooms (such as shiitake and maitake), eggs and liver.

Also on the daily menu were foods rich in 'methylation adaptogens' that help put methyl in the right places. These are found in most vegetables including cruciferous vegetables (such as broccoli, cabbage and cauliflower) and berries.

The science-backed AGE REVERSAL DIET

DAILY MUST-HAVES:

Dark leafy green vegetables: 2 x 65g servings

Veg such as spinach, kale and Swiss chard are recommended for their high content of 'methyl donor' nutrients: folate, phyloquinone, nitrate, α-tocopherol, kaempferol and lutein. A US study also found that a daily serving of dark green leafy vegetables is associated with slower age-related cognitive decline.



Cruciferous vegetables: 2 x 65g servings

This includes broccoli, cauliflower, cabbage, Brussels sprouts, bok choy, rocket, radish, turnip and watercress. These foods are high in sulforaphane, a sulphur-rich phytochemical with potent antioxidant properties that may protect your DNA and lower the risk of cancer.



Additional vegetables: 3 x 65g servings

Any vegetables you like, except potatoes and sweetcorn.

Beetroot:

Dr Fitzgerald recommends adding 1-2 medium beetroots to your diet each day, or drinking 250ml beetroot juice. It's a rich source of nitrate, which converts to nitric oxide in the body and has been shown to lower blood pressure. If you don't like beetroot, substitute with spinach, watercress, rocket or lettuce.



Pumpkin or sunflower seeds: 4 tablespoons

All nuts and seeds are highly nutritious, but pumpkin and sunflower seeds are particularly beneficial. Sprinkle over salads or combine with mixed nuts and dried fruit to make a trail mix. They are rich in anti-ageing nutrients, including omega-3 fats, B vitamins and antioxidants. If you don't like eating them, have them as seed butters, spread on toast or stirred into porridge.



Protein: 2 x 75g servings

Dr Fitzgerald recommends including small amounts of animal protein, preferably organic meat, poultry or fish once or twice a week to provide nutrients important for DNA methylation support. Vegetarians and vegans may use beans and lentils as a substitute.

DAILY PICK YOUR FAVOURITES:

Berries: one handful (80-90g)

All types are rich in antioxidants, flavanols and anthocyanins, which promote cell health and can protect against disease. According to a 20-year Harvard study of 16,000 women, eating blueberries at least once a week or strawberries at least twice a week may delay cognitive ageing by up to two-and-a-half years.



Mushrooms: an 80g serving

All varieties of mushrooms contain valuable nutrients when it comes to slowing biological ageing. According to another US study, mushrooms are the richest source of the antioxidants ergothioneine and glutathione, which are both associated with anti-ageing properties.

Garlic: 2 cloves

Research suggests that the phytonutrient allicin, found in garlic, may help combat ageing and reduce the risk of chronic diseases by preventing inflammation, cell damage and DNA damage. Garlic also contains high amounts of prebiotic fibres that boost your 'good' bacteria.



Turmeric: half a teaspoon

Curcumin, the active component of turmeric, is a methylation adaptogen that has been shown to have a positive effect on ageing. Add half a teaspoon to curries, scrambled eggs, cooked rice, or green smoothies - mixing turmeric with black pepper and some oils can increase absorption.



Green tea: 2 cups

Made from unoxidised leaves of the Camellia sinensis plant, green tea contains more antioxidants and beneficial polyphenols than black tea. These are thought to have an important role in DNA methylation regulation. Dr Fitzgerald recommends brewing your tea for 10 minutes so that the bioactive compounds can be fully released.



Rosemary: half a teaspoon

One of the main active ingredients of rosemary is rosmarinic acid, which is a methylation adaptogen. Use to flavour roasted vegetables, in stews and casseroles, or even as a tea.



WEEKLY EATS:

Liver: 3 x 75g servings

It's definitely not for everyone, but Dr Fitzgerald describes liver as a methylation superfood, loaded with methyl donor nutrients, including vitamin B12, folate, riboflavin and niacin.

Eggs: 5-10

They are a rich source of choline, which is a methyl donor required for normal brain growth and development.



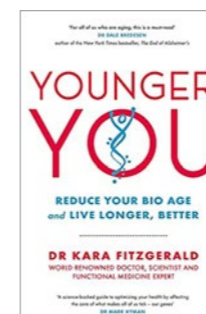
What NOT to do:

X Salty and sugary foods should be avoided, as should all ultra-processed foods.

Dr Fitzgerald says that raised blood sugar levels, from a diet high in sugar and processed foods, accelerate biological ageing.

Try not to eat between 7pm and 7am, where possible, in order to help to stabilise blood sugar.

• For more information: *Younger You: Reduce Your Bio Age And Live Longer, Better (Hachette) by Dr Kara Fitzgerald will be published on 18 January*



Replace ultra-processed foods with fresh fruit and vegetables

PREVENT MIDLIFE WEIGHT GAIN

Middle-aged spread (the accumulation of fat around the abdomen) can add years to your biological age. However, this is not caused by a slowing metabolism, as once thought. The rate of calorie-burning is constant throughout adult life, according to researchers. A 2021 study of more than 6,600 people in 29 countries found that metabolic rate doesn't slow down until after the age of 60, debunking the common myth that ageing is a key factor in weight gain. The reason we gain weight is that we eat more calories than we are burning.

While there may be some small factors that do make it more difficult to maintain a flat stomach as we age, such as hormonal changes during the perimenopause and menopause (which make fat more likely to be stored around our middles than our hips), midlife weight gain isn't inevitable.

Boosting your daily activity will prevent the pounds creeping on. The UK Chief Medical Officers' physical activity guidelines recommend 150 minutes a week of activities that leave you mildly out of breath and slightly sweaty, or 75 minutes of vigorous activity, or a combination of both.

You can walk, jog, swim or dance, whatever you enjoy. Muscle-strengthening exercise at least two days a week to prevent loss of muscle mass is also advised: lifting weights, using resistance bands or exercises like squats, press-ups and lunges that use your own body weight.

(See page 86 for ideas on how to include more exercise in your life.) If you already have a paunch, you will need to eat fewer calories to lose it. Avoiding ultra-processed foods should be your first step. The main culprits have a combination of fat and carbs; think chocolate, cakes and pizzas. **X**

“It's a myth that ageing is a key factor in weight gain”