- Muscles

A mugful of muscle – how coffee makes you stronger

Alongside other health gains, a daily shot can make us less frail.

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For most of us, drinking coffee is an essential part of our morning ritual, either glugging down a mug before we head out of the door or picking one up on the go. The energy boost and spike in alertness is enough of a reason to drink it. But there are also health benefits – research shows it can enhance our brain, heart and gut health. Now, a study in the journal



Nature Metabolism suggests that coffee could also help maintain our muscle mass.

As we age, our muscles deteriorate by around 5 per cent a decade after the age of 30, leading to weakness and an increased risk of fractures and falls. But researchers, who looked at data on

coffee intake and muscle mass among more than 8,000 adults in the US, found that those who consumed at least two mugs of coffee per day (or 240ml) had around a tenth more muscle compared to those who drank none at all.

"That effect would make a big difference to frailty and muscle strength, and it would make a big difference to metabolic health, [and therefore] the tendency towards Type 2 diabetes," says Prof Keith Godfrey, head of nutrition, lifestyle and metabolism at the National Institute for Health and Care Research's (NIHR) Southampton Biomedical Research Centre.

While this study doesn't prove that coffee is directly behind this higher muscle mass, researchers believe that this is plausible.

It may be because coffee increases autophagy, the process where our cells break down and recycle old parts, which is vital for maintaining muscle. Coffee's anti-inflammatory properties could also be a factor.

A compound in coffee called trigonelline could also be to credit, says Prof Godfrey. His research suggests levels of mitochondria (the energy powerhouse in cells) are lower in people with low muscle mass, but that trigonelline counteracts this. Research even suggests coffee may also protect

against Type 2 diabetes and certain types of cancer.

"Coffee just seems really good for every organ system," providing you don't choose the extra large, sugary, syrup-laden options, says Justin Stebbing, professor of biomedical sciences at Anglia Ruskin University.

Brain health may also benefit from coffee. Starting your day with a hit of caffeine boosts our focus and alertness in the short-term but it's also been linked to improved cognitive health as we get older, including better memory and attention – though not all studies have found this effect.

Coffee may also protect against a build-up of amyloid and tau, which are toxic and involved in dementia, research suggests.

Perhaps counterintuitively, coffee may help your heart health. In the short-term, drinking too much can raise the heart rate and cause palpitations, but a few cups a day might protect the organ in the long run.

Studies reported by the American Heart Association have found that the more coffee people drank, the lower their risk for heart failure. Experts put this down to the 100 biologically active compounds in coffee.

Coffee may also be good for your gut microbiome. Having a diverse range of microbes living in your gut is the cornerstone of good gut health and coffee drinkers tend to have more diversity than non-coffee drinkers, research suggests.

Experts believe this may, in part, be because coffee is high in fibre, containing around 1.5g per cup, which feeds our microbes.

Similarly, our mental health can benefit from coffee. As well as making us feel instantly more alert, attentive and energised, coffee seems to have long-lasting mental health effects.

However, tolerance to caffeine varies from person to person. As well as perking you up, coffee drinking can also lead to anxiety, restlessness and insomnia.

Research aso suggests certain cancers, including those affecting the liver, womb and mouth, are less common among coffee drinkers.

While the exact mechanism is unclear, experts believe two phytonutrients found in coffee, called cafestol and kahweol, could be behind this effect as potent chemicals that wipe out cancercausing compounds. Caffeic acid and chlorogenic acid are also thought to prevent cancer development by neutralising harmful free radicals.

Drinking coffee could also offer some protection against Type 2 diabetes, according to research. Acids in coffee may improve blood sugar levels, while its magnesium content may boost protection.

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