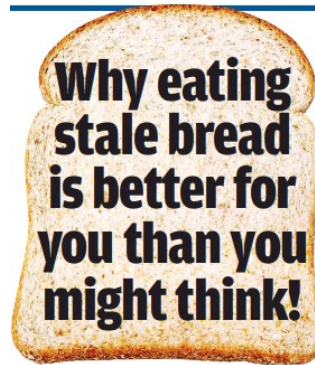


## Why eating stale bread is better for you than you might think!

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WHETHER you prefer your toast golden or dark, your loaf frozen or fresh, it changes the structure of the bread — and the impact it can have on your health.



### FROZEN BREAD

THE glycaemic response of bread (the speed at which the starches break down to sugars) varies when it is frozen, defrosted and toasted — compared to fresh bread.

That's what a 2008 study by Oxford Brookes University, published in the *European Journal of Clinical Nutrition*, found — blaming the fact that it changes the make-up of starch molecules, making them more resistant to digestion, says Dr Sangeetha Thondre, a senior lecturer in nutrition at the university's Centre for Nutrition and health.

The structure of the starch is broken down by the freezing process, making it harder for digestive enzymes in the mouth and gut to break it down, says Dr Thondre.

'Even when the bread is defrosted, those starches cannot return to their original state, in fact they become even less digestible,' she adds.

For most people this is a good thing, as the higher proportion of 'resistant' starch means the oncefrozen bread is digested more slowly by the body, causing a gentler blood sugar spike than fresh bread — and potentially reducing the risk of type 2 diabetes.

This is one reason why Daily Mail columnist Dr Michael Mosley is such a fan of keeping his bread in the freezer, and toasting it from frozen, one slice at a time.

'The resistant starch means fewer calories are absorbed by your body and therefore more are available for your microbiome (your gut bacteria), giving the 'good' bacteria something to feed on and proliferate,' he says.

### FRESH BREAD

THE health advantages of fresh bread lie in its higher moisture content. Dietitian Dr Sarah Schenker explains: 'White flour is fortified with iron and calcium as well as two B vitamins, niacin and thiamin — which are water soluble. The higher moisture content enhances their absorption.'

And while freezing and toasting bread will slow down digestion, fresh white bread is still a useful source of pre-exercise energy, says Sarah Schenker, because of its higher glycaemic index — meaning it is converted into sugar in the blood more quickly, providing energy for exercise.

With low levels of resistant starch, fresh bread is also easier to digest for people who might suffer from bloating and gas.

And while a white, sliced, massproduced loaf is classed as an 'ultra-processed food' (regular consumption of which is linked with obesity and type 2 diabetes) a natural fresh loaf from your local baker is a nutritious option.

### STALE BREAD

STALE bread may not be very palatable but it might be a healthy option — possibly even lowering the risk of bowel cancer.

For a 2017 study, researchers at Australia's Royal Melbourne Institute of Technology, baked white bread and let it sit at various temperatures for up to a week.

Then they tested ground-up samples and found the stale crumbs had higher levels of resistant starch than fresh bread.

When gut bacteria feed off these starches, researchers said, they convert them to fatty acids, which protect against bowel cancer. These fatty acids also stimulate hormones that tell the brain we are full.

Dr Thondre says it's better to let bread go stale in the bread bin than the fridge, as the more it dries out, the slower it gets metabolised in the gut.

### OVER-TOASTED BREAD

LIKE freezing, toasting bread changes starch molecules so they are more resistant to digestion — and less likely to cause sudden blood sugar spikes.

The 2008 Oxford Brookes University study found that bread toasted from fresh produced a 25 per cent lower blood sugar response than fresh bread, but toasting frozen bread puts the molecules through an extra distortion process, lowering that response by almost 40 per cent.

But whereas lightly toasting bread destroys some of the B vitamins, burnt toast contains acrylamide, a compound formed in starchy foods during high-heat cooking methods such as roasting, baking and frying. high amounts of acrylamide may increase your risk of cancer.

Research in humans remains inconclusive but in 2017, the Food Standards Agency recommended toast be cooked to golden yellow — rather than dark brown or black — to reduce acrylamide exposure, as more acrylamide is found in the darker areas.