Testing life-hacks with 'citizen science': does stainless steel really get rid of garlic smells?

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Credit: Nikolaos Dimou from Pexels

How often does someone suggest to you some new hint, tip or hack that will supposedly make your life a whole lot easier? And which ones can you trust? We want to find out by subjecting life-hacks to rigorous

scientific testing – a sort of "clinical trial" for the internet's "top tips". But we need your help. To be sure of the results, we need citizen scientists from far and wide to carry out our simple experiment and then return their results to us.

Old wives' tale?

A common "old wives' tale" suggests that rubbing garlicky hands on something made from stainless steel, such as a spoon or a kitchen tap, will nullify the whiff. This idea has even spawned a high-street product – stainless steel soap, a chunk of the metal which you can use instead of normal soap. It will, however, set you back a few quid, so is it worth forking out?

What causes the whiff?

Garlic is packed with sulfur-containing chemicals, which are responsible for its characteristic taste and odour. Allicin, in particular, is thought to be the culprit most guilty of making your hands (and breath) pong, but it's only created when two chemicals react – the enzyme alliinase and a sulfur-containing amino acid called alliin. These are held in separate portions within the cell walls of the garlic clove and only mix when the garlic is squished.

You can try it yourself – a bulb of garlic doesn't smell of very much at all, but slice into it and smell again. When cells are crushed, the chemical reaction converting alliinase and alliin into allicin is almost instantaneous.

And when allicin degrades, it produces even more smelly sulfurous compounds, including diallyl disulfide. These all contribute to garlic's characteristic aroma.

How might stainless steel banish the pong?

The scientific data on whether the stainless steel trick actually works to get rid of stinky garlic hands is sketchy – although chemistry tells us that it might well work. Stainless steel is an iron alloy with a minimum of 10.5% chromium by mass. This layer of chromium is what makes stainless steel less likely to rust, corrode or stain. Chromium forms an oxide when it is in contact with air and water, making it more durable. It's possible that this oxide layer could help to remove unwanted smells. The idea is that the sulfur-containing chemicals left on your hands after chopping garlic may form a chemical bond to the chromium oxide and cling to the surface of the soap, not to your hands, solving the smell problem. But we don't really know.

This is where you come in

It sounds plausible, but there is very little hard scientific evidence to support this theory. Which is where you can help. We need as many people as possible to perform a simple experiment to test whether stainless steel really is an effective odour remover.

You'll need: A clove of garlic. A knife. A blindfold. A plastic spoon and a stainless steel table spoon of about the same size.

What to do:

- Wash and dry your hands (so they don't smell of anything to start with).
- Slice out a piece of garlic.
- Rub the freshly cut garlic between your hands for about 10 seconds.
- Under running water, rub one palm with the back of the stainless

steel spoon for about 10 seconds. Then rub the other palm with the plastic spoon, again under running water, for 10 seconds (the plastic spoon is our control experiment). Make sure you remember which hand was rubbed with which spoon.

- Find a willing volunteer. Ask them to close their eyes or put a blindfold on – with their eyes closed, they are less likely to notice any signals from you about which hand has had what treatment.
- Hold a hand under their chin (that way each hand will be the same distance from the test subjects nose) and ask them to smell it. Then do the same with the other hand.
- Ask them which hand smelt more strongly of garlic.
- Let us know whether one hand smelt more than the other, or whether they smelt the same using this survey below.

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We'll need plenty of tests if we are going to be sure of our results, otherwise it's just more anecdote. And we'll get back to you, to let you know whether it's worth forking out for stainless steel soap soon. Either way, you will have been part of a truly global science experiment.

Over the next few months, we'll be asking for more help from citizen scientists to check the efficacy of tips that may make flowers live longer, peeling a boiled egg easier and extend the burning time of candles. Check out the Hit or Myth *blog to find out more.*

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