Black hairy, strawberry and geographic—what the state of your tongue can say about your health

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One of my grandmother's favorite things to cook was cold pressed ox tongue, though it's a tradition that I don't really feel the need to continue.
Have you ever seen one? Not only is it colossal, but requires a lot of faff in scrubbing, cooking and pressing, as well as removing a thick layer of skin on top before you eat it.

I'll pass, thanks.

Tongues, whether ox or human, are chiefly comprised of muscle—some of which control its shape and others its movement. They're covered in specialized membranes containing many different small bumps—or papillae—linked to our taste buds. These sense the tastes and textures of our food.

But the tongue does more than taste and help us to swallow what's in our mouth—its appearance can also share important information about our general health.

**Technicolor tongues**

Tongues can turn a surprising range of colors.

Take red tongues for instance. A bright red, inflamed and swollen tongue is sometimes referred to as a strawberry tongue. The papillae become inflamed to look like the pips on the surface, and it can begin with a white coating, making it look like a slightly unripe strawberry. The coating then sheds, leaving the tongue appearing bright red.

It might sound like a cute name but a strawberry tongue should always be taken seriously. First, it could indicate scarlet fever, which is caused by the bacterium Streptococcus pyogenes. It's highly contagious but treatable with antibiotics. Without treatment, however, scarlet fever can lead to complications like rheumatic fever. Strawberry tongue can also indicate Kawasaki disease, a potentially serious inflammatory disorder, mostly seen in children. This also needs to be recognized and treated in
hospital as quickly as possible.

Strawberry tongue can also be seen in toxic shock syndrome, a rare, life-threatening condition—and an emergency. The condition arises as a result of bacteria from the skin invading the body, releasing harmful toxins. Its symptoms include a high fever, muscle aching and a distinctive "sandpaper" rash.

So, never ignore a strawberry tongue.

Tongues can also be discolored white and, believe it or not, black. Conditions like thrush can cause a white tongue, whereas lingua villosa nigra means a black hairy tongue. The name comes from the elongation of the smallest papillae so they look like hairs. It's associated with smoking, dry mouths and poor oral hygiene.

Then, there are blue tongues. This is central cyanosis, a serious condition where there is bluish (or cyan) discoloration of the mouth, tongue or face from poorly oxygenated blood or poor circulation. It occurs in numerous conditions of the heart and the lungs—and can even be caused by high altitudes. This is another medical emergency, meriting a call to 999.

A mapped tongue

Your tongue can be more than red, white, black and blue, though. It can take on some genuinely odd appearances. One example is geographic tongue, where the top of the tongue turns from roughened papillae into patches of smooth red tissue. The tongue looks like a world map, then; land drifting between oceans.

What is strange about this condition is that the patches can come and then go, changing the appearance of the tongue. It's a bit like continental drift, shifting position across the water.
There are usually few symptoms associated with geographic tongue, although some patients may complain of irritation on the surface of the tongue, or sometimes a burning sensation. The condition is entirely benign and more common than you might think—it's estimated to affect 1%–3% of the population.

Spotting geographic tongue might lead to the diagnosis of other associated disorders too. Some links are stronger than others, but psoriasis, allergic diseases, asthma and diabetes have been connected to it.

**Tongue myth-busting**

There are some things that your tongue can't tell you—or some claims that are yet to be backed up with convincing science.

Take cracks or fissures in the top of the tongue, for instance. Most of us will notice one or two cracks in our own tongues—there's usually one that goes straight down the center. This is appears to be just a normal variant. However, there are people who have deeper and more numerous cracks. This is sometimes called fissured tongue and appears to have something in common with geographic tongue.

Claims have been made that cracks have other associations—with deficiencies of vitamins and iron for instance, as well as dry mouth (or xerostomia) and smoking, to name but a few. Again, the strength of association according to scientific proof is variable.

Perhaps one of the greatest myths surrounding the tongue, is something that is taught at school, and which seems to propagate the problem. That is the fallacy that different regions of the tongue are sensitive to particular tastes—sweet at the tip, bitter at the back, for example.
This is codswallop. First, most papillae have tastebuds (except the very tiny filiform type), so all tastes can be perceived in all areas of the tongue. Second, these maps may omit the fifth taste, umami—taken from the Japanese meaning delicious, umami relates to savory tastes. Think parmesan cheese, cooked meat and tomatoes.

So, while the tongue lacks a taste map, it can, in some people, look like a map—and be read like an atlas by doctors in order to make a wide range of different diagnoses.

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