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Human Vestigial Structures

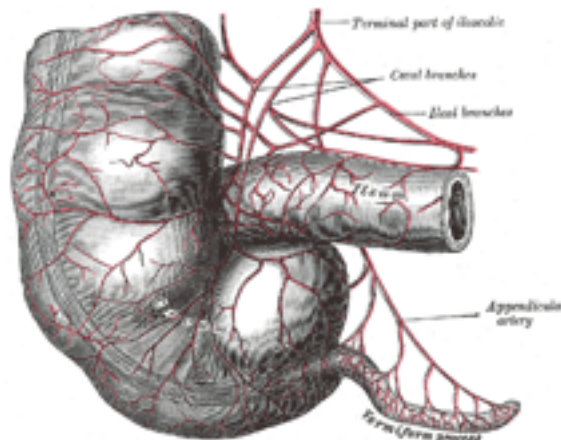
Humans have an amazing knack for clinging to the past. We all have traits or behaviors that suited our ancestors just fine, but no longer make any sense — but we just can't seem to get rid of them.

Over time, these traits and behaviors become what are known as "vestigial" — as in, they exist as a vestige of our evolutionary heritage. At their most innocuous, our vestigial features are funny to think about. At their worst, though, they've been known to be detrimental to our health (scientists often refer to this second case as an example of "evolutionary baggage").

So here are ten vestigial traits and behaviors that you may still be clinging to.

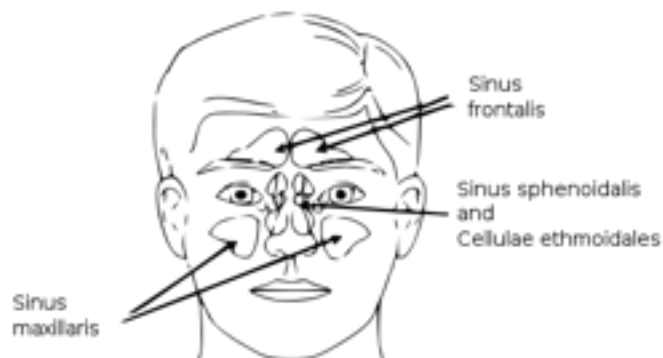
10) The Appendix

The appendix is probably the most widely known vestigial human organ. Labeled as the "vermiform process" in this image, our now-tiny appendices may have once aided our primate ancestors with the digestion of cellulose-rich plants, according to experts. Some scientists believe that the modern human appendix may play a role as a "safe-house" for good, digestion-aiding bacteria, but anyone who's paid for an appendectomy will tell you that its true function is lining the wallets of the surgeons who remove it when it gets infected.



9) Sinuses

Your sinuses are basically pockets of air that reside inside your face. The biological role of sinuses is often a topic of heated debate, but there is little-to-no consensus on their actual purpose. One thing everyone can agree on is that one of the only things worse than a sinus headache is when your sinuses get infected — both of which are things sinuses appear to be very good at.

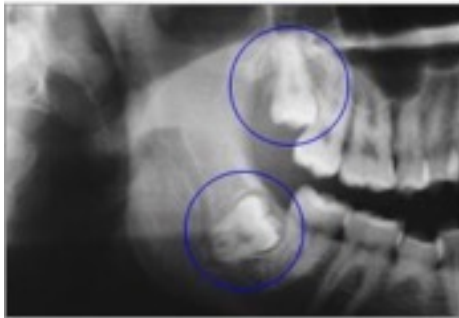


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8) Wisdom Teeth

Wisdom teeth are like unwanted house guests for your mouth. There usually isn't any room for them to push their way into your personal space, but they do it anyway (even if you ask them not to). When they do, it's very uncomfortable. Discomfort usually escalates to pain, as they continue to make your life excruciating. If things get really out of hand they can even become violent, ruining years of orthodontics-work in what amounts to the most protracted punch-to-the-mouth ever.

It's usually too painful to continue living with them, and the police just can't help you. With nowhere left to turn, you're forced to seek out the help of a professional, whom you can pay to take them out. Afterwards, you're shown their bloody remains so you can identify them before they're "disposed of" for good. Some people actually keep them, but that's just morbidly perverse.



7) Coccyx

Your coccyx, better known as your tailbone, is the very last part of your vertebrae, and is the remnant of a lost tail. Actually, pretty much every mammal on earth had a tail at some point in their lives, even if it was while they were developing in the womb. Take humans, for example. Between stages 14 and 22 of human embryogenesis, one can actually observe a tail-like structure that is later absorbed (except when it isn't...which can happen).

This feature of embryological development was one of the mainstays of Ernst Haeckel's theory of recapitulation. Commonly stated as "ontogeny recapitulates phylogeny," the theory basically holds that the process of developing from embryo into adult parallels various stages of the organism's evolution from an ancestral state to its current one.

6) Ears

No, not the whole ear, but the human ear does have all kinds of strange things going on with it. For one thing, there's an entire group of muscles attached to our ears that, for most monkeys, are used to move the ears like satellite dishes trying to pick up a signal. For us, however, they just sit there — not moving anything — suggesting that they've lost their biological function. Except, of course, for those of us who can wiggle our ears, in which case they serve the purpose of making you look like a fool (I'm just jealous). It's worth pointing out that chimps, like us, also have these underdeveloped muscles and therefore lack the capacity for ear-movement, as well.

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Furthermore, in about 10% of the population, the outer rim of the ear called the helix has been known to show signs of vestigial features. In the ear pictured here, for example, a thickening of the helix called "Darwin's tubercle" occurs at the juncture of the upper and middle thirds of the ear — a feature common to many mammals.



5) Arrector Pili

When you're cold or stressed out, your arrector pili are the smooth muscle fibers that contract involuntarily to give you "goose bumps." If you're a furry woodland creature, this can provide insulation (thick, standing fur traps air between the erect hair follicles, helping the animal retain heat), or make you look bigger (which can mean the difference between being eaten and being passed over for less troublesome prey, a particularly good example being a porcupine). Since most humans aren't hairy enough to fit the "furry woodland creature" bill, our arrector pili provide neither of these benefits.

4) Tonsils

Tonsils are purported to be the body's first line of defense against inhaled or ingested pathogens, but they, like the appendix, have a nasty habit of taking up arms and joining the opposing force in the ongoing war-of-infection waged against your body. Their tendency to become inflamed and dangerously infected has led many to believe that if tonsils ever served a more definitive function in the way of immune response, that the benefit of said function has long since been outweighed by the need to have them removed so often.

3) Male Nipples

While examples of males who can lactate pop up from time to time, the biological function of male nipples remains a mystery. They are most likely vestigial in a different way than many of the other features on this list, in the sense that they aren't left over from an evolutionary event, but rather an embryological/developmental one. All fetuses effectively begin life in the womb as females. In the absence of a fetal Y-chromosome, the embryo will develop into a full-blown female. When a Y-chromosome *is* present, however, the fetus will produce hormones like testosterone and develop into a male, but the nipples pretty much just hang out. This essentially makes them decorative.

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2) The Palmar Grasp Reflex

What's interesting about the palmar grasp reflex is that it isn't so much a vestigial feature as it is a vestigial behavior. According to a study conducted in 1932, when a finger or similar object is placed in the palm of an infant, as many as 37% of them are able to grasp with enough power to support their own body weight were they to be suspended. (Interestingly, the reverse motion can be induced by stroking the back or side of the baby's hand). A similar grasping motion can be observed in the feet of infants. These behaviors typically persist until four or five months of age, and might have been useful to our hairier ancestors, who could have been clung to by their offspring while they were traveling.

1) Plica Semilunaris

Your plica semilunaris (what many believe to be a vestigial remnant of your third eyelid) is the small fold of tissue located on the inside corner of your eye (not the little bump in the very innermost corner, but the small flap right next to it — check the image). Your plica semilunaris are the vestigial remnants of what are referred to as "nictitating membranes," which are most commonly found in birds, reptiles, and amphibians.

Its likeness to the nictitating membrane, or third eyelid, of other animals led to the idea that it might be the vestige of such a structure, which is still part of the eye in some primates, including gorillas. In the chimpanzee, however—one of the human species' closest relatives—the plica semilunaris also appears to be vestigial. The function of the nictitating membrane in many animals is protective—for example, keeping the eye clean and moist or concealing the iris from predators. In some species, the membrane is sufficiently transparent so as to enable vision when underground or underwater. Though the reason for the loss of a nictitating membrane in humans is unclear, changes in habitat and eye physiology may have rendered the tissue unnecessary.

