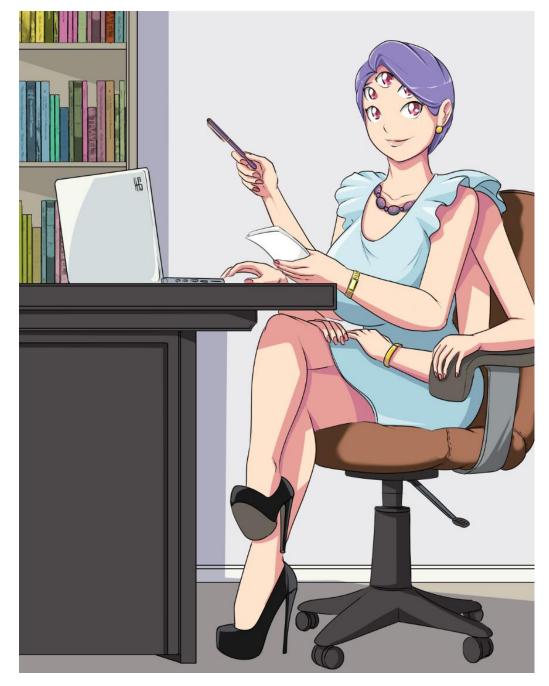


Jessica Park – Sc. D. in Health Science specialization in Genetics.



The content for Ask Ms. Jessica comes from real questions from real people sent to <u>AskMsJessica@gmail.com</u>

Issue 1 - Elongation... how does that work?

Dear Ms. Jessica,

Some mutants can get all stretchy. How do elongation mutations work?

Great question! Unfortunately there is no one answer. When we say "elongation" we usually lump a variety of different mutations into the same category. It's not quite as scientific a descriptor as you'd think.

The simplest kind of elongation mutation is basically the same as being "double jointed." It's a level 1 mutation that allows your joints to bend in ways they shouldn't. Nothing really changes in the mutants biology except for tendons and ligaments stretching further than they should.

A similar mutation, sometimes classified as level one, sometimes as level 2, allows mutants to separate their joints without pain or harm. This would allow the skin and cartilage between their joints t naturally stretch, giving them expanded range of movement.

When people most commonly refer to "elongation" they refer to level 3 mutation, in which the skeletal system of the body undergoes a drastic change. Essentially, muscle mass grows into bone matter, greatly softening it and allowing it to stretch and flex like any other muscle. In fact, the skeletal system of these mutants is made up of mostly muscle and cartilage with very little bone at all.

While this affords incredible strength and flexibility, an elongated mutants limbs acting more akin to octopus tentacles than human limbs, it also offers some drawback. For one, elongated mutants are at higher risk of developing anemia as their new skeletal system has far less marrow than a normal humans. Second, an elongated mutant still has organs inside his or her body, and without hard skeleton to protect them they usually have to work out and get used to having a set of muscles constantly flexing. Luckily enough, a small bit of physical therapy allows these mutants to do this without even thinking, effectively recreating their skeletal system with tensed muscle whenever they aren't stretching.

There is a rarer level 4 form of elongation which science doesn't particularly understand. This mutation essentially keeps all the systems of the body the same, same muscles, same organs, and so on, but somehow changes their consistency from a solid to something more fluid like. The exact consistency varies from mutant to mutant but usually it's somewhere between clay and a liquid latex sort of consistency.

The best theory science has at this point is that this mutation essentially dissolves the protein lattice that gives cellular structure their shape, and instead causes each individual cell to connect to the next via tiny microscopic protein fibers. This essentially allows cellular structures to stretch, squish, and change shape without actually changing their orientation relative to each other. This would allow a mutant with this mutation to be literally squished flat while retaining the functions of their organs, similar to certain fish and salamanders. In short, every mutant who can elongate is different. While each mutant can understand a small bit about how their mutation works by themselves, I recommend elongated mutants have frequent checkups to determine the full extent of your ability to elongate or change shape. There are a series of very reliable tests that should tell you what kind of mutation you have and what it allows your body to do. We wouldn't want you pushing yourself too far only to break a bone or pull a muscle!



Issue 2 – Everybody pees

Hello Ms. Jessica. I have a more intimate question. I always wonder how mutants with a mouth instead of a vagina pee. Hope to get an answer soon!

Well, that is intimate, but science doesn't shy away from the curious.

Once again, there's no easy answer because every mutant that has a mouth vagina is different. We have records of several different types of biology. Some have vaginas which only have mouth like parts and thus still take care of their business as usual. Aside from the lips and the muscles associated with it, their internal "wiring" so to speak, is the same as a normal girls.

Some simply grow another urethra somewhere else on their body, usually its further back, and their anus moves to compensate. Though once again, this is mutation we are talking about, and there have even been instances of vagina mouthed mutants reworking their internal organs such that they almost perfectly utilize all the water that comes through them. In this particular case, every other liquid waste product is excreted as sweat, similar to the slime that would come off certain types of frogs and toads.

But that's actually not the most common way that girls with this specific mutation do their business. For that, answer, we have to look to the worlds of birds and reptiles. But I'm getting ahead of myself.

Obvious, if a girl with a mouth vagina has a full mouth, that is, a full set of lips, teeth, tongue, and a connection to one's digestive tract, then it would be very unsanitary to also pass waste through it. In which case, the body would have to reroute where that waste goes. Luckily, humans already have another opening that they pass waste through, the anus.

This is where the biology of birds and reptiles come in. Most birds and reptiles don't actually have a separate opening for two types of waste and/or sexual activity. They have a single opening that handles all of it, a cloaca. Since this is the mutation that would require the least radical internal changes, it tends to be the most common mutation for girls with a vagina mouth.

Yes, you don't always see it, but most vagina mouthed girls pee through their anus, or in this case what used to be an anus. Now it is a cloaca. For that matter, primary sexual activity also happens through there. You usually can't impregnate a girl through her vagina mouth. You'd have to go through her cloaca.

This also means the waste of girls with a cloaca is somewhat different. You may have noticed that what you commonly refer to as bird droppings are white and pasty? Well that's actually not bird poop. That's what birds do instead of pee. The liquid waste is collected, congealed, and excreted. Girls with a cloaca pass waste in much the same way.

I hope this was informative for you. Mutations can be a little difficult to talk about, considering their intimate subject matter, but a healthy curiosity is always good, and the pursuit of knowledge is never a bad thing.

So keep your questions coming, no matter how intimate.



Issue 3 - Mutants in heles

Hey Miss Jessica!

Just wondering, why do so many mutant girls wear heels?

An interesting question. The easy answer is that they just want to. Heels are fairly accepted in our society as show of propriety. It's a show of cultural collateral, a status thing. Not to mention it's just a good look.

But that's a pretty unsatisfying answer, so here's one you may be interested in. There is a very common level 2 mutation that affects the feet. Those affected have the bones in their feet grow, elongating the space between their toes and their heel. The heel itself moves a bit further up the leg as the shin bone shortens. The result, is a foot that isn't quite designed to be walked on flat.

This mutation has been extensively studied and scientists essentially know what is happening. The mutants foot is essentially being reshaped into a more digitigrade stance.

What does digitigrade mean? Well, in the animal kingdom there are really three types of ways that creatures walk. Humans, rabbits, apes, and other species walk plantigrade. That means that their heel touches the ground as they walk, and the entire surface of their foot is used for walking. You can remember it by thinking of the phrase "planting" your feet. When you plant your feet, you are walking plantigrade.

Digitigrade animals walk with their heel raised off the ground. This is because the foot is extended and the heel takes a place higher up on the leg. The majority of the weight is forced on the ball of the foot and the toes. This is exactly the same as walking in heels. You can remember this because digitigrade animals walk on their "digits" i.e. their toes.

Finally there are unguligrade creatures. These creatures, known as ungulates, don't even put the ball of their feet on the ground. Instead they walk on their toes only, which in most cases have evolved into some sort of hoof. Not all hooved mutants have unguligrade feet, but some do.

That's the dirty little secret of a lot of mutant girls. Many of them have feet that have mutated into a more digitigrade configuration. It's actually very uncomfortable for a digitigrade animal to walk plantigrade. But it would also be weird if mutant girls everywhere were just walking on their tip goes for no good reason.

Thus, we have high heels. It's the perfect solution. They fit digitigrade feet perfectly and allow digitigrade mutants to walk naturally, and from the outside, no one can even tell if your feet have mutated or not.

Once again, this doesn't apply to all mutants, just some. For the most part, us girls just wear heels because they want to, but it's pretty interesting to know that some mutants have feet that are made for them, right?



Issue 4 - Aesthetic vs. Functional Vaginas

Hello again! Thank you for answering my previous question about vagina mouths. What about girls with a vagina on a different spot (like her breasts?) Do they work like normal?

Once again, there's no one answer that applies to all mutants, but there are some patterns worth mentioning.

You know how we classify mutants as level 1-4? Well we have classifications for individual mutations as well.

The first is benign. A benign mutation looks different but serves absolutely no function. If a woman had benign mutated vaginas on her breasts, they would just look like vaginas. They wouldn't even provide her sexual pleasure.

The second is aesthetic. Aesthetic mutations look, feel, and for all intents and purposes act like the things they appear to be, but don't serve a function. So a girl with aesthetic mutated vaginas on her breasts would feel them like normal vaginas. They would be sensitive and sexual and would respond to stimulation like any normal vagina would, though they wouldn't do anything else. They wouldn't have a connection to her birth canal. In fact, they probably wouldn't have a connection to anything. If you would, say, cum in these vaginas, the cum would just dribble out because it has nowhere to go.

NO LAUGHING! This is serious scientific discussion.

The third type of mutation is functional. Functional mutations, for all intents and purposes, are exactly what they appear to be. A girl with functional vagina breasts has, well, vaginas on her breasts, through and through. They connect to her birthing canal. Maybe they each have an individual uterus and womb, or maybe they are simply connected t her original, but they are, as I said before, completely functional. You could impregnate a woman through these types of vaginas, so be careful.

The fourth type of mutation, usually only occurring in level 4 mutants, is meta-functional. A body part that is meta-functional has function beyond its original intension. It's hard to think of an example for a vagina, but think about mutants with tentacle tongues, or mutants that can breathe fire. Not only do their tongues and lungs work like normal, they do even more! So I suppose if your breast vaginas had a tongue, or could produce milk, or something like that, something that a normal vagina couldn't do, then they would be meta-functional.

These classifications aren't perfect. For example, what if you had a breast vagina that couldn't be impregnated but did have a number of small tentacles in it. Is that an aesthetic mutation or a meta-functional mutation? There's not actually a good answer for that and scientists are still debating what the best method of categorizing individual mutations is. It's a growing field, after all.

Luckily, these hard to categorize mutations tend to occur in level 4 mutants only, which are rare. They are the universal exception, so to speak. Level 4 mutations are so extreme that it's very hard to come up with rules that govern them. Heck, we don't even know how most of them work biologically.

So I suppose the answer to your question is, they work a lot of different ways depending on the mutant in question. If you meet a girl with breast vaginas, be sure to ask her what type of mutation it is, just so that you can practice safe sex.



Issue 5 - Two heads are better than one

Hi Ms Jessica,

I frequently see mutants with multiple heads. Some of them refer to themselves as a single person. Some seem to have distinct personalities in each head and say they are conjoined people. Sometimes the ones that call themselves a single person talk to each other... I mean one of their heads talks to the other head, even though they call themselves the same person. What are the differences between these different types of mutation and how many different types are there?

A very good question indeed. You are correct, multi-headed mutants come in many different varieties, and it all comes down to that grey matter that makes up all that we are, the brain!

In general, mutants with multiple heads can form in one of two ways. Either A) someone with one head grows or somehow otherwise forms (splits via mitosis, converts another body part, etc) another head or B) two people, each with one head, fuse into one mutant. Yet even though there are only these two ways that we have yet observed, the resulting mutation can be one of any number of results.

If the resulting mutant has two heads but one brain, or at least one organ that operates as a brain, then they will inevitably act as one person. You have likely seen mutants like this, that have one personality despite having two heads. In this circumstance the extra head is the same as any other limb. It's just another part of the body that the single brain can control. Sometimes the brain only exists in one head, sometimes the brain migrates to another part of the body, sometimes both heads have brain like structures but can only operate as a brain when working in tandem, either way, one brain=one personality.

Anything else is a result of having more than one brain. But once again, simply having two brains doesn't predict anything. In fact, mutant neurological systems can be quite diverse.

Sometimes, a mutation will cause one's brain to split into two identical copies of itself, but the two brains have no direct communication with each other. When that happens, the original human has, essentially, been cloned, or more technically, copied. The two heads will consider themselves two people, and at the time of copying they will be identical, but then nature will take its course and the two personalities may diverge as they have different experiences.

Sometimes, the same thing will happen, but the mutants form a "spinal bridge." This is when a very thick bundle of neurons, similar to the spinal column, connects one brain to the other. Mutants that have this organ tend to hear each other's thoughts or "share memories." In other words, the mutant has two brains, but each brain constantly knows what the other brain is thinking, making it seem like they are acting as one.

When this happens, you will usually get two mutants referring to themselves as the same person, as they have access to the same memories, emotions, thoughts, feelings, and desires at any time. However, since they have two brains they still do think independently of each other and thus can hold conversations, and in some ways be different people despite referring to themselves as once.

Sometimes, when a brain splits, it doesn't split perfectly. For example, sometimes one brain forms with a more active amygdala and right frontal lobe, enhancing feelings of guilt and shame, while the other has a less developed prefrontal cortex leading to reduced impulse control. As a result, these mutants might appear to be manifestations of one's Freudian superego and id.

However, these are all just a result of brain formation. You can have splits that form with one scared personality and one brave personality. Or for that matter you can have splits that don't necessarily mirror each other. A reserved and conservative girl might split into one personality that is an outgoing party girl, and another who is an outspoken and violent anarchist. It really makes you think about what makes us, us, since tiny changes to our grey matter can greatly change who we are.

It's also worth noting that imperfect splits like this can form with or without a spinal bridge, resulting in mutants that look at themselves as either one or two people, despite differing personalities.

Then there is the case of the "blank slate" brain. Sometimes, when a new head forms, it forms essentially empty. It might have the basic skills needed to exist as a person, speech, the ability to breath and beat a heart, etc, but they won't have any memories or if they do, they are a garbled distortion of the originals. This essentially creates an entirely new personality in the new brain, one who will inevitably consider themselves a separate being from the original, even with a spinal bridge.

In the case of conjoinment, it's much the same but in reverse. The two brains coming into the fusion inevitably will have different personalities and memories, but this can change based on how they fuse. If they form a spinal bridge, they will be able to feel each other's thoughts and emotions and so the boundary between them will lessen. Furthermore their two brains can merge into one, completely creating a new being. That's what happened to that pop idol, Synergy, that all the kids seem to love on Tik Tok. Despite the new brain having two sets of memories, it will inevitably think of itself as one person.

These rules apply no matter how many heads a mutant has, from 2 to 20 to 200. It always comes down to how many brains the mutant has, and how they are connected. It really makes you marvel at the wonders of biology that such a complex organ responsible for everything we are, all our loves, dreams, hopes, and fears, evolved naturally.

Before I go, there are a few exceptions. Sometimes, particularly complex mutants form separate brains that don't fully form. They contain the ability to control muscles and organs, but aren't capable of independent thought. We call these brains "slave brains" and they often form when a mutation is particularly complex and a body needs extra mental power to handle the cognitive load of all the new mutated body parts, or when a mutant is able to separate from their body yet still control it remotely. Once again, these slave brains are really just extensions of the original brain. Think of them sort of like graphics cards in a computer. A graphics card is, in a sense, a tiny computer but can't do anything unless it's attached to a bigger, more complex computer.

The second exception deals with multiple personalities or Dissociative Identity Disorder. This is when multiple personalities form in one brain. It happens in mutants and it, of course, can happen in mutants too, especially if their mutation was traumatic. In this case, a mutant might have one

brain, but manifest two or more personalities, which they then enact through their multiple heads. The big difference here is that mutants with DID might someday, through therapy and treatment "reintegrate" if they wish to do so. Mutants with multiple brains are truly two different people, in biology as well as personality, and could not reintegrate even if they wanted.

Phew, that was a bit of a ramble! I hope I cleared up your question! Neuroscience is a truly fascinating field and the neuroscience of mutants is teaching us so much about the human brain.

