Whom should I thank for my penis? [1]

Dear Alice,

Okay, I have looked in just about every place possible. I was just curious about the genetics of genitalia. Is the size of a penis inherited from the father's or mother's side? I have found more than enough info on the size, etc. I just want to know what side of the family my penis came from (no pun intended). Thanks.

Answer

Dear Reader,

In a nutshell, the answer to your question is complex: your penis size could be a factor of genes from either parent, both, or it could be a product of neither one exactly. Like many observable traits (called phenotypes, meaning the physical outcome of your genes, or genotype), it can be difficult to fully differentiate genetic influences from environmental or even chance ones. With all of these factors in play, the ability to draw clear cause and effect relationships between what is in your genes and how those genes get expressed as the physical you (and your penis) can be a bit complicated.

To explain this in a broader sense, consider all the things that go into a characteristic like height. Sure, you could inherit tall genes from either your mother or your father, and that could be one explanation for being a tall person. But consider someone who inherits tall height genes, but is malnourished in utero, had a very low birth weight, and also experienced significant malnourishment during her/his first six years of life. During this critical window of early bone development, if you don’t receive adequate nutrients, your bones simply will not grow to their full potential, and you would be shorter (either slightly or significantly shorter) than you would be growing up in nutritional abundance. In this case, the environmental influences can trump or even permanently change genetics.

People also carry traits or phenotypes that are not present in their biological parents. Consider it a product of the wondrous genetic remixing that happens when the egg and sperm first get together, prior to fertilization. Most people have about 200 genes that are said to be de novo mutated—that is, they are genes that have changed slightly from the parent line. The majority of these mutations are innocuous, and many go unnoticed, but an example would be a particular nose shape that is close to but isn’t exactly like one of your parents. So your penis size may not be attributable to the genome of either of your parents: it could be the influence of a gene that’s yours alone and from neither parent.
However, the fact that you have a penis at all (versus not having one) is genetically determined, thanks to the Y chromosome inherited from your father. Biological females don’t have a Y chromosome. Sex development goes something like this: prior to the seventh week of fetal development, both male and female fetuses look about the same, with undefined sexual organs (gonads) and ducts (called the Wolffian duct and Müllerian duct). After the seventh week, the gonads will turn into either testes or ovaries and one of the ducts will remain depending upon the combination of chromosomes. The presence of SRY gene, which is called the sex-determining region of the Y chromosome, initiates the development of the testes in the fetus. One type of cell present in the developing testes produces testosterone, which promotes the development of Wolffian ducts into the rest of components of internal and external (including the penis) male genitalia. Another type of cell in the testes will produce a hormone that will degrade the Müllerian duct. In the absence of the SRY gene and Y chromosome, however, the Müllerian duct would typically develop into female genitalia. So, exposure to hormones is what influences the development of the penis, and levels of testosterone could influence penis growth. Researchers have noted that the fastest period of growth for the penis is in the first three months of life, and if your brain isn’t synthesizing testosterone properly, or if your testosterone receptors don’t work well, penis growth can be compromised. This is also true if there is difficulty with testicular development in the fetal period. But there isn’t clear data on what, specifically, influences particularly larger penis growth.

Now, size really doesn’t matter, but if you’re curious, some recent studies have shown a few interesting (if conflicting) findings on body size correlations with penis size. One study on Italian men noted that penile and testicular size seemed to correlate with body mass index (BMI). Another recent study on Egyptian men noted a correlation between index finger and penile length. Other studies have addressed the difficulty with standardizing penile measurement techniques and have doubted the connection between any other body part size and the size of the penis. Although it’s ambiguous at best whether penis size is reflected in any other body part measurement, it also seems that overall penis lengths are getting longer: one recent study has shown that penile length in boys between the ages of one and 158 months increased 0.4 centimeters across most age groups. It’s worth noting that penises aren’t the only things that are getting bigger with time: in the same study, height, body weight, and testicular size are all now larger on average.

All this to say, your penis size could be a product of any of one of the factors mentioned or any combination thereof. Hopefully this gives you a handle on the incredible girth of your question!

Alice!
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