

Growth supplements to make up for lost ground during puberty? ^[1]

Alice,

I am a healthy male aged 22 years old. I have recently looked into the possibility of growth supplements as I was a vegetarian during my very active teenage years and am concerned that a lack of protein may have inhibited my growth in these years. Is there any possibility of:

- (a) Making up 'lost ground' at this stage in my life?
- (b) There being any truth behind the claims made by these companies who sell growth supplements? I am struggling to find any independent evidence!

Many thanks.

Answer

Dear Reader,

Making up for what might be "lost ground" can take different directions and all of them may not be "up". It's a little unclear exactly what you mean by growth, but if your concern is about building muscle and protein intake, those can be addressed in adulthood (there's a wealth of information to be found in the *Go Ask Alice!* [Nutrition and Physical Activity](#) ^[2] archives on both topics). However, because you mention your teenage years, "growth" during that time typically refers to height or bone growth. If this is what you hope to make up for in your adult years — that may be a tall order. The biggest factors that determine bone growth and height are a person's genetics and hormones. Some of these factors may be able to be addressed or treated, but may not result in the change you seek. The good news is that your nutritional intake as a teen (barring specific eating concerns and certain medical conditions) likely didn't significantly contribute to hindering your growth. As for the growth supplements in question, there's a lack of research available about their effectiveness or safety, so it's difficult to say whether they would be of any benefit. That said, an understanding of bone growth and the factors that can impact it may help forge a new path for you in the future.

Reader, you mention that you're 22 years old — while you may be a young adult, your bones may be at a different bone "age," which helps determine whether a person's bones have the

ability to continue growing. More specifically, at the end of many of the bones in the body, there are growth plates that have their own rate of aging aligned with periods of growth over the lifespan. Two major growth spurts typically occur in a lifetime: a very rapid period just following birth and during puberty. Once the growth plates of the bone have aged to the point where they've sealed, then no more vertical growth can occur. With this in mind, there are some instances where differences in growth may stem from either from genetic or hormonal factors. As far as genes are concerned, there are many involved and there are lots of possible variations that can affect the height reached as an adult. As such, a difference in growth can certainly be passed down through families — ranging from short parents that beget short children to a number of conditions that can result in shorter stature or delayed growth (e.g., constitutional growth delay [3], Turner's syndrome, dwarfism). Growth may also be altered through differences in hormonal signals in the body. Multiple hormones are involved in the signals for bone growth before the growth plates have aged (though these hormones also serve other functions as well. They all interact in complex ways to promote or hinder linear growth in growth plates.

Also, a bit more on nutrition and stature: Though it's not considered the primary cause of slow growth — even for people who follow vegetarian diets [4] — not getting enough nutrients *can* impact growth. A nutritional deficiency, which may result from restrictive eating behaviors or simply inadequate amounts of calories or nutrients (including protein), can contribute to a shorter stature. Nutrition may also be a factor in the inhibition of growth for folks with certain medical conditions that hinder the body's ability to absorb nutrients, including inflammatory bowel disease, Crohn's disease [5], and celiac disease [6].

So, what can you do with this information? Addressing your concerns with a health care provider is a good place to start. If there's a condition or nutritional deficiency at play and if your bones' growth plates have not yet fused, resolving or treating those issues may influence what is referred to as "catchup growth". This is when the body reacts by growing at a faster than usual rate to make up for the past delay (if your bone growth plates have fused and are no longer capable of growing longer, then this isn't a likely possibility). To determine your bone "age," a health care provider will ask about your family and personal medical history along with conducting a thorough physical exam, and possibly blood tests and X-rays. It's with this information that a diagnosis can be made and proper treatment be recommended, if needed.

Speaking of treatment, though you mentioned growth supplements specifically, you may have also heard of with growth hormone therapy. Only a medical provider can truly figure out if therapy with hormones is appropriate for height-related concerns (and, once again, this will need to happen before bone growth plates have fused). What's more, researchers are still learning what effects, both systemic and long-term, it can have on the body. Regardless of whether the hormone therapy may be beneficial in your situation, your provider may be a great resource for learning more about whether the growth supplements are right for you, particularly because nutritional supplements are not regulated for safety and effectiveness by the U.S. Food and Drug Administration (FDA) [7].

If after seeking medical advice you learn that additional height is not in store for you, you might consider your interest in increased growth. Are you within the normal height range for your age? Has a medical professional ever determined that you're growing at a rate that's slower given all other factors? Do you wish to grow purely for aesthetic reasons? If you're having some negative

thoughts and feelings about your appearance, talking it out with a mental health professional might be helpful. You might also consider other ways to care for yourself at this stage of life. Getting enough quality sleep, physical activity, and a balanced diet are some do-it-yourself strategies that support the body and mind at any phase in the lifespan. Ultimately, you may benefit greatly from a healthy dose of self-care — something that may help you grow in many more ways.

Alice!

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