Prevention

Cure for Baldness Might Have to Do With Your Hairy Moles, New Study Finds

This promising new hair loss treatment using microRNA could be available soon.

BY KORIN MILLER PUBLISHED: JUN 24, 2023

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- *New research has pinpointed molecules that lead to hair growth in moles.*
- *These molecules cause long, thick hairs to form.*
- *The discovery could lead to a cure for balding, but further clinical trials are needed.*

Hair loss is a common issue, with baldness affecting an estimated 80 million people in the U.S. But despite how common it is, there is no cure for baldness...yet. Now, researchers think they may have found one.

A new study published in the journal Nature analyzed genetic mouse models of nevi (aka moles) and found that two molecules—osteopontin and CD44—are responsible for hair growth that can happen inside moles. These moles tend to have robust hair growth of long, thick hairs, the scientists pointed out.

Osteopontin “causes normally dormant and diminutive hair follicles to activate their stem cells for robust growth of long and thick hairs,” study co-author Maksim Plikus, Ph.D., a professor of developmental and cell biology at University of

California, Irvine, said in a statement. “Senescent cells [which make up moles] are typically viewed as detrimental to regeneration and are thought to drive the aging process as they accumulate in tissues throughout the body, but our research clearly shows that cellular senescence has a positive side to it,” he adds.

The researchers also conducted mouse models where osteopontin or CD44 were removed from genes and found that the moles had significantly slower hair growth. (The also confirmed the impact of osteopontin on hair growth by analyzing samples of hairy moles collected from people.)

The researchers also suggested in the study that osteopontin could be needled into the scalp of people with hair loss to reawaken hair follicles that have gone dormant.

The researchers concluded in the study that their findings identify senescent cells as “an attractive therapeutic target in regenerative disorders.”

“Our decision to study this phenomenon stemmed from an intriguing observation in human hairy nevi, where we noticed an abundance of excessive hair growth emerging from hyperpigmented skin,” says lead study author Xiaojie Wang, Ph.D., a postdoctoral fellow at University of California, Irvine. “We set out to understand why hair growth tends to be more pronounced in dark skin and which specific genes play a role in regulating this process.”

Obviously, there’s a lot that needs to happen to bridge the gap between discovering that molecules found in hairy moles help grow long, thick hairs, and creating a cure for baldness, but dermatologists say the early findings are promising.

What do dermatologists think of the potential cure for baldness?

Dermatologists say the latest findings are promising. “Regenerative medicine is the wave of the future,” says Joshua Zeichner, M.D., director of cosmetic and clinical research in dermatology at Mount Sinai Hospital in New York City. “The use of stem cells and growth factors to stimulate natural activity of our skin has already been shown to fight the signs of aging.”

Hair thinning is a “significant concern for millions of Americans,” Dr. Zeichner points out. “While we have treatments that can help, none have yet proven to be the silver bullet,” he says. “The discovery that osteopontin induces hair growth could be a major breakthrough for those suffering from thinning hair.”

Gary Goldenberg, M.D., a board-certified dermatologist practicing in New York City, agrees. “Hair follicles are one of the few cells in the body that have stem cells. Activating of follicular stem cells could potentially help restore hair and increase the number of follicles in the scalp,” he explains. “In fact, some of the current modalities—platelet rich plasma, stem cells, or exosomes injections—try to activate and turn on follicular stem cells in order to grow new follicles.”

Dr. Goldenberg says the findings are “all very exciting and could give a real boost to patients with hair loss.”

“I find this new development regarding the role of osteopontin in hair growth quite intriguing,” says Ife J. Rodney, M.D., founding director of Eternal Dermatology Aesthetics and professor of dermatology at Howard University and George Washington University. “Until now, osteopontin was not recognized as a molecule associated with hair growth, so this study opens up new possibilities for potential hair loss treatments.”

While the findings are early, Dr. Rodney says they have big implications. “The fact that osteopontin, when injected or overexpressed, can induce robust hair growth in mice is promising,” she says. “It suggests that manipulating the levels of this molecule in the scalp could potentially stimulate dormant hair follicles and promote hair regrowth in individuals experiencing hair loss.”

But Dr. Zeichner says that there is a lot that needs to happen to see if this is a good treatment option for baldness. “The next step will be to see how well it works in a clinical setting, where it is actually used on the scalps of patients,” he says. “It’s always exciting to learn about the latest innovations, but there’s a difference between what works in the test tube and what actually works in humans.”

Dr. Zeichner says he's "cautiously optimistic" about whether this will lead to a cure for baldness. Wang says the research team plans to continue to study osteopontin and its impact on balding.

What causes hair loss?

There are several causes of hair loss. However, the most common form is hereditary hair loss, aka androgenic alopecia. Hereditary hair loss is inherited and causes hair follicles—which hair grows out of—to shrink and, eventually, to stop growing hair, per the American Academy of Dermatology (AAD).

This usually shows up as overall thinning or a widening part in women and a receding hairline or bald spot at the top of the head in men.

Other causes of hair loss include aging, alopecia areata (a disease that develops when the body's immune system attacks hair follicles), cancer treatment, childbirth, and hairstyles that pull on your scalp, the AAD says.

What treatments are currently available for hair loss?

There is no cure for balding, but there are treatments available. Those can include over-the-counter options like minoxidil (Rogaine), red light therapy caps, and vitamin supplements, Dr. Zeichner says.

"I recommend the Revian red cap, which emits a dual wavelength of red and orange light to enhance production of nitric oxide and improve delivery of oxygen and nutrients to the hair follicles," Dr. Zeichner says. "Supplements, like Nutrafol and Viviscal have become the leaders in the vitamin category, with significant clinical data supporting their use."

You can also visit your dermatologist for in-office procedures, including platelet rich plasma therapy. "In this procedure, your own blood is drawn and processed, isolating growth factors which are injected into thinning hair follicles," Dr. Zeichner says. "You can think of it like fertilizer for your hair follicles."

Prescription medications like oral finasteride and oral minoxidil "are commonly used and effective," Dr. Zeichner says.

If you're experiencing hair loss and it bothers you, Dr. Goldenberg says it's important to check in with a dermatologist. "Don't wait. See your dermatologist right away," he says. "Many of today's treatments can slow down and even stop hair loss. But it's a lot more difficult to regrow hair once it's gone."

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Korin Miller is a freelance writer specializing in general wellness, sexual health and relationships, and lifestyle trends, with work appearing in Men's Health, Women's Health, Self, Glamour, and more. She has a master's degree from American University, lives by the beach, and hopes to own a teacup pig and taco truck one day.

https://www.prevention.com/health/a44302996/baldness-cure-breakthrough-microrna-study/