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HEALTH

Hair Cloning as 'Silver Bullet' For Baldness May Take Awhile

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(See Corrections & Amplifications [item below](#)⁰.)

Walter Unger, a doctor who has performed about 29,000 hair transplants, remembers the time he had to tell one patient that further procedures wouldn't make his hair look thicker.

The patient offered him \$100,000 to start research on hair cloning, a process through which hair cells are multiplied, then injected into the head to form new follicles.

The patient had just come out of a hair-transplant procedure and was woozy from painkillers, so Dr. Unger told him, "why don't you tell me that tomorrow after you've had enough time to think about it." The patient returned the next day with a check.

Today, Dr. Unger and researchers at the University of Toronto hold a patent on a hair-cloning procedure. During their five years of research, however, they managed to clone hairs on just four out of 23 people. One of the test subjects had a "nice tuft" of hair, but the other three sprouted hair that was too short, thin or scraggly. The cloning didn't work on the rest of the subjects.

It's likely to be years before someone as bald as actor Bruce Willis will be able to walk into a doctor's office, donate a few hairs for multiplying, return for scalp injections 10 days later and end up with a full head of hair in a matter of months.

Bosley Medical, the single largest provider of hair transplants in the U.S., has been pursuing a solution since 2002. The company, owned by Japanese wig manufacturer **Aderans** Co., employs 18 researchers. Bosley Chief Executive John Ohanesian thinks his company could get a cloning process to market as soon as 2008.


Initial treatments would likely cost between \$8,000 and \$12,000 and be offered in addition to a hair transplant, Mr. Ohanesian said. But eventually, as techniques for multiplying hair cells improve, patients could avoid the scalpel altogether and just get injections "like Botox," he said, referring to the Allergan Inc. drug injected to remove skin wrinkles.

Hereditary hair loss affects 80 million men and women in the U.S., according to the American Academy of Dermatology, and Americans spend millions of dollars every year trying to fight it. **Merck & Co.**'s Propecia, the only FDA-approved prescription drug for hair loss, had global sales of \$270 million in 2004. Americans spent \$59 million on over-the-counter remedies in 2004, according to MarketResearch.com. Spending on hair pieces and transplants has increased.

Hair cloning "would be the silver bullet" for baldness, said Tony Mangubat, a Seattle-based plastic surgeon and president of the International Society of Hair Restoration Surgery.

Hereditary hair loss stems from sensitivity to the hormone dihydrotestosterone, or DHT. Hair follicles shrink to

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microscopic size and eventually fail to grow healthy new hairs. Drugs such as Propecia and **Pfizer Inc.**'s Rogaine work by blocking DHT or the effects of the hormone.

Hair transplants work by shifting hairs from the back of the head to other areas to cover bald spots. Those hairs are genetically different and resistant to the effects of DHT. But a hair transplant usually leaves a patient with a head of thin hair.

Hair cloning takes it a step further by taking some of those genetically resistant hairs from the back of the head and multiplying them. Researchers break down the hairs to different cells, then reproduce the cells in petri dishes. The cells are injected back into the scalp and form hair follicles. Patients would likely need hundreds of tiny injections -- one for each new follicle. Bosley researchers are also looking into a gel or serum that could be applied topically, without injections.

Researchers have grown hair on mice, but getting hair to grow on humans has been a challenge. Dr. Unger, 66, stopped pursuing hair-cloning research two years ago, but Bosley is hard at work and there are other efforts. Intercytex Ltd., a British health-care company, has been doing research in the field and has an agreement with Bosley. Also, Coen Gho of the Gho Clinic in the Netherlands holds a patent on a hair-cloning procedure.

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Corrections & Amplifications:

Bosley Medical's chief executive, John Ohanesian, isn't a medical doctor. This article incorrectly referred to him as a doctor.

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