

patients who'd tried it," isn't alone. And that's odd since stem cell therapy is still in the clinical trial stage in India, with an estimated 4,000 trials currently underway.

Dr Pravin Mahajan, a general surgeon researching regenerative medicine for five years, who treated Jaggi among 40 others suffering from arthritis, hair fall, facial scars, acne, muscular dystrophy and cerebral palsy, agrees that not all patients respond to the same degree. "The response depends on the state and immunity of the patient. But all my diabetes patients are now either off insulin or on reduced dosage," he says.

Dr Geeta Jotwani, assistant director general (stem cell research) at the Indian Council of Medical Research (ICMR), argues that patients like Jaggi who show improvement are in fact, isolated cases. "For the few who show improvement, there are lakhs who don't," she says, adding that it's important that doctors follow up with their patients for at least five years after conducting the procedure to examine longevity of results and side effects. Most of Dr Mahajan's patients, for instance, have been receiving treatment only over the last two years.

Forty-seven-year-old Panvel resident Vishnu Gawli is one of them. The private detective, who is third in his family to suffer chronic diabetes, was bed-ridden after he suffered a minor heart attack in June 2012, followed by a paralytic attack in October the same year. "I had given up work and was unable to even make it to the bathroom on my own," says Gawli, whose blood sugar would fluctuate between 250 and 300.

Within a week of meeting Dr Mahajan this June, he says, he was able to gradually move his limbs, and cut down on medicines. "I simply follow a nutritious diet and exercise regularly," he says.

WORD OF CAUTION

A speedy recovery like Gawli's, caution experts, could be a placebo effect. Andheri-based diabetologist Dr Rajiv Kovil warns that blood sugar level is not the only parameter to take into account while examining the therapy's success. "What's wanted is a thorough study, undertaken with a larger sample size and a longer follow up," he adds.

In fact, no research has been conducted into the side-effects of stem cell therapy, experts rue. Dr Jotwani says the formation of a tumour on account of excess cell generation is a likelihood. Additionally, there is no clarity on whether there's a chance

of relapse. Doctors don't report such patients neither do patients step forward to bring it to the expert's notice.

DIFFERENT STROKES

Experts are also divided on method of treatment. While Dr Mahajan extracts stem cells from the patient's own bone marrow, Dr Altaf Patel, a Mumbai Central-based physician sources stem cells from a healthy donor's umbilical cord. Dr Patel, who has treated 20 odd diabetics over two years has a reason for his approach. "If a patient's own stem cells had the ability to repair, wouldn't they perform the function while in the body? I believe, reintroducing 'ineffective' cells is pointless. Which is where the donor comes in."

While methods may vary, what doesn't is the money involved.

"Globally, between 40 per cent and 60 per cent healthcare and pharmaceutical companies are investing in research and development of stem cells," said Shailesh Gadre, MD of Stemade, India's only dental stem cell bank which offers extraction, processing and storage of cells harvested from dental pulp.

The treatment itself is expensive. While Jaggi paid Rs 2.5 lakh for two sessions, Gawli shelled out Rs 1.6 lakh for one session that lasted no longer than a day.

Ideally, argue industry observers, neither should have had to pay considering all stem cell therapy is at trial stage in the country. At present, only Bone Marrow Transplantation — in use since 1968 to treat blood and bone marrow diseases, blood cancers, and immune disorders — is an approved form of stem cell therapy.

All others can be only conducted as clinical trials only after approval from the Drug Controller General of India (DGCI), and for free after the patient signs a consent form. "What is going on across the country is simply not acceptable," says Dr Jotwani.

The therapy also falls in the legally grey area, as ICMR is still in the process of drafting regulations for it. The only guideline currently available is that any institution or individual using human stem cells should be registered under the National Apex Committee for the Stem Cell Research and Therapy (NAC-SCRT).

But for patients like Jaggi, who says she feels as young as she did in college, the therapy has, for now at least, granted a fresh shot at life. "My colleagues and students are yet to digest the transformation," she smiles.

growth hormones responsible for creating new capillary and blood vessels. They also activate residential stem cells in other body organs. They then trigger an epigenetic reaction, which means that cells which are not typically hormone producing ones start secreting hormones.

The stem cells then get differentiated into islet cells (which work together to regulate blood sugar), beta cells (that sense sugar in the blood and release the necessary amount of insulin to maintain normal blood sugar levels) and hormone cells. "Eventually, insulin resistance is reduced in patients and glucose breakdown begins," explains Dr Mahajan.

HOW IT'S DONE

A wide bore needle is used to extract 200ml of bone marrow, while another 200ml of adipose (fat tissue) is extracted from the same area along with 100cc of peripheral blood for platelet rich plasma (PRP). The bone marrow and adipose tissue are then sent for culture where stem cells are segregated and then 'activated'. Around 300-400 million of these cells are then transplanted into the patient through an IV.

Dr Mahajan says stem cells trigger a few reactions after entering the body, which results in reduced blood sugar levels.

First, they release chemicals and

Is over-styling making you bald?

How to save your locks from an overdose of hair product and frenetic combing

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By the age of 35, over 66 per cent of men show some signs of significant hair loss. The figures are a result of a UK study. Factors that cause hair loss include genetics, stress and weather conditions. But you may be joining hands with the enemy by over grooming your hair every day.

Are your efforts to sport the latest new hairdo worth losing your crowning glory by the age of 35? *Mirror* tells you how you can reduce the damage while grooming your tresses.

DON'T STRESS OVER IT

Stop blaming your maternal grandfather and forget about why your genetics are causing you to lose hair. It is what it is and you have to deal with it no matter what the reason may be. Worrying about it will only add more emotional stress, and failing to reduce stress in your daily life will have a lasting effect on your

hair.

LIVING IN DENIAL

Don't fret about the few strands of hair you find on your pillow. It's normal to lose up to 100 hair per day. However, it is important to take note if you find the quantity of hair loss increasing at an unnatural pace. Don't live in denial if the process has begun. Getting treatment during the early stages can help slow down the pace of hair loss.

HATS OFF

Let your hair breathe. Keeping your cap on for long hours at a time can increase the stress your hair experiences. A hair band that pushes your hair back or tying your hair too tight can also put more stress on your strands and lead to further hair loss.

HOLD OFF ON THE PRODUCT

The use of gels, wax and pastes to help smoothen rough hair and tame those terrible tresses can backfire if you use generous amounts every day. The flip side to hair products is that the chemicals can react

with the natural components of your hair and there is nothing worse than drawing attention to thinning hair than clumps of stiff, gelled strands. Lay it on light to keep things covered up.

EASY ON THE COMB

Unlike the princesses in fantasy sagas who have hand maidens to brush their hair a thousand times a day, keep your grip on that comb to a minimal use. Brushing your mane too much stresses out your hair. Use your hands and fingertips to shape your shorter hairstyle and groom it with the natural growth pattern on your scalp.

GET SHORTY

Let go of that ponytail you have been lovingly nurturing since you were in college. Longer hairstyles only serve to accentuate what's already gone. A closer crop will maximise coverage, leaving no one the wiser. And if the situation is dire, go for the new-age clean-shaven look that rapper Pitbull has made popular. Hair for men is optional.

THE WET LOOK

Most men don't need to wash their hair every day. Too much shampoo or conditioner on a daily basis breaks down the natural structure of your hair. This doesn't mean you skip showers, though. Smelly guys finish last. Wet and soak your hair in your daily shower, but don't use a shampoo each time.

TOWEL TALK

Beating your hair with a rough towel and vigorous rubbing can cause serious damage. Physical force breaks off finer hairs, and newly emerging ones don't even get a chance to survive. Use a super soft cloth and pat rather than rub the hair to rid it of excess moisture after bathing.

EAT RIGHT

The quality of your hair is a sure giveaway about how healthy your body is. A balanced diet with organic meats, fruits and vegetables can strengthen your hair and your overall fitness as well. Deficiency of iron and vitamin B are also contributing factors.



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