

Introducing age reversal as South Africa's new therapeutic frontier

 By [Katja Hamilton](#)

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Thousands of biomedical researchers are working on different aspects of slowing aging, and if only one of them succeeds, it will change the world for the better.



Source: [Pexels](#)

These were the words of Steve Horvath, a professor of human genetics and biostatistics at the University of California, Los Angeles who has studied treatments that slow or even reverse aging in humans.

He described the first age-estimation method using saliva which has been coined "the epigenetic clock". His work includes studying and researching the best means to precisely measure the age of every cell of the body whether that be from a blood-, liver- or kidney tissue sample.

Epigenetics, in particular is the study of changes in gene expression or cellular phenotype, caused by mechanisms other than changes in the underlying DNA sequence.

Biological-age reversal in humans

Part of his research into reversing the biological age of cells independently of their chronological age was a Phase 1 clinical [study](#) he conducted, which showed an age reversal effect of 2.5 years in human blood samples.

This shows promising signs that biological age reversal in humans is possible.

Experiments on animals at key universities around the world are backing this finding. More recently in December 2020, Harvard Medical School scientists successfully restored vision in mice by turning back the clock on aged eye cells in the retina to recapture youthful gene function. Developmental Biologist at the Salk Institute for Biological Studies in La Jolla, California has claimed this as a major landmark [outcome](#).



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"These results clearly show that tissue regeneration in mammals can be enhanced," he said. The team at Harvard Medical School has been working on adding, removing or altering chemical groups on DNA in such a way that it alters the cells' biological age. The results, they say, show it is possible to reverse a range of age-related human disease rather than merely stem its progression.

"By 2035 we will have interventions that reverse aging in humans," Horvarth says.

But already breakthroughs in the application of this knowledge are surfacing.

2022 and self-renewing cells

Cells being able to self-renew is an exciting area of development for 2022 particularly in the field of Aesthetic Medicine.

Enter the Age of Ageless Skincare:

There are already skincare brands that maximise the ways in which the skin's DNA expresses itself particularly with regards to collagen production and oxygen uptake, but the advent of ageless skincare stands to take a quantum leap here in reprogramming the DNA - the building block of the skin's cells - to reverse its biological age.

"The trick is to shape the biological age of your skin independently of your skin's chronological age," says Jerome Jackson who heads up the research and development unit at SA's biotech company, Gève Phytogenics. "Old cells can be made young again."

The same can be said of skin ageing, which at a cellular level Jackson considers to be a disease, not a natural phenomenon.

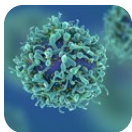
Getting to grips with telomeres

"When it comes to the research done on the DNA of skin cells, proof of concept has already been offered," he says. "The key to understanding how the biological age of skin can be reversed is in understanding the concept of telomeres. They are found on the ends of each double-stranded helix located in the DNA of each skin cell.

"Telomeres act as the anti-aging clock in every skin cell. If you were to picture a double-stranded helix of DNA, and imagine each strand to be a shoelace, the telomeres would be the plastic caps at the end of each strand. Without this coating, the strand would eventually become frayed and the DNA would stop functioning properly.

"Telomeres get shorter each time a skin cell copies itself, but the important DNA stays intact. Eventually, telomeres get too short to do their job, causing the cells - and the skin as a whole - to age," says Jackson.

"Each cell divides about 50 times, after which the cell cannot divide further. Thereafter, either cell death ensues or the cells become inactive senescent cells. These continue to take up oxygen and nutrients from the body despite offering no value in return."



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South Africa leading the conversation

Looking to the future, therefore, ageless skincare will need to focus on not only removing the senescent skin cells, but lengthening telomeres in skin cells. Cosmetic companies will need to keep up with the conversation and the pace of product development, in order to stay relevant.

To this end, Jackson says South Africa is leading the pack. Gève PhytoGenetics has launched South Africa's first ageless skin-care formulation. The range, Gève, harnesses the power of key ingredients derived from botanicals that modify and rewrite the skin cells' DNA and flush out senescent cells.

One of the primary actives in the skincare formulation is derived from wild-harvested young buds and shoots of a trade-secret botanical - rich in phyto hormones, auxins and gibberellins.



Source: [Rxabay](#)

Science teams up with Nature

The future of ageless skincare is here, he says, and it's the perfect intersection of Science with Nature.

"At Gève PhytoGenetics we incorporate a branch of phytotherapy known as gemmotherapy which incorporates the embryological tissues of plants. The young shoots and buds contain the peak life essence of the plant and are richer in vitamins, oligo elements, minerals, nucleic acids and growth hormones than any other plant tissues. Gemmotherapy facilitates tissue regeneration."

The skincare formulation includes potent local botanicals aimed to support this role, and is proudly South African - positioning our country on the global map in this exciting field of development.

Targeted approach

Ultimately while the viability of anti-ageing skincare products has come under huge scrutiny, the advent of skin age reversal is a proven concept – and Gève PhytoGenetics backs this up.

The deciding factor ultimately when choosing a skincare brand is answering the question of how skin deep you'd like your product to work.

Working with DNA's telomeres might be the most targeted approach yet in skincare, and sets the stage as South Africa's new therapeutic frontier in age reversal.

ABOUT KATJA HAMILTON

Katja is the Finance, Property and Healthcare Editor at Bizcommunity.

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