Reverses the signs of aging new advances in longevity

The path to reversing aging is getting closer every day, as demonstrated by a group of researchers who will explore early advances in a small compound capable of increasing TERT (telomerase) levels, a critical enzyme for maintaining our DNA in cells.

TERT levels decline with age, accelerating cellular senescence, tissue inflammation, and reduced muscle function, as well as cognitive decline. Despite this, this treatment shows us how restoring TERT not only prolongs cell health but also promotes neurogenesis, improves memory, and optimizes motor coordination, thereby reversing many of the effects of aging.

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Since time immemorial, the quest for youth or longevity has been a constant in our history as humans. From mythological stories of fountains of eternal youth to the most recent biomedical research, this desire not only to preserve life but also to improve its quality is something that marks our cultural and scientific progress.

Today, thanks to advances in molecular biology, regenerative medicine, and genetics, we are witnessing discoveries that will transform this ancient dream into a more tangible possibility. One of the most striking and promising findings is the treatment currently in development that has the ability to restore the activity of TERT (telomerase), an enzyme that is essential for protecting cellular DNA. Through reactivation, it has been shown to reverse many of the signs of aging in animal patients, improving memory and physical strength while reducing inflammation. This is an achievement that opens up a huge horizon where longevity and well-being can advance together.

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The center of this discovery

What we know as aging is not an isolated phenomenon; it is a normal biological response known as hallmarks of aging, among which the following stand out: telomere shortening, genetic instability, epigenetic alterations, accumulation of senescent cells, low-grade chronic inflammation, and loss of regenerative capacity.

As the years go by, these telomeres, or structures that protect DNA during cell division, become depleted, causing cells to enter senescence or shut down. The enzyme telomerase (TERT) performs the function of restoring the telomeres mentioned above, but its effectiveness declines with age.

Recently, this experimental treatment with TERT-activating compounds has been shown to reverse some of these processes in aged rodents, which showed improved memory, better neurogenesis, renewed muscle strength, and reduced systemic inflammation.

A pioneer in the study of telomeres and Nobel Prize winner Elizabeth Blackburn commented in an interview conducted and published by the Nobel Foundation, "I remember seeing it and thinking, 'Oh, this could be really big. This looks right. It had this pattern... something real." That observation about the potential of telomerase is now stronger than ever, as what was once just a laboratory finding has now translated into therapies with real-world applications.

Parallel advances in the science of longevity

The discovery adds to an ecosystem of other research aimed at prolonging healthy life, such as Klotho protein, a gene therapy that extends life in mice by up to 20% and, of course, improves both cognitive and physical functions. There are also senolytic therapies such as ABT-263, which remove aged cells and promote healing.
There is also Mitopure (Urolithin A), a postbiotic still under study that encourages mitophagy, which cleanses defective mitochondria and revitalizes cell energy.

Last but not least, nutritional and lifestyle interventions such as intermittent fasting, calorie restriction, and exercise are ideal practices for repairing the body's cells, which are linked to longevity. This set of activities not only aims to prolong life, but also to extend what we know as biological youth.

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Global brands are also becoming part of the science of longevity

Those interested in this field are not only coming from academic laboratories. Currently, major brands are already turning their attention to the enormous potential that biotechnology represents for redefining everything we know about well-being.

Tripeptide-32, which have the ability to restore epigenetic biomarkets in the skin. In vitro studies have also shown how 60-year-old skin cells behave like 30-year-old cells after application. With this, the brand is seeking to integrate cutting-edge science with personal care.

On the other hand, we have **L'Oréal Group**, a company that recently introduced its Skin Age Calculator product, a tool that combines widely used artificial intelligence with biology to study skin ages and make a highly personalized proposal for each skin type.

They have invested in **Urolithin a (Mitopure)**, a treatment that has the potential to regenerate energy in cells, which is currently undergoing clinical validation. Barbara Lavernos, L'Oréal's research director, said of this change, *"Longevity is not just a matter of appearance, it's health. We want to help people live better at every stage of life."*

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Social and ethical challenges

With the possibility of reversing aging, doubts and questions inevitably arise. Will this be accessible to everyone in the future, or only to those who can afford it? How big will the impact be on healthcare systems if life is extended by many decades? Will this change our perception of working life, retirement, and even education, or will we remain active in the workforce until an advanced age?

Reflection is essential in this situation, as longevity should not be understood as a kind of privilege, but rather as a right that allows all people to live with dignity and fulfillment.

A step from science to personal life

If we think beyond laboratories and companies for a moment, this is a finding that motivates us in a certain way to engage in internal introspection about ourselves. Could we cultivate this perspective of longevity in our daily lives? The truth is that there are small habits we can implement that can help us live longer in the long term.

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You can start with mindful eating, regular exercise, stress management, and resilience. Emotionally, you can create meaningful relationships and, of course, constantly feed your curiosity and learning. All these small habits activate our internal enzymes, which in turn help us strengthen our vitality and prepare us to enjoy these scientific advances.

If you are a student, this is for you

If you are currently pursuing a career in education, let this serve as a reminder of how science has the power to transform and change the lives of many. In fact, longevity research can be combined with disciplines such as molecular biology and genetics, in order to understand aging at its root, neuroscience, which focuses on the preservation of memory and cognition, regenerative medicine, and bioethics and philosophy, to guide the correct use of these technologies.

Allowing yourself to take the time to explore these areas is more than just a good find as a professional; it is an opportunity to contribute to a social legacy. Remember that knowledge does not remain only in theories; rather, it translates into a life that you can live with greater fulfillment and purpose.

May the passage of time not erase what has been learned here

The advances that led to this treatment, which reactivates telomerase and reverses the signs of aging, are more than just a scientific achievement. It is a breakthrough that presents us with a new paradigm as humanity; it is an invitation to think that making longevity a fundamental right will not only make us live healthier, but also better.

Once these scientific findings are integrated into our daily practices and values, longevity becomes a collective concept and project, something that belongs to everyone. Whether we are companies, universities, or communities, we can all contribute to the transformation so that the benefits can reach everyone.

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Likewise, continuing to study and learn about these processes opens a great door to a more conscious future, one that is healthy and fair. That is why we invite you to delve much deeper into areas such as biology, genetics, regenerative medicine, and neuroscience, fields that undoubtedly contribute to knowledge and help shape the future. That is why at AIU we offer you the opportunity to access personalized and flexible programs for people like you who are looking for guidance to continue on their path to excellence.

At Atlantic International University, we believe that students have great potential to stand out and be agents of change. That is why today we invite you to continue on this path and apply everything you learn to both your professional and personal life. We are confident that you will succeed wherever you go!

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Recommended reading

For students interested in exploring this topic further, we recommend the following articles:

1. Longevity and Evolution
2. REDEFINING LONGEVITY.
3. Prospective Longevity : A New Vision of Population Aging
4. Psychology of Aging and Gerontology
5. Physical activity and Wellness
6. The science of super longevity (video)
7. Activating molecular target reverses multiple hallmarks of aging
8. Unlocking longevity: the role of telomeres and its targeting interventions
9. The Scientific Search for Youth
10. I was floored by the data': Psilocybin shows anti-aging properties in early study

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You can delve deeper and continue learning about different topics in our wide range of recorded classes covering various topics of interest, which can be very useful for expanding your knowledge. If this topic interests you, you can explore further in our extensive online library, which also houses a wealth of knowledge, consisting of thousands of e-books, serving as a valuable complementary resource.

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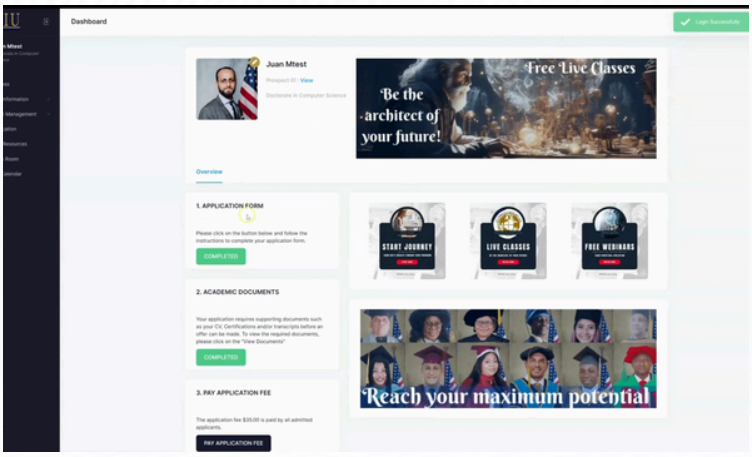

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