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How stem cells are a game-changer in regenerative beauty

Right from improving skin health to face contouring to treatments for baldness, stem cells have many benefits

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If there's one thing we know about the beauty industry, it's that it takes every opportunity to achieve brave and unimaginable steps towards growth and innovation. Though this science-backed, innovation-driven sector has consistently delved into various aspects of well-being, anti-ageing and skincare, it doesn't get much braver than the introduction of stem cells in beauty care. Right from improving skin health to face contouring to treatments for baldness, stem cells are being seen as a game-changer of regenerative beauty, especially when caused by ageing.

So what are stem cells and how will they be used in the future? We asked the experts for insights — cells expert Giuseppe Mucci, CEO and founder of the Bioscience Institute. Having spent almost two decades in R&D, Giuseppe is a treasure trove of extensive knowledge within the medical industry. Firm in his vision to find the most innovative and safest medical techniques, he created the Bioscience Institute in 2005 to offer new and highly effective treatments for people across the globe, and since then, he has had a resounding impact on the stem cell industry. *Khaleej Times* met Giuseppe to gauge the future of stem cell therapy in wellness space.



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Giuseppe Mucci, CEO and founder of the Bioscience Institute.

Edited excerpts from an interview:

What is stem cell therapy and how does it work?

Stem cells are undifferentiated cells within our body that have the potential to develop characteristics of specific cells in a given organ or tissue; this simply means that if there is a certain area of damage within the body, stem cells can turn into the cell types that need replacement. This is what is beautiful and unique about stem cells — they can develop into any type of cell in the body, in addition to encouraging the production of native cells. A classic example : you may have heard of stem cells being collected from umbilical cords after a baby's birth, which are reserved for its future should s/he ever require healthy stem cells to replace damaged cells.

Stem cell therapy is a non-invasive cosmetic procedure that helps in restoration and rejuvenation. In terms of cosmetic uses, stem cells are removed from a patient's own tissue, combined with premium growth hormones, and then the concentrated solution is reinjected into target areas of the face or body. I must add that by using stem cells, you don't reverse ageing, you simply slow down the process; so the earlier you do it, the more effective the treatment.

What is the role of stem cells in delaying ageing?

Since stem cells have the ability to divide and differentiate into various specialised cells in the body, they play a critical role in maintaining the health and functionality of organs and tissues throughout life. As we age, the number and function of stem cells in our bodies decline, leading to age-related diseases and degenerative conditions. Mesenchymal stem cells (MSCs) can help delay the ageing process.

MSCs are found in many tissues throughout the body and have the ability to promote tissue repair and regeneration, reduce inflammation, and enhance the immune system. Studies have shown that MSCs can improve the function of ageing organs, including the heart, brain, and musculoskeletal system, and may also have anti-ageing effects on skin and hair.

In what way is stem cell therapy different from chemical beauty treatments, filler and Botox?

Oh, in many important ways! Since stem cell therapy is a type of regenerative medicine that involves promoting the growth and regeneration of new tissues, it provides long lasting benefits, whereas chemical treatments, fillers and Botox, offer a temporary mask to reduce the appearance of wrinkles for a short period of time.

Stem cell therapy can be targeted to specific areas of the entire body that need repair and refreshing, while chemical treatments are typically used to treat wrinkles and other signs of ageing only on the face.

Considered a safer option, stem cells used in a treatment are typically obtained from the patient's own body and have a low risk of rejection or adverse reactions. Chemical treatments carry a comparatively higher risk of side effects, such as allergic reactions, infection, and tissue damage.

How safe is the procedure that you follow at the Bioscience Institute?

Completely safe, we initially make a pain-free fat extraction of 20cc via biopsy. This fat is then sent to the laboratory and undergoes quality control as we need to be sure that it is biologically viable. Then in a completely sterile room, we start the process of extracting the stem cells from the fat; this process takes around one week. This is a very important step because, within the fat sample, there are also other cells that can damage our bodies, like micro fat that can cause inflammation if injected into the body again by mistake.

Then we start to culture the stem cells in an incubator, which can take around two weeks, when we have enough stem cells (around 10 million for the skin and 20 million for the lungs) we once again repeat the quality controls. This is key for us to determine that the product is safe to use on the patient; if there is any contamination of the stem cells, they cannot be used as we cannot sterilise human cells. When they have passed quality control, we put them in a cryo-tank to stop them from ageing. Finally, they are released for treatment. These stem cells can be used to treat any degeneration/ageing in the body but cannot be used to treat diseases.

Who is eligible for these treatments?

The physiological ageing of our bodies is connected with our respiratory and cardiovascular systems, and generally starts at age 30. As I mentioned, you don't reverse the ageing, you simply slow down the process. Therefore, we should start as soon as possible because that way we can age in a healthier manner. The degenerative process, in general, can increase the risk of diseases, so when we treat our bodies for anti-ageing at an earlier age, we are actually helping to ward off diseases.

What age is too late for a stem cell treatment?

When the patient is around 80 years old, the proficiency of the stem cells is down by about 30 per cent. The number of stem cells decreases with age, so we would need a large number of stem cells for the treatment to work.

Are there any side effects of stem cell treatments?

If the stem cells are produced in a sterile environment, with correct quality controls in a factory that is certified there are no side effects. But if other cells, which are not compatible with the body, contaminate the stem cell cultures, they can cause side effects. That's why choosing a high-standard laboratory is so important.

With the stem cell movement growing in the region, what are your future expectations and your vision for the movement?

When I started, it was out of pure interest and passion, but now I see that worldwide interest has started to grow. We are still unsure about the future but scientifically speaking, there is a huge impact because the US government website now recognises the process. There are currently 1,460 clinical trials worldwide using stem cells for different applications. Although currently, we are the only ones doing this in the Middle East, other players are sure to enter. It takes a lot of time and money to set up, this is a tailor-made product with no scalability.

And since you work with so many clients who want to augment their beauty, what - in your view - is the definition of beauty?

For me, true beauty is natural, to be authentically yourself and to emphasise beauty — according to me — is the synthesising of beauty where everyone looks the same. And I always make sure that my work reflects this core belief.

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