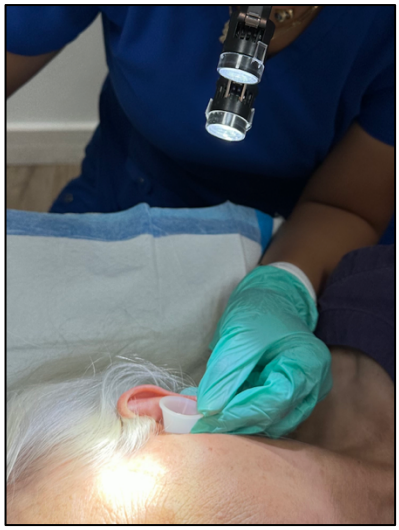
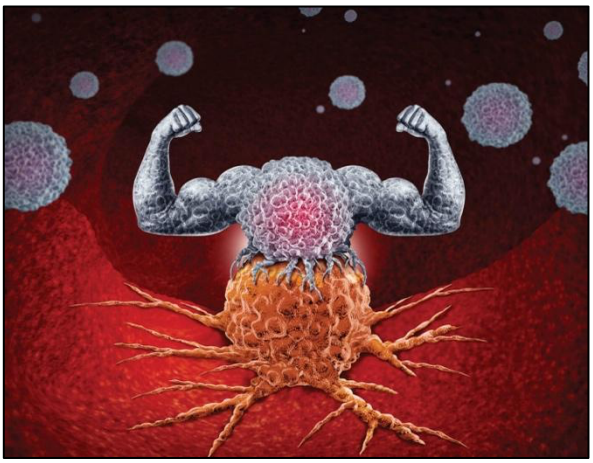
X Cell Stem Cells for Inner Ear Rejuvenation

After working in the field of regenerative medicine for over 20 years, I have seen myriad stem cell applications and many different types of stem cells. They all have unique characteristics. The vast majority of clinics use perinatal stem cells, which include stem cells from cord blood, Wharton's jelly, and amniotic fluid. There are also products containing exosomes derived from these perinatal stem cells. Exosomes are the tiny vesicles that are secreted from stem cells and activate a rejuvenating effect. After using perinatal stem cells and perinatal exosomes for many years, I have discovered a much more powerful stem cell line I call X cells. X cells (not to be confused with the lymphocytes of the same name) are derived from adipose, or fat tissue, and they are considered adipose-derived stem cells (ADSC). Let's dive into the benefits of ADSC and why they might be the best answer for regeneration of the inner ear as

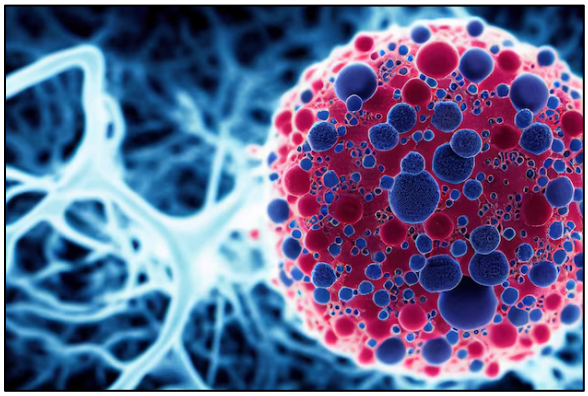


well as orthopedic and neurologic applications. Consider the following aspects of X cells:



1. **X cells live longer.** They have stem cell viability as long as weeks, as opposed to hours as with perinatal stem cells such as Wharton's jelly, cord blood, or other placenta-derived sources. Most stem cell clinics use culture-expanded perinatal stem cells. These mesenchymal stem cells (MSCs) are very fragile and survive only a very short period of time.

2. **X cells differentiate 4x faster than perinatal MSCs.** This means they work 400x faster to regenerate your body.



3. **X cells are known to be superior at producing endothelial cells at a much more rapid rate.** That means more blood supply to the new cells and tissues so that the body can bring in all the necessary building blocks to create inner ear hair cells, strong healthy cartilage, nerve tissue, ligaments, and muscles.

Hair, Skin, and Sexual Rejuvenation

X cells have an enhanced ability to both produce endothelial cells and regenerate nerves, which makes them an excellent choice to treat hair loss, for sexual rejuvenation (such as with O-shot and P-shot treatments) and even skin rejuvenation.

X Cells Vs. Perinatal Stem Cells

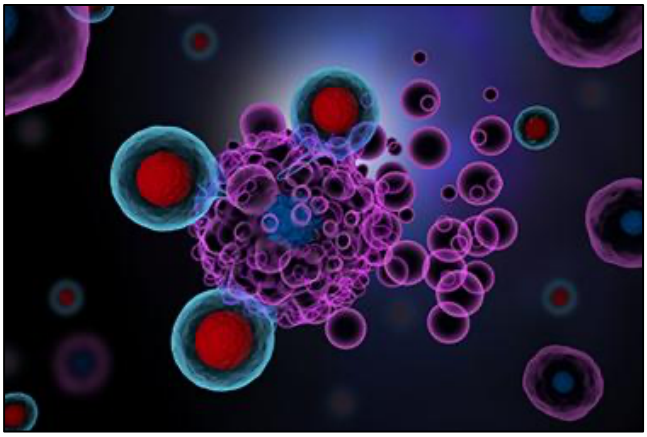
Stem cells not only migrate to damaged tissue and differentiate into various cell lines to replace damaged cells, they also attach in locations adjacent to damaged cells and release tiny vesicles called exosomes, which we touched on earlier. Exosomes are tiny packages of RNA. RNA carries information, and these little vesicles are carrying information from the stem cell that will influence the damaged cells as well as healthy cells in the area to go into a regenerative phase and build fresh, new cells and tissue to replace the damaged ones. Ultimately, it is your own cells and tissue that do the repair after the RNA in the exosomes showers the injured or weakened site in the body.

Exosomes that are released by stem cells provide the primary influence for regeneration. Both perinatal stem cells and ADSC produce an average of 17 million exosomes per hour. Typical stem cell treatments in Mexico, Colombia, and Panama use perinatal stem cells. We're going to get into some deep math for a moment here, but it proves my point as to the benefits of a longer-lived stem cell line. An example of an X cell producing 17 million exosomes per cell per hour multiplied by 2 million X cells is 34 trillion exosomes per hour that would continue to be produced for 2 to 4 weeks. Compare that to a typical perinatal stem cell that produces 17 million exosomes over 12 hours. That results in only 2.5 percent of what an Xcell would create over 3 weeks. So X cells provide 4,000 percent more regenerative ability!

X Cells for Brain and Nerves

Researchers have found X cells to show superior potential for promoting nerve regeneration and remyelination of nerves, such as with multiple sclerosis and neuropathy. When administered to damaged nerve fibers, X cells can incorporate themselves into the affected area, differentiate into oligodendrocytes (the cells responsible for producing myelin), and initiate the rebuilding of the myelin sheath. This makes X cells a great choice for inner ear regeneration.

X Cells Clinically



X cells are FDA-approved for Crohn’s disease, utilizing ADSCs called Cx-601 administered via IV infusion.[13] There have been 5,340 patients treated under an FDA-approved multisite clinical trial for osteoarthritis of the knee utilizing X cells. In addition, there have been over 200 clinical stem cell trials utilizing X cells — more than any other stem cell source to date. X cells are sufficient in their natural state and not expanded in a lab. They are processed without any chemicals like DMSO or enzymes, and only a light mechanical stress is used to release them from the adipose tissue. So far, each audit by the FDA has resulted in a perfect review. Advanced Rejuvenation is the first clinic to use X cells for inner ear regeneration, and we plan to begin clinical trials soon based on positive results to date.

References:

Bislenghi G, Wolthuis A, Van Assche G, Vermeire S, Ferrante M, D'Hoore A. Cx601 (darvadstrocel) for the treatment of perianal fistulizing Crohn's disease. Expert Opin Biol Ther. 2019 Jul;19(7):607-616. doi: 10.1080/14712598.2019.1623876. Epub 2019 Jun 3. PMID: 31121104.