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Understand Office-Based Plastic Surgery... Injectable Volume Fillers

By Richard Westreich, MD

It's been 500 years since Ponce de Leon set out to discover the fountain of youth. Never in his wildest dreams would he have imagined it might be contained inside a syringe.

Science has recently given physicians an

ever-expanding array of materials for injectable facial augmentation. Advances in tissue engineering, the production of human tissues in a lab, has helped to characterize the glue that holds our cells together, also known as the "extracellular matrix." Reproducing the elements of this matrix was previously somewhat of a mystery. Its discovery occurred in a laboratory and did not involve characters named Neo.

Morpheus, or Agent Smith. Subsequently, you don't have to take "the red pill" in order to experience it.

When it comes to your facial skin, several key aspects of the matrix are now known. Microscopic structural proteins, such as collagen, and larger proteins with sugars attached to them form the underlying scaffold. These sugars stick to water providing our tissues with volume. One such sweet and sugary compound is called hvaluronic acid.

With time, gravitational effects, and damage from the environment, our skin looses its elasticity and fullness: wrinkles develop and volume is lost. This occurs both in the under layer of the skin (known as the dermis) and in the fat immediately below the skin. The goal of injectable facial fillers is to reverse these processes by replacing natural components that have

become deficient and restore volume.

The last few years has seen an explosion in the number of materials that are available to physicians. Prior to this expansion, several purified forms of collagen existed. The problem with collagen was that it could not be made in a lab and had to be

> harvested from other sources. Human collagen was difficult to make due to the quantity of donor material required and the small but real chance of infectious transmission. Therefore, most forms of collagen were ultimately derived from bovine sources (Zyderm™and Zyplast™). In layman's terms: cows.

Not surprisingly, some patients were allergic to this cow material . This

required all new patients to undergo testing several weeks prior to formal injections. After injection, the material lasted approximately 3 months, requiring 3-4 trips to the physician each year.

Today's hottest substances are completely different from collagen. They are naturally occurring human extracellular matrix compounds that are made in a laboratory from scratch. Minor alterations allow the material to degrade slower and last longer in the body. Two of the more popular materials on the market are hyaluronic acid (Restylane™) and hydroxyapatite (Radiesse™). Each compound has unique properties that can be utilized in different facial regions. Most can last up to 6-9 months and are natural components of your skin, so they do not require allergy testing and are well tolerated by your body. These materials have allowed LICH physician, please call (800) 420-4004.

for fewer visits to the doctor and the immediate treatment of interested patients at the time of the first office visit.

If "foreign" implants make you uneasy, other options do exist. Isolagen ™ and Autologen ™ are fillers made from a person's own tissues. Their effects last about as long as other newer facial fillers. However, both of these specialized products cost patients much more than hyaluronic acid and hydroxyapatite, which are mass produced.

Facial fillers are best suited to smooth deep wrinkles in the face and add volume to specific areas. The treatment effect is immediate without significant bruising or down-time. Forehead frown lines, nasolabial folds (smile lines), and labiomandibular folds (marionette lines) are particularly well suited for this type of treatment. Also, enhancing lips (within reason, please!), increasing cheekbone height, and filling out under-eye bags are particularly well suited for this type of therapy. In some areas. combined use of facial fillers with Botox ® Cosmetic causes additive and longer lasting effects. Fine wrinkles are not treated by fillers and respond better to chemical peels or laser resurfacing procedures.

Ponce de Leon never found the fountain of youth, although he spent many years trying. We now know that there is no such thing, but the quest for youthfulness continues. Helping facial plastic surgeons and patients in this endeavor are laboratories and scientists, rather than explorers and captains. Discoveries such as those mentioned in this article have helped to make office based facial rejuvenation more affordable and accessible to patients everywhere.

It has been said that "youth is a gift of nature, but age is a work of art." This statement effectively sums up the practice of cosmetic surgery. However, due to scientific breakthroughs, it should also now be noted that "the art of facial plastic surgery can replace more of nature's gifts."

For a referral to Dr. Westreich or any other



Associate Director, Facial Plastic and Reconstructive Surgery at Long Island College Hospital.



