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A BRIEF INTRODUCTION TO INJECTABLE FILLERS AND BOTOX® BY ASAF YALIF, M.D.

Non Surgical facial rejuvenation is an increasingly popular way to achieve a more youthful appearance. Botox® injections are now the most frequent cosmetic procedure performed in the United States. In addition fillers such as Restylane® and Radiesse® are being utilized with increasing frequency to help restore youthful contours in the face.

As we age the collagen and other elastic elements in our skin begin to become lax. This is due to sun damage as well as the effects of the underlying muscles and gravity. One of the early signs of aging is loss of volume and the development of fine lines and wrinkles. Softening of these lines and restoration of the lost volume can be accomplished non-surgically with a combination of injectable fillers and Botox®.

Injectable fillers can be used to:

- Augment thin lips
- Enhance shallow contours
- Improve the appearance of facial scars
- Soften facial creases and wrinkles

Fillers do not stop the aging process. Surgery, such as a face lift, is a more permanent way to change the elements of your face. Non-surgical intervention may not give you as dramatic a change as surgery does, but some of the risks are less with injectable fillers and these fillers may delay the time to which you feel a facelift is appropriate.

What are the different types of fillers?

Collagen is a natural protein that supports the skin. Injectable collagen formulas derived from human dermis include Cosmoderm® or Cosmoplast®. Zyderm® and Zyplast® are forms of bovine collagen that, unlike human derived collagen, require prior allergy testing. Evolence® is a porcine collagen. The results may last 2 to 4 months.

Hyaluronic Acid, such as Restylane® and Juvederm®, is a natural substance found in our bodies. It is well suited to plump thin lips and fill facial creases such as nasolabial folds. It may also be appropriate for some surface wrinkles and concave scars. The results may last 6 months or longer.

Hydroxylapatite (Radiesse®) is a mineral-like compound found naturally in human bones, suspended in a gel-like formulation. It is the heaviest of facial fillers and is recommended to fill deeper creases such as nasolabial folds, marionette lines and frown lines, as well as to enhance fullness of the cheeks and other facial contours.

Human fat, harvested from your own body, can be reinjected to enhance facial fullness, fill deep creases and to build up shallow contours. Fat injection requires a more extensive procedure than other injectable fillers because it uses liposuction techniques to extract the fat prior to injection.

PMMA (polymethylmethacrylate) fillers contain 20% tiny PMMA microspheres suspended in 80% purified collagen gel. An FDA-approved PMMA filler is recommended for the correction of facial wrinkles known as smile lines. The brand name for PMMA is Artefill®.



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Sculptra® (**poly-L-lactic acid**) is another injectable on the market with a favorable profile. It is used to fill out areas of fat atrophy/lipoatrophy.

Treatment results last up to a year or more in some cases and are highly variable. (Fat can be stored for your own future treatment. The duration of results from preserved fat is not as favorable as fat used at the same time it is harvested.)

Botox® is a purified protein derivative that is produced by bacteria (*Clostridia Botulinum*) and causes muscles to be less active. When underlying muscles are less active the overlying skin and wrinkles can appear softer and smoother resulting in a more youthful appearance. Botox® can be injected in multiple areas on the forehead and face to accomplish the desired result and is often used in conjunction with a filler, as mentioned above. The results of Botox® are not apparent for five to seven days. Botox® does not reverse or stop aging and does not actually remove the wrinkles on your face. Botox® is usually re-injected every three to six months to maintain the results.

A note about the FDA and injectable fillers: The U.S. Food and Drug Administration reviews and approves pharmaceutical fillers in the same manner as medical devices. However, some fillers may be used on an off-label basis, meaning they are approved medical treatments but not directly reviewed for a specific application. The options discussed here are among the current fillers preferred by plastic surgeons. Some are available for general use, others are not; regulatory status may be subject to change.

Botox® is a non-surgical injection that temporarily reduces or eliminates frown lines, forehead creases, crows feet near the eyes and thick bands in the neck. The toxin blocks the nerve impulses, temporarily paralyzing the muscles that cause wrinkles while giving the skin a smoother, more refreshed appearance.

The actual procedure involves numbing of the areas to be treated with topical anesthesia and/or ice packs. This will be followed by injection of the filler into the areas desired after cleansing with alcohol. This process may involve multiple injections at several sites. Your surgeon may also massage the area to smooth some of the contours after the injection. Following the procedure icepacks can be reapplied if you desire to alleviate any minor discomfort. Occasionally, for deeper injections, local anesthetic injections may be used. Common sites of deeper injections include the cheeks and nasolabial folds.

Your results from filler injections are immediate, though some swelling and minor bruising may occur. These should resolve within a few days. Results with Botox® take about a week to occur. Touchups may be necessary if asymmetry occurs, which is common.

The results of both Botox® and all fillers are not permanent and your face will continue to age. This and other factors will determine how long your results will last. If you choose not to continue treatments your face will return to its' pretreatment appearance. Plumped lips will lose volume and improved wrinkles, creases and scars will visibly recess and fully reappear in time.

The results of permanent fillers can change over time; as you age naturally, these fillers may shift or clump. Surgical removal may be necessary to correct these conditions and could result in visible changes in appearance and noticeable changes in the texture of soft tissue.



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I am happy to discuss all of your options with you and tailor a plan for your unique needs. I am available for a full consultation and look forward to meeting with you and helping you to make an educated and informed decision.

Portions of this discussion have been copied and/or modified from the American Society of Plastic Surgeons brochures on injectable fillers.