

The benefits of firm HA fillers and where to use them

If you're interested in aesthetics and fillers in particular, you may already know they have slightly different properties. Some are quite firm and others are softer and more flexible.[1] One is not better than the other, it all depends on the result you want and where in the face it's used. Here we'll take a closer look at firm hyaluronic acid (HA) fillers and why they can produce great results when used expertly.

Does it really matter if HA fillers are firm or flexible?

Have you ever tried out a lot of products before finding , for example, a mascara, skincare product, eyeshadow, or lipstick that you really like? Our face is the most visible part of our body, and many people invest time and money to find the exact right products for them.

HA fillers are not just put onto our skin; they are *injected into* the skin. Why would't we want to find the most suitable one for our treatment?

Why HA fillers?

Before going into details about gel firmness, it's good to know a bit about HA.

Hyaluronic acid, or HA in short, has become the most used ingredient when creating fillers.[1] The reason is that it has unique characteristics that makes it suitable for injecting into the skin:

- It's a natural substance, a kind of sugar molecule, that keeps our skin and other tissues hydrated and elastic.[2]
- It's one of the most water-loving molecules in nature and has been called nature's own moisturizer.[2]
- When HA molecules are surrounded by water, they form a thick viscous gel. Technically, viscosity describes the properties of fluids. Something that is viscous is not very fluid, it's rather sticky and thick.[2]
- It's biocompatible and does not trigger immune reactions.[2]

So, by itself, HA forms a viscous gel that does not produce any reactions in the body; rather it's natural to the body since it's already there in our skin.

These characteristics make it a suitable ingredient for skincare and aesthetics and not surprisingly many fillers today are based on HA.[2]

Modifying HA into a gel that lasts for several months or longer[3]

HA gels need a bit of modification to make them last longer after being injected into the skin.

The body constantly breaks down and rebuilds HA with a fast turnaround rate. A third of all hyaluronic acid in the body is turned over daily. When natural HA is injected, it therefore disappears fast, within a couple of days.[4]

To make the HA more resistant to degradation by the body, so-called cross-linking technologies are used. HA naturally forms long chains or strands. When HA is cross-linked, chemical "bridges" are created between the chains to prevent the body's enzymes from breaking down HA.[4]

Cross-linking makes the gel last longer, in general between 3 and 24 months.[3]

Cross-linking with the pioneering NASHA™ technology

There are different kinds of cross-linking technologies, and they produce HA filler gels with slightly different characteristics. One of the first cross-linked HA fillers was Restylane® which was launched in 1996.[5]

Restylane was formulated using the pioneering NASHA technology.[5] Not only was it one of the first of its kind on the market; it was also based on HA from *non-animal origin*.

Previously, HA had been sourced from rooster combs.[4] The HA used in Restylane was instead derived from bacterial fermentation.[3]

NASHA produces firm HA gels. When compared to major competitors, NASHA gels are the firmest on the market.[6]

The advantages of firm HA fillers

Firm gels have specific advantages that make them appropriate for certain kinds of treatments.

Firm HA gels are more resistant to muscle movements. They do not spread and integrate so much in the tissues. In other words, they stay where they are injected without changing form so much. They can therefore be used for more targeted placement and have a higher lifting capacity.[1]

In comparison, flexible HA gels integrate more in the tissues and are able to adapt to facial expressions, like when we smile. They are therefore often used in areas that move a lot, such as around the mouth. Firm gels are suitable for places that don’t move so much and are used to correct deep wrinkles and folds, as well as under eye hollows.[1,7-9]

A broad range of HA fillers with different properties

Not all Restylane fillers are made with NASHA. Some are made with the OBT™ technology that produces soft and flexible HA gels.[6]

By using two different cross-linking technologies, Restylane covers a wide range in firmness and flexibility, from the firmest to the most flexible of all fillers on the market, compared to major competitor brands:

HA fillers that are firm with low flexibility:[6,7]

Restylane®

Restylane® Lyft™

Restylane® Eyelight™

HA fillers with moderate firmness and flexibility:[6]

Restylane® Volyme™

Restylane® Defyne™

Restylane® Kysse™

HA filler that is soft and flexible:[6]

Restylane® Refyne™

Cross-linking technology is not the only determining factor of a gel's properties. Particle size also plays a role.[1] By varying these two factors, the cross-linking technology and the particle size, a broad range of gels with different characteristics can be created, as the Restylane range shows.

Your look on your terms

Unless we have specific requirements, the healthcare practitioner whom we consult will make the choice for us. A qualified practitioner knows which kind of gel is appropriate for a certain kind of treatment. With a broad range of different gels, from highly firm to soft and flexible, they have many options to choose from.

If you’re considering an aesthetic treatment, always consult a qualified practitioner who can individualize the treatment to your own unique facial features and needs. It’s your look on your terms.

References

1. Lundgren, B. et al.; Using a New Photo Scale to Compare Product Integration of Different Hyaluronan-Based Fillers After Injection in Human Ex Vivo Skin, J Drugs Dermatol. 2018 Sep 1;17(9):982-986
2. Necas J. et al, Hyaluronic acid (hyaluronan): a review, Veterinarni Medicina, 53, 2008 (8): 397–411
3. Fallacara A. et al, Hyaluronic Acid in the Third Millennium, Polymers 2018, 10(7), 701
4. Coleman S.R., Cross-Linked Hyaluronic Acid Fillers, Plast Reconstr Surg. 2006 Feb;117(2): 661-5
5. Data on file (MA-39680). Global 50 million Restylane Treatments, 2021
6. Öhrlund Å, New method to study the balance of firmness and flexibility for HA fillers, Galderma Development, Uppsala, Sweden, Presented at AMWC Monte Carlo, Monaco. 4 - 6 April 2019
7. Nikolis, A. et. al.,A Randomized, Crossover-Controlled Evaluator-Blinded Trial Evaluating Cannula- Vs Needle-Assisted Hyaluronic AcidInjections for Infraorbital Deformities. Aesthetic Surgery Journal sjab284 (2021) doi:10.1093/asj/sjab284.
8. Restylane EU IFU
9. Restylane Eyelight EU IFU.

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