

Cosmetic Fillers

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| Trade Name (Manufacturer) | Composition | Duration | Implantation Level | Comments |
|--|--|----------|--|--|
| HA Fillers^a | | | | |
| Belotero Balance (Merz Aesthetics, Inc) | HA | 6–9 mo | Mid to deep dermis | Monophasic: entirely stabilized gel without suspended particles (all other HA fillers are biphasic) |
| Eleveess (Anika Therapeutics, Inc) | HA + lidocaine | 6–9 mo | Mid to deep dermis | Contains highest concentration of HA of all the fillers |
| Hylaform, Hylaform Plus ^b (Inamed/Genzyme) | HA | 3–6 mo | Mid dermis (Hylaform), deep dermis (Hylaform Plus) | Derived from rooster comb (not <i>Streptococcus equi</i> , as with the other HA products) |
| Juvéderm, Juvéderm Ultra, Juvéderm Ultra Plus (all have XC versions) (Allergan, Inc) | HA (XC versions have lidocaine) | 4–6 mo | Mid dermis (Juvéderm Ultra), deep dermis (Juvéderm Ultra Plus) | |
| Perlane (Medicis Aesthetics Inc) | HA | 3–6 mo | Deep dermis | |
| Prevelle Silk (Mentor Corporation) | HA + lidocaine | 3–6 mo | Mid to deep dermis | |
| Restylane, Restylane-L (Medicis Aesthetics Inc) | HA (L version has lidocaine) | 4–6 mo | Mid dermis | |
| Stimulatory Fillers | | | | |
| Radiesse (Merz Aesthetics, Inc) | CaHA micro-spheres in polysaccharide gel | 9–18 mo | Subdermal | Material is radiopaque and can be seen on CT scans and radiographs; FDA approved for HIV-associated lipoatrophy; lowest allergenic profile of nonhuman fillers; least likely to cause localized inflammation |

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Table (continued)

| Trade Name (Manufacturer) | Composition | Duration | Implantation Level | Comments |
|--|---|--|--|---|
| Stimulatory Fillers (continued) | | | | |
| Sculptra (Valeant Aesthetics) | PLLA | Up to 2 y | Subdermal | FDA approved for HIV- associated lipoatrophy |
| Artefill (Suneva Medical, Inc) | PMMA beads in bovine collagen suspension | Permanent | Deep dermis | Pretesting required for bovine allergy 6 wk prior to treatment, with 2nd skin test 4 wk later (superficial dermal injection of product into forearm skin); nonabsorbable and nonbiodegradable |
| Collagen Fillers^c | | | | |
| Zyderm 1, ^b Zyderm 2 ^b (Allergan, Inc) | Bovine collagen + lidocaine | <3 mo (Zyderm 1), 3–6 mo (Zyderm 2) | Upper to mid dermis (Zyderm 1), mid dermis (Zyderm 2) | Pretesting required for both; first filler used in the United States (Zyderm 1 FDA approved in 1981) |
| Zyplast ^b (Collagen Corporation) | Bovine collagen cross-linked with glutaraldehyde + lidocaine | 3–5 mo | Deep dermis | Pretesting required |
| CosmoDerm ^b (Allergan, Inc) | Human collagen + lidocaine | 3–4 mo | Upper to mid dermis | Fibroblast cell cultures derived from neonatal foreskin |
| CosmoPlast ^b (Allergan, Inc) | Human collagen cross-linked with glutaraldehyde + lidocaine | 3–4 mo | Deep dermis | Fibroblast cell cultures derived from neonatal foreskin |
| Laviv (Fibrocell Science, Inc) | Human collagen (azficel-T) | 6–9 mo | Mid dermis | Fibroblast cell cultures derived from patient's own skin (obtained from postauricular skin) |
| Cymetra/AlloDerm (LifeCell Corporation) | Acellular tissue matrix | 3–6 mo | Subdermal | Derived from human cadaveric dermis |

Abbreviations: HA, hyaluronic acid; CaHA, calcium hydroxylapatite; CT, computed tomography; FDA, US Food and Drug Administration; HIV, human immunodeficiency virus; PLLA, poly-L-lactic acid; PMMA, polymethyl methacrylate.

^aAll HAs are derived from bacterial fermentation (*S equi*), except for Hylaform, which is derived from an avian source (rooster comb). All HAs bind water and expand in volume. Possible side effects from injection of HAs include blue-tinged nodules under the skin (can use hyaluronidase to reverse), bruising, swelling, and pain.

^bProduct discontinued in the United States.

^cBovine and human-derived collagen-containing fillers are contraindicated in the glabellar region due to risk for tissue necrosis.

Practice Questions

- 1. Which of the following cosmetic injectables binds water to create volume, has a low allergic reaction profile, and lasts approximately 6 months?**
 - a. bovine-derived collagen
 - b. calcium hydroxylapatite
 - c. human-derived collagen
 - d. hyaluronic acid
 - e. polymethyl methacrylate

- 2. Which cosmetic injectable demonstrates radiopacity?**
 - a. bovine-derived collagen
 - b. calcium hydroxylapatite
 - c. human-derived collagen
 - d. poly-L-lactic acid
 - e. polymethyl methacrylate

- 3. Which cosmetic injectable is contraindicated in the glabellar region due to increased risk for tissue necrosis?**
 - a. bovine-derived collagen
 - b. human-derived collagen
 - c. poly-L-lactic acid
 - d. a and b
 - e. a, b, and c

- 4. Which of the following cosmetic injectables is the least likely to illicit a localized inflammatory response?**
 - a. calcium hydroxylapatite
 - b. human-derived collagen
 - c. hyaluronic acid
 - d. poly-L-lactic acid
 - e. silicone

- 5. Which of the following cosmetic injectables is approved by the US Food and Drug Administration for the treatment of human immunodeficiency virus-associated lipoatrophy?**
 - a. bovine-derived collagen
 - b. human-derived collagen
 - c. hyaluronic acid
 - d. poly-L-lactic acid
 - e. polymethyl methacrylate

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