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Three important stages in the treatment: marking the region to be treated and the injection technique. See Chapters 5, 6, 7
Top left: Marking the skin around the mouth
Top right: Electronically guided injection technique
Bottom: Injecting manually
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The active substances

**Non-cross-linked hyaluronic acid**  
*(E.g. Teosyal Meso, Redensity I, TKN HA MW 2%)*  

The glucosaminoglycan polysaccharide HA, also known simply as Hyaluron, is a universal and essential component of skin and connective tissue, possesses a high water-binding capacity and improves the viscoelastic properties of the dermis and epidermis. It counteracts skin thinning (by c. 6% every 10 years) and age-related skin atrophy. Produced in the fibroblasts, it has a significant role in the proliferation, migration and differentiation of the keratinocytes. Only HA produced by biotechnological methods, rather than the substance of animal origin, may be used in esthetics. There are many products on the market, but they differ with respect to quality, purity and HA concentration.

Uses: Universal. The nature-identical gel is an essential component of the Mesolift cocktail. It is water-soluble and can be homogenized. In non-cross-linked form, its long-term effect sets in only on epidermal or superficial intradermal administration; following deep injection, it is rapidly transported away from the skin and metabolized. Its half-life in perfused tissue is only 15 days.

**Glycolic acid**  
*(E.g. Glycomax 1% Toskani)*  

This alpha-hydroxy acid, obtained from sugar cane, is a well-known peeling agent, but can also be added to the Mesolift cocktail. It enables the effective treatment of acne or shallow acne scars, blemished and large-pored skin, age-related pigment spots and lines, as well as dull, lifeless and coarse skin. It causes superficial, fine reddening of the skin with subsequent peeling, dissolving and removing the layers of skin cells lying on the surface. After the treatment, the skin’s sensitivity to light is heightened. Serious side-effects or risks have not been observed when the substance is used correctly.

**Taurine**  
*(E.g. Tauricol Toskani)*  

2-aminoethane-sulfonic acid is a semi-essential amino acid containing sulfur. It has an antioxidant, anti-inflammatory effect and vasoprotective effect. Stimulates keratinocytes, collagen synthesis and the storage of moisture in the skin.

Uses: Anti-aging, smoker’s skin, skin regeneration, energy carrier.

**Vitamin C**  
*(Ascorbic acid 200 mg/ml)*  

Stimulates collagen synthesis, promotes wound healing and skin regeneration, protects from light, regulates melanogenesis.

Uses: Prevention of sun aging, Mesoglow, melasma.

**Vitamin B5**  
*(Pantothenic acid, dexpansenol)*  

Involved in the acetylation of proteins and peptides, promotes glutathione synthesis, is essential for the hair roots and skin (nutrition, moisture binding), protects from oxidative stress and UV-radiation, has an antiviral and anti-inflammatory effect. Fibroblast proliferation 1. Activates wound healing genes.

Uses: Stretch marks (striae), melasma.

**DMAE**  
*(E.g. in DM-Silk Toskani, Cocktail skin tightening Toskani)*  

Dimethylaminoethanol is a specific substance with a lifting effect on the face and body (anti-sagging). It increases skin muscle tone due to increased acetylcholine secretion and counteracts skin ptosis. Potential side-effects: toxic dermatitis and fibroblast damage at excessive concentrations. Its tolerability is considerably better when used in the form of DM-Silk (complex containing organic silicon).

Uses: Mesolift, skin tightening, stretch marks.

**Polidocanol**  
*(POM) (Aethoxysklerol®)*  

Its sclerosing effect may also be used for extravascular applications (Note: this is an off-label use), connective tissue firming, potent skin tightening, treatment of fresh stretch marks; concentration and dose depend on the depth of injection and the target structure. Potential side-effects: inflammation or even necrosis at excessive concentrations.

Uses: Tightening and firming of the skin, stretch marks, microsclerotherapy with DHE (dihydroergotamine, F), e.g. treatment of spider burst veins, couperose, small hemangiomas.
Assessing the anatomy of the face

Inspection and assessment of the anatomy of the face and of the individual structure of the skin and connective tissue allow the therapist to select the correct active substance combination for mesotherapy, or a combination of methods for a more complex "face composition".
The active substances

solutions without any loss of effect. Supplements regenerative Mesolift if relaxation of large areas of the face (particularly the areas around the eyes and mouth), neck or cleavage are desired. The most recent observations indicate that this neurotoxin helps promote hair growth.

Uses: Mesobotox, epidermal and intradermal, rejuvenation and relaxation of the face, reducing the size of large skin pores. Hyperhidrosis of the axillae, scalp, palms and soles of the feet.

Salmon calcitonin (POM)
(50 or 100 IU) (must be kept refrigerated)

An oligopeptide, licensed as an osteoporosis agent of second choice, this hormone-like active substance has traditionally been used in mesotherapy for many years. Calcitonin is locally effective in all forms of chronic pain; in France, it is also widely used in the esthetic treatment of cellulite, fat pads and for Mesoglow. Its efficacy is explained by its regulation of calcium metabolism, together with its anti-inflammatory, vasodilatory and analgesic properties. It is regarded as a local repair and regeneration agent for universal use. In anti-aging medicine, it has become established in conditions including periodontia, hearing loss, atrophy of the gums and loose teeth. Side-effects occur only in responders and at higher doses.

Collagenase
(USA, Mesomedica)

Dissolves fibrocellular structures in connective tissue.
Uses: Acne nodules, old scars, nodular cellulite, bull neck, encapsulated lipomas.

Dihydroergotamine (F)

Mild vasoconstriction through α-receptor stimulation. Increases venous tone. Microsclerotherapy, Mesodrain.
Uses: Venolymphatic insufficiency, cellulite, migraine.

Dutasteride (USA)

A 5α-reductase inhibitor which, like finasteride, acts on testosterone metabolism. In genetically predisposed individuals, the hair follicles react to DHT with a reduction in the anagen phase (growth phase). Finasteride and dutasteride also inhibit the local conversion of testosterone to DHT. The hair follicles react to this with a prolongation of the anagen phase and improved hair growth. Can be combined with a regeneration cocktail to improve the trophic situation and microcirculation.
Uses: Androgenic alopecia in men and women (not during pregnancy and exclusively for local use).
2.3 Mixing rules in mesotherapy

Local anesthetics (mostly procaine or lidocaine), physiological saline or monomethyl trimethyl salicylate (Conjocetyl®; Silicor) are used as carrier solutions. Allopathics licensed for intramuscular or intravenous use should be highly diluted in these carriers (generally by a factor of 10). The carriers and adjuvants are drawn into the syringe first, and the allopathic or viscous products (e.g. non-cross-linked hyaluronic acid) added afterwards. The mixture is then shaken briefly to homogenize it and the air evacuated. Care must be taken to ensure that no undiluted allopathics remain in the cone of the syringe. It is only then that the appropriate needle should be fitted onto the syringe. In contrast to systemic treatment, only fractions of the usual doses are needed for local administration. The first-pass effect of systemic administration does not apply, so that the active substances reach the target structure in their full extent. This often means that therapists need to switch to the microdose range and abandon any “more is more” mentality they may have. Adjuvants (special mesotherapy products, orthomolecular products or homeopathic preparations) can be mixed undiluted or used in their pure state. A maximum of three allopathic medicinal products may be mixed in one cocktail. Care must be taken to use only water-soluble substances, to ensure pH equivalence and to use only clear and isotonic solutions for injection. This is the only way to ensure that the procedure is tolerated by the skin. Ideally, the mixtures should be synergistic, with a mu-

Overview – Toskani ready-made cocktails

<table>
<thead>
<tr>
<th>Cocktail FCE</th>
<th>Composition:</th>
<th>Composition: natural stemcell-activator (non-animal, wheat germ extract) 0,1% + Na-DNA 0,3% + Coenzym Q10 0,01% + ferulic acid 0,05%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocktail antiaging</td>
<td><strong>Composition:</strong></td>
<td>DMAE bitrate 3% + carmitine 3% + pyruvat 2% + HA 0,5% + sodium hydroxide 0,88% + Angireline® 0,05%</td>
</tr>
<tr>
<td>Cocktail antiaging plus Mesolift</td>
<td><strong>Composition:</strong></td>
<td>Na-DNA 3% + HA 2% + polyvitamin BCAE + organic Silica 0,5% + DMAE-Bitartrate 0,5%</td>
</tr>
<tr>
<td>Skin tightening cocktail</td>
<td><strong>Composition:</strong></td>
<td>elastin 5% + DMAI-bitrate 3% + sodium ascorbate 2%</td>
</tr>
<tr>
<td>Cocktail antistriae</td>
<td><strong>Composition:</strong></td>
<td>Organic Silica 2,5% + dexpantenol 2,5% + Centella asiatica 2,5% + elastin 2,5% + collagen 2,5% + Mimosb tenuiflora 1%</td>
</tr>
<tr>
<td>Hair cocktail</td>
<td><strong>Composition:</strong></td>
<td>dexpantenol 10% + pyridoxine 2% + Thiamin 1% + biotin 0,05% + iron gluconate 0,05%</td>
</tr>
<tr>
<td>Cellulite and fat pad cocktails</td>
<td></td>
<td></td>
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<tr>
<td>Cocktail anticellulite</td>
<td><strong>Composition:</strong></td>
<td>caffeine 5% + Cynara scolymus 3% + Equisetum arvense 1% + PPC/DC 1%</td>
</tr>
<tr>
<td>Cocktail anticellulite spot</td>
<td><strong>Composition:</strong></td>
<td>Hamamelis 2% + Ruscus 2% + PPC/DC 2%</td>
</tr>
<tr>
<td>Natural stem cell activator</td>
<td>(Non-animal) for the skin: additives may include Q 10 and ferulic acid</td>
<td></td>
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All the cocktails may be used in their pure state; where there is local sensitivity (e.g. Meso-Hair) add a local anesthetic: e.g. 0.5 ml procaine 1% + 1.5 ml hair cocktail. The stem cell activator is mixed 1:1 (only for skin and hair).