

## MESOTHERAPY IN COSMETOLOGY

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**Abstract.** Mesotherapy is an injectable technique used in cosmetology for the localized delivery of biologically active substances into the middle layer of the skin (dermis). This procedure is effectively applied for correcting signs of aging, treating dermatological issues, and improving aesthetic parameters. This article discusses the primary mechanisms of action of mesotherapy, the composition of injectable preparations, as well as the benefits and risks associated with the procedure.

**Keywords:** mesotherapy, anti-aging therapy, hyperpigmentation, cellulite, hair growth stimulation, dermis, biologically active substances.

## МЕЗОТЕРАПИЯ В КОСМЕТОЛОГИИ

**Аннотация.** Мезотерапия представляет собой инъекционную методику, используемую в косметологии для локальной доставки биологически активных веществ в средний слой кожи (дерму). Процедура эффективно применяется для коррекции возрастных изменений кожи, лечения дерматологических проблем и улучшения эстетических параметров. В данной статье рассмотрены основные механизмы действия мезотерапии, состав инъекционных препаратов, а также преимущества и риски процедуры.

**Ключевые слова:** мезотерапия, антивозрастная терапия, гиперпигментация, целлюлит, стимуляция роста волос, дерма, биологически активные вещества.

### Introduction

Mesotherapy is an injectable technique widely used in modern cosmetology to address various aesthetic and dermatological concerns. The core principle of the procedure lies in introducing active substances directly into the dermis, which allows achieving localized therapeutic effects while minimizing systemic side effects. Despite its widespread popularity, the mechanisms of action and the composition of mesotherapy preparations continue to be actively studied, opening new opportunities for further application of mesotherapy in cosmetology.

### Basics of Mesotherapy: Mechanisms of Action and Composition of Preparations.

Mesotherapy is based on the introduction of biologically active substances into the dermis to stimulate regenerative processes in the skin. The controlled micro-inflammatory response caused by the injection activates collagen synthesis, improves microcirculation, and enhances the metabolism of skin cells (1). The composition of mesotherapy preparations includes vitamins (A, C, E), minerals, amino acids, peptides, hyaluronic acid, and plant extracts (2). These components contribute to improving skin texture, hydration, elasticity, and the reduction of pigmentation.

### Application of Mesotherapy in Cosmetology

#### Anti-Aging Therapy

Mesotherapy is widely used for the prevention and correction of age-related skin changes.

The procedure helps smooth out wrinkles, increase skin elasticity, and improve its structure. The introduction of active substances stimulates the synthesis of collagen and elastin, leading to the restoration of the dermal framework (3).

#### **Correction of Hyperpigmentation**

Mesotherapy is also employed for the treatment of hyperpigmentation. The components of the preparations inhibit tyrosinase activity and contribute to skin lightening, improving its tone and providing a more even complexion (4).

#### **Cellulite Treatment**

For cellulite correction, mesotherapy includes preparations that enhance lipolysis and microcirculation, leading to a reduction in the volume of fat cells and an improvement in skin condition (5).

#### **Hair Growth Stimulation**

Scalp mesotherapy helps prevent alopecia and stimulate hair growth. Preparations containing vitamins, amino acids, and growth factors activate follicles and strengthen the hair (6).

#### **Advantages and Risks of Mesotherapy**

##### **Advantages**

The main advantages of mesotherapy include its high efficacy, localized action of the preparations, minimal systemic effects, and a wide range of applications. The introduction of small doses of preparations directly into the dermis increases their effectiveness and reduces the risk of side effects (7).

##### **Risks and Side Effects**

Despite its advantages, mesotherapy carries certain risks, such as allergic reactions, inflammation, hematomas, and infectious complications. These risks can be minimized with proper injection techniques and the use of certified preparations (8).

#### **Conclusion**

Mesotherapy represents an effective method in cosmetology, allowing the resolution of a wide range of aesthetic and dermatological problems. However, its application requires careful diagnosis and an individual approach for each patient to ensure maximum safety and efficacy of the procedure.

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