Table of Contents

Part I. SKIN AS AN OBJECT OF AESTHETIC TREATMENT

Chapter 1. Skin structure and functions

- 1.1. Skin functions
- 1.2. Organization levels: from organelle to organ
- 1.3. Skin layers
- 1.3.1. Epidermis and stratum corneum

Keratinocytes and corneocytes

Other epidermal cells

1.3.2. Derma and interstitium

Extracellular matrix

Dermal cells

1.3.3. Subcutaneous fat

Structure and functions

Subcutaneous fat cells

- 1.3.4. Musculoaponeurotic system
- 1.4 Skin receptors
- 1.5. Skin glands
- 1.5.1. Sebaceous glands
- 1.5.2. Sweat glands

Merocrine sweat glands

Apocrine sweat glands

1.6. Hair and nails

Resume

Chapter 2. Defense mechanisms of the skin

- 2.1. The acid mantle
- 2.1.1. Structure and origin
- 2.1.2. Functions
- 2.2. Stratum corneum
- 2.2.1. Structure
- 2.2.2. Origin
- 2.2.3. Functions
- 2.3. Skin immune system
- 2.3.1. Innate immune response
- 2.3.2. Specific immune response
- 2.4. Skin microbiome
- 2.4.1. Composition
- 2.4.2. Functions
- 2.5. Skin pigmentation
- 2.5.1. Melanogenesis

Melanin synthesis

Distribution of pigment in the epidermis

Ethnic peculiarities of melanogenesis

- 2.5.2. Melanin functions
- 2.5.3. Regulation of melanogenesis

- 2.6. Skin antioxidant system
- 2.6.1. Reactive oxygen and nitrogen spices
- 2.6.2. Antioxidant system

Resume

References

Part II. PRINCIPLES OF SKIN EXPOSURE TO SKINCARE AND AESTHETIC TREATMENTS

Chapter 1. Basic science for modern cosmetic dermatology

- 1.1. The stratum corneum is the leading skin barrier. From corneology to corneotherapy
- 1.2. Microbiome and skin health. The concept of using biotics in skincare
- 1.3. Chronologic and premature skin aging. From reduction to prevention of aging signs: preventive skincare
- 1.4. Oxidative stress as an internal destabilizer. Maintaining the body's antioxidant capacity by using antioxidants
- 1.5. Stress and General Adaptation Syndrome. Controlled skin destruction for skin stimulation
- 1.6. Skin self-renewal. Physiological cosmetic dermatology concept and regenerative medicine
- 1.7. Regulatory mechanisms imbalance in skin aging and diseases. Using signaling substances for restoring intercellular communication
- 1.8. Psychodermatology and psychoaesthetics
- 1.9. Principles of integrative medicine in cosmetic dermatology. Longevity medicine and cosmetic dermatology

Resume

Chapter 2. Method of choice

- 2.1. Physiological approach in cosmetic dermatology
- 2.1.1. Strengthening and maintaining skin protective structures
- 2.1.2 Stimulation of structural reorganization in the skin (biostimulation)
- 2.1.3. Aesthetic defects masking
- 2.2 Maintaining skin homeostasis
- 2.3. Epidermis and stratum corneum
- 2.3.1. Cellular balance: proliferation/desquamation
- 2.3.2. Water balance
- 2.3.3. Lipid balance
- 2.3.4. Ionic balance
- 2.3.5. Acid-alkaline balance
- 2.4. Dermal balance
- 2.4.1. Structural balance

Hyaluronic acid

Collagen and elastin fibers

- 2.4.2. Water balance
- 2.5. Subcutaneous fat
- 2.5.1. Cellular balance
- 2.5.2. Lipid balance Resume

References

Part III. AESTHETIC PROBLEMS AND APPROACHES TO THEIR SOLUTION Chapter 1. Dry skin (xerosis). Skin moisturizing

1.1 Dry skin vs. dehydrated skin: what is the common and the difference?

- 1.1.1. Definition and meaning
- 1.1.2. Dry skin: a problem of the epidermal barrier
- 1.1.3. Dehydrated skin: a problem of the dermal matrix
- 1.2. Barrier damage and inflammation: what is a primary?
- 1.3. Causes of dry skin
- 1.4. Moisturizing skincare products
- 1.4.1. Sebum-like substances and occlusion
- 1.4.2. Water binding substances

Polymeric substances and surface moisturizing ("wet compress")

Natural moisturizing factor and "deep" skin moisturization

Glycerin

1.4.3. Lipid barrier restoration and reinforcement

Physiological lipids

Natural oils

Antioxidants

- 1.4.4. Osmotic hydration
- 1.5. Strategies and tactics for proper hydration
- 1.6. Differential diagnostics of dry skin. Algorithm of moisturizer choice
- 1.6.1. Disturbance of stratum corneum integrity
- 1.6.2. Excess sebum secretion (seborrhea)
- 1.6.3. Sebum deficiency
- 1.6.4. Natural moisturizing factor deficiency
- 1.7. Hygiene principles
- 1.8. Nutritional support
- 1.9. Climate control
- 1.10. Moisturization of pathological dry skin

Resume

References

Chapter 2. Oily skin (seborrhea) and acne. Restoration of sebum regulatory mechanisms

- 2.1. Oily skin as a background for chronic dermatoses
- 2.1.1. Causes of increased skin oiliness
- 2.1.2. Clinical types of seborrhea

Oily seborrhea

Dry seborrhea

- 2.2. General recommendations for oily skin
- 2.2.1. Diagnostics and pathogenetic treatment
- 2.2.2. Diet and nutritional support
- 2.2.3 Health promotion
- 2.3. Hygiene and skincare principles
- 2.3.1 Cleansing

Surface impurities dissolving agents

Sebum absorption and absorbents

Comedones extraction

2.3.2 Re-balancing keratinization/desquamation and prevention of keratosis

Exfoliation

Barrier structures and physiological lipids

2.3.3. Normalization of the sebum production regulation

Local regulation mechanisms

Direct regulation of sebocyte activity

2.3.4. Skin immune function restoration

Soothing skin irritation

Strengthening skin immunity

- 2.3.5. Normalization of the skin microbiome
- 2.3.6. Moisturization and protection
- 2.4. Acne
- 2.4.1. Pathogenesis
- 2.4.2. Etiology

Hormonal factor

Immune factor

Anatomical factor

Biochemical factor

Cutibacterium (Propionibacterium) acnes)

- 2.4.3. Drug treatment of acne
- 2.4.4. Special ingredients for anti-acne skincare products

Benzoyl peroxide

Non-comedogenic emollients

2.4.5. Cosmetic and aesthetic treatment for acne-prone skin

Phototherapy

Photodynamic therapy

Plasma shower and transdermal delivery

Chemical peel

Comedones extraction

Resume

References

Chapter 3. Hyperpigmentation. Skin lightening

- 3.1. Permanent and temporary pigmentation
- 3.2. Assessment methods for evaluation of skin pigmentation
- 3.2.1. Mexametry
- 3.2.2. UV visualization
- 3.3. Depigmenting and lightening aesthetic methods
- 3.4. Skincare products
- 3.4.1. Depigmenting and lightening cosmetic ingredients
- 3.4.2. Mechanism of depigmentation

Non-selective depigmenting agents

Selective depigmenting agents

- 3.4.3. Combination of depigmenting and lightening ingredients
- 3.4.4. Antioxidants
- 3.5. Phototherapy
- 3.6. Injection treatment
- 3.7. Hypermelanosis in cosmetic dermatology practice

Melasma

Freckles

Lentigo

Post-inflammatory and post-traumatic hyperpigmentation

Dark skin Resume

References

Chapter 4. Hypersensitive skin. Reducing reactivity and strengthening the skin's defense mechanisms

- 4.1. Definition and classification
- 4.2. Diagnosis of hypersensitivity
- 4.3. Itching and inflammation in skin hypersensitivity
- 4.3.1. How the itching sensation is formed
- 4.3.2. Neurogenic inflammation
- 4.3.3. Molecular and cellular mechanisms of inflammation
- 4.4. Scenarios of pathogenesis
- 4.4.1. Barrier function disruption and dry skin

Atopic dermatitis

Skincare products that weaken the stratum corneum function

4.4.2. Increased excitability of skin receptors and neurogenic inflammation

Chemical irritant contact dermatitis

Photo-contact dermatitis

Physical irritant contact dermatitis

4.4.3. Immune disorders and allergic reactions

Allergic contact dermatitis

Photoallergy

4.4.4. Psychological stress

4.5. Hypersensitive skincare

4.5.1. Protection and prevention

Physical factors

Mechanical damages

Chemical agents

Cosmetic agents

4.5.2. Treatment

Restoration and strengthening of the skin barrier function

4.5.3. Psychosomatic disorders

Resume

References

Chapter 5. Skin wrinkles and atony. Lifting and remodeling of the skin

5.1. Definition and classification of facial wrinkles

Fitzpatrick classification

Glogow classification

Hamilton classification

Lemperlé classification

Classification according to the severity of wrinkles

Photoaging scale

- 5.2. Skin biomechanical properties
- 5.3. Skin lifting
- 5.3.1. Physiological and mechanical lifting

5.3.2. Skin lifting assessment methods

5.3.3. Skin lifting methodology

Mechanical stretching

Remodeling (physiological restoration)

Hybrid lifting: mechanical stretching + remodeling

5.4. Principles of remodeling treatment

5.4.1. Diagnostics

5.4.2. Pre-treatment

Improvement of blood supply

Soothing of the skin

Decrease in melanocytes activity

Normalization of the epidermis cell renewal and keratinization

Reducing the mimic wrinkles

5.4.3. Skin destruction

Chemical peel

Laser dermabrasion and fractional photothermolysis

Mechanical dermabrasion

Plasma resurfacing

High-intensity focused ultrasound (HIFU) lifting

Photodynamic therapy (PDT)

5.4.4. Physiological stimulation

Intradermal injections of active substances solutions

Intradermal injections of platelet-rich plasma (PRP therapy)

Autologous dermal fibroblast transplantation

RF lifting

Remodeling cosmetic products

5.4.5. Post-treatment

Skincare products

Physical treatment

PRP topical applications and intradermal injections

Nutritional support

Resume

References

Chapter 6. Orange peel and local fat deposits. Aesthetic lipomodelling treatments

- 6.1. Etiology
- 6.2. Stages and clinical signs
- 6.3. Subcutaneous fat remodeling
- 6.4. Surgical methods
- 6.5. Therapeutic methods
- 6.5.1. Scientific rationale
- 6.5.2. Massage and energy-based technologies

Mechanical methods

Electrical methods

Sound technologies

Cryolipolysis

6.5.3. Injection treatment

Improvement of microcirculation

Effects on adipose tissue

Improvement of the skin appearance

6.5.4. Skincare products

Active ingredients

Professional treatment

6.5.5. Anti-orange peel nutraceuticals

6.5.6. Special clothing

Resume

References

Chapter 7. Skin aging. Skin rejuvenation

- 7.1. Dynamics of age-related skin changes
- 7.2. Etiology and preventive measures
- 7.2.1. UV radiation and photoaging
- 7.2.2. Chronic inflammation and skin inflammaging
- 7.2.3. Hormonal imbalances
- 7.2.4. Glycation and advanced glycation end products (AGEs) accumulation
- 7.2.5. Psycho-emotional factors and mental youth
- 7.3. Targets of skin rejuvenation and methods of age-related changes reduction
- 7.3.1. Epidermis

Stratum corneum

Pigmentation

7.3.2. Dermis

Extracellular matrix

Skin microcirculation

7.3.3. Subcutaneous tissue

Fat tissue

Ligaments

- 7.4. General principles of skincare and aesthetic treatments in the context of anti-aging care
- 7.4.1. Antioxidants and sun protection
- 7.4.2. Stimulation of skin regeneration and remodeling
- 7.4.3. Moisturizing the skin to strengthen the skin's barrier structures
- 7.4.4. Nourishing the skin
- 7.4.5. Improvement of blood circulation
- 7.4.6. Reducing the skin signs of aging

Lightening of pigment spots and evening of the skin tone

Wrinkles

Skin atony

Volume depletion

- 7.5. Key components of the anti-age aesthetic program
- 7.5.1. Diagnostics
- 7.5.2. Cosmetic skincare routine
- 7.5.3. Intensive skincare procedures
- 7.5.4. Aesthetic treatments with immediate results

Resume

References

Part IV. MODERN TRENDS IN COSMETIC DERMATOLOGY AND SKINCARE Chapter 1. Nutraceuticals for health, youth, and beauty

- 1.1. Cutting-edge science and technology
- 1.2. Cosmeceuticals = cosmetics + medicine
- 1.3. Nutraceuticals: food + medicine
- 1.4. Nutricosmetics: food + cosmetics
- 1.5. Nutritiology, cosmetology, and longevity medicine

References

Chapter 2. Cosmetic dermatology and skincare are part of longevity medicine

(Yutskovskaya .A.)

- 2.1. Aesthetic socialism
- 2.2. Cosmetic dermatology is "getting younger"
- 2.3. To be healthy, not to seem healthy
- 2.4. Interdisciplinary approach to health, biological and psychological aging, and natural beauty as a modern vector of cosmetic dermatology

References