

Table of Contents

Part I. BIOLOGY OF AGING

Chapter 1. Theories of aging (Korotych I.)

- 1.1. Basic concepts
- 1.2. Apoptosis, a “leaf falling”
- 1.3. Too many mutations
- 1.4. Lack of repair materials
- 1.5. Problem inside the cells
- 1.6. Organ and system failure
- 1.7. Body intoxication
- 1.8. Free radicals
- 1.9 Cause or effect?

References

Chapter 2. Neuroendocrine regulation at different stages of human life (Pyankova E.Y.)

- 2.1. Biological aging because of internal dysregulation
- 2.2. Endocrine health
 - 2.2.1. Basic principles of endocrine regulation
Mechanism of information transfer: lock- and-key principle
Hormones vs. neurotransmitters
Endocrine glands and hormones
Regulation of hormone production
Hormone transport
 - 2.2.2. Relationship to the immune system
- 2.3. Endocrine aging
 - 2.3.1. Puberty and adolescence
 - 2.3.2. Specific features of the reproductive, adaptive, and endocrine systems functioning in the middle-aged and older adults
Reproductive function
Adaptive resources
Energy homeostasis
Main strategies of health (aging) management

References

Chapter 3. Aging as a disease (Hernandez Jimenez E.I.)

- 3.1. Pro
- 3.2. Contra
- 3.3. Are we aging, or are we sick?

References

Part II. SKIN AND AGE

Chapter 1. Age-related microscopic skin changes (Borkhunova E.N., Taganov A.V.)

- 1.1. Clinical, morphological, and biomechanical skin changes related to chronological aging
 - 1.1.1. Morphotypes of aging
 - 1.1.2. Structural skin transformations
Epidermis
Derma
Subcutaneous fat

Skin blood vessels

1.1.3. Biomechanical properties

1.2. Morphological changes related to photoaging

1.2.1. Clinical signs

1.2.2. Histological signs

Epidermis

Derma

Skin blood vessels

Resume

References

Chapter 2. Age-associated skin diseases (Yutskovsky A.D., Dvoryaninova I.E.)

2.1. Morphological elements of the rash

2.1.1. Primary elements

Spot

Blister

Pustule

Papule

Bump

Node

2.2.2. Secondary elements

Skin dyschromia

Scales

Crust

Crack

Excoriation

Erosion U

Icer

Scar

Skin vegetation

Lichenification

2.2. Diseases accompanied by skin rashes: basic principles of diagnostics

2.3. Gender differences

2.3.1. Gender-specific skin features

2.3.2. Stigmas of pregnancy

2.3.3. Gender specificities of dermatoses

2.4. Most common dermatoses in cosmetic dermatology practice

Pityriasis rosea Gibert

Rosacea

Perioral dermatitis

Seborrheic dermatitis

Acne

Actinic keratoses

Follicular keratosis

Ichthyosis

Porokeratosis of Mibelli

Palmar and plantar keratoderma

Eczema
Infectious dermatoses
Leukoplakia
Benign skin lesions
Alopecia
Nail pathologies

References

Part III. AGE-RELATED SKIN CHANGES INSTRUMENTAL ANALYSIS (Hernandez Jimenez E.I.)

- 1.1. Functional approach to skin health maintenance
- 1.2. Age-related skin syndrome
 - 1.2.1. Wrinkles
Evaluation
Treatment
 - 1.2.2 Laxity
Evaluation
Treatment
 - 1.2.3. Dry skin, rough texture
Evaluation
Treatment
 - 1.2.4. Pigment spots
Evaluation
Treatment
 - 1.2.5. Vascular disorders
Evaluation
Treatment
 - 1.2.6. Facial contour changes (due to edema or soft tissue involution)
Resume

References

Part IV. MOLECULAR AND CELLULAR TECHNOLOGIES IN GERODERMATOLOGY

Introduction

Chapter 1. Genotyping in the dermatology practice (Grigortsevich N.Y.)

- 1.1. What is genotyping
- 1.2. When and why is genotyping to be done
- 1.3. How to perform the test
- 1.4. Information obtained from the test
- 1.5. Consequences of polymorphism

- 1.6. Error risk
- 1.7. Genetic-based treatments
- 1.8. Genotyping example

References

Chapter 2. Regenerative medicine for skin rejuvenation (Zorina A.I., Zorin V.L.)

- 2.1. Autologous dermal fibroblasts injection
- 2.2. Adipose-derived stem cells

- 2.2.1. Cell characteristics
 - Adipose-derived stromal-vascular cell fraction
 - Adipose-derived stem cells
- 2.2.2. Lipograft enrichment
- 2.2.3. Adipose-derived stem cells for reducing age-related skin changes
- 2.3. Platelet-rich plasma (PRP)
 - 2.3.1. Platelets as a source of growth factors
 - 2.3.2. Classification and methods for obtaining
 - 2.3.3. PRP in cosmetic dermatology

References

Chapter 3. Hormone therapy for managing age-related changes (Tishova Y.A., Tyuzikov I.A., Gusakova D.A., Vorslov L.O., Kalinchenko S.Yu.)

- 3.1. Sex hormones: estrogens, testosterone, progesterone. Manifestations of deficiency and gender-specific therapy
 - Menopausal hormone therapy (MHT) by estrogens preparations
 - MHT by progesterone preparations
 - MHT by testosterone preparations
- 3.2. Vitamin (hormone) D
- 3.3. Thyroid hormones
- 3.4. Human growth hormone (HGH)
- 3.5. Health Quartet

References

Part V. FUNCTIONAL FOODS AND NUTRACEUTICALS FOR SKIN REJUVENATION (A.A. Gulyaev)

- 1.1. Functional foods (FF) vs. nutraceuticals
- 1.2. Geroprotectors in FF and dietary supplements
 - 1.2.1. β -Carotin
 - 1.2.2 Polyphenols
 - 1.2.3. Chlorophyll
 - 1.2.4. Vitamins C and E, coenzyme Q10
 - 1.2.5. Ginsenosides
 - 1.2.6. Acemannan
 - 1.2.7. Indole-3-carbinol
 - 1.2.8. Squalene and other lipids
 - 1.2.9. Melatonin
 - 1.2.10. Collagen
 - 1.2.11. Proteoglycans
 - 1.2.12. Hyaluronic acid
- 1.3. More about dietary supplements

References

Part VI. SKINCARE AND AESTHETIC TREATMENT OF AGE-RELATED SKIN CHANGES

Chapter 1. Anti-aging aesthetic solutions for patients of different age groups (Yutskovskaya Y.A., Sintsova T.S.)

- 1.1. Most common age-related skin problems: prevention and reduction
 - 1.1.1. Teenagers (up to 18 years)

- 1.1.2. 18-25 years old
- 1.1.3. 25-40 years old
- 1.1.4. over 40 years old
- 1.2. Site-specific age-related changes
- 1.3. Fight against age-related skin changes by combining different anti-aging aesthetic methods

References

Chapter 2. Male skincare (Yutskovskaya Y.A., Sukhanova A.S.)

- 2.1. Men's skin peculiarities
- 2.2. Men's skincare

References

Chapter 3. Estimating age-related changes in face and neck in clinical practice

(Kalashnikova N.G., Urakova D.S.)

- 3.1. Geometrical estimation of the face
 - 3.1.1. Static asymmetry of the face
 - 3.1.2. Facial proportions in full-face and profile
- 3.2. Anatomico-morphological features
 - 3.2.1. Assessment of the facial skeleton
 - 3.2.2. Assessment of soft tissue
- 3.3. Evaluation of age-related skin changes
 - 3.3.1. Skin tonus and elasticity
 - 3.3.2. Wrinkles
 - 3.3.3. Mimicry activity
 - 3.3.4. Aging-related skin pathologies
- 3.4. Age-related changes in the face and neck
 - 3.4.1. Soft tissue loss
 - 3.4.2. Ptosis
 - 3.4.3. Myofascial imbalance and facial asymmetry
 - 3.4.4. Dental alterations
- 3.5. Evaluation results

References

Chapter 4. Aging morphotype-based aesthetic treatments (Yutskovskaya Ya.A., Sukhanova A.S., Luchina E.N., Birko O.N.)

- 4.1. Aging morphotypes: definition and classification
- 4.2. Anti-aging aesthetic strategies for different morphotypes of aging
 - 4.2.1. Tired morphotype
 - 4.2.2. Wrinkled morphotype
 - 4.2.3. Muscular morphotype
 - 4.2.4. Deformation morphotype
 - 4.2.5. Mixed morphotype

References

Chapter 5. Individual approach to treating involutational dystrophic skin changes (IDC) based on morphological typing (Tsepkoenko V.A., Tsepkoenko A.V.)

- 5.1. What is morphological typing
- 5.2. Biochemical, endocrinological, and metabolic features
- 5.3. Complex treatment of vascular IDC skin type
- 5.4. Complex treatment of atopic IDC skin type

- 5.5. Complex treatment of hyperplastic IDC skin type
 - 5.6. Complex treatment of hypoestrogenic IDC skin type
- Resume

References

Chapter 6. Anti-aging medicine comprehensive strategy in the real clinical practice

(Pyankova E.Yu.)

- 6.1. Anti-aging clinic — NO! Anti-aging services in the clinic — YES!
 - 6.2. Legal and organizational issues for providing anti-aging services
 - 6.2.1. Legislative framework
 - 6.2.2. Clinic chief manager responsibilities and duties
 - 6.2.3. Anti-aging medical specialist (medical coordinator)
- Algorithm for primary preventive counseling Algorithm for medical control (monitoring)

References

Part VII. HAIR AGING (Ovcharenko Y.S.)

- 1.1. Gerontobiology of the hair follicle
 - 1.1.1. Age-related transformation of the hair follicle and fiber
 - 1.1.2. Age-related hair color changes
 - Hair pigments
 - Melanocytes and peculiarities of hair melanogenesis
 - Melanocyte life cycle and activity regulation
 - Natural graying
 - Hypothetical scenario of hair pigment unit aging
 - Premature hair greying
 - 1.1.3. Age-related hair fiber changes
- 1.2. Scalp aging
- 1.3. Hair photoaging
 - 1.3.1. Keratin framework photodamage
 - 1.3.2. Melanin photodamage
 - 1.3.3. Cell membrane complex (CMC) photodamage
- 1.4. Hormones and hair
 - 1.4.1. Androgens
 - 1.4.2. Estrogens
 - 1.4.3. Thyroid hormones
 - 1.4.4. Prolactin and hair loss
 - 1.4.5. Human growth hormone
 - 1.4.6. Melatonin
- 1.5. Age-related hair loss
 - 1.5.1. Androgenetic alopecia
 - Genetic basis Pathobiology
 - Microinflammation of the hair follicle and fibrosis
 - Clinical features
 - 1.5.2. Involutional alopecia
 - Pathobiology
- 1.6 Age-related pathologies affecting the hair condition
 - 1.6.1. Endocrine disorders
 - 1.6.2. Nutrient deficiencies

- 1.6.3. Drug-induced disorders
- 1.6.4. Endogenous intoxication
- 1.6.5. Psychological disorders in the elderly
- 1.7. Therapeutic strategies for hair rejuvenation
 - 1.7.1. Hormonal treatment against signs of aging
 - 1.7.2. Hair growth stimulators: minoxidil
 - 1.7.3. Metabolic complexes
 - 1.7.4. Surgical hair restoration
 - 1.7.5. Reversal of involutional pigment loss
 - 1.7.6. Hair photoprotection

References

Part VIII. PSYCHOLOGY OF AGING

Chapter 1. Aging through the eyes of beauty salon clients (Orasmae-Meder T.)

- 1.1. Mirror of the soul
- 1.2. Meet not only on clothes
- 1.3. Youthful radiance
- 1.4. Getting lower: neck, decollate, hands...
- 1.5. The problem is within us

Chapter 2. One for all, and all for one: how to work with families (Ivanova, A.N.)

- 2.1. Mother brings her daughter, daughter brings her mother
- 2.2. You can't beat a gene
- 2.3. Not only heredity
- 2.4. Works for one; does it work for the other?
- 2.5. Silence is golden

Chapter 3. A man at a beautician's appointment (Chernyshova E.A.)

- 3.1. Thinking as a reflection of changing reality: how and why the psychology of women and men has changed
- 3.2. Appearance as a tool in the competition
- 3.3. The man at the cosmetologist's appointment: a few touches to the portrait
- 3.4. The cosmetologist is a companion of a man in the struggle for youth