Johannes Huber: Endocrine estetic and cosmetic in menopause
možete objektivizirati proces starenja na licu

Original Article

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Three-dimensional human facial morphologies as robust aging markers

Weiyang Chen, Wei Qian, Gang Wu, Weizhong Chen, Bo Xian, Xingwei Chen, Yaqiang Cao, Christopher D Green, Fanghong Zhao, Kun Tang and Jing-Dong J Han

Aging is associated with many complex diseases. Reliable prediction of the aging process is important for assessing the risks of aging-associated diseases. However, despite intense research, so far there is no reliable aging marker. Here we addressed this problem by examining whether human 3D facial imaging features could be used as reliable aging markers. We collected >300 3D human facial images and blood profiles well-distributed across ages of 17 to 77 years. By analyzing the morphological profiles, we generated the first comprehensive map of the aging human facial phenome. We identified quantitative facial features, such as eye slopes, highly associated with age. We constructed a robust age predictor and found that on average people of the same chronological age differ by ±6 years in facial age, with the deviations increasing after age 40. Using this predictor, we identified slow and fast agers that are significantly supported by levels of health indicators. Despite a close relationship between facial morphological features and health indicators in the blood, facial features are more reliable aging biomarkers than blood profiles and can better reflect the general health status than chronological age.
In modern data processing, attempts are being made to discover parameters that will register the process of aging on the face.

Daily news 31 March 2015

Eek! How your face reveals your body’s real age
Oestrogen and age estimations of perimenopausal women

Ludwig Wildt, Teresa Sir-Petermann

We estimated the age of perimenopausal women at a first visit and measured the concentrations of oestradiol in serum. The accuracy of estimation of age strongly correlated with oestradiol concentrations: age was overestimated when oestradiol was low and underestimated when oestradiol was high.

The association between oestrogens and sexual attractiveness has been widely discussed in both scientific and popular literature. However, the question how
Estrogen levels correlate with the estimated age of a woman’s face.

Lancet. 1999 Jul 17;354(9174):224
Solving an age-old problem

Western governments need to rethink their approach to dealing with an ageing population.
Gruber CJ, Wieser F, Gruber IM, Ferlitsch K, Gruber DM, Huber JC.
A prospective, randomized, double-blind, placebo-controlled study on the influence of a hormone replacement therapy on skin aging in postmenopausal women

P.-G. Sator, M. O. Sator*, J. B. Schmidt, H. Nahavandi†, S. Radakovic, J. C. Huber* and H. Hönigsmann

Fig. 1. Bone gain and bone loss in men and women. Adapted from R. Bartl, 2001 [9]
The effect of topical oestradiol on skin collagen of postmenopausal women.
Local oestriol treatment improves the structure of elastic fibers in the skin of postmenopausal women.

Punnonen R, Vaajalahti P, Teisala K.
Objective To investigate the effect of 17β-oestradiol ophthalmic drops in comparison with a traditional tear substitute in postmenopausal women with keratoconjunctivitis sicca.
Hormonal influences on intraocular pressure

Michael O Sator  Doris M Gruber  Elmar A Joura

Reprinted from THE LANCET Saturday 14 September 1996 Vol. 348  No. 9029  Pages 761–762
The number of people aged 60 years and older is growing rapidly worldwide. So keeping the elderly healthy has to be high on the list of priorities. Ageing research is clearly gaining momentum, as the reviews in this Insight testify, bringing hope that at some time in the future we will be able to keep age-related diseases at bay by suppressing ageing itself. As ageing will affect us all sooner or later, we hope that you will find this collection informative and stimulating.
Immunological and dermatological impact of progesterone.

Huber J, Gruber C.

Not only estrogen but also progesterone is important for the skin.
Progesterone does not penetrate the skin easily because it contains 21 carbon atoms.
Estrogen stimulira kolagen struktura
Progesteron sprječava razgradnju kolagena
The Nobel Prize in Chemistry 2003

Peter Agre  
Prize share: 1/2

Roderick MacKinnon  
Prize share: 1/2

The Nobel Prize in Chemistry 2003 was awarded "for discoveries concerning channels in cell membranes" jointly with one half to Peter Agre "for the discovery of water channels" and with one half to Roderick MacKinnon "for structural and mechanistic studies of ion channels".

Kako mogu kožu za make hormona tijekom
Electroporation as an Efficient Physical Enhancer for Skin Drug Delivery

José Juan Escobar-Chávez, PhD, Dalia Bonilla-Martínez, MSc, Martha Angélica Villegas-González, MSc, and Alma Luisa Revilla-Vázquez, PhD

Transdermal drug delivery offers an attractive alternative to the conventional drug delivery methods of oral administration and injection. However, the stratum corneum acts as a barrier that limits the penetration of substances drugs. The in vivo application of high-voltage pulses is well tolerated, but muscle contractions are usually induced. The electrode and patch design is an important issue to reduce the discomfort of the electrical treatment.

Journal of Clinical Pharmacology, 2009;49:1262-1283
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This is important for the treatment of the flabby upper arm, which is caused by weakness of fasciae – similar to the loss of trabeculae in osteoporosis.
THE AESTHETIC UPPER ARM:
ON THE ANATOMY AND CLASSIFICATION OF THE LIPODYSMORPHIC UPPER ARM

Der ästhetische Oberarm:
Zur Anatomie und Klassifikation des lipodysmorphenen Oberarmes

MATTHIAS SANZOFEHOFER¹, PATRICK SCHAUER², FRIEDRICH ANDERHUBER³
A sagging upper arm is caused by weak fasciae.
Parathormone, which is used for the treatment of osteoporosis, is of interest for the treatment of connective tissue as well.
The thyroid hormone also exerts effects on fasciae and tendons.
Thyroxine is important for both collagen synthesis and matrix metabolism. Hypothyroidism causes accumulation of glycosaminoglycans (GAGs) in the extracellular matrix, which may, in turn, predispose to tendon calcification. GAGs are involved in the pathogenesis of carpal tunnel syndrome during hypothyroidism.
Tenocytes grew with a doubling time of approximately 49 h. The addition of the THs in the culture medium led to stimulation of cell growth with a reduction of the doubling time. In particular, T3 induced a reduction in doubling time of 27% (36 h) and T4 of 19% (40 h; ), with the 10−7 M dose.

**T3 and T4 play an antiapoptotic action.** Hence, to verify whether they counteracted apoptosis in isolated tenocytes, cells were plated and serum deprivation was performed for 48 h to induce apoptosis.
Identification and characterization of chondrogenic progenitor cells in the fascia of postnatal skeletal muscle

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Hialuronska kiselina može električki podesiti na koži.
Electrically assisted skin delivery of liposomal estradiol; phospholipid as damage retardant

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Abstract

This work investigated transdermal penetration of a model lipophilic drug (estradiol) through human epidermis from phosphatidylcholine (PC)-based liposomes and saturated aqueous estradiol solution (control). Representative examples of cholate-containing ultradeformable (Transfersomes), non-rigid

Estrogen također može prenijeti elektroporacijom u kožu bolj
Induction of Collagen by Estradiol

Difference Between Sun-Protected and Photodamaged Human Skin In Vivo

Laure Rittié, PhD; Sewon Kang, MD; John J. Voorhees, MD; Gary J. Fisher, PhD

Objective: To evaluate the effectiveness of topical estradiol in stimulating collagen I and III production in naturally aged and photoaged human skin of postmenopausal women and age-matched men.

Design: Vehicle-controlled treatment followed by biochemical and immunohistochemical analyses of skin biopsy specimens.

Setting: Academic referral center.

Participants: Seventy healthy volunteers (40 postmenopausal women with a mean age of 75 years, and 30 men with a mean age of 75 years) with photodamaged skin.

Interventions: Topical application of estradiol, 0.01%, 0.1%, 1%, or 2.5% or vehicle on aged or photoaged skin, with biopsy specimens taken after last treatment.

Main Outcome Measures: De novo synthesis of collagen by quantitative polymerase chain reaction, immunohistochemistry, and enzyme-linked immunosorbent assay.

Results: Topical estradiol increased procollagen I and III messenger RNA and collagen I protein levels in sun-protected aged hip skin in postmenopausal women and, to a lesser extent, in age-matched men. Surprisingly, no significant changes in production were observed in women or men after 2-week estradiol treatment of photoaged forearm or face skin, despite similar expression of estrogen receptors (ER-α, ER-β, and GPR30) in aged and photoaged skin. Estradiol treatment induced the estrogen-responsive gene GREB1, indicating that penetration of topical estradiol and genomic response to estrogen were similar in the 3 anatomic sites.

Conclusions: Two-week topical estradiol treatment stimulates collagen production in sun-protected hip skin, but not in photoaged forearm or face skin, in postmenopausal women and aged-matched men. These findings suggest that menopause-associated estrogen decline is involved in reduced collagen production in sun-protected skin. Interestingly, alterations induced by long-term sun exposure hinder the ability of topical 2-week estradiol to stimulate collagen production in aged skin.

Trial Registration: clinicaltrials.gov Identifier: NCT00113100

Arch Dermatol. 2008;144(9):1129-1140
The effects of topical isoflavones on postmenopausal skin: Double-blind and randomized clinical trial of efficacy

Andrea B. Moraes, Mauro A. Haidar, José Maria Soares Júnior, Manuel J. Simões, Edmund C. Baracat, Marisa T. Patriarca

Izoflavoni djelovati kroz estrogenskog receptora beta

coat of horses kaput konja
Transdermal Delivery of Tea Catechins by Electrically Assisted Methods

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The advantage of catechines
Proanthocyanidin: A natural crosslinking reagent for stabilizing collagen matrices

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Abstract. While attempting to find a suitable crosslinking reagent for biopolymers, a naturally occurring proanthocyanidin (PA) obtained from grape seeds was selected to fix biological tissues. The cytotoxicity and crosslinking rate, reflected by the in vitro and in vivo degradation of fixed matrices has been studied. The shrinkage temperature of the fixed bovine pericardium increased from 66 to 86°C. A cytotoxicity assay using fibroblast cultures revealed that PA is ~120 times less toxic than glutaraldehyde (GA), a currently used tissue stabilizer. In vitro degradation studies showed that fixed tissue was resistant to digestion by bacterial collagenase. Crosslinks between PA and tissues can be stabilized by decreasing the dielectric constant of the solution during storage. After subcutaneous implantation for periods ranging between 3 and 6 weeks, we found no apparent degradation of the CA- or PA-fixed tissues, whereas fresh tissue controls rapidly disintegrated. Beyond 6 weeks PA crosslinks began to degrade. More fibroblasts migrated and proliferated inside the PA-fixed implants compared with GA counterparts. Tissues crosslinked with PA manifested an enhanced collagen expression and deposition and did not calcify after implantation. CA, on the other hand, even after thorough rinsing continued to be cytotoxic, inhibited collagen synthesis and encouraged dystrophic calcification. Collagen matrices crosslinked with PA are expected to be of value in the design of matrices that will encourage cell ingrowth and proliferation, which are temporary in nature, and that are intended to regenerate or replace missing tissues, which can delay the biogradation of collagen. As such they should be of significant value in the emerging field of tissue engineering. © 2003 Wiley Periodicals, Inc. J Biomed Mater Res E: 118–124, 2003

Key words: collagen; crosslinking; proanthocyanidin; toxicity; degradation
Procyanidin B1
The main advantage of the delivery through skin is the possibility of molecules to enter the circulation, avoiding the metabolic processing of the delivered molecules in the liver. However, the stratum corneum acts as a limiting barrier, therefore only small lipophilic drugs have the ability to penetrate the skin at therapeutic rates by passive diffusion. Conventional transdermal delivery systems, such as transdermal patches, enable controlled transdermal drug delivery, but are applicable only to small, potent and lipophilic solutes and the transport of drug across the skin is slow with lag times to reach steady-state fluxes in hours.
Effect of percutaneous androgen replacement therapy on body composition and body weight in postmenopausal women.

Gruber DM, Sator MO, Kirchengast S, Joura EA, Huber JC
A Randomized, Controlled Trial of 3.0 mg of Liraglutide in Weight Management

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ABSTRACT
Glucagonsekretion - Betazellen +
Insulinempfindlichkeit +
Magenent leerung -
Sättigung +