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STUDIES LIST

Visioscan[®] VC 98

H. Tronnier, M. Wiebusch, U. Heinrich, Results of the Skin Surface Analysis by Means of SELS, Akt. Dermatol. 23, 1997

Surface evaluation of living skin (SELS) is a new optical-photoanalytical process. Four important parameters, determining the surface structure of the skin (scaling, roughness, wrinkling status and smoothness) can be recorded simultaneously. At the same time the image of the studied skin area can be used either directly or converted to colors chosen arbitrarily to represent different temperatures. The usefulness of the method is shown through examples of relevant influences on the skin surface and their effect on the SELS values, as well as by the results of comparative treatments of several weeks' duration. Constitutional, topical and age dependant skin surface structures can also be recorded by means of this method.

H. Tronnier, M. Wiebuch, U. Heinrich, R. Stute, Surface Evaluation of Living Skin-SELS. Experimental Dermatology-Vo. 6, No.5, 10/1997

H. Tronnier, M. Weibusch, U. Heinrich, R. Stute, Surface Evaluation Of Living Skin. 3rd Int.Symposium on Cosmetic Efficacy, May 1998

H. Tronnier, Ergebnisse der Hautoberflächenanalyse mit SELS. Kosmetische Medizin Nr. 5, 1998

Nach einer Beschreibung des Meßprinzips und der Durchführung der SELS-Methode sowie einem Eingehen auf bereits publizierte Studienergebnisse wird über 3 weitere Untersuchungsreihen berichtet. Dabei konnte gezeigt werden, daß die glätte der Haut SE_{sm} mit einer Verbesserung der zellulären Kohäsion korreliert ist.

H. Tronnier bsr, Beitrag zur Hautverträglichkeit von Körperpflegemitteln. Kosmetische Medizin 6/1999

Wenn auch die Zahl der Nebenwirkungen durch kosmetische Präparate und Körperpflegemittel, vor allem der allergischen, sehr gering ist, gibt es doch gerade bei empfindlichen Patienten Hautzustände, für die eine weitere Maximierung der Verträglichkeit für den Dermatologen wünschenswert ist.

H. Tronnier, Results of the Skin Surface Evaluation, Cosmetics&Toiletries Manufacture Worldwide 1999.

After a description of the measuring principle, the equipment and the realization of the SELS-Software as well as after dealing with already published study results, there will be a report also about three more analysis series. Thus it was possible to show that the smoothness of the skin $Sesm$ has correlated with an improvement of the cellular cohesion.

A.O.Barel, K.Alewaeters, P.Clarys, **Optical Imaging Using UV Light for the Determination of Photoageing**. Skin Research and Technology, Vol.5 No. 2, May 1999

P.Clarys, K.Alewaeters, A.O.Barel, **Comparative Study of Skin Color Using Different Bioengineering Methods**. Skin Research and Technology, Vol.5 No. 2, May 1999

H.Tronnier, U.Heinrich, **Diagnostik und Behandlungskontrolle seborrhoischer Kopfschuppung mit bildanalytischem Verfahren**. Kosmetische Medizin, 2 Mai 1999-07-15

Nach kurzem Eingehen auf die Klinik der (seborrhoischen) Kopfschuppung und ihre Pathogenese sowie die Therapie wird auf die konischen Nachweisverfahren auf der Kopfhaut hingewiesen. Eine neue bildanalytische Methode, basierend auf älteren Untersuchungen, wird beschrieben. Gemessen wird dabei die Schuppenzahl (SZ), die durch Schuppen bedeckte Meßfläche (SF), aus denen sich eine relative Schuppengröße errechnen läßt (SG). Außerdem werden prozentual die Schuppengrößen in 9 Klassen ausgewiesen.

E. Thumm, E.G. Jung, Ch. Bayerl, **Überprüfung der Auswirkung von Kosmetika auf Hautrauhigkeit, Feuchtigkeitsgehalt und Barrierefunktion der Haut**. Kosmetische Medizin 3 Juni 1999

In einer seitenkontrollierten Studie wurde drei Kosmetikpräparate auf liposomaler Basis hinsichtlich ihrer Auswirkung auf a)Hautrauhigkeit (Skin Visiometer SV 500), b) den Feuchtigkeitsgehalt des Stratum corneum (Corneometer CM825) und c) die Hautbarrierefunktion bzw. den transepidermalen Wasserverlust/TEWL (Tewameter TM 210) untersucht.

M. Puschmann, A. Melzer, H.P. Nissen., **Hautglättende, hautelastische und hautschützende Wirkung einer Urea-Ceramid-Kombination**. Kosmetische Medizin Nr. 4, 1999-11-22

Sebostase ist ein häufiges dermatologisches Krankheitsbild. Sie wird durch exogene Faktoren, (Klima, Waschgewohnheiten) und/oder konstitutionelle Faktoren wie Alter und atopische Hautdiathese hervorgerufen. Eine auffällige Häufung derartiger Symptome findet sich in der kalten Jahreszeit. Hier ist das Klima (Temperatur, Luftfeuchtigkeit) sowohl im Freien als auch in den Gebäuden als wichtiger Kofaktor anzusehen. Zur Therapie trockener Haut werden traditionell Salben/Fettsalben, Ölbäder sowie harnstoffhaltige Zubereitungen eingesetzt.

H. Tronnier, **Wirksamkeit von Kosmetika – Anspruch, Wirklichkeit und Perspektiven**, 13. Symposium der DGK Bad Neuenahr, 1999

H.E.Packham, c.L. Packham, **Skin Bioengineering as a Contribution to Product Performance and Safety**. Cosmetics & Toiletries 03/2000

J.W.Wiechers, C.Oakley, V.Wortel, T.Barlow, **Comparison of Skin Colour Measuring Methodologies on Asian Skin**. Personal Care Ingredient Asia Conference, Bangkok, March 2000.

H.E.Packham, **Skin Bioengineering as a Contribution to Product Performance and Safety**, C&T, 2000

A. Castro, **Sericina en Preparaciones Capilares para Cabellos Danados: Medida de su Efectividad**, Magazine Actualizaciones Terapéuticas Dermatológicas y Estéticas, Vol. 25 No. 3, 2001

Thomas Förster, Henkel KgaA, **Cosmetic Lipids and the Skin Barrier**, 2001 by Marcel Dekker

There is no doubt that the application of cosmetic lipids has many positive effects on the structure and function of the skin. These effects are pleiotropic, caused either by direct interaction with the epidermis, particularly the stratum corneum, or indirectly, by influencing the physiologic, homeostatic condition of the skin.

C. Piérard-Franchimont, G.E. Piérard, Postmenopausal Aging of the Sebaceous Follicle: A Comparison between Women Receiving Hormone Replacement Therapy or Not. Dermatology 07/2002

The endocrine control of sebaceous follicles is complex in women. During aging, a decline in sebum output is often experienced. However, some women report increased seborrhea after the menopause.

H. Tronnier, Effects of Textiles on Human Skin, SÖFW Journal, 128. Jahrgang 4-2002

Very often, the people concerned as their employers make detergent residues in clothes responsible for skin reaction to textiles. Sometimes allergies are suspected.

A. Pagnoni, Photoaging and Photodocumentation, Cosmetics & Toiletries, January 2002, Vol. 117, Nr. 1

Techniques to photograph or image skin photodamage have reached new levels of sophistication. This survey discusses clinical grading, light imaging techniques, videomicroscopy and threedimensional in vivo measuring systems.

L. Orejarena, A. Castro, Evaluacion de la efectividad hidratante de diferentes sustancias y su estabilidad fisica, Actualizaciones Terapeuticas, dermatologicas y Esteticas, Nov.-Dec. 2002, Vol. 25

La resequedad de la piel tiene diversos origenes: disminucion de lipidos, perdida de agua transepidermal, factores hormonales, geneticos, medicamentosos, ambientales. Conociendo que esta condicion es una de las mas tratadas por especialistas, y que infinidad de productos dermocosmeticos especifican ser hidratantes, sin evaluacion de efectividad ni estabilidad, nos propusimos evaluar la actividad de diferentes hidratantes, en varias bases.

M. Boeninger, Comparison of Three Methods for Determining Removal of Stratum Corneum Using Adhesive Tape Strips, International Conference on Occupational and Environmental Exposures of Skin to Chemicals, September 8-11 2002, Hilton Crystal City, Washington DC

Adhesive tape stripping has been used to remove layers of the outermost stratum corneum from the skin. These tapes can be used to measure the physical condition of the skin, or for quantifying exogenous and endogenous compounds present within the skin.

JS Burry, RL Evans, AV Rawlings, Effects of antiperspirants on whole body sweat rate and thermoregulation, Posters of the 22nd IFSCC Congress, Edinburgh 23.-26. Sep. 2002

Nils Krüger, Lucy Fiegert, Dagmar Becker, Tilman Reuther, Martina Kerscher, Spurenelemente in Form eines Kupfertripeptidkomplexes, Kosmetische Medizin, 1/2003, 24. Jahrgang

In den letzten Jahren wurde eine Reihe von neuen dermatokosmetischen Wirkstoffen entwickelt, um Hautalterungssymptome zu bessern. Neben konsequentem Lichtschutz, Retinol und Antioxidantien werden jetzt auch in Deutschland Spurenelemente bei Hautalterung eingesetzt. In der hier vorgestellten offenen, kontrollierten Untersuchung an 40 Probanden zeigte sich bei topischer Applikation von Kupfertripeptid eine Zunahme der Hautdicke in der 20MHz-Sonographie, eine verbesserte Hydratation der obersten Hautschichten gemessen mittels Corneometrie sowie eine im Vergleich zu Retinol und Placebo signifikant stärkere Glättung der Haut, erfasst mit dem Visio-Scan.

Astrid Castro de Castro, Sericina en preparaciones capilares para cabellos danados: medida de su efectividad

El cabello humano esta sometido a una agresion ambiental que contribuye a causar degradaciones quimicas y estructurales. Se disenaron dos preparaciones con Hidrolizado de Sericina: champu acondicionador y ampolla revitalizante. Se estudiaron 20 pacientes con cabellos danados, observandose el dano mediante un Visiscan VC 98. cada paciente uso: champu y ampolla 3 veces/semana/30 dias.

R. Pena Ferreira, P. Costa, F. Bahia, **Visioscan VC 98 application: a comparison study between coarse and smooth skin surface**, Skin Research and Technology, Vol. 9, No. 2, May 2003

The skin is a result of many biochemical and physical factors and these are subject to changes both internally and externally. What is aging? Most of us define aging in terms of the appearance of people in our life experience. Others studying aging mechanisms define aging as a decrease in functional capacity. In the last few years, a great deal of data has been generated on aging mechanisms trying to determine if the aging process is a single event, a one-gene process, or a multifaceted process produced by many events and perhaps many genes.

H. Tronnier, M. Wiebusch, U. Heinrich, **Frictiometry on human skin**, Skin Research and Technology, Vol. 9, No. 2, May 2003

The state and function of human skin can be quantified by numerous non-invasive test methods. There are, however, still no valid methods to measure the tactile properties of the skin surface and thus to quantify the state of the skin on the one hand, and to determine the negative and positive effects of tactile influences on the other hand. The measuring device (Frictiometer) consists of a sensor, a steering unit and a monitor. The torque, the circular friction on the skin surface, is measured via the motor load current and is shown as a voltage drop.

H. Lambers, H. Pronk, S. Piessens and E. Voss, **Natural human skin surface pH is on average below 5**, Gordon Conference, Aug. 2003

The acidic surface pH and the pH gradient over the stratum corneum (SC) are important for optimal condition of the skin, supporting the following functions: regulation of skin microflora, thereby preventing pathogenesis, optimal structure and function of the lipid barrier, optimal stratum corneum homeostasis.

PHARMAZIE Kosmetika **Wirken sie wirklich?** von Ulrike Heinrich, Witten

Bei der Beurteilung kosmetischer Produkte im Hinblick auf ihre Wirksamkeit gehen die Meinungen oft weit auseinander. Ist ihre kosmetische Wirksamkeit wissenschaftlich erwiesen oder steht sie nur als vollmundiger Werbeslogan im Vordergrund? Für die Herstellung und Vermarktung kosmetischer Produkte gelten heute genaue Vorschriften, sowohl auf nationaler als auch auf internationaler Ebene. Sie beziehen sich vor allem auf die Verträglichkeit und den Nachweis der Wirksamkeit dieser Produkte. Die EGKosmetikrichtlinie befasst sich in Artikel 7a mit dem Nachweis kosmetischer Wirkungen. Er muss erbracht werden, wenn dies auf Grund der Beschaffenheit des Erzeugnisses oder der angepriesenen Wirkung gerechtfertigt ist. Anschrift der Verfasserin: Privatdozentin Dr. Ulrike Heinrich Institut für experimentelle Dermatologie Universität Witten/Herdecke Alfred-Herrhausen-Straße 44 58455 Witten © 2003 GOVI-Verlag; E-Mail: redaktion@govi.de

A.G. Shepky, A. Bürger, G. Rudolph, M. Max, U. koop, J. Ennen, M. Kuhn, A. Schölermann, F. Rippke, **Mild keratolysis by topical application of proteolytic enzyme subtilisin**,

The proteolytic enzyme subtilisin offers a novel, especially mild way of keratolysis, obtained already in low concentrations and within the normal pH-range of the skin. The highly purified protease subtilisin from Bacillus subtilis degrades the bonds between the corneocytes and promotes the release of peptides and amino acids as natural moisturizing factors.

U. Heinrich, H. Tronnier, **Johanniskraut-Extrakt zur Pflege der atopischen Haut**, Kosmetische Medizin, Ausgabe 3-4/2003, 24. Jahrgang

Die Bedeutung einer wirkungsvollen Hautpflege mit subakuter atopischer dermatitis sowie auch Personen mit trockener empfindlicher Haut konnte in Zahlreichen Untersuchungen nachgewiesen werden. Neben einem besseren Hautgefühl können Juckreiz, Rauigkeit, Rötung und Trockenheit deutlich vermindert werden. Gleichzeitig werden heute die angenehmen galenischen Eigenschaften einer kosmetischen Hautpflege verlangt.

M. I. Nogueira de Camargo Harris **Propriedades biomecânicas da pele**, Pele : estrutura, propriedades e envelhecimento, Editora Senac, Sao Paulo, 2003.

A biometrologia cutânea, ramo da ciência que avalia quantitativamente as propriedades biomecânicas da pele, tem encontrado na cosmetologia um importante aliado, pois o apelo mercadológico dos produtos destinados aos cuidados com a pele e com os cabelos tem-se baseado cada vez mais em evidências científicas e técnicas sensíveis, precisas e validadas, ao invés de serem fundamentadas em especulações.

R. Pena Ferreira, P. Costa, F. Bahia, **Visioscan VC 98 application: a comparison study between coarse and smooth skin surface**, Skin Research and Technology, Vol. 9, Nr. 2, May 2003, "Abstract Nr. P91".

The skin is a result of many biochemical and physical factors and these are subject to changes both internally and externally. What is aging? Most of us define aging in terms of the appearance of people in our life experience. Others studying aging mechanisms define aging as a decrease in functional capacity.

H. Tronnier, B. Garbe, M. Herling, M. Wiebusch, U. Heinrich, **Nicht-invasive Testverfahren an der Kopfhaut**, Ästhetische Dermatologie, 2 2004, S. 30-37.

Zum Nachweis vorliegender Hautzustände oder Funktionen sowie ihrer Änderungen unter dem Einfluss interner Faktoren oder externer Maßnahmen im positiven (zum Beispiel Wirksamkeit) oder negativen Sinn (zum Beispiel Verträglichkeit) gibt es zahlreiche nicht-invasive Testmethoden. Sie können zum großen Teil modifiziert oder mit Vorbehandlung (zum Beispiel Rasur) auch an der behaarten Kopfhaut eingesetzt werden.

Nicht invasive Testverfahren am behaarten Kopf

Hagen Tronnier 10. MFDK München, 04.12.2004 (PPT) Messung der (seborrhoischen) Kopfschuppung; *Photo-Trichogramm*; Messung von Haardichte und -qualität

M. Fröschele, R. Plüss, K. Bojarski, A. Peter, **Antiaging Effect with Cosmotropic Substances**, SÖFW-Journal, 130, 4 2004, S. 36-43.

Water is one of the most important and limiting factors for plants, animals and humans. The human being consists of 60-65% water and loses daily up to several liters through the skin. The regulation of water content is therefore very significant. Plants especially have developed fascinating physiological and structural strategies to minimize water loss and survive periods of dryness.

P. J. Dykes, R. Marks, **Unfolding or True Extension? The Mechanism and Importance of Stratum Corneum Compliance**, Stratum Corneum IV, Paris, 17.-19. Juni 2004.

- 1y, 2y and 3y skin surface lines
- Role in stratum corneum compliance
- What happens to these lines on deformation (see pictures included)
- Stretched stratum corneum (see picture) etc.

H. Tronnier, B. Garbe, M. Herling, M. Wiebusch, U. Heinrich; **Nicht-invasive Testverfahren an der Kopfhaut**; Ästhetische Dermatologie 2/2004, pp. 30-37

Zum Nachweis vorliegender Hautzustände oder Funktionen sowie ihrer Änderungen unter dem Einfluss interner Faktoren oder externer Massnahmen im positiven (zum Beispiel Wirksamkeit) oder negativen Sinne (zum Beispiel Verträglichkeit) gibt es zahlreiche nicht-invasive Testmethoden. Sie können zu großen Teil modifiziert oder mit Vorbehandlung (z.B. Rasur) auch an der behaarten Kopfhaut eingesetzt werden. Ergänzend dazu sind zahlreiche Methoden beschrieben, mit denen Wasch- und Pflegemaßnahmen am Haar auch in vitro, also an Haarsträhnen getestet werden können. Es gibt aber auch dermatologisch-kosmetische Indikationen im Bereich der Kopfheit, für die spezielle Testverfahren erforderlich sind und zu entwickeln waren.

H. Lambers, S. Piessens, A. Bloem, H. Pronk, P. Finkel, E. Voss, **Natural skin surface pH is on average below 5, which is beneficial for its resident flora (abstract)**, Skin Research and Technology 10, Abstracts, 2004.

The acidic surface pH as well as the pH gradient over the gradient over the stratum corneum (SC) are important for a good skin condition, supporting optimal structure and function of the lipid barrier and SC homeostasis.

P. Quatresooz, L. Petit, I. Uhoda, C. Pierard-Franchimont, G. E. Pierard, **Mosaic subclinical melanoderma: An Achilles heel for UV-related epidermal carcinogenesis**. International Journal of Oncology 25: 1763-1767, 2004.

Cutaneous cancers are not uncommon on the face of elderly patients. Melanin should protect, at least in part, against the ultraviolet (UV)-induced neoplastic damage. However, the density in melanin chromatophores is heterogenous in the epidermis of Caucasian adults. The computerized UV light-enhanced visualization (ULEV) method is a sensitive tool to assess non-invasively this mosaic pattern of intra-epidermal melanin load.

R. Debowska, K. Rogiewicz, T. Iwanenko, I. Eris, **Folic Acid (Folacin) – New Application of a Cosmetic Ingredient**, Kosmetische Medizin 3/2005, pp. 16-22. *

Many years of trials and research tests proved that a lot of well-known vitamins could be successfully used in cosmetology. The available data indicate that one of them – folic acid plays an important role in life process of mitotically active tissues and its deficiency increases background level of DNA damage.

C. Vincent, M. Szubert, I. Eris, K. Rogiewicz, **Comparison of microtopography and profilometry- two methods of skin surface analysis**, Poster presentation Centre For Science And Research Dr. Irena Eris, 2005.

The process of skin aging is connected with progressive changes in skin structure. The most spectacular effect of skin aging are wrinkles and progressive unevenness of skin surface. Skin of elderly people is thin and fragile due to complex changes very often summarized to reduced dermal collagen and decreased cell proliferation.

A novel micronutrient supplement in skin aging: a randomized placebo-controlled double-blind study Alain Béguin *Skin Testing Department, Intercosmetica Neuchâtel SA, Neuchâtel, Switzerland*; 2005 Blackwell Publishing • *Journal of Cosmetic Dermatology*, 4, 277–284

Summary Background Skin aging, a combination of intrinsic and environmentally induced Processes, predominantly ultraviolet (UV) light from the sun, results in characteristic tissue alterations, such as the degradation of collagen and the formation of visible fine lines and wrinkles. **Objective** To test the efficacy and safety of a novel micronutrient supplement (Estime) in skin aging. **Methods** A 4-month randomized double-blind controlled study including 40 subjects where the supplement was tested against placebo for 3 months followed by a 1-month supplement-free period for both groups to assess lasting effects. Efficacy measurements included skin surface evaluation, ultrasound measurement of sun-exposed and protected areas of the skin (back of the hand and ventral forearms, respectively), and photographic assessment.

Sonnen-Apotheke, Kötzing, Dermokosmetik, Beratung in der Apotheke, PTA Nr. 11, Oktober 2005.

Eine gute Unterstützung bei Promotionaktionen zum Thema „Hautpflege“ sind Hautanalysegeräte. Sie erleichtern den Einstieg in die Beratung, individuell auf den Hauttyp und Hautzustand der Kundin oder des Kunden abgestimmt.

Hristo Dobrev, **Clinical and instrumental study of the sebum regulation efficacy of REGUÜ-SEB**, Poster Presentation at the EADV in London, October 2005.

Excessively oily facial skin is due to overactive sebaceous glands and can occur in both males and females. The skin is greasy and shiny, with large open pores, feels unpleasant and may be a serious cosmetic problem. Moreover, this type of skin is sensitive and much more prone

to acne and seborrhoeic dermatitis. That is why the control over the excessive oiliness is very important.

*Dr. G. Varju, Dr. G. Garay, **Surface Evaluation of Living Skin (SELS) during Microdermabrasion Treatment Course**, Poster Presentation, Dr. Derm Laser Center of Dermatology, Budapest Hungary, 2005.*

Microdermabrasion has become a popular method of skin rejuvenation for treating photo-damage, fine rhytides, age spots, dyschromia, enlarged pores and mild acne. This procedure is one of the newest skin rejuvenating techniques employed to help improve the texture and appearance of the skin.

*H. Dobrev, **The Effects of topically applied Matrixyl, natural grape seed and avocado oils on skin surface, hydration and elasticity**, EADV, May 2005, Sofia, Bulgaria (abstract). **

Background: Matrixyl is a lipophilic pentapeptide that stimulates the collagen synthesis by fibroblasts in the skin. The grape seed extract is rich in flavonoids which are powerful antioxidants. Avocado oil consists predominantly of unsaturated fatty acid glycerides, vitamins and minerals, and has good emollient properties.

*H. Dobrev, **Evaluation of the efficacy of a Rooibos Extract containing anti-wrinkle cream**, EADV, May 2005, Sofia, Bulgaria (abstract). **

Background: Rooibos plant possesses scientifically proven anti-oxidative, anti-allergic, anti-microbial and anti-inflammatory features. Aim: To evaluate the efficacy of a Rooibos extract containing cream on aged facial skin using in vivo skin bioengineering techniques.

*K. Schweikert, V. Kalhöfer, B. Gabard, **Improving the properties of Hyaluronic acid on dry skin**, Personal Care, Nov. 2005, pp. 35-39.*

The effects of two cosmetic actives intended for the treatment of skin dryness (Hyaluronic acid and the new Tamarindus indica seed extract) were evaluated in five healthy volunteers by objective measurements after twice daily application on the skin of the volar forearm for two weeks.

*Enzo Berardesca, Norma Cameli, Grazia Primavera, Manuela Carrera; **Clinical and Instrumental Evaluation of Skin Improvement after Treatment with a New 50% Pyruvic Acid Peel**; Dermatol Surg 2006*

Pyruvic acid is an α -keto acid that presents keratolytic, antimicrobial, and sebostatic properties as well as the ability to stimulate new collagen production and elastic fibers formation. Because of its low pK_a and its small dimension, it penetrates rapidly and deeply through the skin, so far as to be considered a potent chemical peel agent. It has proven its efficacy for the treatment of many dermatological conditions such as acne, superficial scarring, photodamage, and pigmentary disorders. Pyruvic acid application usually induces intense burning, and the postpeeling period is characterized by erythema, desquamation, and, sometimes, crusting.

*Hristo Dobrev, **Evaluation of dry Skin: a comparison between visual score, corneometry and image analysis**, Poster presented at the 16th Congress of the EADV, 5/2007*

The term "dry skin" describes a skin condition characterized by reduced quantity and/or quality of moisture and/or lipids. The visible symptoms of dry skin are roughness, scaling and reduced elasticity. In addition, patients complain about tightness and itching.

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Assessment of Age-Related Differences in Skin Surface, Hydration, Sebum and pH;

Marta O. Ferreira, M. Helena Amaral, Paulo C. Costa, M. Fernanda Bahia; Ifssc Barcelona 2008

Skin is the body's largest organ and constitutes a formidable physical barrier that protects us from the environment [1]. It is composed of two main layers: the epidermis and the dermis. The stratum corneum is the outermost layer of the epidermis and is the most important in terms of protection against damage and aesthetic appearance of the skin. The hydro-lipidic film of the

stratum corneum, which consists mainly of sebum excreted by the sebaceous glands and moisture components excreted with sweat, protects the skin from drying out, keeps it supple and due to the natural acid protection barrier it prevents the penetration of harmful external substances.

In Vivo Assessment Of Ectoin: A Randomized, Placebo-Controlled Clinical Trial;

Heinrich U, Garbe B, Tronnier H.; Ifsc Barcelona 2008;

The objective of this study was to determine the anti-aging properties of Ectoin with special regard to its compatibility and efficacy. For this purpose 104 voluntary female participants were included in a monocentric, randomized, double-blind application test. Moisturizing properties, skin surface structure and skin elasticity were tested, comparing Ectoin (2 %: Treatment B) to a reference emulsion (Treatment A) versus an untreated control. None of all treated participants showed side effects during the study. The gained results of this study display that the natural cell protection concept of Ectoin is transferable to skin care

Study of the Inter-Relations between Skin Surface Parameters, Hydration, Sebum and pH

Marta O. Ferreira, M. Helena Amaral, Paulo C. Costa, M. Fernanda Bahia; Ifsc Barcelona 2008

Skin is the body's largest organ and constitutes a formidable physical barrier that protects us from the environment [1]. Several biophysical techniques are commonly used to study the skin properties and to measure the in vivo skin effects of cosmetics, topical medicaments and chemical irritants [2,3]. The Corneometer® (a capacitance method) measures skin hydration, the Sebumeter® (a photometric method) measures the sebum of the skin and the Skin-pHMeter® (a potentiometric method) measures the pH of the skin [4]. The Visioscan® VC98 connected to the software SELS (Surface Evaluation of the Living Skin) can measure several skin surface parameters [5]. This apparatus consists of a special b/w video sensor chip with very high resolution, an objective and an UVA-light source.

Stability and Clinical Efficacy of Cosmetic Formulations Containing Different Peptides;

Glasiela Lemos Anconi, Patrícia Maria Berardo Gonçalves Maia Campos; Ifsc Barcelona 2008

Wrinkles, as a sign of skin aging, have an important social impact, especially because of longer lifetimes and more frequent social relationships; consequently, they are an important factor influencing our way of communication. Wrinkles represent the more evident outcome of cutaneous ageing. Their onset is linked to a variety of events, resulting from both chrono- and photoageing. Both *intrinsic* (hormones, racial and genetic factors, oxidative stress, systemic disease) and *extrinsic* (temperature, air pollution, smoke, alcohol) factors worsen skin condition. However, wrinkles deriving from skin texture, or micro-relief, modification afflict women more than all other wrinkles

as signs of ageing in the common mind.

Bi-Functional Study of Ion Calcium in the Skin

Silvia H. Pérez Damonte¹, Claudia Liliána Selem, Claudia Groisman; Ifsc Barcelona 2008

The Calcium ion has an important function in the skin. Its gradient plays a role in regulating epidermal growth and differentiation *in-vivo*. In the intact epidermis, the extra cellular calcium content is low in both, malpighi and spinosum strata, but increases from the inner to the outer layer of the stratum granulosum [1]. Also, the calcium ion participates in the formation of the epidermal desmosomes, fibroblasts and keratinocytes, which provide the integrity and firmness of the skin [2]. All of these factors are important for the correct function of the epidermal barrier.

Safety Assessment for Nickel in Cosmetics;

Silvia H Pérez Damonte; Ana Maria Martín; Marta Edit Daraio ; Ifsc Barcelona 2008

Many environmental chemicals produce contact hypersensitivity or local inflammatory responses in the skin. Nickel released from metal objects is well known as a sensitizing agent in humans. Since the initial damage caused by nickel remains to be the leading cause of skin disorders such as allergic contact dermatitis worldwide, the aim of this study is to investigate if the content of nickel in cosmetics could produce such reactions.

Clinical efficacy of cosmetic formulations containing *Myrtus communis* extract; *Patricia M. B. G. Maia Campos; Flavio Bueno de Camargo Junior; Sabrina M. Bertucci; Emeline Esteves de Oliveira; Glasiela Lemos Anconi; Lorena Rigo Gaspa; Ifsc Barcelona 2008*

The Research & Development of cosmetic products that are able to act in skin ageing alterations has been a challenge in Cosmetic area. This way, a great number of botanical extracts have been proposed as active ingredients for anti-ageing cosmetic development. *Myrtus communis* is a plant rich in polysaccharides, essential oils, flavonoids, among other substances. Some studies showed that its different hydroalcoholic extracts have a potent antioxidant activity mainly due to the presence of polyphenols. *Myrtus communis* leaves hydrolyzed extract has been proposed as cosmetic ingredient with anti-ageing properties because it is rich in galacturonic acid, ramnose, galactose, glucose, xylose and fructose.

Evaluation of the Safety and Efficacy of Cosmetic Formulations Containing *Saccharomyces cerevisiae* Extract and Vitamins; *Lorena R. Gaspar, Flavio B. de Camargo Jr, Mirela D. Gianeti, Patrícia M. B. G. Maia Campos Universidade de São Paulo - Faculdade de Ciências Farmacêuticas de Ribeirão Preto. Ifsc Barcelona 2008*

There are many substances frequently used in anti-aging products due to their moisturizing, photoprotective and skin barrier effects and among them we can point out vitamin A, C and E derivatives. Vitamin A palmitate acts on epithelization and on abnormal keratinization [1]. Vitamin E acetate is a free radical scavenger and can reduce DNA damage and keratinocytes death (sunburn cell formation) [2,3] and also can enhance stratum corneum hydration and reduce skin roughness [4]. Tetra-isopalmitoyl ascorbic acid (VC-IP) releases vitamin C in physiological conditions and enhances cellular tolerance against UVB and reactive oxygen species as well as reduces the production of interleukin-1a and prostaglandin E2 [5].

Protective Effects Of Turmerones From *Curcuma Longa* Against UVB-Induced Oxidative Stress – Upregulation Of Cellular Defence Systems; *Michael Wegmann¹, Peter Lersch¹, Hans Henning Wenk¹, Saskia K. Klee¹, Ursula Maczkiewitz¹ Mike Farwick¹. Evonik Goldschmidt GmbH. Essen. Germany¹.*

The human epidermis represents the largest interface of the body that is constantly in close contact to the environment. Therefore, it is especially vulnerable to oxidative stress, which in turn leads to oxidation of cellular macromolecules such as proteins, lipids and nucleic acids. In order to counteract these harmful effects and consequently ensure the redox status of the cell, a plethora of defence mechanisms exists. Fuelled by new research, activities and expression of enzymes of the anti-oxidative defence line is better understood. Two major players during aging and anti-oxidative stress mechanisms are the thiol redox systems driven by glutathione peroxidase (GPX1) and thioredoxin reductase (TXNRD1) [1]. Both systems require redox equivalent in the form of NADPH to restore their full anti-oxidative potential [2,3]. This in-turn is generated by another enzyme named NAD(P)H dehydrogenase (NQO1) that generates NADPH from oxidized NADP⁺ by consuming ATP [4]. While the thioredoxin and the glutathione systems neutralize harmful products emerging from the oxidation and peroxidation of bio-macromolecules the defense of reactive oxygen species (ROS) such as hydrogen peroxide which are responsible for most of the oxidative stress on cells exposed for example to UV-irradiation depend on the catalase system. This enzyme eliminates hydrogen peroxide by catalyzing its decomposition to water and oxygen [5].

Hagen Tronnier, Mathilde Wiebusch, Ulrike Heinrich; First Skin-Physiological Tests in Weightlessness in the ISS Space Station; *IFSCC Magazin – vol. 11, no 3/2008*

A prolonged stay in weightlessness induces several medical alterations of the human body and also results in impairment of the skin. The stratum corneum, epidermal barrier as well as other skin compartments are affected in terms of their susceptibility to dryness, desquamation and pruritus. This can lead, for example, to wound healing disorders. Skin physiological tests were performed on the skin of an astronaut during the ASTROLAB-Mission within the Skin Care program

initiated by the ESA. The skin was analysed before, partly during and after the mission. In addition, the tests were repeated after one year.

C. Huh, M. Choi, S. Lee, S. Kim, Y. Park, B. Kim, H. Park, S. Choi, S. Youn, K. Park; FP0723 Low dose 1064nm Q-switched Nd:YAG laser for the treatment of melasma; Abstract; EADV Paris 09/2008;

Background : Melasma is a common acquired pigmentary disorder that is known for its recalcitrance to the conventional treatment. Although Q-switched Nd:YAG laser(QSNYL) is widely used for the treatment of melasma, little has been published regarding its effect. Objectives: In this study, we would like to know the effect of low dose 1064nm QSNYL(MedLite C6, HOYA Conbio, CA) on the treatment of melasma objectively.

U. Heinrich, B. Garbe, H. Tronnier, W. Stahl, C. Moore, M. J. Arnaud; FP0324 SUPPLEMENTATION WITH GREEN TEA EXTRACT IMPROVES SKIN PHYSIOLOGICAL PARAMETERS; Abstract; EADV Paris 09/2008;

Background: The objective of the study was to determine changes in skin parameters during the intake of a beverage rich in green tea extract. The detection of hydration properties, transepidermal water loss (TEWL), changes of skin surface (SELS), skin elasticity, skin thickness and density as well as serum analyses were determined during the study. Methods: Hydration measurements were carried out with the Corneometer CM 825 prior to and during the study. Transepidermal water loss (barrier function of the skin) was measured with the Tewameter, skin surface (SELS) with the Visioscan and skin elasticity with the Cutometer (Courage & Khazaka Electronics, Cologne, Germany).

R. M. Debowska, A. Dzwigalowska, M. Szubert, K. Rogiewicz, I. Eris, B. Pander; FP0313 EFFICACY EVALUATION OF RE-MODELLING FACE CARE PRODUCT; Abstract; EADV Paris 09/2008

Background: Skin ageing is an important and interesting topic of study. It results from the combination of intrinsic ageing and photoageing, which is due to the environmental influence. The cosmetic industry creates and develops for the ageing population constantly improving products. Objectives: The aim of this study was to evaluate the in vivo efficacy and beneficial effects of application of the re-modelling face cream containing an anti-wrinkle peptide, vitamin E, proteins from sweet almonds and peach oil.

Dorothee Bürkle; Die Haut der Astronauten- Erstes kommerzielles ISS-Experiment aus NRW; http://www.wdr.de/themen/wissen/astronomie/blick_ins_all/raumfahrt/060701.jhtml

Auf der Raumstation ISS, zu der Thomas Reiter am 1. Juli startet, wird er viele Experimente durchführen. Mit seiner eigenen Haut wird er für den ersten Versuch erhalten, den Unternehmen aus NRW in Auftrag gegeben haben. Wie viele Falten während seines sechs Monate langen Aufenthalts auf der Internationalen Raumstation ISS dazugekommen sind, wird Thomas Reiter am Ende ganz genau wissen. Alle zwei Wochen holt der deutsche Astronaut einige Messgeräte aus den Regalen der Raumstation, testet damit den Wasserverlust seiner Haut und kontrolliert, ob neue Fältchen dazugekommen sind.

Permamed, Prof. Dr. med. P. Humbert, Besancon 2008; Klinische Anti-Aging-Studie;

In einer monozentrischen klinischen Studie wurde die Anti-Aging-Wirkung von Lubex anti-age über drei Monate bei Frauen im Alter zwischen 45 und 60 Jahren mit mittelstark lichtgealterter Haut im Gesicht und Décolleté geprüft und belegt. Als Grundlage wurden hautphysiologische Messungen durchgeführt, das Hautbild wurde fotografisch dokumentiert und durch Dermatologen im Doppelblindverfahren bewertet.

H. Tronnier, M. Wiebusch, U. Heinrich; Project Skin Care of the European Long-Term Mission (Astrolab) on the ISS; DermaTronnier, Research

Impairments due to circulatory and vestibular disturbances of the equilibrium are the prevalent medical side effects astronauts suffer from. These are followed by the dermatological prob-

lems. In order to examine these skin problems and find ways to prevent them, skin-physiological measurements as a project "Skin Care" were carried out within the framework of the European long-term mission (ASTROLAB) 2005-2007.

Mike Farwick, Ursula Maczkiewitz, Peter Lersch, Tim Falla, Susanne Grether-Beck, Jean Krutmann; An ECM-derived Tetrapeptide to Counterbalance ECM Degeneration; Cosmetics & Toiletries; Vol. 124, No. 6/June 2009

The extracellular matrix (ECM) is the structural backbone of many tissues, especially the skin, and represents a main target for cosmetic applications. ECM proteins are believed to play a pivotal role in cellular migration, proliferation and gene regulation during wound healing. Fragments from ECM constituents have been found capable of stimulating ECM biosynthesis to compensate for tissue destruction. Their mechanisms have been implicated in wound healing, skin aging and skin's response to UV irradiation.

Dr. Laurent Sousselier, Caroline Camuzat, White biotechnology : new source of ingredients, Personal Care, September 2009

White biotechnology has been used for millennia for the preparation of bread and alcoholic drinks. Sumerians had mastered alcoholic fermentation, for the manufacture of beer, 4,000 years AD. Nowadays, white biotechnology is used for several applications. In the pharmaceutical sector it is used for the production of antibiotics such as famous Penicillin, and it is used for energy in bioethanol production.

Bazela K., Debowska R. Tyszcuk B., Kazmierczak E., Mlosek K., Nowicki A., Eris I.; Evaluating the efficacy of anti-cellulite cosmetic products – skin ultrasonography and skin condition analysis; Dr. Irena Eris Centre for Science and Research;

Cellulite is currently considered to be an endocrine metabolic microcirculatory disorder that causes interstitial matrix alterations and structural changes in subcutaneous tissue. It affects thousands of women of any age worldwide. Our study aimed to evaluate the efficacy of an anti-cellulite cream gel. The study was performed using 13 MHz ultrasound (Esoate Technos) as well as Corneometer and Visioscan camera. Each volunteer also completed a survey concerning their own evaluation of the product

Montserrat Mangues, José M. Garcia-Anton, Albert Calvillo, Cristina Crreno; Assessment of new skin brightening agents; Personal Care, November 2009, pp. 31–36

Exogenous causes, particularly chronic ultraviolet light exposure, are a common factor in pigment abnormalities such as melasma, solar lentigines (or age spots), freckling, mottled pigmentation, and ephelides. There are numerous internal and external stresses that affect human skin pigmentation. Exposure to certain drugs and chemicals as well as the existence of certain disease states can result in hyperpigmentation. Post-inflammatory pigmentation, another skin hyperpigmentation disorder, usually develops after resolution of inflammatory skin eruptions like acne, contact dermatitis or atopic dermatitis.

M. Udompataikul, P. Sripiroj, P. Palungwachira; An oral nutraceutical containing antioxidants, minerals and glycosaminoglycans improves skin roughness and fine wrinkles; IFSCC Magazine – vol. 12, no 4 / 2009, p. 422

Various nutraceuticals (dietary supplements) are claimed to have cutaneous antiageing properties, however, there are limited number of research studies supporting these claims. The objective of this research was to study the effectiveness of an oral nutraceutical containing antioxidants, minerals and glycosaminoclycans on cutaneous ageing. In this double-blind, placebo-controlled trial, 60 women aged 35-60 years were randomized to receive oral dietary supplement (n=30) or placebo (n=30), once daily for 12 weeks.

G. Szepetiuk, C. Piérard- Franchimont; Comment j'explore ...la peau par le photodiagnostic utilisant la

fluorescence cutanée et son imagerie fonctionnelle; Rev Med Liège 2010; 65 : 9 : 521-526

RÉSUMÉ : Sous l'effet d'une stimulation lumineuse adéquate, la peau émet une fluorescence particulière. Cette propriété peut être mise à profit à titre diagnostique ou indicatif d'une fonction particulière de la peau. Diverses infections superficielles (érythrasma, pityriasis versicolor, teignes,...) révèlent une fluorescence parfois intense. Les follicules pilo-sébacés renfermant des propionibactéries apparaissent fluorescents. Cette propriété est perdue lors de certains traitements anti-acnéiques. Elle est masquée par des crèmes solaires. Les zones (pré)néoplasiques préparées pour la photothérapie dynamique deviennent fluorescentes. Certains marqueurs de la couche cornée, comme la pyranine, émettent une fluorescence, propriété permettant de mesurer l'activité de renouvellement de l'épiderme.

Frau Prof. Dr. med. V. Mahler, Rizinuswachsperslen – eine icht irritierende Alternative zu reibemittelhaltigen Handreinigern, KOM Newsletterservice Volume 1 – Issue 8, September 2010

Zur Entfernung starker Industrieverschmutzungen (Öl, Fett, Ruß, Metallstaub, Graphit etc.) werden bislang Handreiniger mit abrasiven Bestandteilen wie Walnusschalenmehl, Sand oder Kunststoffmehle eingesetzt. Diese Reibekörper stehen jedoch aufgrund ihrer Materialeigenschaften im Verdacht Hautirritationen herbeizuführen. Als Alternative zu abrasiven Reibekörpern wurden Schmutzlösekörper aus hydriertem Rizinusöl (Active Soft Pearls) entwickelt. Durch ihre polare Oberfläche werden hartnäckige Verschmutzungen bei der Reinigung gelöst und entfernt. Ziel der vorliegenden Studie war es, unter standardisierten Bedingungen die in vivo Effekte von reibekörperhaltigen und reibemittelfreien Waschlösungen auf die menschliche Haut zu untersuchen.

Choi, Mira; Choi, Jee-Woong; Lee, Sun-Young; Choi, Sun-Young; Park, Hye-Jin; Low-dose 1064-nm Q-switched Nd:YAG laser for the treatment of melasma; Volume 21 (4) Informa Healthcare – Jul 1, 2010

Abstract Background : Melasma is a common acquired pigmentary disorder which is sometimes hard to treat with conventional methods. Various kinds of modalities have been applied for the treatment of melasma but none shows constantly good results. Objectives : In this study, we would like to know the effect of low-dose 1064 -nm Q-switched Nd:YAG laser (QSNYL) on melasma and want to evaluate the changes of skin after laser treatment. Methods : Twenty melasma patients were enrolled. Two regions were evaluated from each patient; a total of 40 sites. The 1064-nm QSNYL at fluences of 2.0–3.5 J/cm² was used to treat the whole face, including the melasma lesions. The fluence was adjusted individually and increased until erythema was developed on the laser-treated area. The treatment was performed five times with a 1-week interval. Non-invasive measuring methods, including a chromatometer, mexameter, cutometer, visioscan and a corneometer, were used before and after treatment.

Ward L. Billhimer, M.S., Judy Woodford, Ph.D., Desiree Butcher, Karen Epplen, Tarin Neufarth, Danielle Houston, Jim Bowman, M.S. OBJECTIVE EVALUATION OF MOISTURIZER EFFECT ON SKIN SENSITIVITY AND BARRIER INTEGRITY DURING CONTINUED INSULT PRESSURE, ISBS 2010 Buenos Aires, Argentina

Demonstrating the ability of a moisturizer to reduce skin sensitivity as it helps restore barrier integrity is a key part of product claims substantiation. Typical measures of sensitivity usually rely on subjective self-assessments while monitoring barrier disruption using TEWL during optimum seasonal periods for severe dry skin. This presentation introduces an objective, continuous skin insult model for evaluating moisturizer treatment effect on skin sensitivity and barrier integrity irrespective of season. This study evaluated the impact of two skin moisturizers on barrier integrity, neural sensitivity and surface texture during continued insult pressure. The formulas were evaluated in a randomized, double blind, two period crossover design using an exaggerated forearm wash model. Normal, healthy female volunteers were enrolled in this 5 week study. To damage the skin, during the first 4 days, subjects participated in standardized, exaggerated forearm washes (4x/day) on both arms. This was followed by 10 days of washing both arms twice a day to maintain the damage.

During this period, the assigned product was applied to one arm (3x/day) to assess its efficacy while the other arm served as a control.

Patricia M. B. G. Maia Campos, Mirela D. Gianeti, Daiane G. Mercurio, Lorena R. Gaspar, **ASSESSMENT OF PROTECTIVE EFFECTS OF COSMETICS WITH UV-FILTERS, VITAMINS, GINKGO BILOBA AND RED ALGA EXTRACTS USING BIOPHYSICAL AND SKIN IMAGE TECHNIQUES**; ISBS 2010 Bueno Aires, Argentina

The combination of UV filters with antioxidant substances and natural extracts with biological activity in terms of photoprotection can provide unique benefits to the skin, by increasing its protection against UV radiation and also by improving skin conditions. Thus, the aim of this study was the assessment of protective effects of cosmetic formulations containing UV-filters, vitamins, *Ginkgo biloba* and red alga *Porphyra umbilicalis* extracts by biophysical and skin image techniques. For this purpose, an emulsion was supplemented or not (F) with *Ginkgo biloba* extract (FG), or red alga *Porphyra umbilicalis* extract (FA), or the combination of these extracts and vitamins A, E and C (FGAV). These formulations were submitted to preliminary studies for the evaluation of Sun Protection Factor (SPF), which were carried out on a group of human volunteers according to the COLIPA methodology. After that, the formulations were applied on 10 human volunteers' forearm skin, followed by the analysis of their effects using biophysical and skin image techniques. This evaluation was done in terms of transepidermal water loss (TEWL) (Tewameter® TM 210), water content of the stratum corneum (Corneometer® CM 825), viscoelastic properties (Cutometer® SEM575), skin microrelief (Visioscan® VC 98) and the dermal thickness (Dermascan C®). The measurements were done before and after a 30 day-period of daily applications.

M. Rosa Pena Ferreira, P.C. Costa, Fernanda M. Bahia; **Efficacy of anti-wrinkle products in skin surface appearance: a comparative study using non-invasive methods**; Skin Research and Technology 2010; 16; pp. 444-449

Age has a huge influence on skin roughness; with increasing age, the number of collagen and elastine fibers is reduced and elasticity decreases significantly. Pharmaceuticals and cosmetics, environmental factors and lifestyle have an important effect on skin. In this study, the efficacy of 12 commercial anti-wrinkle products was evaluated using a direct non-invasive method to measure the skin surface morphology. Four clinical parameters surface evaluation of the living skin (SELS) (Ser, Sesc, Sesm and Sew) were evaluate using Visioscan VC 98. Two hundred and forty-eight healthy female volunteers, aged between 30 and 70 years, were chosen for this study. The duration of treatment was 28 days. Skin microrelief, parameters were evaluated using the Visioscan VC 98 – SELS 2000 from Courage + Khazaka.

Bertucci, Sabrina M.1; Freitas, Luciana S.1; Gaspar, Lorena R. 1; Mercurio, Daiane G. 1; Gianeti, Mirela D. 1; Maia Campos, Patrici, **EFFICACY OF COSMETIC FORMULATIONS CONTAINING GREEN TEA AND GINKGO BILOBA EXTRACTS – PRE-CLINICAL AND CLINICAL STUDIES**, IFSSC 2010 Buenos Aires, Argentina

This research aims to evaluate the effects of cosmetic formulations containing green tea (*Camellia sinensis*) and/or *Ginkgo biloba* glycolic extracts by histopathological and histometric studies and also to evaluate the immediate and long-term effects on human skin using biophysical techniques and skin image analyses. The pre-clinical efficacy evaluation was performed by the application of the formulations on the dorsum of hairless mice once a day for 5 days. For the clinical studies, formulations under study were applied to the forearm skin of 48 volunteers, which was evaluated by biophysical techniques and skin image analyses according to the following parameters: stratum corneum water content, transepidermal water loss (TEWL), skin elasticity and viscoelastic-to-elastic ratio and skin micro-relief, before (basal values) and after 3 hours (immediate effects), 15 and 30 days (long term effects). The histological analysis showed the formulations containing green tea extract, alone or in combination with the *Ginkgo biloba* extract, provoked significant enhancement in viable epidermis thickness and in the number of cell layers, suggesting a moisturizing effect and an induction of cell renewal. The clinical efficacy studies showed that the extracts under study had a moisturizing effect and also acted synergistically on skin viscoelastic-to-elastic ratio, related to hydration of deeper epidermal layers.

Dr. Tatjana Pavicic, Christine Contini, Petra Liekfeld, Dermokosmetika gegen Hautalterung, GD-Gesellschaft für Dermopharmazie e.V. 22.März 2010

Mit zunehmender Lebenserwartung und Aktivität bis ins hohe Alter wachsen die erwartungen an ein länger währendes jugendliches Aussehen. Eine gezielte kosmetische Prävention bringt neben der Verbesserung des persönlichen Lebensgefühls auch sozio-ökonomische Vorteile im Sinne einer Vorbeugung krankhafter Hautveränderungen mit sich. Die zunehmende medizinische Bedeutung dermokosmetischer Produkte gegen Hautalterung betrifft Industrie, Medizin und Handel hinsichtlich Herstellung, Aufklärung und Produktauswahl. Zur Prävention und Milderung der Alterserscheinungen der Haut sollten Kosmetika Verwendung finden, deren Qualität gesichert ist, das heißt, galenische Eigenschaften, erwünschte und unerwünschte Wirkungen sollen hinreichend untersucht und dokumentiert sein.

Selem, Claudia, Delic, Norberto Sphagnum Magellanicum Peat. Characterization and Proposal for Cosmetics Uses.

This paper focuses on the characterization of Sphagnum Magellanicum peat, its properties and the different uses in cosmetic products. Studies were conducted to analyze the organic, inorganic and microbiological content of this material. The results determined that it is an important source of polyphenols with antioxidant capacity. It has anti-inflammatory action and is safe in contact with skin. It has germicide properties. Humic substances have a large capacity to retain multivalent ions forming metalorganic complexes acting as a natural organic sequestrant. Because the intensity of UV light absorption it can be used in the formulation of coloured sunscreen emulsions and taking into account the other properties tested in the development of others cosmetic products. Considering the results obtained we found that Sphagnum Magellanicum peat has interesting properties for being used in the cosmetic industry coupled with the benefit of this raw material which has the important property of being natural and organic.

Alain Thibodeau, Anti-aging Skin Care Benefits of Saccharina longicuris Extract; Cosmetics & Toiletries, Vol. 126, No. 3/March 2011

Skin appearance and functionality are affected by a complex combination of factors including both genetic, i.e. intrinsic, and actinic, i.e. extrinsic or environmental. Indeed, genetic and actinic factors act together to modulate the expression of key genes involved in skin homeostasis. Intrinsic aging is genetically regulated and follows a chronological clock inside of cells, while environmental factors such as UV exposure, humidity and air pollutants are responsible for actinic aging. Together, genetic and actinic aging target important metabolic pathways in skin cells that trigger the signs of aging such as skin roughness and wrinkling. At a molecular level, it has been demonstrated that collagen synthesis is reduced in aged skin cells and in cells damaged by UV radiation.

Alain Thibodeau, Philip Jacobs, Sergio Amari; Olive oil fatty acids: positive effects for the skin; Personal Care, March 2011, pp. 51-57

The skin is externally located and thus serves as a sheath separating internal organs from direct contact with the environment. The main roles of the skin are: protection from UV radiation (melanogenesis), immune defence and a barrier function preventing the penetration of foreign particles. Perhaps of greater importance, skin – especially the stratum corneum layer – is dynamically involved in the management of internal water levels. The first skin layer facing the external environment is the stratum corneum; the outermost layer of the epidermis. This histological section is predominantly represented by keratinocytes. The epidermis is constantly renewed through an upward movement – and differentiation – of keratinocytes originating from epidermal basal layers up to the stratum corneum.

Alain Thibodeau, Philip Jacobs, Sergio Amari; Biomimetic ingredient offers formulation benefits; Personal Care, March 2011

The skin is externally located and thus serves as a sheath separating internal organs from a direct contact with the environment. The main roles of the skin are: protection from UV radiation

(melanogenesis), immune defence and a barrier function preventing the penetration of foreign particles. Perhaps of greater importance, skin – especially the stratum corneum layer – is dynamically involved in the management of internal water levels. The first skin layer facing the external environment is the stratum corneum; the outermost layer of the epidermis. This histological section is predominantly represented by keratinocytes. The epidermis is constantly renewed through an upward flow of keratinocytes originating from epidermal basal layers up to the stratum corneum.

Grégory Szepetiuk, Sébastien Pierard, Claudine Piérard-Franchimont, Marie Caucanas, Pascale Quatresooz, Gérald E. Piérard; Recent trends in specular light reflectance beyond clinical fluorescence diagnosis; Eur J Dermatol 2011; pp. 157-161

Under specific light illumination, particularly ultraviolet (UV) and near-UV light stimulation, the skin produces both specular light reflectance and, possibly, specific fluorescent emission. These properties offer diagnostic clues and disclose some peculiar functions of the skin. A series of superficial infections (erythrasma, some tinea capitis types, tinea/pityriasis versicolor, dermatophytoses, etc.) and pilosebaceous follicles enriched in *Propionibacterium spp* show fluorescence. This latter characteristic is downgraded or lost while on some anti-acne treatments. A quenching effect of fluorescence is observed following the application of sunscreens.

C. Piérard-Franchimont; P. Quatresooz, G.E. Piérard, Specular light reflectance of flakes in seborrhoeic dermatitis of the scalp: a pilot study; Experimental dermatology 2011, pp. 1-4

Seborrhoeic dermatitis and dandruff are common scalp conditions. In this study, we set out to explore a new method for rating both the severity of the scalp condition and the efficacy of scalp-care compounds. Scalp flakiness was sampled for 40 volunteers using adhesive-coated clear discs, with image analysis used to quantify the specular light reflectance (SLR) of the flakes. Two ultraviolet (UV)-emitting charge-coupled device cameras (Visioscan VC98 and Visiopor PP34) were used. SLR clearly highlighted the flakiness with high contrast against a black background, and the recorded appearance could be conveniently submitted to the image-analysis system for quantification. In conclusion, SLR under UV illumination highlights scalp flakiness, allowing objective measurements.

Gérald E. Piérard, Sophie Seité, André Rougier, Pascale Quatresooz; Analytic assessment under ultraviolet light of actinic lentigines under bleaching treatment

Actinic (solar) lentigines are melanitic tumors frequently developed during photoaging on the dorsum of the hands. Bleaching (whitening) agents are commonly offered to fade their darker aspect. In general, regular colorimetric methods show poor sensitivity to disclose any bleaching effect. The present randomized controlled study on 24 women was designed to objectively assess the clinical efficacy of a combination of bleaching agents on actinic lentigines. In the endeavour of improving sensitivity. The ultraviolet light-enhanced visualization (ULEV) method was used to derive analytical measurements of lentigo areas and darkness

Pascale Quatresooz, Frédérique Henry, Philippe Paquet, Gérald E. Piérard, Photoaging under recreational sunbeds; Skin Research and Technology 2011, 17; pp. 309-313

Photoaging refers to light-induced changes in the skin that are superimposed to the alterations of intrinsic chronologic aging. Photoaging is induced by non-ionizing electromagnetic radiations, and is recognized by the combination of mottled skin melanoderma (MSM), coarse wrinkles, loss of skin firmness and solar elastosis. These changes are primarily due to chronic solar radiations. In addition, the importance of exposures to artificial sources of restricted light wavelengths is steadily increasing for lifestyle purposes in affluent cultural societies. The tanning bed procedure poses problems particularly in conditions of unsupervised and non-medical use.

Gérald E. Piérard, Claudine Piérard-Franchimont; Pascale Quatresooz; Field melanin mapping of the hairless scalp; Skin Research and Technology 2011;

pp. 1-5 Skin pigmentation may be altered in different ways by a variety of physiological and pathological conditions. The gross manifestations of such alterations are more frequent on

sunexposed skin than on light-shielded areas. There are two ways in which white light is transformed into coloured light by interaction with skin chromophores. Light absorption by the skin commonly transforms light into other forms of energy. Scattering including reflection, refraction and diffraction redirect some segments of the incident light wavelengths. In clinical and experimental settings, a controlled procedure for recording optical imaging is mandatory for comparative purposes.

Gérald E. Piérard, Claudine Piérard-Franchimont, Philippe Humbert; Bioimpact of EGFR antagonists on the pilosebaceous follicles; Eur J Dermatol 2011, pp. 1-4

Cancer patients under targeted chemotherapy to the epidermal growth factor receptor (EGFR) frequently suffer from unusual skin adverse events. In the past, these changes were globally qualified as a rash. Our aim was to assess objectively by non invasive bioinstrumentation some early structural and functional skin changes associated with EGFR inhibitor treatment. A series of 27 cancer patients aged 58-66 years were assessed using two ultraviolet light emitting CCD cameras, Visioscan and Visiopor. Assessments were performed on the foreheads at inclusion and therefore at weekly intervals for 2 months at most. No topical treatment was applied during the assessment period.

Patricia Maia Campos, Daiane G. Mercurio, Mirela D. Gianeti, Ananda T. Nobrega; In vitro antioxidant activity and clinical efficacy of cosmetic formulation containing chamomile extract; FAPESP

Botanical extracts have attracted great interest in the cosmetic area due to its rich composition and medicinal properties. Among these extracts, it can be mentioned the *Matricaria chamomilla* L. extract, which has been commonly used in cosmetics. Chamomile extract has being well studied once it presents therapeutic properties in terms of pharmacological applications. Various studies showed that chamomile have soothing, antiallergic, antioxidant and antiinflammatory effects. All of these properties are given by chamomile richest composition of organic components. It es added to the cosmetic formulations to provide skin moisturizing and smoothness.

Marine ingredients focus: a look at marine products;

The sea holds a huge amount of power and influence in the minds of humans. At once mysterious, alluring and terrifying, Earth's oceans also represent the birthplace of all life, both plant and animal, and are increasingly becoming a rich source of medical and personal care ingredients. In personal care, the popularity of marine-derived cosmetic ingredients is not only due to their efficacy, but also the connotations they come with. Consumers associate the sea with purity and freshness, two extremely important characteristics for personal care products, and skin care in particular. This is a deeply-ingrained association that has lead people to use sea flora as a skin care ingredient for many centuries as well as in soap, cleansers, and more recently shaving foams and shampoos.

Miriam Mateu, Cristina Davi, Elena Canadas, Albert Soley, Raquel Delgado; Effective ingredients from marine biotechnology, Personal Care, April 2012, pp. 53-57

Cosmetic scientists are developing new ways to identify new natural sources, which enable innovative compounds with excellent cosmetic properties such as firming, restructuring, moisturising or anti-wrinkles. Biotechnology encompasses the use of microorganisms to come up with novel active ingredients that fulfil two of the demands that are leading trends in the cosmetic industry: natural and sustainable. Besides, complex molecules can be obtained, which otherwise would be impossible due to technical or economic limitations. Our approach is to take advantage of biotechnology to develop cosmetic ingredients which are naturally occurring in non-genetically modified organisms, through sustainable production while preserving the invironment, since there is no harvesting nor extracting from nature.

Ruediger Graf, Karl-August Reiffen, Soheila Anzali, Ulrike Heinrich, Hagen Tronnier, Hansjuergen Driller, Frank Pfluecker; In Vivo Anti-Aging Efficacy of a Cyclic Peptide Composition; IFSCC Magazine 1, 2012, pp. 23-27

Aging affects the composition and morphological structure of the different compartments of the skin. Integrins, as an important family of transmembrane receptors, play a key role in cell-matrix interactions and are involved in cell signaling. Binding of specific ligands within the extracellular matrix to these receptors is a crucial step to maintain a vital tissue structure. For this reason a selective cyclic peptide containing an arginine-glycine-aspartic acid (RGD) sequence was designed for cosmetic application. The objective of the present work was to evaluate the binding efficiency of different RGD peptides to specific integrins.

*B.A. Khan, N. Akhtar, K. Waseem, T. Mahmood, A. Rasul, M. Iqbal, S.-u.-Zaman; **Visioscan VC98, Corneometer MPA5 and Tewameter MPA5**; African Journal of Pharmacie and Pharmatologie Vol. 6(3), pp. 225-227, 22 January, 2012*

Human skin is the largest exposed area of our body. There are number of physiological changes which may occur in response to internal or external sources. Biophysical techniques have been extensively employed to study any changes in human skin physiology. Usually these bioengineering techniques are equipped with non-invasive probes. Visioscan, Corneometer and Tewameter are the most widely used techniques in the characterization parameters of skin physiology, like skin hydration, transepidermal water loss and skin wrinkles. This research covers all aspects of these parameters, in skin analysis.

*T. Hermanns-Lê, K. Al Rustom, C. Piérard-Franchimont, G.E. Piérard, S. Piérard, **Le “cheetah-look” Le phenotype guépard, face cache de la pigmentation mélanique innée du visage**; DERM ACTU n° 131 mai-juin 2012*

Au niveau du visage, trois types principaux de pigmentation physiologique peuvent être distingués. On identifie d'une part des mélanoses zonales ethniques comme la pigmentation orbitaire. D'autre part, le territoire facial peut comporter des zones mélaniques discrètes limitées par des lignes de démarcation coédifiées qui donnent un effet de “tigre-look” sous éclairage en lumière ultraviolette. Enfin, des mouche-tures relativement régulières, peuvent parsemer le visage, contribuant à un “cheetah-look” très particulier sous lumière ultraviolette. La lampe de Wood est un outil ancestral permettant des observations dans un spectre relativement étroit de lumière ultraviolette. Cet équipement centenaire a fait l'objet de transformations techniques nombreuses pour aboutir à des cameras de type Visioscan et Visiopor (C+K electronic, Cologne).

*Gerlach N., Herling M., Heinrich U., Tronnier H., **Kosmetisch-dermatologische Wirksamkeit und Verträglichkeit einer Dexpanthenol-haltigen Fußcreme**, Kosmetische Medizin 3.12*

Mit der Dexpanthenol-haltigen Fußcreme steht eine Fußpflege zur Verfügung, die zur Pflege der trockenen und empfindlichen Haut entwickelt worden ist. Sie zeichnet sich durch eine sehr gute feuchtigkeitsanreichernde Wirkung aus und trägt gleichzeitig zu einer Stabilisierung der Hautbarriere bei. Durch die pflegenden Eigenschaften konnten die Hautrauhigkeit und Hautschuppigkeit deutlich gemildert werden und eine übermäßige Hornhaut wurde reduziert. Die pflegenden Eigenschaften, die gute Wirksamkeit und sehr gute Verträglichkeit der Dexpanthenol-haltigen Fußcreme spiegeln sich in der hohen Zufriedenheit und Akzeptanz der Probanden wieder.

*J. Schild, M. Mentel, U Maczkiewitz, T. Köhler, **Cyanidium caladarium algae extract: a multifunctional anti-aging cosmetic ingredient with profound in vitro activity on epidermal stem cells and dermal fibroblasts**, IFSCC 2012, 15-18 Oct. 2012, Sandton, South Africa*

The presented studies show unique and multifunctional anti-aging activity of an aqueous Cyanidium caladarium algae extract enriched in 4 aminobutyric acid (GABA). Activities were demonstrated in different in vitro cell culture models, and further substantiated in an in vivo cosmetic study. In order to elucidate the molecular mechanism of the Cyanidium caladarium extract, several in vitro assays were conducted on different skin cell culture models. The extract proved to be highly effective on all in vitro models employed, including stem cell-like epidermal keratinocyte progenitor cells, human dermal fibroblasts and reconstituted epidermis models. Results from in vitro gene expression experiments suggest that Cyanidium caladarium extract exerts several beneficial nutritional and protective effects on the molecular level, thereby

promoting (i) maintenance of the skin's stem cell potential, (ii) overall strengthening of the dermal extracellular matrix architecture, and (iii) protection from UV-induced stress.

D Tamburic, I Macijauskaite, R Parton, S Williams; Assessing the efficacy of high-flavanol cocoa extract: does higher concentration work better?, IFSCC 2012, 15-18 Oct. 2012, Sandton, South Africa

It is well documented that antioxidants have a range of positive effects on human skin. However, there is a problem with their delivery to the site of action, an issue shared with most topical actives. Due to their chemical nature, antioxidants are also inherently unstable ingredients.

L Heider, R Graf, S Anazli, S Hitzel; Natural and bio-mimetic approaches to influence ageing, IFSCC 2012, 15-18 Oct. 2012, Sandton, South Africa

Skin ageing, an ongoing and complex process, is influenced by many factors. Most of the involved aspects can be categorized as photo ageing or external ageing and the chronological ageing or intrinsic ageing. However any type of ageing can also be of dramatic impact on histological skin changes. The following table lists the various ageing types their origin.

Neti Waranuch, S Maphanta, W Wisuitiprot; Effect of microparticles containing green tea extract on facial skin improvement, ISBS Copenhagen 2012

To clinically evaluate an effectiveness of skin cream containing green tea extract loaded chitosan microparticles for facial wrinkle treatment. Method: Twenty-nine volunteers were randomly assigned to apply skin cream containing 1% green tea extract loaded chitosan microparticles (GT-Cs) and a placebo cream on each of their half faces for 8 weeks. Skin elasticity was evaluated by using Cutometer and the photographs of each half faces were also compared. Skin moisture and skin irritation were determined by Corneometer and transepidermal water loss (TEWL) respectively.

Jan Kottner, Marianne Schario, Natalie Gracia Bartels, Ellina Pantchechnikova, Katrin Hillmann, Ulrike Blume-Peytavi; Comparison of two in vivo measurements for skin surface topography; Skin Research and Technologie 2012; 0:1-7

Skin surface characteristics like roughness, scaliness or wrinkles are important diagnostic signs and outcomes in dermatological and cosmetological practice and research. Besides visual inspection and application of clinical scores more objective quantifications gained a lot of attention during the last decades (1, 2). 'Traditional' methods include the preparation of skin replicas with subsequent application of optical or mechanical profilometry (3, 4). Limitations of these methods are possible inhomogeneities, bubbles or artifacts of the replicas, possible interactions between the skin surface while generating the replicas and long drying times (2, 3, 5).

M. Estanqueiro, G. Bossolani, M.H. Amaral, J. Conceicao, D. Santos, J.M. Sousa Lobo; Characterizing and Evaluating the Effectiveness of Volcanic Pumice Exfoliants ; Cosmetics & Toiletries magazine Vol. 127, No. 11 November 2012

Human skin, more specifically facial skin, periodically needs a deep cleansing to remove not only the oily particles resulting from secretions, but also dead skin caused by desquamation of the epidermis. Cleansers are designed to remove dirt, sweat, sebum and oils from the skin, which helps to promote normal exfoliation and thereby rejuvenates the skin. However, the use of cleansers can lead to a reduction in the level of the natural moisturizing factor (NMF) of skin. Factors that reduce the water content can lead to changes in skin's viscoelasticity. Further, harsh cleansers such as soaps can induce dryness, leading to scaly and rough skin. These effects may be much more severe during winter months when the air is cold and dry.

Christiane Uhl, Diana Khazaka, C+K electronic GmbH; Techniques for globally approved skin testing; Personal Care April 2013

In efficacy testing and claim support for cosmetic products, objective measurement systems became indispensable long ago, especially since subjective clinical assessments are often prone to bias and inter-observer variation. Without suitable instrumentation it is close to

impossible to determine what a product is really doing for the skin. Those objective measurement methods and subjective evaluations are mutually dependent. No measurement can be performed without the subjective evaluation of the results by the user of such instrumentation. However, a pure subjective evaluation of the skin without appropriate measurement techniques is not able to achieve accurate results either. This relationship becomes clearer when looking for example at skin colour measurements. Subjectively, the human brain cannot process slight changes in colour, especially when the colours are not viewed side by side, but at different points in time. Instrumental measurement however will clearly detect such slight changes. The achieved result must then be interpreted in context with the expected outcome or the hypothesis. For this, you will always need a knowledgeable and experienced person because 'a fool with a tool is still a fool', as the late Albert Kligman used to say. This relationship between objective measurement and subjective evaluation is not only true for the determination of differences in skin colour, but also for all other skin measurement parameters important for the cosmetic industry.

A. Dzwigalowska, A. Solyga-Zurek, R.M. Debowska, I. Eris; Preliminary study in the evaluation of anti-aging cosmetic treatment using two complementary methods for assessing skin surface; Skin Research and Technology 2013; 19: 155-161

Background/purpose: One of the constantly developing fields in the area of cosmetology is the analysis of the efficacy of cosmetic products. Various instrumental techniques are available nowadays to evaluate changes in skin surface and measure anti-wrinkle activity. The aim of our study was to present and confront two methods of the analysis of skin surface, Primos and Visioscan, regarding their applicability in evaluating anti-wrinkle properties of cosmetic formulations and treatments. Methods: The study was performed on women, taking part in anti-wrinkle cosmetic treatments. Various skin aging parameters were analyzed, including skin surface changes. The results obtained with Visioscan and Primos were compared regarding their usefulness in anti-wrinkling properties assessment.

Y. Gao, X. Wang, S. Chen, S. Li, X. Liu; Acute skin barrier disruption with repeated tape stripping: an in vivo model for damage skin barrier; Skin Research and Technology 2013; 19: 162-168

Purpose: To establish a model of standardized acute barrier disruption, investigate the response of normal human to repeated tape stripping, and analyze the change of damaged skin with non-invasive examination techniques for skin, such as TEWL and squamometry. Methods: Repeated tape stripping with corneofix was applied on three different anatomical sites, the measurement of TEWL was performed on the baseline and after every 5 strips. Then the samples of corneofix were analyzed using Visioscan VC98 and squamometry.

T. Hermanns-Lê, C. Piérard-Franchimont; G.E. Piérard; Scrutinizing skinfield melanin patterns in young Caucasian women; 2013 Informa Healthcare UK

In humans, melanocytes and their melanin production are responsible for the phototype-related skin color. Two chemically distinct types of melanins are present in the skin, namely an insoluble black-brown eumelanin and an alkali soluble red-yellow pheomelanin. The microenvironment within the melanosomes where these pigments are formed is critically important. Indeed, the varied skin hues depend largely on the chemical nature, amount and distribution of melanin pigments produced in melanosomes and transferred to keratinocytes. The overall system appears organized in each epidermal melanin (EMU) corresponding to a functional entity composed of a single melanocyte and its related neighbor keratinocytes into which melanosomes are transferred [1].

G.E. Pierard, C. Franchimont, P. Delvenne; The thousand and one facets of actinic keratosis; Dermatology Laboratory and Clinical Research, Nova Biomedical; ISBN: 978-1-62808-106-0

Introduction: Actinic (or solar) keratosis (AK) is a common photoinduced neoplasm. It is a biologically benign condition. However, it represents the initial clinical step of a disease continuum observed on chronically photodamaged skin leading to a peculiar type of invasive squamous cell carcinoma (SCC). This cancer has limited metastatic potential [1], and is tentatively more

specifically named “actinic carcinoma” (AC). When considering AK, the older terms “senile keratosis” and “senile keratoma” have been abandoned as clinical designations because the age of the individual is not an essential feature.

K. Myer, H. Maibach; Stratum corneum evaluation methods: overview ;Skin Research and Technology 2013; 19; 213-219

Background/purpose: The stratum corneum serves as a main barrier for the skin, minimizing water loss and regulating absorption of substances. Because of its surface location, it is readily available for analysis. Consequently, many techniques are amenable to investigating its content and function. Here, we review the methods employed to evaluate the stratum corneum and its function. **Methods:** We reviewed Pubmed and Embase search results for ‘stratum corneum, ‘method, ‘methods, ‘technique, ‘and ‘evaluation’ and extracted pertinent articles that discussed ways to examine the stratum corneum and its constituents. **Results:** Traditional and novel methods vary by accuracy, ease of use, time requirements, cost, invasiveness, and equipment requirements.

Dr. Mario Schweitzer; A Physiological Experiment for Skin Research on ISS ; Kayser-Threde GmbH 2013

SKIN-B is an experiment set for non-invasive investigation of changes of skin hydration, skin barrier function and skin surface structure of astronauts before, after, and during space flight. Professor Dr. Heinrich and Dr. Nicole Gerlach from Derma Tronnier, Institute for Experimental Dermatology at Witten-Herdecke University, hope to derive conclusions from the data on the effects of weightlessness on the astronaut’s skin, inner organs, and on physiological changes to the skin to be expected during long-term missions. In comparison to the precursor experiment SkinCare (2006) the experiment set has been substantially improved by Kayser-Threde: An enhanced ultra-violet camera was chosen to obtain sharper images. Operation was made easier since the experiment can now be operated from a space station laptop via USB ports and with a software adapted for this specific purpose. Use of the ISS board laptop also allows experiment data to be transferred to Earth directly.

Daiane. G. Mercurio, Effects of sun exposure habits on skin aging: a multivariate analysis; ISBS, Milan 15-16.10.2013

Summary: Skin exposure to ultraviolet (UV) radiation is related with molecular, morphological, structural and clinical changes on the skin, which characterizes photoaging. However, there are few studies that correlate sun exposure habits and objective measurements using biophysical and skin image techniques. Thus, the aim of this study was to evaluate the influence of the sun exposure habits on the biophysical and morphological characteristics of aged skin using multivariate analysis. For this, 40 healthy female volunteers (aged between 18- 30 or 40-65 years) filled a questionnaire concerning their sun exposure and protection habits during different periods of their lives. The characterization of the skin of dorsal and volar forearms was performed using objective measurements by biophysical and skin image techniques in terms of transepidermal water loss, direct measurement of the skin topography, viscoelasticity, dermis thickness and echogenicity, and structure and morphology of the epidermis by in vivo Reflectance Confocal Microscopy. Principal Component Analysis (PCA) of the values of each parameter was used to visualize the relationship between variables and groups. According to the PCA analysis, the sun exposure habits are directly related to increased dermis thickness, reduced echogenicity and elasticity.

J. Kottner, L. Ludriksone, N.G. Bartels, U. Blume-Peytavi; Do Repeated Skin Barrier Measurements Influence Each Other’s Results? An Explorative Study; Skin Pharmacology and Physiology 2014; 27:90-96

Abstract: **Background:** Biophysical skin measurement techniques are widely used to quantify the skin barrier function. In clinical research usually several parameters are subsequently measured in the same skin areas. In this study, possible interfering effects of subsequent measurement procedures on transepidermal water loss (TEWL), stratum corneum hydration

(SCH) and skin surface pH were investigated. Methods: An exploratory study was conducted. Twelve young (mean age 32.9 ± 7.2 years) and 12 elderly (mean age 68.3 ± 2.5 years) subjects without any skin diseases were enrolled. The parameters TEWL, skin surface pH, SCH, sebum content, and surface evaluation of living skin were obtained successively in pairs from 4 contralateral volar forearm skin areas.

F.Fanian, S. Mac-Mary, A. Jeudy, T. Lihoreau, R. Messikh, J.-P. Ortonne, J.-M. Sainthillier, A. Elkhyat, A. Guichard, K.H. Kenari, P. Humbert; Efficacy of micronutrient supplementation on skin aging and seasonal variation: a randomized, placebo-controlled, double-blind study; Dove Press Journal 14 November 2013

Background: Several studies have confirmed dramatic changes in skin surface parameters during the winter months. Although there are many studies supporting the positive effects of topical treatment, there are no published studies demonstrating the effects of oral supplementation in the prevention of negative skin changes during winter. The purpose of this study was to evaluate the efficacy of an oral micronutrient supplement in preventing the negative effects of winter weather on skin quality using noninvasive biometrologic instruments.

Methods: This study included 80 healthy female volunteers aged 35–55 years with phototype II–IV skin. Randomization was balanced. Two tablets of a micronutrient supplement (Perfectil® Platinum) or placebo were administered once daily for 4 months. The volunteers were examined at baseline, after 4 months, and 6 weeks after termination of treatment (month 5.5). The evaluation included skin microrelief by Visioscan® as the main outcome, and the secondary outcomes were results on standard macrophotography, skin tension by Reviscometer®, skin high-frequency ultrasound, and self-assessment.

G.E. Piérard, C. Piérard-Franchimont, S. Piérard; Visioscan-Driven ULEV Method; Non Invasive Diagnostic Techniques in Clinical Dermatology; Springer Berlin Heidelberg 2014; ISBN 978-3-642-32108-5

Introduction: Melanocytes and their melanins govern the phototype-related color palette of the skin. Indeed, the color palette of the skin largely depends on the molecular nature and amount of melanins (eumelanin and pheomelanin) and on the size, shape, and distribution of melanosomes produced by melanocytes and transferred into keratinocytes. Such combinations define what could be called the individual melanotype. The epidermal melanin unit refers to a microscopic functional entity composed of one single melanocyte and its adjacent keratinocytes into which the melanosomes are transferred. Chronic ultraviolet (UV) light exposures represent positive stimulatory signals to the epidermal melanin units. In such instance, both the active melanocytes are increased in number, and each individual melanocyte is stressed to produce more melanins. In addition, melanosome transfer from melanocytes to adjacent keratinocytes is boosted through the intervention of the protease-activated receptor 2 [1].

X. Li, C. Galzote, X. Yan, L. Li, X. Wang; Characterization of Chinese body skin through in vivo instrument assessments, visual evaluations, and questionnaire: influences of body area, inter-generation, season, sex, and skin care habits; Skin Research and Technology 2014; 20: 14-22

Background/Purpose: The varying influence of multiple factors (e.g., aging, sex, season, skin care habits) on skin structure and function necessitates study within ethnic groups to fully characterize their skin. Methods: Men and women aged 40-50 years ($n=43$) and their consanguineous same sex-children, aged 18-25 years ($n=43$), living in Chengdu, China were enrolled in this single center, non-interventional study. Volunteers attended two study visits (summer, 2010 and winter, 2011) at which dermatologists measured transepidermal water loss (TEWL), skin hydration, sebum secretion, fine lines/roughness, melanin/erythema, temperature, and color, and clinically graded participants' skin.

C. Trojahn, M. Schario, G. Dobos, U. Blume-Peytavi, J. Kottner; Reliability and validity of two in vivo measurements for skin surface topography in aged adults; Skin Research and Technology 2014; 0: 1–7

Background: The non-contact optical methods phaseshift rapid in vivo measurement of skin (PRIMOS) and surface evaluation of living skin (SELS) are widely applied for measuring skin surface topography. The aims of the present study were to evaluate reliability and validity of these methods and to compare skin roughness intraindividually. Methods: SELS and PRIMOS measurements were performed on four skin areas of the left and right volar forearms in 12 healthy elderly subjects. Reliability and correlations were analyzed for Visioscan_ and PRIMOS roughness parameters. Student's t-tests for estimating differences between contralateral volar forearm sites were applied.

C. Trojahn, G. Dobos, M. Schario, L. Ludriksone, U. Blume-Peytavi, J. Kottner; Relation between skin micro-topography, roughness, and skin age; Skin Research and Technology 2014; 0: 1–7

Background: The topography of the skin surface consists of lines, wrinkles, and scales. Primary and secondary lines form a network like structure that may be identified as polygons. Skin surface roughness measurements are widely applied in dermatological research and practice but the relation between roughness parameters and their anatomical equivalents are unclear. This study aimed to investigate whether the number of closed polygons (NCP) per measurement field can be used as a reliable parameter to measure skin surface topography. For this purpose, we analysed the relation between skin surface roughness parameters and NCP in different age groups. Methods: Images of the volar forearm skin of 38 subjects (14 children, 12 younger, and 12 older adults) were obtained with the VisioScan VC98. The NCP was counted by three independent researchers and selected roughness parameters were measured. Interrater reliability of counting the number of closed polygons and correlations between NCP, roughness parameters, and age were calculated.

Tyszczyk B., Szczepanik B., Mlosek R. K., Malinowska S., D bowska R., Rogiewicz K., Eris I.; The high frequency ultrasound as a tool for the assessment of anti-cellulite treatments efficacy; IFSCC 2014 Paris

Cellulite is nowadays a common aesthetical defect, which affects most of women worldwide. Taking into consideration the size of this phenomenon cosmetic industry is searching a new ways of fighting against it and new diagnostic tools and methods to measure anti-cellulite therapy's efficacy. Unfortunately reliable monitoring of anti-cellulite treatment still remains a problem. However, new diagnostic techniques such as high frequency ultrasound (HFUltrasound) imaging can be useful tool for the assessment of cellulite-reducing efficacy of cosmetics therapy.