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STUDIES LIST SEBUMETER®

*H. Schaefer, Kuhn-Bussius, **Methodik zur quantitativen Bestimmung der menschlichen Talgsekretion***, Arch. klin. exp. Derm. 238/1970, 429-435

Bei Milchglas nimmt die Lichtdurchlässigkeit durch Aufdruck kleiner Fettmengen stark zu. Diese Transmissionszunahme kann photometrisch erfaßt und durch Wägung des abgenommenen Fettes auf der Mikrowaage geeicht werden. Sie ist daher zur quantitativen Bestimmung des Hautoberflächenfettes geeignet. Durch vergleichende Messung mit bekannten, auf die Stirn aufgetragenen Vaseline-mengen sind Rückschlüsse auf den Fettfilm und damit die Talgdrüsenfunktion menschlicher Haut möglich. Eine ins einzelne gehende Testbeschreibung wird am Schluß der Arbeit gegeben.

*M. Gloor, U. Schulz, G. Wieland, I. Wieland, H.C. Friedrich, **Beitrag zur quantitativen Bestimmung der Hautoberflächenlipide in der Praxis***, Dermatologica 27.12.71

Es wird über Bestimmungen der Menge der Hautoberflächenlipide (casual level und replacement sum) mit Hilfe des Osmiumsäuretest nach Brun et al. an 33 Versuchspersonen und mit Hilfe des Milchglastests nach Schäfer und Kuhn-Bussius an 14 Versuchspersonen berichtet. An der symmetrischen Körperstelle wurden jeweils exakte gravimetrische Lipidbestimmungen nach der Methode von Honsig vorgenommen. Zusätzlich wurde die Zusammensetzung der Hautoberflächenlipide dünn-schichtchromatographisch analysiert. Im Gegensatz zum Milchglastest erwies sich der Osmiumsäuretest als aussagekräftig. Die Zusammensetzung der Hautoberflächenlipide beeinflusst das Ergebnis beider Methoden nur wenig.

*Tronnier, Brunn, **Vergleichsuntersuchungen des Hautoberflächenfettes Hautgesunder und Aknekranker***, Berufsdermatosen, 79-88, 1972

Mit Hilfe einer aus Säulen-, Dünnschicht und Gaschromatographie sowie IR-Spektroskopie kombinierten Methode wurde eine Vollanalyse der Hautoberflächenlipide bei Aknekranken im Vergleich zu hautgesunden Kontrollpersonen durchgeführt. Aus den Mittelwerten von je 5 Probanden ergab sich: 1. Die Menge der Oberflächenlipide ist bei der Akne gering erhöht. 2. Bei der Auftrennung in die einzelnen Fraktionen waren in der Kontrollgruppe u.a. die Triglyzeride, bei der Akne dagegen die freien Fettsäuren vermindert. 3. Die Verteilungen im übrigen entsprachen unter Berücksichtigung methodischer Unterschiede den Angaben in der Literatur. 4. Die möglichen Auswirkungen der gefundenen Differenzen auf die Pathogenese der Akne bezüglich der Gesamtverteilung auf die Fraktionen (z.B. Spreitung) und der Kettenlänge (z.B. Reizwirkung) werden erwähnt.

*Tronnier, **Methodisches zum Nachweis des Hauttalgs unter besonderer Berücksichtigung der Akne***, Vortrag anlässlich der Tagung der Gesellschaft Deutscher Kosmetik-Chemiker e.V., 14.16-03.74

Die Problematik der Hautfettbestimmung wird beschrieben, die in der uneinheitlichen Zusammensetzung, in der unterschiedlichen Lokalisation und in der verschiedenen vollständigen Gewinnung des Hauttalgs begründet ist. Vor- und Nachteile der verschiedenen Methoden werden, teilweise unter Heranziehung eigener Versuche, dargestellt. Von den drei für die Seborrhoe und die Erkrankungen des seborrhoischen Formenkreises in Frage kommenden Störungen im Hauttalgsystem, nämlich in der Menge, in der Zusammensetzung und im physikalischen Verhalten des Talgfilms auf der Hautoberfläche, scheint letzterem die wesentlichste Rolle zuzukommen. Dies konnte aus zahlreichen Untersuchungen einerseits bei der Akne und andererseits bei der Seborrhoe abgeleitet werden. Auf die Bedeutung des Verhältnisses von Talgmenge zur Spreitungsfähigkeit für die Ausbildung von Comedonen bei Akne wird anhand vergleichender Talguntersuchungen mit verschiedenen Methoden und unter Glucocorticoid-Medikation hingewiesen. Die bei Akne vorliegende Störung in dieser Relation wird an weiteren experimentellen Befunden erörtert.

Tronnier, H. Kuhn-Bussius, Zur Brauchbarkeit optischer Methoden für die Bestimmung des Hautoberflächenfettes, Hautklinik Dortmund, Kosmetologie 06/1974

F. Greiter, S. Doskoczil, Forschung in der Kosmetik, Österreichische Chemie-Zeitschrift, Juni 1976
Diese Arbeit ist ein Versuch, sinnvolle Forschung in der Kosmetik zu beschreiben und zu begründen. Nur neuere Methoden werden beschrieben. Bekannte Prüfungsverfahren einschließlich Spektralphotometrie und Gaschromatographie dürfen als üblich vorausgesetzt werden. Spezieller Wert wird auf das Gebiet des Sonnenschutzes gelegt. Auch die Notwendigkeit besonderer Emulsionsformen wird behandelt. Es wird daran erinnert, daß die Kosmetik nicht nur die Aufgabe des Schmückens (Kosmein), sondern vor allem auch der Reinigung, der Pflege und des Schutzes der Haut hat. Es wird ausgeführt, daß kosmetische Präparate, die zum Teil im Grenzbereich Kosmetik-Pharmazie liegen, einen Beitrag zur Fitneßbewegung leisten können. Es wird allerdings auch unmißverständlich dargelegt, daß Irreführung in der Kosmetik abzulehnen ist und eine weit gehende Deklaration der Kosmetikpräparate notwendig erscheint.

Nur die Werbung geht glatt unter die Haut, "Test" 01/1978

D. St Léger, J.L. Leveque, Les méthodes quantitatives des lipides de surface chez l'homme, International journal of cosmetic science, 1980

Three main methods to measure quantitatively surface lipids in man have been used. A comparison of the information they produce and their routine practicabilities are given. Adaptation and standardization of the Schaeffer and Kuhn-Bussius method, using a photoelectric absorptiometer and ground glass plates are described. This procedure, applied to thirty-two adults, demonstrated the quantitative nature of the sampling mechanism. A mathematical approach gives the precise definition of the casual-level. This procedure shows that casual-level values appear to be correlated with skin types.

S. Dikstein, Instrumental Analysis in Individual Cosmetic Consultation, Cosmetics & Toiletries, Vol. 98, Nov. 1983

K. Zeller, H. Huben, Sebumetrische Messungen des "Casual Level" der Hautoberflächenlipide bei einem studentischen und einem geriatrischen Kollektiv hautgesunder Probanden, Aktuelle Dermatologie, Juni 1983

Für dermatologische Reihenuntersuchungen wäre es wünschenswert, die in der Regel makroskopische Einschätzung des "seborrhoischen" oder "sebostatischen" Hautstatus mittels eines einfachen, leicht transportablen Meßgerätes objektivieren zu können. Es wurde daher an zwei altersunterschiedlichen Probandengruppen (223 Junioren, 116 Senioren) untersucht, ob mit einem neuen reflex-

photometrischen sog. Sebumeter eine quantitative Untersuchung bezüglich des Hautoberflächenfettfilmes möglich ist. Das Gerät erwies sich vor allem im Hinblick auf eine semiquantitative Objektivierung des exsikkativen oder sebostatischen Hornschichtstatus brauchbar. Darüber hinaus wurden auch Geschlechtsunterschiede ermittelt. Anwendungsmöglichkeiten bestehen bei Einstellungsuntersuchungen für ekzemgefährdete Feuchtberufe (z.W. Friseur, Maurer, Stukkateure) sowie zur Früherkennung der sog. Alterssebostase.

Dikstein, Shabtay, Orgad, Distribution of sebum measurement in normal adult women, 4th International Symposium on Bioengin. & The Skin, 09/83

U. Huschka, A. Schulewsky, Hauttalgsekretion und Haarshampoos, Ärztliche Kosmetologie, 1984

Mit insgesamt 1520 Messungen wurde an 20 Probanden der Einfluß von vier Haarshampoos, die unterschiedliche Antischuppenwirkstoffe enthielten, auf die Rückfettung der behaarten Kopfhaut und der Stirn sebumetrisch mit der Kunststoffbandmethode untersucht. Im Gegensatz zu anderen Berichten war bei 85% unserer Probanden der Ausgangsfettspiegel auf der behaarten Kopfhaut nach der Wäsche innerhalb von 24 Stunden wieder erreicht; die vollständige Rückfettung der Stirn erfolgte bei 90% der Probanden zwischen 2 und 5 Stunden. Die Änderung der Rückfettung war durch Fettmessungen im kinetischen Bereich nach 2, nach 5 und 24 Stunden wesentlich empfindlicher bestimmbar als im Steady-state nach 72 Stunden. Die nach den ersten Haarwäschen einsetzende Änderung der Rückfettungsgeschwindigkeit verstärkte sich über mindestens 3 Wochen und war erst nach diesem Zeitpunkt eindeutig bewertbar. 0,6% Pyrithiondisulfid führte zu leicht verstärkter Rückfettung, 0,2% Pyrithiondisulfid mit 7% Dinatriumundecylensäuremonoäthanolamidosulfosuccinat war neutral, eher sebostatisch wirksam, 0,5% Octopirox führte zur Verstärkung der Rückfettung. Am behaarten Kopf und an der Stirn war die Wirkung der Inhaltsstoffe in der Regel gleichgerichtet.

Dikstein, Courage, Verteilung von Talgspiegelmessungen bei gesunden erwachsenen Frauen, Ärztliche Kosmetologie, 15, 41-44, 1985

The sebumeter measures the amount of fats on the skin by absorbing it onto a thin plastic strip and measuring its transparency. The range of values relevant to medicocosmetics was established by asking experienced cosmeticians to define and classify the skin of over 150 women according to "Dry" (insufficient sebum level), "Normal" or "Oily". The skin was then measured by Sebumeter. 70-80 % agreement is present between the cosmetician's definition of "Dry" or "Oily" skin at the extremes, but in the middle the definition is casual. Tabulating the data into histograms permits in finding the best balance between the subjective cosmetic definition and the instrumental reading. On the forehead, Sebumetric readings of less than 90, and on the cheek and neck readings of less than 60 mean "Dry" skin. Sebumetric readings of more than 200 on the forehead, more than 160 on the cheek, and more than 100 on the neck, mean "Oily" skin. The advantage of using objective instrumental readings in place of observational methods is the prevention of misdiagnoses.

de Pedova, Tosti, Veronesi, Gelatin-Cystine in Seborrheic Alopecia, J. Appl. Cosmetol. 04-06/1986

The gelatin-cystine spherules seem to be able to affect the regulation of sebum genesis. In the order to demonstrate the sebum normalizing property performed by this product, a study was carried out on 60 subjects affected by seborrheic alopecia. A significant reduction of seborrhea was observed in 30% of the subjects taking the gelatin-cystine spherules for the period established. It was also observed a significant reduction of serine, proline, glycine, alanine, 1/2 cystine, valine, leucine and methionine is always found and a parallel increase of glutamin acid, phenilalanine and argine.

P. Thune, T. Gustavsen, Comparison of two photoelectric techniques for quantitative measurement of skin surface lipids, Acta Derm Venerol 1987

Tronnier, Dermatologische Bewertung von Kosmetika und Körperpflegemitteln, Ärztliche Kosmetologie, 374-398, 1987

The practicing dermatologist is interested in body care products and cosmetics because of their potential side-effects which may be allergic or primarily toxic. In view of skin physiology also cosmetics and body care products having special effects, such as light and skin protective preparations, deodorants and antiperspirants, dandruff and hair removing products, washing products and preparations which are supposed to have an anti-wrinkle effect on the skin, are of interest to the dermatologist. These preparations claiming a certain effect are opposed to the series of cosmetics which to some extent also make this claim, but on the whole have general effects such as improvement of the hydration of the horny layer and influence on the pH-value of the skin effects which, however, are also assigned to some special products. These preparations contain a number of active substances the effects of which are at least controversial and often difficult to prove. So, it is pointed out to the fact that just in case of body care products and cosmetics the effect of the basic substances used is essentially responsible for the effects of care.

Dikstein, Comparison of the Sebumeter and the Lipometer, Bioeng. Skin, 197 - 207, 3, 1987

Die Instrumente Lipometer und Sebumeter wurden durch gleichzeitige Messungen der zufälligen Lipidwerte an nebeneinander liegenden Stellen derselben Person verglichen. Der Koeffizient der Bestimmung zwischen den Instrumenten ist 92%. Das Sebumeter ist geeigneter für die Messungen eines raschen Screenings.

Muti, Barrico, Berino, Gelentano, Measurement of cutaneous sebum: reproducibility at different cleansing conditions, J. Appl. Cosmetol. 07-09/1987

H.I. Maibach, E. Patrick, Session VI: Hair, Sebaceous Glands and Nails, 7th International Symposium of Bioengineering and the Skin, 1988

P. Morganti, S.D. Randozzo, Gli indici di idratazione e di emolienza per la verifica dello stato cutaneo, Incontri di Cosmetologia No. 3, 07/89

Per la misurazione sia del sebo di superficie che dell' idratazione cutanea ci si è serviti di un sistema computerizzato denominato Dermotest Hytech dato dall'unione del Sebumeter SM 810 PC et del CORNEOMETER CM 820 PC, opportunamente collegati ad un PC mediante un adeguato programma di utilizzazione. Utilizzando il Dermotest Hytech è possibile ottenere direttamente sia i valori sebometrici espressi in mg/cm² che i valori della idratazione cutanea espressi in CV (corneometer values).

L. Nogueira, D. Gabrielle, New techniques to assay skin care products, D & CI 09/89

J.L. Antoine, J.L. Contreras, D. van Neste, pH Influence on surfactant-induced skin irritation, Dermatosen in Beruf und Umwelt, Band 37, 1989, 3, 96 - 100

Even though various experimental methods have been proposed for in vitro testing of detergents such as SLS (sodium laurylsulfate) no absolutely relevant clinical information can be inferred from them as to the irritancy of a given compound. In particular the relative importance of pH needs further assessment. This study reports on in vivo evaluation of skin function changes under given experimental conditions with SLS applied at 3 different pH values. There is a dramatic increase of transepidermal water loss (TEWL), i.e. a substantial reduction in the barrier function of the skin, when SLS is applied under occlusion for 48 H. The alkaline control solution (NaOH pH 9) induced low-grade, but significant TEWL increases, as compared to the other controls (distilled water pH7; HCl pH5), which had no influence on TEWL. The changes obtained with the controls were much lower

than those observed with SLS. The barrier-function changes induced by the surfactant SLS could, however, promote transepidermal passage of acid and/or alkaline molecules, hence increasing toxic damage of the skin; yet no such effects could be observed, indicating that the main effects are due to detergency. Assessment of cutaneous blood flow values (CBFV) by laser Doppler velocimetry showed increased values after SLS. When pH-adjusted SLS solutions were compared, there was neither a difference in relation to pH nor did the control solutions induce any significant CBFV change. This study reveals that TEWL and CBFV are probably the most reliable methods to investigate acute irritancy by SLS. Accordingly, pH cannot be considered as a major contributive factor of irritancy when SLS solutions are applied under occlusion (48H). The current level of sebaceous secretion and the electrical properties of the skin surface were not parameters to evaluate acute SLS-induced skin damage, but longitudinal studies are presently being conducted in order to assess their significance in monitoring epidermal repair after SLS insults.

P. Morganti, S.D. Randazzo, L'utilizzazione degli indici di correzione per il trattamento cosmetico della cute secca e desidratata, Il Prodotto Chimico, April 1989

Solaroli, Manifestazioni seborroiche e desquamative del capillizio, trattate con un nuovo preparato a base di urea e acido salicilico, La Medicina Estetica, 13.04.1989

Seborrhea and desquamation of the scalp treated with a new preparation based on urea and salicylic acid. The activity of salicylic acid and urea from particular lotions was studied in vivo by measuring the possible antiseborrheic effect. We used the modified photometric technique (Sebumeter SM 810) which permits measurement of casual levels (CL) or sebometric index (SI); although this is less accurate than a sebum excretion rate (SER) assessment, but there is some correlation between (SER) and (CL). In the study of 30 patients we have employed the method described to assess the bioavailability of Keratolytic and Keratoplastic agents incorporated in topical formulations; in this way we have shown the benefit of these preparations.

C. Torresani, D. Rastelli, M. E. Berio, G. De Panfilis, Valutazione dell'efficacia di un'emulsione cosmetica a base di acqua termale sulfurea, Incontri di Cosmetologia, 07/89

Lo studio è stato condotto su un gruppo di 20 pazienti, 13 femmine e 7 maschi, di età compresa tra 21 e 43 anni. Il trattamento è consistito in due applicazioni giornaliere di una emulsione O/A contenente per il 79% acqua termale sulfureo-solfato-calcica, per un periodo di quattro settimane. Durante tale periodo è stato escluso qualsiasi altro trattamento ed i pazienti sono stati invitati ad effettuare la detersione del viso esclusivamente con acqua. I pazienti sono stati controllati prima dell'inizio del trattamento, nonché al 7°, 14°, 21° e 28° giorno del trattamento stesso. La valutazione quantitativa della seborrea è stata effettuata mediante sebometro riflettometrico Sebumeter SM 410 della ditta Schwarzhaupt. Come gruppo di controllo, è stato scelto un gruppo di 10 pazienti, omogeneo per sesso, età e patologia. Tali pazienti sono stati trattati, secondo le stesse modalità, con una emulsione placebo contenente i soli eccipienti e priva del principio attivo.

Celleno, Valutazione dermatologica dei prodotti per la detersione della cute, Cosmesi Dermatologica, 30/1990

The authors report the results and the methods of the dermatological and cosmetological evaluation of 16 solid products for cleaning the skin (traditional soaps, neutral soaps, syndets). There is a growing need for valid and reliable tests to evaluate the cosmetic properties and the safety of cosmetics. Data obtained in this field will contribute to the protection of both the consumer and the cosmetic industry.

o.A., Biométrie cutanée, Actualités Pharmaceutiques, Nov. 1990

*G. Campagnoli, L. Celleno, S. Grifeo, A.G. Nume, C. Ronchi, **Valutazione dell'attività sebonormalizzante di un'emulsione a base di lipoaminoacidi***, *Cosmesi Dermatologica* 39/1990

Aim of the present study is to investigate thoroughly a new class of compounds, the lipoaminoacids. These are molecules with sebum-normalizing and antimicrobial activity, useful in the cosmetic treatment of seborrheic and preacneic skin. The experience is based on the instrumental measurement of sebumetry and pH-metry in 21 subjects, selected according to sebometric parameters above the physiologic limits (group A), and on the evaluation of the onset of allergic symptoms in 20 different subjects (group B) following 27 day treatment with a suitable preparation. Results show a sebum-normalizing activity also following 7 day treatment, with no case of intolerance and/or sensitization.

*C. Torresani, **Utilizzo del fango termale sulfureo nel trattamento della cute seborroica***, *Cosmesi Dermatologica*, 1990

In the present study the efficacy of mud containing sulphurous thermal water, in the treatment of the face seborrheic skin was evaluated. The results provided evidence for effectiveness as well as tolerability of the treatment. Mechanism by which sulfur and, in particular, sulphurous thermal mud operate in the sebaceous secretion are discussed with regard to literature data.

*R. Mehl, **La cosmétologie active arrive à l'officine***, *Le quotidien du Pharmacien*, 08.10.1990

*o.A., **La méthode Pharmaskin***, *L'écho des labos*, 27.10.1990

*F.P., **Reconquérir la cosmétologie***, *Le moniteur*, 13.10.1990

*Ing-Marie Bergbrant, Jan Faergemann, **The role of Pityrosporum ovale in Seborrheic Dermatitis***, *Seminars in Dermatology*, 12/90

This paper discusses the relation between the lipophilic dimorphic yeast Pityrosporum ovale and seborrheic dermatitis. A review of studies concerning the microbiology in seborrheic dermatitis and immune reactions to P. ovale are given. In our own studies with quantitative cultures, no significant difference was found in the number of P. ovale in patients compared with controls, or between healthy and lesional skin in the patient group. IgG serum antibodies against P. ovale cells estimated with indirect immunofluorescence did not show any difference between patients and controls, but a significant difference was found when a P. Ovale protein extract and ELISA were used. Immunological investigation on serum samples were done on 30 patients with seborrheic dermatitis. Defects were found in their T-cell function. The number of P. Ovale is of importance in those individuals who are susceptible to seborrheic dermatitis and the development of the disease depends on the way their immune system reacts to the antigens derived from P. Ovale.

*Seiler, **Rückfettung: Balsam für die Altershaut***, *Moderne Geriatrie*, 03/91

*A. del Pozo, Carras Cosa, **Dispensacion dermofarmaceutica: Apoyo tecnologico al rol del Farmaceutico***, *Departemento de farmacia, Unidad docente de Farmacia Galenica, Universidad de Barcelona*, 1991

Check-up Cosmetologique et Biometrologie Cutanee, *Special Dermo-cosmétologie*, No. 289, Juillet 1991

La notion de "Check-Up" cutane a toujours exprime un souci de rigueur pour definir des besoins cutanes et des reponses performantes. Une logique, aujourd'hui scientifique, qui s'assuie sur des connaissances precises de la physiologie cutanee pour interpreter les differents etats de la peau

et proposer de véritables méthodes de correction; c'est l'avènement d'une cosmetologie de soins, rigoureuse.

Y. Guiserix, La vente scientifique, Cosmetics Distribution, 02/92

R. Wolf, E. Tur, D. Wolf, M. Landau, The effect of smoking on skin moisture and on surface lipids, International Journal of Cosmetic Science 14/92

In the present retrospective study we investigated the effect of smoking on the moisture and surface lipid levels of the skin. We analysed data from the files of 576 female clients treated in a Tel-Aviv cosmetic parlour. Measurements have been conducted by the same cosmetician, by commercially available equipment, on every client receiving cosmetic treatment, regardless of the nature of the treatment. Results demonstrated a significant difference of skin moisture in the various smoking groups: women who smoked 11-20 cigarettes per day showed significantly lower mean values than the non-smoker group, as expected. Moreover, women before or after menopause showed no significant differences in their moisture measurements. The surface lipid variables showed no significant differences in mean over the four smoking groups. We believe that the objective of the study was achieved, and that the results, indicating decreased skin moisture in smokers, will serve well in anti-smoking campaigns. We also believe that the present study will stimulate other investigators to conduct similar studies that will provide answers to many questions which still remain open.

o.A., Quantitative evaluation of sebaceous secretion on the forehead: comparison between the Sebumeter™ and a microporous film (Sebutape™), 9th international symposium "Bioengineering and the skin", Sendai / Japan, 19.-20. October 1992

The Sebutape technique seems to be a reliable and as fast procedure to obtain numerical values concerning the amount of skin surface lipids. The technique with the Sebutape is more time consuming but has the advantage to examine a greater surface of the skin, to protect the evaluated region and the Sebutape leaves the possibility for further quantitative lipid determination. Direct scanning of the Sebutape instead of scanning of an enlarged picture of the Sebutape results in a more standardised method with a greater surface that can be used for evaluation. The correlation between the Sebumeter and between the Sebutape technique increased from $r=0,73$ to $r=0,94$ when using direct scanning of the Sebutape instead of indirect scanning of the Sebutape.

V. Bousquet, D. Redoules, I. Raynal, G. Dahlem, Y. Gall, Les principales techniques d'objectivation des effets des dermo-cosmétiques, Cosmétologie, 1993

La mise au point de produits dermo-cosmétiques de plus en plus performants grâce aux progrès de la galénique a entraîné le développement d'un ensemble de méthodes d'évaluation visant à mesurer leurs effets directement sur la peau et de la manière la plus objective.

S. La Mendola, F. Rinaldi, M.C. Salvadori, F. Clemente, Competence and satisfaction. A Study of the Hair and Shampoo of 1.000 Users of a Trichology Service, 18th International IFSCC-Congress, Venice, October 1994

The awareness which 1.000 users of the medical trichology service at the San Raffaele Hospital of Milan have of the conditions of their scalps is first issue tackled in this study. The self-assessment that each person makes of their own hair conditions is compared to data measured by means of sebumetric instruments. A high degree of incompetence is recorded and correlation with some personality traits of the subjects illustrate this. Some aspects of the impact of different competence levels on behaviour are evaluated. In addition, the level of satisfaction expressed by these users about the shampoo used are examined, taking into account the relationship with some subjective variables.

Ch. Münzberger, U.F. Haustein and U. Elefant, Effects of UVA- and UVB-radiation on transepidermal water loss, water content of the horny layer and skin surface lipids, Second International Symposium on Irritant Contact Dermatitis (ISICD), Zurich, April 14-16, 1994

In the last year many studies have provided important new knowledge concerning the benefits and risks of skin exposure to sunlight and ultraviolet radiation, among them the acute and chronic effects on damage of the skin barrier. We examined the transepidermal water loss, the water content of the horny layer and the amount of skin surface lipids in relation to low dose UV-radiation. The transepidermal water loss was measured with the TEWAMETER TM 210, the water content of the horny layer with the CORNEOMETER CM 820 and the skin surface lipids with the SEBUMETER SM 810 PC (all from Courage and Khazaka GmbH). The ultraviolet radiation of 25 healthy adults was performed with UVA (Philips TL-K 40W/09N) and UVB (Philips TL 20W/01).

C. Trullas, J. Coll, C. Pelejero, J. Vilaplana, S. Sirigu, C. Dederen, Cosmetological Activity of Glycolic Acid Incorporated in a New Topical Delivery System (W/O/W Emulsion), 18th International IFSCC-Congress, Venice, October 1994

The cosmetological potential of alpha hydroxyacids (AHA'S) is still evolving. The powerful research in physicochemistry has provided a promising new delivery system, the multiple emulsion W/O/W which could permit a controlled and sustained release of AHA'S, modifying their efficiency and safety. The cosmetological activity and safety of a W/O/W multiple emulsion containing 3% of glycolic acid has been assessed by bioengineering methods using several tests. A six-hour test and 30-days study for comparison of the effects of 3% glycolic acid in two delivery systems W/O/W multiple emulsion and O/W emulsion were conducted. The cutaneous biophysical variables evaluated were electrical capacitance of stratum corneum, skin surface lipids, transepidermal water loss, biomechanical properties, blood flow and skin surface topography. The safety of 3% glycolic acid in the two delivery systems was determined using patch testing and assessment of cutaneous responses by visual scoring and biophysical non-invasive methods (evaporimetry, laser doppler flowmetry, reflectance spectrophotometry).

A.M. Grunewald and M. Gloor, Value of barrier creams against skin damage due to repeated washings, Second International Symposium on Irritant Contact Dermatitis (ISICD), Zurich, April 14-16, 1994

The aim of our study was to evaluate the protective effect of barrier creams onto irritant contact dermatitis. Therefore the following skin function parameters were evaluated: corneal lipids (sebumetry), water content of the corneal layer (corneometry), transepidermal water loss (TEWL), pH of the skin, skin reddening (colorimetry) and skin blood flow (laser doppler flow). We did standardized washings of both arms on the first and the 8th day. The subjects were asked to wash 5 times daily for one week. In a first study we evaluated the irritating effect of repeated washings with 0.01 mol/l sodium lauryl sulphate solution on 20 subjects. We were able to show that there is a more than 12 hours lasting change in skin function parameters after one week of repeated washings. Concerning corneometry, corneal lipids, TEWL, pH and laser doppler flow there were highly significant differences before and after repeated washings ($p < 0.01$). In a second study we evaluated the irritation reducing effect of 3 barrier creams on 15 subjects for each cream. Using the same method as in our first study, one selected arm was additionally treated with a barrier cream 5 times daily. Barrier creams had a highly significant ($p < 0.01$) effect on laser doppler flow, corneometry and TEWL. Nevertheless they were not able to offer complete protection. The different barrier creams showed significant differently positive effects onto skin function parameters.

J. Bettinger, M. Gloor, W. Gehring, Influence of a pretreatment with emulsions on the dehydration of the skin by surfactants, Int.Journal of Cosmetic Science 16, 53-50, 1994

Improving the water content of the horny layer of the skin is of great importance in dermatology (atopic dermatitis, ichthyosis etc.) and in cosmetics (to soften the skin surface [1]. It is believed that emulsion bases lead to hydration of the stratum corneum [2]. The hydration is believed to last a few minutes if an o/w-emulsion is used [3] and a few hours in the case of w/o-emulsions [4]. The present study addresses whether the hydrating effect really does last for such a short time. Literature also proposes an increase in water content by using urea, which is a component of many dermatological skin-care ointments [3, 5-8].

*M. Lodén, M. Lindberg, **Product Testing-Testing of Moisturizers**, Bioengineering of the Skin: Water and the Stratum Corneum, 275-288, 1994*

Moisturizers are used to restore and/or to maintain a normal function of the stratum corneum (SC). Mostly they are used on the indication of so-called dry skin. When performing product testing of moisturizers, bioengineering devices are used for evaluating how these products affect the function of SC, the main diffusion barrier in the skin. Biophysical measurements of dry skin need to be carefully evaluated. A number of highly developed noninvasive methods for the study of skin physiology have appeared during recent years and a number of papers on the use of these methods are now being published.

*P. Clarys, C. Eeckhout, J. Taeymans, P. Gross, A.O. Barel, **Influence of short daily exposure to thermal water on the hydration state of the skin**, Threat to the Skin, 333-337, 1994*

The thermal Kurzentrum of Lenk (Switzerland) is one of the spas recognized by the Department of Health of Switzerland as a centre specialized in the treatment of rheumatic patients. Part of the typical 3-week cure in the centre consist of daily bathing in hot thermal water containing high concentrations of salts and sulphur (sulphates and hydrogen sulphide). According to recent data from balneo-therapeutic treatments, the sulphur which penetrates the skin is oxidized and provokes various physiological responses in the skin: vasodilatation in the microcirculation, an analgesic influence on the pain receptors and inhibition of the immune response.

*L.Zissova, Hr.Dobrev, **Quantitative Investigation of Sebum Excretion in Seborrhoeic Dermatitis of the Scalp Treated with Ketoconazole 2% Shampoo**, 2nd Congress of the ECMM, Brussels, April 27-29, 1995*

The quantity of sebum excretion before, during and after treatment with Ketoconazole 2% shampoo / Nizoral®, Janssen Pharmaceutica, Belgium / in 20 patients with seborrhoeic dermatitis of the scalp, aged 16-40 years, was studied.

*P. Elsner, **Nichtinvasive Techniken in der Hautphysiologie**, 38. Tagung der Deutschen Dermatologen Gesellschaft, Berlin, 29. April - 03. Mai 1995*

Nichtinvasive Techniken (Synonyma: Bioengineering-Verfahren, biophysikalische Meßverfahren) haben in den vergangenen Jahren in verschiedenen dermatologischen Forschungsgebieten Eingang gefunden. Dazu zählen insbesondere die Hautphysiologie, die Dermatopharmakologie und Dermatotoxikologie, die Allergologie und die Berufsdermatologie, aber auch die Erforschung der Kollagenosen, der Veränderungen der Altershaut (dermatologische Gerontologie) und die Onkologie.

*G.E. Piérard, **Relevance, Comparison, and Validation of Techniques**, Handbook of Non-Invasive Methods and the Skin, J. Serup G.B.E.Jemec, 1995*

Measuring in an objective way is always in need of additional breakthrough. Dermometry and bioengineering have been and remain closely associated in the search for improvements of quantitative noninvasive assessments. The pre-bioengineering times and the descriptive phase of dermometry are behind us. Ingenious researches pioneered methods that may now look crude, time-consuming, and sometimes lacking in reproducibility.

P. Elsner, **Sebum**, Bioengineering of the Skin: Methods and Instrumentation, CRC Press 1995

While the epidermal barrier function depends largely on intercellular lipids in the stratum corneum, skin surface lipids are mainly from sebum. Sebum is an oily mixture of lipids, keratin, and cellular membrane structures excreted by the sebaceous glands.

E. Weißhaar, R. Sabel, C. Smith, M. Coißbau, E.-M. Röpke, H. Gollnick, **Does a New Lipidizing Agent in a Medical Soap Prevent Lipid Loss Induced by Repetitive Washing**, Skin Pharmacology Society: 12th Annual Meeting 1995

Skin care eg choosing a suitable soap is an important factor in preventing skin disease. Various medical soaps claim to minimize the strain put on the skin by repetitive washing. The aim of this study was to determine whether a new relipidising agent in a medical soap which supposedly counteracts lipid loss induced by repetitive washing leads to a significant change in transepidermal waterloss, pH, sebum excretion and 8 epidermal lipids.

J. Woodruff, **Testing time**, Cosmetics, June 1996

In his continuing series on impending EC cosmetics-legislation, John Woodruff looks at the requirements for proof of efficacy, and takes a trawl around available testing facilities.

K.P. Wilhelm, *proDERM* institut for applied Dermatological Research GmbH. Schenfeld, Germany. **Client-Server based On-Line Data Acquisition for Skin Bioinstrumentation Devices.**

During dermatological safety and efficacy studies, huge amounts of data- both instrumental data as well as evaluator scores may accumulate. We have developed an integrational data with on-line data acquisition capability. The program runs in a Macintosh network. A graphical interface facilitates data entry. A multilevel password system secures unauthorised use. In order to comply with GCP/GLP requirements all data entries and any possible changes relating to experimental studies- both scores and instrumental values -are secured in a log file together with date, time, and initials of the person entering the data. The program can at present acquire data from: Chromameter (Minolta), Tewameter, Corneometer, pH-Meter, Sebumeter, Mexameter, (all Courage and Khazaka). However, the open architecture would easily allow to incorporate more instruments with a serial interface. Data can be exported in DOS, windows or Macintosh format for easy import into any spreadsheet or statistics programs. The program has been completely validated and successfully used in a contract research organisation for over 12 months. Automatic data acquisition has proven to be very useful tool to facilitate and speed up data analysis and to enhance the quality and reliability of test results.

D.R. Black, J.M. Lagarde, C.M. Auzoux, Y. Gall, IRPF Centre JL Alibert, CHU Rangueil, **An Improved Method for the Measurement of Scalp Sebum**. Skin Research and Technology, Vol.2, No.4, Nov 1996.

D.A. Comes, E.J. Fendler, M.J. Dolan and R.A. Williams, **Bioengineering Instrumentation: Automation and Use**. Skin Research and Technology, Vol.2, No.4, Nov. 1996

Objective: The increasing complexity and use of bioengineering skin test instrumentation has created a critical need for unified software that controls the instruments, collects and stores data, performs analysis, and generates reports. In this study, user-friendly software programs were developed and applied to perform panel testing on a large number of test subjects utilising bioengineering skin test instrumentation. Methods/Results: Generic software programs were developed to integrate and automate operation, data storage, and data analysis of multiple bioengineering skin instruments. The software was applied to the following instruments:- Courage and Khazaka - Sebumeter SM810, Corneometer CM 820, skin pH-meter 900, Tewameter TM210; Minolta Chromameter CR300, and NOVA DPM 9003. Conclusions: Automation of skin bioengineering instrumentation allows evaluation studies

to be performed using a large number of test subjects (with multiple variables). This greatly increases the statistical validity of data and overall efficiency, whilst negating the historical constraints which required a large commitment of resources.

*P.M. Clarys, A.O. Barel, **Sebumetry: A comparison between Lipid Collection Techniques.** Skin Research and Technology, Vol.2, No.4, Nov.1996*

Recently, several methods have been developed for the collection of skin surface lipids. We compared 3 of those measurement techniques: the Sebutape, the Sebufix, and the Sebumeter. Lipid sampling with the Sebufix and with the Sebumeter takes only 30 seconds while lipid sampling with the Sebutape takes 1 hour. As demonstrated by several authors application of a film on the skin surface may interfere with several skin properties such as skin temperature, skin hydration, and skin surface water loss. Our experimental set was designed in order to make a comparison between the 3 measurement techniques and in order to evaluate the effect of Sebutape application on the above skin parameters. Comparison of the lipid quantification with the 3 techniques delivered a good correlation. The Sebutape seems to have no or only a minor influence on skin temperature and TEWL. The hydration state of the stratum corneum increased significantly during the Sebutape application.

*M.A. Francomano, K. Mantovani, P. Pepe, A. Di Nardo and S. Seidenari, **Baseline Biophysical Skin Parameters in Subjects with Sensitive Skin.** Skin Research and Technology, Vol. 2, No. 4, Nov 1996.*

*Dr. H. Gerny, **IV Medizinische und Kosmetische Behandlungen,** Kosmetik und Dermatologie, Krause & Pachernegg Verlag GmbH, Wien.*

Die Langzeitwirkung einer Pflege kann nur dann einigermaßen beurteilt werden, wenn ein klar definierter Ausgangspunkt bezüglich des aktuellen Hautzustandes und Hauttypes gegeben ist. Die Bestimmung des Hauttypes ist ein sehr komplexer Vorgang, da viele äusserliche Einflüsse auf unser Hautbild einwirken. Auch ist die Haut hormonell empfindlich und stellt ein Bild unseres Innenlebens dar. Da der Zustand der inneren Schichten ohne chirurgische Maßnahmen nicht definitiv beurteilbar ist, kann nur die Summe aller Beobachtungen durch Auge, Lupe, und Woodlampe sowie Apparativer Hilfsmittel einen approximativen Anhaltspunkt über den Zustand der Haut geben. Es ist empfehlenswert, nach dem 35. Altersjahr von Zeit zu Zeit eine Hautbeurteilung durchführen zu lassen, um die Pflege nach dem aktuellen Hautbedürfnis anzupassen.

*J.W. Wiechers, **A Supplier's contribution to performance testing of personal care ingredients.** SÖFW-Journal, 123. Jahrgang 14/97*

Current cosmetic formulations address a wide variety of customer needs. This variety requires a plethora of personal care ingredients. In order to create excellent new products, it is essential that the formulator not only knows the physical properties of the components (s)he chooses, but also the skin performance that these products may have. In order to facilitate the selection process for the formulator, we have investigated the effect of our products against some of the most prominent claim areas of cosmetic products: skin moisturisation, elasticity, substantivity, and mildness.

*H. Dobrev and L. Zissova, **Effect of Ketoconazole 2% Shampoo on Scalp Sebum Level in Patients with Seborrhoeic Dermatitis.** Acta Derm Venereal, Stockholm 1997*

Twenty patients with scalp seborrhoeic dermatitis were treated twice weekly with ketoconazole 2% shampoo for 4 weeks. Clinical assessment, culture for *P. ovale* on Dixon broth and lipid measurement at two places were made before treatment and after 2 and 4 weeks. Significant improvement of the severity of seborrhoeic dermatitis ($p < 0.001$) and negative mycological tests by 19 (95%) of patients were observed. The scalp lipid content remained unaltered in 11 patients with an initial lipid value over 220 $\mu\text{g}/\text{cm}^2$ but increased those with lower initial values.

Dr. H.-P. Nissen, Dr. S. Sustmann, EUBOS Sensitive DUSCHÖL F – Körperpflege für sensible und besonders trockene Haut; lt. Gutachten 1997

Alkalseifen-freie Syndets, d.h. Waschpräparate mit neutralem oder einem sogenannten hautneutralen pH-Wert, haben sich als milde Reinigungsmittel für den generellen Gebrauch bewährt. Speziell für Personen mit erhöhter Hautirritabilität, mit Hautproblemen angeborener oder erworbener Art, bietet diese Entwicklung die Möglichkeit einer schonenden Hautreinigung: Durch den neutralen bis leicht sauer eingestellten pH-Wert wird eine alkalische Quellung der Haut, mit all ihren möglichen Folgen, vermieden. Deshalb werden Syndets auch von Dermatologen als Adjuvans therapeutischer Maßnahmen empfohlen (z.B. EUBOS flüssig). Trotz der Vorteile der modernen seifenfreien Körperreinigungsprodukte kann es bei trockener und sehr trockener Haut, jedoch insbesondere auch bei vorgeschädigter Haut, zu einer weiteren Exsiccation kommen. In Verbindung mit den Waschgewohnheiten (z.B. tägliches Duschen) ist eine Austrocknung der Haut, Schuppung und Jucken vor allem bei Personen mit Hautproblemen, welche den Dermatologen aufsuchen, ein belastendes Problem. Die Empfehlung, auf zu häufiges Duschen oder Baden zu verzichten, findet oft nicht die gewünschte Compliance. Um den Hygieneansprüchen auch der Patienten und Konsumenten mit Hautproblemen zeitgemäß entgegenzukommen, wurde die neue Produktkategorie „Duschöl F“ entwickelt

T. Fischer, C. Greif, W. Wigger-Alberti, P. Elsner, Instrumentelle Methoden zur Bewertung der Sicherheit und Wirksamkeit von Kosmetika, Kursprogramm Sicherheitsaspekte in der Kosmetik, Basel, Mai 1998

Durch die Erfordernisse eines Wirksamkeits- und Sicherheitsnachweises für Kosmetika gewinnen nichtinvasive biophysikalische Meßmethoden zunehmend an Bedeutung. Neben der Bestimmung des transepidermalen Wasserverlustes und der Messung der Hautfeuchtigkeit, des Oberflächenfettes, des pH-Werts, und der Elastizität kommen der Bestimmung des Oberflächenreliefs, der Farbe und der Hautdurchblutung große Bedeutung zu. Mit diesen Methoden können u.a. die hautfeuchtigkeitsfördernden, glättenden und straffenden Wirkungen von Topika sowie der Grad der Irritation durch Externa valuiert werden. Zur Messung der Vergleichbarkeit dieser unterschiedlichen Funktionsparameter sind standardisierte Meßbedingungen erforderlich.

Dr.R. Ward, The Human Factor - SPC March 1998

With the proposed ban on animal testing on the horizon, Dr. Rachel Ward looks at the ethical aspects of human volunteer testing.

M. Arens-Corell, J. Welzel, HH Wolff, Beurteilung von Hautreinigungsmitteln für trockene und empfindliche Haut. Kosmetische Medizin 1/1998.

Die zunehmende Problematik trockener und empfindlicher Haut in der Bevölkerung macht die Entwicklung geeigneter Reinigungsmittel notwendig. Ihre Hautverträglichkeit und minimierte Austrocknungswirkung kann in dermatologisch kontrollierten Anwendungsbeobachtungen unter Einbeziehung der Messung hautphysiologischer Parameter objektiv geprüft werden. Das Beispiel eines Duschöls und einer Waschemulsion für trockene und empfindliche Haut zeigt, daß durch einen hohen Ölanteil ebenso wie durch die Auswahl milder Syndetsubstanzen bei Anpassung des pH-Wertes im Hautphysiologischen, leicht sauren Bereich die Hautreinigung unter Praxisbedingungen ohne Austrocknung und Irritationen möglich ist.

W.D. Becker, J.S. Bajor, K. Hoyberg, S. Hillmer, D. Thiboutot, H. Knaggs, Measurement Of Human Surface Sebum Levels. The Journal of Investigative Dermatology, Vol. 110, No. 4, April 1998.

J. Gottfreund, T. Meyer, Die Bedeutung des pH-Wertes 5,5 in Emulsionen. Kosmetische Medizin Nr. 3, 1998.

Es wird die Bedeutung des pH-Wertes 5.5 in Emulsionen dargestellt. In einer W/O-Emulsion wurde der pH-Wert der Wasserphase auf einen Wert von 5,5 eingestellt. Es ließ sich zeigen, daß der durch Umwelteinflüsse tiefe pH-Wert der Haut sich an 5,5 anpaßt. Bei der Auswahl der Rohstoffe für den Fettkörper einer Emulsion müssen die speziellen Bedingungen, die durch den pH-Wert bedingt sind, berücksichtigt werden.

I. Le Fur, S. Lopez, F. Morizot, M. Dubourgeat, Ch. Guinot, E. Tschachler, Comparison of Malar and Frontal Zones by Bioengineering Methods for Different Cosmetic Skin Type Groups of Women. Poster - 20th IFSCC Congress Cannes, 09/1998.

Y. Yazan, M. Seiller, S. Avcier, M. Demirel, Comparison of Glycolic, Lactic and Glycolic + Lactic Acids in Multiple Emulsion Systems. 20th IFSCC Congress Cannes, 09/1998

F.Morizot, I. Le Fur, E. Tschachler, Sensitive Skin. Cosmetics & Toiletries Vol.113, November 1998
Studies on skin reactions to irritant substances and topical preparations have a long history. Clinical signes and symptoms of irritant reactions in the dermatological sense are well defined and are synonymous with skin inflammatory reactions.

Uta Bornschein, Der Schuß ins Waschwasser.... Die Schwester/Der Pfleger 12/98
Die Ganzkörperwaschung der Patienten durch Pflegende ist im Krankenhaus eine täglich wiederkehrende Verrichtung. In vielen Einrichtungen ist dafür ein Pflegestandard geschaffen worden. Dabei kommt es oft zu einer Diskussion um en Waschwasserwechsel, und dies nicht nur aus hygienischen Gesichtspunkten.

H. Knaggs, J. Bajor, W. Becker, The Sebumeter and Its Use. Mediscript 12/98
The Sebumeter is a quick and easy tool to use in measuring skin surface lipids. The type of lipids sampled largely depends on the body site at which the measurement is taken. The Sebumeter has most commonly been used to measure skin lipids on the forehead which consist predominantly of sebaceous gland-derived lipids or sebum.

B.Chadoutaud, L.Curtil, C.Veret, F.Alais-Gallou, Evaluation objective en double aveugle de la performance hydratante et de la rémanence de deux émoullients corporels E/H et H/E dans le traitement des peaux sèches et très sèches. Les Nouvelles Dermatologiques, Vol. 18 No. 2 – Feb.99
Cette étude en double aveugle randomisée chez 20 volontaires à peau sèche et très sèche, concerne l'analyse controlatérale de l'activité hydratante de deux émulsions

H+G Band 74, Heft 6, 1999. Hautmeßgeräte unentbehrlich für Klinik + Praxis
Eine Notwendigkeit für die dermatologische Praxis ? Die apparative Bestimmung von Hautparametern

W.D.Becker, S.Hillmer,M.A.Presser, A Clinical Model for Surface Sebum Measurement – Poster Arbois 1999

P. Muti, M.Stanulla, A. Micheli, V. Krogh, J.L.Freudenheim, J. Yang, H.J. Schünemann, M. Trevisan, F. Berrino, Markers of Insulin Resistance and Sex Steroid Hormone Activity in Relation to Breast Cancer Risk: A Prospective Analysis of Abdominal Adiposity, sebum production, and hirsutism (Italy). Pediatric Research April 1999

W.Voss,G.Schlippe,M.Breuer, Tests on Cosmetics Scientific Standards. SÖFW-Journal 4/99

In general, body care articles and cosmetics have only a low allergy potential. The probability that toxic-irritative reactions will arise after proper use is even lower. But especially with patients with sensitive skin, unclear skin reactions, which can frequently be confused with allergies, can arise. The cosmetics manufacturers, however, would like to produce safer products and naturally want to avoid that type of problem from the start.

M. Maruno, FC Facco, PA Rocha Filho, Hydration, Oily and PH of Skin In Vivo Evaluation After Application of Both Simple and Complex Emulsions Containing Hydrolyzed Proteins. IFSCC May 1999

RG Azzini, L Licursi, PA Rocha-Filho, Colour Evaluation „In Vitro“ Method of Facial Powders. IFSCC May 1999

SH Perez Damonte, GM Cuomo, RL Galimberti, Evaluacion Instrumental de la Piel Sensible. IFSCC May 1999

A.Fendl, Einzelheiten der Hautdiagnose. Natürlich schön/Grundlagten der Ganzheitskosmetik, Handwerk und Technik – 1999

I.Le Fur, S.Lopez, F.Morizot, Ch. Guinot, E. Tschachler, Comparison of cheek and forehead regions by bioengineering methods in women with different self-reported “cosmetic skin types”. Skin Research and Technology, Vol. 5, No. 4, August 1999

Piérard-Franchimont, O. Martalo, A. Richard, A. Rougier, Sebum rheology evaluated by two methods in vivo. Split-face study of the effect of a cosmetic formulation, European Journal of Dermatology, Volume 9, Number 6, 455-457, 1999, Revues.

Modulation of the rheological characteristics of sebum at the surface of the skin might represent a valuable strategy for the treatment of seborrhea. In this field, only a small number of studies have addressed sebum diffusion within the stratum corneum.

C. Piérard-Franchimont, O. Martalo, A. Richard, A. Rougier, G.E. Piérard, Sebum rheology evaluated by two methods in vivo. Split-face study of the effect of a cosmetic formulation, European Journal of Dermatology. Volume 9, Number 6, 455-7, September 1999

Modulation of the rheological characteristics of sebum at the surface of the skin might represent a valuable strategy for the treatment of seborrhea. In this field, only a small number of studies have addressed sebum diffusion within the stratum corneum. In an open, split-face study conducted on 20 men, we measured the sebosuppressive effect of Effidrate® cream which is based on a glycerol alkyl-ether. Measurements were made in the morning at three-week intervals for a total period of 3 months. Sebum casual levels and sebum excretion rates were measured using a SM810® Sebometer. Lipid-absorbent Sebutape® was also used to collect all the sebum released from infundibular reservoirs over a four-hour period. Clinical assessments were relatively uninformative but the photometric measurements showed that Effidrate® cream had a sebosuppressive action. The underlying biological mechanism remains unclear but a hypothesis based on enhanced sebum absorption by the stratum corneum is discussed

C.Pierard-Franchimont, O.Martalo, A.Richard, A.Rougier, GE Pierard, Sebum rheology evaluated by two methods in vivo. Split-face study of the effect of a cosmetic formulation. Eur J Dermatol, Sept. 1999

I.Le Fur, C.Guinot, S.Lopez, F.Morizot, V.Lambert, E.Tschachler, **Age-Related Reference Ranges for Skin Biophysical Parameters in Healthy Caucasian Women**. 13th ISBS Jerusalem, March 2000.

S. Lopez, I. Le Fur, F.Morizot, G. Heuvin, Ch. Guinot, E. Tschachler, **Transepidermal Water Loss, Temperature and Sebum Levels on Women's Facial Skin Follow Characteristic Patters**. Skin Research and Technology, Vol. 6 No. 1, February 2000.

The aim of this study was to compare the biophysical properties of different facial zones.

G.Gacic-Vukavljak, **Sebum Control Performance with Powdered Silicone Elastomers**. Personal Care Ingredient Asia Conference, Bangkok, March 2000.

V.Lambert, I. Le Fur, Ch. Guinot, F. Morizot, S. Lopez, E.Tschachler, **Comparaison des Parametres Biophysiques Cutanes en Hiver et en ete chez des Femmes Caucasiennes**. Ilième Congrès de la Société D'Ingénierie Cutanée, Juin 2000

B. Rode, U. Ivens, J. Serup, **Degreasing method for the seborrheic areas with respect to regain-ing sebum excretion rate to casual level**, Skin Research and Technology, Vol. 6, No. 2, May 2000

Insulin resistance and increased levels of serum steroids have been hypothesized to be relevant etiological factors for breast cancer. The present study analyzed the association of breast cancer with markers of insulin resistance and elevated serum sex steroids, abdominal adiposity, increase in sebum production and hirsutism in a case-control study nested in a prospective cohort study.

N.Ota, T.Horiguchi,N.Fujiwara, N.Kashibuchi, Y.Hirai, H.Mori, **Identification of Skin Sensitivity through corneocytes Measurements**. XXIst IFSCC Congress 2000, Berlin

Surveys conducted in many nations suggest that up to 50% of cosmetic users believe they have sensitive skin and products specifically designed for this skin type have become an important cosmetic category. In developing such products, objective assessment of the degree and the type of sensitivity is desirable.

W.van Es-Spiekman, G.W.Lucassen, **Skin Characterization: Human Skin Water Content Versus Lipid Content Measured by Corneometer, Sebumeter and ATR-FTIR Spectroscopy**. XXIst IFSCC Congress 2000, Berlin

Skin characterization methods are important for the cosmetic industry, personal care industry, in pharmacology and dermatology. Water content and lipid content are of special importance because of their crucial role in the barrier function of the skin.

A.Zlotogorski, S.Dikstein, **Skin Surface Sebum on the Forehead and Cheek of Adults**. Skin Research and Technology, Vol. 6, No. 3, August 2000

I.Le Fur, C.Guinot, S.Lopez, F.Morizot, V.Lambert, E.Tschachler, **Age-Related Reference Ranges for Skin Biophysical Parameters in Healthy Caucasian Women**. 13th ISBS Jerusalem, March 2000 and Skin Research and Technology, Vol. 6, No. 3, August 2000

S.M.John, W.Uter, H.J.Schwanitz, **Relevance of Multiparametric Skin Bioengineering in a Prospectively-followed Cohort of Junior Hairdressers**. Contact Dermatitis, Vol.43, No. 3, September 2000.

There is conflicting evidence concerning predictors of individual susceptibility to develop irritant contact dermatitis in wet work. A cohort of initially 92 hairdresser apprentices was prospectively followed for 3 years.

Ken-ichiro O'goshi, Makiko Iguchi, Hachiro Tagami, Functional analysis of the stratum corneum of scalp skin: studies in patients with alopecia areata and androgenetic alopecia, Arch. Dermatol. Res. (2000) , Springer-Verlag

Because of the presence of thick long hairs on the scalp, little information is available concerning the functional characteristics of the stratum corneum (SC) of scalp skin. We therefore conducted a functional study of the SC of lesional scalp skin of patients with alopecia areata and of patients with androgenetic alopecia. We compared the scalp with the cheek and the flexor surface of the forearm (volar forearm). The water barrier function of the scalp SC of both patient groups, in terms of transepidermal water loss (TEWL), was almost comparable to that of the volar forearm, and was far better than that of facial skin.

A. Castro, A. Vargas, Formulacao de Sabonete Liquido com Productos Naturais: Medida de sua Efectividade, Cosmetics & Toiletries (Portugese), Vol. 13 No 6, p. 93, 2001

H.Song, The Effects of Inositol Extracted from Rice on the Skin. Personal Care Ingredients Asia, March 2001

K.Miyajimoto, Quantitative comparison of the differences in facial skin aging and Skin Biophysical Properties in Japanese femals living in south and north part of Japan, and global research expansion on Caucasians, East Asians, Indian Asian and Latinos. 5th ASCS, March 2001

D.Iliev, U.Hinnen, P.Elsner, Skin Bioengineering Methods in Occupational Dermatology. Skin Bioengineering Vol. 26, March 2001

Measuring biophysical properties of the skin is not only useful to study cutaneous physiology and pathology but may also be of value for the prediction of eczema risk, for the detection of subclinical eczema and for therapy control in occupational dermatology.

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.

P.-G. Sator, J.B. Schmidt, M.O. Sator, J.C. Huber, H. Hönigsmann; The influence of hormone replacement therapy on skin ageing. A pilot study; Maturitas 39 (2001) 43-55;

We studied the effect of hormonal treatment on skin ageing in menopausal women. Twenty-four patients without hormone treatment for at least 6 months were included. Patients were assigned to three therapy groups: 1, oestrogen only 2. transdermal oestrogen and progesterone. One group without therapy was included as a control group. Treatment was continued for 6 months. Three patients, one from group 2 and two from group 3, discontinued therapy before the study endpoint. The following skin parameters were measured at monthly intervals during treatment.

G.G.Hillebrand, B.Schnell, K.Miyamoto, M.Ichihashi, R.Shinkura, S.Akiba, The Age-Dependent Changes in Skin Condition in Japanese Females Living in Northern Versus Southern Japan. IFSCC Magazine, Vol. 4, No. 2, April/June 2001.

I.Le Fur, F.Morizot, S.Lpez, C.Guinot, J.Latreille, E.Tschachler, Seasonal changes in skin biophysical properties in healthy Caucasian women. Congress Stratum Corneum III, Basel, September 2001.

Prof. K.-D. Neander, Dr. F. Hesse, The role of cream mousses in the treatment of dry skin in patients with diabetes mellitus, LII, Issue 10/2001, Pages 19,20,21

Diabetics are well known for their frequent struggles with the problem of "dry skin". The diverse and unpleasant effects to which these patients are exposed range from pruritus to skin inflammations, particularly in the interdigital spaces of the feet. As has been demonstrated in a variety of studies, lack of moisture is at the heart of this problem.

G. G. Hillebrand, M. J. Levine, K. Miyamoto, The Age-Dependent Changes in Skin Condition in African Americans, Asian Indians, Caucasians, East Asians, and Latinos, IFSCC Magazine, October/December 2001, Vol. 4, Nr. 4

Understanding the similarities and differences in skin characteristics as a function of age, race and geography should aid in the development of skin care products that better meet consumers' skin care needs around the world.

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.

G. Maramba, M. A. Esposito, Potassium Azeloyl Diglycinate: A Multifunctional Skin Lightener, *Cosmetics & Toiletries*, March 2002, Vol. 117, Nr. 3

Skin lightening and sebum normalization are among the useful cosmetic functions of potassium azeloyl diglycinate, a soluble derivative of azelaic acid.

J. Djordjevic, g. Vuleta, J. Milic, H. Zhai, H. Maibach, O/W Emulsions Enriched with Vitamin E. *Cosmetics & Toiletries* 2002 April, Vol. 117, Nr. 4

Vitamin E has an important protective function for the entire organism. It is believed that the broad biological activities of vitamin E are due to its ability to inhibit lipid peroxidation and stabilize biological membranes.

Le Fur I., Lopez S., Morizot F., Latreille J., Guinot C., Tschachler E., Age-Related Reference Ranges for Skin Biophysical Parameters in Healthy Women, 20th World Congress of Dermatology, Paris 2002

Purpose: The aim of this study was to establish age-related reference ranges in healthy Caucasian women for some widely used skin biophysical parameters.

Le Fur I., Reinberg A., Lopez S., Morizot F., Tschachler E., Facial Skin Circadian Rhythms of Healthy Women Investigated Using Non-Invasive Methods, 20th World Congress of Dermatology, Paris 2002

Purpose: The aim of this study was to document around the clock changes in a set of skin biophysical parameters.

U. Uksal, C. Atasavun, B. Özcelik, S. Utas, A. Ferahbas, The effects of hormone replacement therapy on the skin of postmenopausal women (abstract), 11th Congress of the European Academy of Dermatology and Venereology, Prag 2002.

The study was performed to compare skin pH, transepidermal water loss (TEWL), skin surface lipids and hydration in postmenopausal women receiving hormone replacement therapy (HRT) and

those who not. Two parallel age-matched groups (each 24) of 48 postmenopausal women evaluated by tewameter, sebumeter, pHmeter and corneometer.

Rodolphe Korichi (LVMH Lab R&D), Video Imaging in the Measurement of Makeup Efficacy and Performance, Cosmetics & Toiletries October 2002, Vol. 117 No. 10

Video imaging techniques add quantitative data about the visual effects of makeup when evaluating efficacy and performance of products such as mascaras, lip colorants, facial foundations and nail enamels.

I Le Fur, F. Morizot, S. Lopez, C. Guinot, J. Latreille, E. Tschachler, Seasonal changes in skin biophysical properties in healthy Caucasian women, The Essential Stratum Corneum, 2002 Martin Dunitz Ltd.

The human skin surface has to adapt constantly to changing environmental conditions, such as temperature and relative humidity. Several studies have demonstrated the detrimental effects of winter weather in our countries on the skin and seasonal changes in certain biophysical parameters. The work presented here examines seasonal variations of biophysical parameters on facial skin in Caucasian women in France.

T. Gambichler, P. Altmeyer, S. Rotterdam, M. Herde, M. Stücker, K. Hoffmann, Bioengineering der Haut, Kosmetische Medizin, 4/2002, 23. Jahrgang

Nicht-invasive Untersuchungstechniken (Bioengineering) am Hautorgan werden in der Dermatologie und Kosmetologie zunehmend eingesetzt. Gegenüber der bloßen klinischen Untersuchung bietet der Einsatz von Bioengineering-Methoden viele Vorteile. Es lassen sich morphologische und funktionelle Parameter der Haut objektiv darstellen und standardisiert messen, die der bloßen klinischen Untersuchung bzw. sensorischen Wahrnehmung oft unzugänglich sind.

Susanne Haug ; Feuchtigkeit, Fettgehalt und pH-Wert der Haut im Gesicht – Eine Untersuchung zur Festlegung von Normalwerten an definierten Punkten im Gesicht und am Hals; Klinik und Poliklinik für Dermatologie und Allergologie am Biederstein des Klinikums rechts der Isar der Technischen Universität München 2002

Das größte Organ des menschlichen Körpers, die Haut, besitzt eine Gesamtfläche von 1,5-2,0 m², die von Körpergröße und Gewicht abhängig ist [1]. Die Haut ist in mehreren Schichten aufgebaut. Das 6-20µm, an Handinnenfläche und Fußsohle zwischen 200-600 µm [54,86], dicke kernlose Stratum corneum (Hornhaut) ist die oberste Schicht der Haut. Es besteht aus 13 Zellschichten [76]. Der Aufbau des Stratum corneum ist dabei ähnlich einer Mauer aus Ziegelsteinen und Mörtel (bricks and mortar-Modell). Die Ziegelsteine entsprechen in dieser Modellvorstellung proteinreichen Korneozyten, die hauptsächlich aus seiner starren Zellhülle [6], Keratinfilamenten [107] und dem interfilamentären Matrixprotein [28] bestehen.

MegaSun beauty & care, Sonnen ohne Risiko, Kosmetische Medizin, 4/2002, 23. Jahrgang

Sonne gilt für große Bevölkerungsteile als die Universal-Arznei aus der „Himmelsapotheke“. Doch der Dermatologe rät: Was für die Risiken und Wirkungen von Arzneimitteln gilt, gilt auch für die Solarien-Besonnung: Die Dosis ist entscheidend. Auf der Pressekonferenz am 16.10.2002 in Hamburg präsentierte die KBL-Solarien AG den Medien sowie dem Fachhandel ein auf streng wissenschaftlicher Basis entwickeltes Gerät zur individuellen Hauttypbestimmung, um Solarstrahlen für gesunde und natürliche Bräune optimal zu dosieren – das megaSun care Terminal.

P.G. Sator, J.B. Schmidt, M.O. Sator, J.C. huber, H. Hönigsmann, Parameters of skin aging during hormone replacement therapy, EADV /th Congress, Abstract Submission Form

All patients with HRT showed an increase in skin hydration, elasticity and thickness, as well as subjective and clinical improvement.

*I. Uhoda, N. Faska, C. Robert, G. Cauwenbergh, G.E. Pierard, **Split face study on the cutaneous tensile effect of 2-dimethylaminoethanol (deanol) gel**, Skin Research and Technology, Vol. 8, No. 3, August 2002*

Large interindividual variations precluded any significant finding in the first study. The DMAE formulation showed, however, a significant effect characterized by increased shear wave velocity in the direction where the mechanical anisotropy of skin showed looseness. The DMAE formulation under investigation increased skin firmness.

*S.W. Youn, S.J. Kim, In A Hwang, K.C. Park, **Evaluation of facial skin type by sebum secretion: Discrepancies between subjective description and sebum secretion**, Skin Research and Technology, Vol. 8, No. 3, August 2002*

People secrete varying amounts of sebum at different skin sites. Reclassification of skin type based on sebum secretion revealed that most participants underestimated the amount of facial sebum excretion. When sebum secretion amounts were compared, a statistically significant difference was apparent between the oily and dry skin types. However, there were no statistical differences between oily and normal, and normal and dry skin.

*C. Piérard-Franchimont, O. Martalo, A. Richard, A. Rougier, G. E. Piérard, **Sebum rheology evaluated by two methods in vivo, split-face study of the effect of a cosmetic formulation**, European Journal of Dermatology, www.john-libbey-eurotext.fr/articles/ejd/9/6/455-7,*

Modulation of the rheological characteristics of sebum at the surface of the skin might represent a valuable strategy for the treatment of seborrhea. In this field, only a small number of studies have addressed sebum diffusion within the stratum corneum. In an open, split-face study conducted on 20 men, we measured the sebosuppressive effect of Effidrate cream which is based on a glycerol alkyl-ether. Measurements were made in the morning at three-week intervals for a total period of 3 months. Sebum casual levels and sebum excretion rates were measured using a SM810 Sebumeter.

*J. Willms, S. Dolphin, et al., **Free internal lipids in hair from pre- and post-menopausal women**, Posters of the 22nd IFSCC Congress, Edinburgh 23.-26. Sep. 2002*

*N. Muizzuddin, KD. Marenus, et. al., **Effects on normal female monthly hormonal cycles on skin functions**, Posters of the 22nd IFSCC Congress, Edinburgh 23.-26. Sep. 2002*

*L. Ambroisine, C. Guinot, et. al., **Relationship between visual and tactile skin characteristics and skin biophysical parameters**, Posters of the 22nd IFSCC Congress, Edinburgh 23.-26. Sep. 2002*

*I. Le Fur, F. Morizot, S. Lopez **Seasonal changes in skin biophysical properties in healthy Caucasian women**, The Essential Stratum Corneum, chapter 60, ed. by R. Marks, J.-L. Lévêque, R. Voegeli, Martin Danitz Ltd., London, 2002.*

The human skin surface has to adapt constantly to changing environmental conditions, such as temperature and relative humidity. Several studies have demonstrated the detrimental effects of winter weather in our countries on the skin and seasonal changes in certain biophysical parameters. The work presented here examines seasonal variations of biophysical parameters on facial skin in Caucasian women in France.

A. Kramer, T. Bernig, G. Kampf, Clinical double-blind trial on the dermal tolerance and user acceptability of six alcohol-based hand disinfectants for hygienic hand disinfection, Journal of Hospital Infection, 2002, 51: 114-120

Six commercially available alcohol-based hand rubs (AHD 2000, Desderma, Muscasept A, Manorapid (Poly-Alkohol, Spitacid, and Sterillium)) were investigated in a clinical double-blind trial involving 10 participants who had no previous experience of using hand rubs (Group 1) and seven who had substantial professional experience of using hand rubs (Group 2, viro laboratory staff).

A. Kramer, V. Mersch-Sundermann et al., Toxikologische Bewertung für die Händedesinfektion relevanter antimikrobieller Wirkstoffe, in Günter Kampf (Ed.): Hände-Hygiene im Gesundheitswesen, Springer Verlag, 2003, Kapitel 5

D. Lautenschläger, Hautanalyse – Moderne Geräte helfen, Ki-Magazin 3/2003

Die Hautanalyse ist ein zentraler Bestandteil der kosmetischen Behandlung. Sie schafft die Grundlage für erfolgreiche hautspezifische Konzepte. Ein großes Angebot an Geräten kann die Hautbestimmung erleichtern. Was können diese Instrumente genau.

JS Dosik, T Plott, RD Gilbert, Efficacy and Tolerability of Sodium Sulfacetamide 10% and Sulfur 5% Short-Contact Therapy for the Treatment of Acne Vulgaris, 61st Annual Meeting, Sanfrancisco, March 2003

A short-contact acne therapy containing sodium sulfacetamide 10% and sulfur 5% was investigated for its efficacy and tolerability in the treatment of acne vulgaris. Poster at the American Academy of Dermatology,

G. Gasic-Vukovljak, I. Li, et.al., Beyond superior feel in skin care, Personal Care 2003, p. 45

Silicones have a long history in personal care products where they are recognized for their smooth, silky and nonoily feel, spreadability, lubrication properties, substantivity, and lack of harm to the environment.

H.K. Lee, S.Y. Bae, S.J. Moon, I.S. Chang, Comparisons of skin characteristics between men and women using non-invasive methods in young healthy Asians, Skin Research and Technology, Vol. 9, No. 2, May 2003

Skin has different properties depending on intrinsic effects such as inherent factors, race, gender and so on. Besides, it has been known that skin may change because of the environmental stress such as UV, climate and life style. We would like to know the differences of skin characteristics between male and female. The results of this study might be applicable to the department of dermatology and cosmetology.

Paul-Gunther Sator, Jolanta B. Schmidt, Herbert Hönigsmann; Comparison of epidermal hydration and skin surface lipids in healthy individuals and in patients with atopic dermatitis; J Am Acad Dermatol, March 2003

The water content of the stratum corneum and the skin surface lipids form a balance that is important for the appearance and function of the skin. Nevertheless, the water content of the stratum corneum and the skin lipids, the water-binding substances from the hydro-lipid film of the skin, act together as a barrier to the environment.

M. Setaro, A. Sparavigna, It is possible to define a "biological age" of the skin?, Skin Research and Technology, Vol. 9, No. 2, May 2003

The evaluation of global skin performance as compared to anagraphical age of the subject is until today dependent on clinical evaluation. By doing so, "pre-clinic" alterations of skin aging, are often missed, loosing the possibility to set up adequate strategies of prevention and treatment. Non-invasiev evaluations based on the measurements of skin parameters allow to monitor functional alterations of the skin with age in objective, sensitive specific and reproducible way.

A. Castro, Evaluation of the moisturizing effectivity of different materials (ES), Colamiq Congress in Cartagena, 2003

La resequedad de la piel tiene diversos origenes: disminucion de lipidos, perdida de agua transepidermal, factores hormonales, geneticos, medicamentosos, ambientales. Durante muchos anos se han buscado medicamento o procedimientos que puedan revertir o detener los danos de la piel que se presntan a traves del curso de la vida, inducidos por factores externos o internos. La condicion de piel seca que afecta a un amplio universo de la poblacion, viendose mas marcada en la poblacion adulta, aunque tambien se presenta en la poblacion joven, juega un papel determinante en el proceso de envejecimiento de la piel.

L.C. de Ramayo, A. Castro, Luis Augusto Castro Sader, Medida de la efectividad de reguladores de grasa de origen natural, Colamiq Congress in Cartagena, 2003

En la actualidad existe un numero considerable de consumidores que presentan una piel con una apariencia aceitosa, grasosa, brillante, untuosa al tacto que desde todo punto de vista resulta desagradable. Hoy en dia, se habla mas de un problema de calidad de sebo en la superficie de la piel que de aumento de la oleosidad y la piel grasosa se ha convertido en un problema serio de la piel.

L.P.L. van de Vijver, E. Boelsma, R.A. Bausch-Goldbohm, L. Roza, Subjective skin condition and its association with objective skin measurements, Cosmetics & Toiletries, Vol. 118, No. 7, July 2003

From a group of 302 volunteers, the authors obtained both selfreported subjective evaluations of skin condition and objective measurements of skin conditions, and then looked for correlations between the subjective and objective kin measures.

B.A. Green, B.L. Edison, R. Hwu, R.H. Wildnauer, Cosmetic uses of benzilic acid – a lipophilic Alpha-Hydroxyacid (AHA), 12th European Academy of dermatology and Venereology, Barcelona 2003 October 15.-18.

The alpha-hydroxyacids (AHAs) are used extensively to enhance skin smoothness and clarity, while promoting overall skin health and normalcy. They are also used adjunctively with topical medications for the treatment of skin conditions including acne and hyperpigmentation. Commonly used AHAs, including glycolic acid and lactic acid , are highly hydrophilic and less lipophilic.

P-A. Wendling, G. Dell'acqua, Skin biophysical properties of a population living in Valais, Switzerland, Skin Research and Technology 2003, 9, 306-311

On average we observed low values of skin capacitance that identify subjects with dry skin. Measures of skin visco-elasticity ratios were also particulary low, while skin pH and sebum content were in the normal range. Age was correlated with a decrease of skin elasticity and sebum content, but there was no correlation with hydration or pH.

H. Dobrev, L. Zissova, R. Iankova, Study of therapeutic effectiveness of four antidandruff shampoos, 12th Congress of the European Academy of Dermatology & Venereology, Oct. 15-18 , 2003, Barcelona, Spain

Dandruff and scalp seborrhoeic can be successfully treated with shampoos containing different active substances. In patients with dry seborrhoea an increase in scalp lipid level occurs due to the elimination of follicular occlusion and improvement of sebum delivery.

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.

E. Hernandez **Bioengineering in Dermatology and Cosmetology: Methods, Studies and Prospects**, SÖFW-Journal, 129. Jahrgang 11-2003.

One of the trends in modern dermatology and its perspectives for the near future are skin bioengineering and imaging. The 1st joint meeting of two scientific societies focusing on measurements and visualisation of skin function, structure and physiology – the International Society for Skin Imaging (ISSI) – took place in Hamburg, May 21-24, 2003. Before that, the meetings and conferences organised by these societies had been held separately.

PCIA, Guangzhou/ China: Conference Proceedings, Step Exhibition Ltd., Kent, UK. 2003.

This CD-Rom contains a number of interesting articles about the usage of different, cosmetological applicants (like applying special, new designed facial colour products, special natural products etc.). The effect on skin is investigated, such as sebum or melanin.

HK Lee, SY Ahn, JH Bae, SJ Moon, IS Chang, **Comparisons of skin characteristics between men and women using non-invasive methods in young healthy Asians**, Skin Research and Technology, Vol. 9, Nr. 2, May 2003, "Abstract Nr. P84".

Objective: Skin has different properties depending on intrinsic effects such as inherent factors, race, gender, and so on. Besides, it has been known that skin may change because of the environmental stress such as UV, climate and life style.

P.-G. Sator, J.B. Schmidt, H. Hönigsmann; **Clinical Evidence of the Endocrinological Influence of a Triphasic Oral Contraceptive Containing norgestimate and Ethinyl Estradiol in Treating Women with Acne vulgaris**; Dermatology 2003;206: 241-248

Acne vulgaris is a multifactorial inflammatory follicular skin disorder occurring in pilosebaceous units, especially on the face and the trunk. The major etiological factors are increased sebum production, hypercornification of the pilosebaceous duct, abnormal microbial flora and inflammation. There are many different faces of acne. Acne and acneiform eruptions affect persons of all ages, beginning with neonatal acne and progressing to include rosacea in older persons. Acne vulgaris is the most common skin disorder, affecting close to 80% of people at least once between 11 and 30 years of age.

H. Ranc, A. Elkhyat, C. Servais, B. Launay, Ph. Humbert, **Coefficient de friction et mouillabilité de la muqueuse linguale : influence d'une couche de mucus salivaire**, Nestlé Research Center, Nestec Ltd. P.O. Box 44, 1026 Lausanne, Suisse.

Les aliments, une fois en bouche, sont cisailés et comprimés entre la langue et des surfaces telles que les dents et le palais. La tribologie appliquée aux surfaces interagissant en bouche devrait permettre d'expliquer certains phénomènes physio-chimique qui régissent la perception orale de la structure des aliments.

Dr. M. Fröschle, Dr. R. Plüss, A. Peter, F. Etzweiler, Phytosteroids for skin care, Personal Care, Vol. Sept. 2004.

Healthy skin is a largely self-regulating system. In order to keep metabolic processes functioning efficiently, the relevant biological precursors and activators must be available to the skin cells for metabolism. If, due to age-related changes, the body no longer provides a sufficient amount of certain substances, an additional external supplement can proactively support the biological processes and thus counteract the advance of the ageing process.

John J. Wille, Corneotherapy: skin hydration and occlusivity of some commercial skin moisturizers and skin protectants, Skin Research and Technology 10, Abstracts, 2004.

Corneotherapy is defined here as a topical treatment that improves the condition of the stratum corneum. In this respect, cosmetic and dermatological vehicles play an important role independent of their capacity to deliver drugs or cosmetic actives, in formulating an optimal topical treatment for skin diseases such as atopic dermatitis.

S. Savic, S. Tamburic, M. Savic, N. Cekic, J. Milic, G. Valuta, Vehicle-controlled effect of urea on normal and SLS-irritated skin, International Journal of Pharmaceutics, Okt. 2004.

It is known that, depending on the concentration, treatment with urea could improve skin barrier function, despite its penetration-enhancing properties. This controversial skin effect of urea has been explored systematically in this study in terms of the effect of vehicle on the performance of urea. In the first part, a series of four semi-solid emulsions with 5% (w/w) urea, varying in the type of emulsion, nature of emulsifier and polarity of oil ingredients, have been evaluated with regard to their skin hydrating and transepidermal water loss (TEWL)-modifying properties.

K. Wanatabe, M. Masuda, K. Nakamura, T. Inaba, T. Yanagida, T. Yanaki, A. Noda, A new makeup remover prepared with a system comprising dual continuous channels (bicontinuous phase) of silicone oil and water, IFSCC Magazine, vol. 7, No. 4, Oct.-Dec. 2004.

Removing makeup is considered to be the first step in the skincare process. Makeup that has served its purpose is a kind of impurity that should ideally be removed completely to maximize the effects of skincare products applied afterwards. However, the use of silicone resins has significantly improved the long-lasting property of makeup with the result that makeup can hardly be removed efficiently either with surfactant-type cleansers like soaps or with oil-based cleansers like liquid crystalline cleansers.

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, The assessment of efficacy, tolerability and cosmetic features of Diosperin K 1% PROLONGATUM cream containing complex of diosmine, hesperidine and vitamin K, Poster Presentation Centre for Science and Research Dr. Irena Eris, 2005.

Face redness and couperoses can cause very negative visual effect and influent on patients' quality of life. Such type of skin requires special regime. Application of very gentle cleaners, sun protective products and appropriate cosmetic creams can improve the skin condition and minimize the red face effect.

Toru Tsuchiya, Shinichiro Haze, Tetsuji Hirao, Junichi Hosoi, Akio Kikuchi, Ken Shoji, Masahiro Tanida, Takanari Tsuda, ODORANT INHALATION LOWERED STRESS LEVELS SYSTEMICALLY, SUBSEQUENTLY RESULTING IN THE IMPROVEMENT OF CUTANEOUS FUNCTIONS: LINKAGE BETWEEN OLFACTORY SENSATION AND SKIN, Presentation at the IFSCC in Florence 2005. *

Our research conducted over several years has demonstrated that odorant inhalation produces an effect on cutaneous functions by inducing changes in the neuroendocrinological system. For example, inhalation of the natural sedative component of the rose flower, DMMB (1,3-dimethoxy-5-methylbenzene), inhibited an increase in plasma cortisol levels and barrier recovery delay or an increase in forehead sebum, which was induced by stress. These findings were obtained using authentic experimental patterned stress and short-period odorant inhalation.

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.

D. Kowatzki, C. Machold, K. Krull, P. Elsner, J.W. Fluhr, Regeneration kinetic of sweating, Stratum Corneum hydration, Surface pH, Sebum production and mechanical properties is not altered by regular sauna bathing, Presentation on the ISBS Meeting 2005 in Philadelphia, USA, abstract.

Wellness and especially sauna bathing are of growing interest in modern health care. The positive effect of sauna for general health is well documented. However, to our knowledge no controlled studies have been published on the effect of sauna on skin physiology.

Yujin Sunwoo, Chinmei Chou, Junko Takeshita, Motoko Murakami, Yutaka Tochiwara; Physiological and Subjective Responses to Low Relative Humidity; Journal of Physiological Anthropology 2005; pp. 7-14

In order to investigate the influence of low relative humidity, we measured saccharin clearance time (SCT), frequency of blinking, heart rate (HR), blood pressure, hydration state of skin, transepidermal water loss (TEWL), recovery sebum level and skin temperature as physiological responses. We asked subjects to judge thermal dryness and comfort sensations as subjective responses using a rating scale. Sixteen non-smoking healthy male students were selected. The pre-room conditions were maintained at an air temperature (T_a) of 25°C and a relative humidity (RH) of 50%. The test room conditions were adjusted to provide a T_a of 25°C and RH levels of 10%, 30% and 50%.

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.

J.W. Fluhr, Chr. Uhl, Hautphysiologische Messungen in der täglichen Praxis: Corneometrie und Sebometrie bei physiologischen und krankhaften Hautveränderungen, Diagnostische Verfahren, Kap. Nr. 37, 2005, pp. 321-345.

Grundlagen der Methoden: Bei der Corneometrie handelt es sich um eine nicht-invasive Messung der Hautoberfläche zur Bestimmung des Feuchtigkeitsgehalts im Stratum corneum. Die Messung erfolgt auf kapazitivem Weg und beruht auf der Tatsache, dass Wasser eine von anderen Stoffen sehr unterschiedliche Dielektrizitätskonstante besitzt.

H. Dobrev, Treatment of Acne with a new topical preparation. A clinical and instrumental study, EADV, October 2006, Rhodes, Greece (abstract).

Background: Sepicontrol A5 is a cosmetic active ingredient designated to improve the appearance of oily, acne prone facial skin. Aim: To evaluate the sebum regulation activity, clinical efficacy and safety of a 3% and 4% Sepicontrol A5 containing cream and gel in subjects with mild to moderate acne. *

*F. Tokumura, Y. Yoshihura, T. Homma, H. Nukatsuka, Regional differences in adhesive tape stripping of human skin, Skin Research and Technology 2006, 12, pp. 178-182. **

Medical pressure-sensitive adhesive tapes are applied to various regions of the human body for many purposes. Although some adhesive tapes are designed for a specific purpose and applied to a single region, such as first-aid bandages for the fingers and a variety of adhesive pads for foot-care, a large number of adhesive tapes are applied to various regions.

D. Khazaka, Objective Measurement at all Stages of the treatment, 5th Asia Pacific Conference on Antiaging Medicine, Bali, September 2006.

The days are over when a dermatologist only looked at the skin to make a diagnosis and to decide about the following treatments and to recommend skin care products to use. For almost 20 years now there is scientific equipment available to measure different parameters on the skin, such as hydration and sebum level, pH, elasticity, pigmentation skin texture and wrinkles and many more.

Hiroshi Fujita, Tetsuji Hirao, Motoji Takahashi, A Simple and non-invasive visualization for assessment of carbonylated protein in the stratum corneum, Skin Research and Technology 2007, pp. 84-90.

Stratum corneum (SC) ist the interface of body and environment and is continuously exposed to oxidative stress, resulting in oxidative modification of proteins. Consequent carbonylated proteins (CPs) have so far been labelled with 2,4-dinitrophenyl (DNP) hydrazine and subsequently detected with anti-DNP antibody.

Uwe Wollina, Jörn Kubick,i Dexpanthenol supports healing of superficial wounds and injuries, Kosmetische Medizin 5+6/2006, pp. 240-249.

Oberflächliche Hautverletzungen und Wunden sind häufig. Unter Einsatz eines Spektrums verschiedener In-vivo-Modelle der epidermalen Barrierestörung und der Wundsetzung untersuchten wir das Potential der topischen Dexpanthenol-Anwendung in der Förderung der epidermalen Regeneration und der Wundheilung.

Barbara-Isabell Bettzüge-Pfaff, H. Prieur, Nutzen einer adjuvanten Basiscreme bei trockener, atopischer Haut, Kosmetische Medizin 5+6/2006, pp. 261-263.

Im Rahmen eines dermatologisch kontrollierten Anwendungstests und hautphysiologischer Messungen an Patienten mit atopischem Ekzem hat sich eine lipidreiche Basiscreme auch bei Kindern als effektive und gut verträgliche Formulierung erwiesen. Nach Anwendung der Creme wurde eine Steigerung der Hautfeuchtigkeit und Hautfettung sowie eine Verbesserung der Hautbarrierefunktionen erreicht.

Catherine Lenaers, David Brunet, Katia Ladegaillerie, Magalie Pinel, Brigitte Closs, Influencing the Equilibrium of the Cutaneous Ecosystem to Improve the Properties of Skin Prone to Acne, IFSCC magazine-vol. 9, no 4/2006, pp. 305-310.

The skin is colonized by a variety of microorganisms such as *Propionibacterium acnes*, *Staphylococcus epidermidis* and *Malassezia furfur* that are in a stable balance and form the resident skin

flora. The homeostasis of this ecosystem is of fundamental importance since it plays a barrier role by limiting the invasion and growth of pathogenic bacteria on the skin surface.

Ronald Rizer, Nathan Trookman, James Herndon, Thomas Stephens, A 4-week, randomized, double-blind, parallel group trial evaluating the efficacy and tolerability of sebum control AB14 J AM ACAD DERMATOL

Excessive production of sebum on acne prone individuals often leaves skin with an undesirable appearance that emphasizes facial shine, acne lesions, and enlarged pores. The factors that often contribute to this appearance include family history, hormonal activity changes, stress and the use of certain types of birth control pills.

Maggie Fox, It's true – Stress Makes Teens Break Out, 2007 ABC News Internet Ventures

Teen-Agers who claim that stress makes them break out are telling the truth: The stress of taking an exam can make pimples worse, researchers reported on Tuesday. And surprisingly, inflammation may be to blame and not greasy skin, said Dr. Gil Yosipovitch, a professor of dermatology at Wake Forest University School of Medicine.

Gil Yosipovitch, Mark Tang, Aerlyn G. Dawn, Mark Chen, Chee Leok Goh, Yiong Huak Chang, Lim Fong Seng, Study of Psychological Stress, Sebum Production and Acne Vulgaris in Adolescents, Acta Dermato-Venereologica, Volume 87, Issue 2, March 2007, pp. 135-139

Sebum production is thought to play a major role in acne vulgaris in adolescents. Psychological stress may exacerbate acne; however, it is not known whether the perceived association between stress and acne exacerbation is due to increased sebum production.

A. Firooz, F. Gorouhi, P. Davari, M. Atarod, S. Hekmat, M. Rashighi-Firoozabadi, A. Solhpour Comparison of hydration, sebum and pH values in clinically normal skin of patients with atopic dermatitis and healthy controls, 2007 The Author(s), Journal compilation, Blackwell Publishing Ltd.

The water content of the stratum corneum and skin surface lipids forms a balance that is important for the appearance and function of the skin. An impaired balance may lead to the clinical manifestations known as "dry skin", which is particularly seen in patients with atopic dermatitis (AD).

Laurence Ambroisine, Khaled Ezzedine, Anissa Elfakir, Sophie Gardinier, Julie Latreille, Emmanuelle Mauger, Michel Tenenhaus, Christiane Guinot, Relationships between visual and tactile features and biophysical parameters in human facial skin, Skin Research and Technology 2007; 13: pp. 176 – 183

Skin properties, such as colour, hydration and texture, can be studied on a qualitative basis by a clinical assessment or on a quantitative basis using techniques that measure biophysical properties of the skin. The aim of this study was to explore the links between facial skin features and a range of skin biophysical parameters using multivariate methods.

Walaiorn Pratchyapruit, Katsuki Kikuchi, Pimonpun Gritiyarangsarn, Setsuya Aiba, Hachiro Tagami, Functional analyses of the eyelid skin constituting the most soft and smooth area on the face: contribution of its remarkably large superficial corneocytes to effective water-holding capacity of the stratum corneum, Skin Research and Technology 2007, 13, pp. 169 – 175

The eyelid constitutes a unique area on the face because of its soft, smooth and thin skin distinct from that of other facial portions. Its softness facilitates their easy compliance to blinking movement, which is indispensable to protect the wet surface of the eyeball. Moreover, the skin of the eyelid does not show any prominent follicular orifices of an oily appearance even in adults.

Lawrence Ambroisine, Khaled Ezzedine, Anissa Elfakir, Sophie Gardinier, Julie Latreille, Emmanuelle Mauger, Michel Tenenhaus, Christiane Guinot, **Relationships between visual and tactile features and biophysical parameters in human facial skin**, Skin Research Technology 2007; 13: pp. 176-183

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M. Kerscher, T. Reuther, G. Schramm, **Chlormadinonacetat enthaltende Mikropille verbessert unreine Haut**, Frauenarzt 48 (2007), Nr. 4, pp. 373-378

Moderne Mikropillen zeichnen sich besonders durch eine Reihe von Zusatznutzen aus. Den wichtigsten stellt die Verbesserung des Hautbildes dar. Für die Chlormadinonacetat-haltige Mikropille Belara wurde in klinischen, kontrollierten Studien bei leichter bis mittelschwerer Akne die Überlegenheit im Vergleich zu einer Levonorgestrel-haltigen Mikropille und zu Plazebo nachgewiesen

Slaheddine Marrakchi, Howard I. Maibach, **Biophysical parameters of skin: map of human face, regional, and age-related differences**, Contact Dermatitis 2007; 57, pp. 28-34

The face showed anatomical variation on reaction to chemicals, which could be related to differences in biophysical parameters. 10 young human volunteers (24-34 years) and 10 old volunteers (66-83 years) were studied to prepare a map of the human face based on regional variations and age-related differences by measuring various biophysical parameters.

Eunyoung Lee, Seunghun Kim et al. **Comparison and correlation between stinging responses to lactic acid and bioengineering parameters**, Contact Dermatitis 2007; 57; pp. 158-162

Sensitive skin has been described as a skin type showing higher reactivity than normal skin. By our consumer surveys, approximately 30% of the subjects believe that they have sensitive skin. However, consumer-perceived cutaneous reactions are usually scientifically unconfirmed.

Firooz A., Gorouhi F., Davari P., Hekmat S., Atarod M., Rashighi Firoozabadi M., Solhpour A.; **Comparison of hydration, sebum and pH values in clinically normal skin of patients with atopic dermatitis and healthy controls**; Clinical and Experimental Dermatology 2007; 32, S.321-322;

The water content of the stratum corneum and skin surface lipids forms a balance that is important for the appearance and function of the skin. An impaired balance may lead to the clinical manifestations known as "dry skin", which is particularly seen in patients with atopic dermatitis (AD).

Gabriele Feller-Heppt, Christina Wagner, Selma Ugurel, **Wirksamkeit und Patientenzufriedenheit verschiedener Pflegecremes bei Atopikern und Neurodermitispatienten im erscheinungsfreien Intervall**, Kosmetische Medizin 5/2007, pp. 28-34

Bei Neurodermitispatienten stehen vor allem die Symptome trockene Haut und ausgeprägter Juckreiz im Vordergrund. Hierdurch kommt es zu vermehrtem Kratzen und nachfolgend möglicher-

weise zum Eintritt infektiöser Erreger bei gestörter Hautbarrierefunktion und gestörter zellulärer Immunität. Ein neuer Ekzemschub kann entstehen und den Juckreiz noch verstärken.

G. Maaß, Anwendungsstudie der sebamed TROCKENE HAUT Produkte bei Kindern mit atopischem Ekzem, Kosmetische Medizin 6/2007, pp. 288-290

Es erfolgte in einer vierwöchigen Anwendungsuntersuchung eine klinische Überprüfung der sebamed TROCKENE HAUT Pflegeprodukte – Waschlotion, Pflegelotion, Tagescreme und Nachtcreme – bei Kindern mit atopischem Ekzem anhand von quantitativen Meßgrößen, von klinischen Befundurteilen sowie von qualitativen Beurteilungen der Pflegewirkungen.

Renata Debowska, Carmen Vincent, Karolina Bazela, Marcin Kruszewski, Barbara Winkler-Spytkowska, Adam Maciejczyk, Katarzyna Rogiewicz and Irena Eris; The repair effect of Folacin on skin damage due to radiotherapy; Kosmetische Medizin 2/2007

Zusammenfassung Obwohl medizinische und pharmakologische Fortschritte unübersehbar sind, ist die Behandlung bösartiger Tumore nach wie vor mit einem hohen Risiko unerwünschter Nebenwirkungen verbunden. Insbesondere bei der Strahlentherapie sind allgemeine Nebenwirkungen (Krankheitsgefühl und Unwohlsein) und lokale Nebenwirkungen wie kutane Strahlenschäden zu beobachten. Kutane Strahlenschäden bedürfen einer entsprechenden Behandlung und Pflege sowohl während der Radiatio als auch nach Beendigung der Strahlentherapie. Viele Patienten greifen dabei nach kosmetischen Produkten, die die vorher geschädigte wieder in eine gesunde Haut zurückführen sollen. Ziel dieser Studie war es, Wirksamkeit, Tolerabilität und kosmetische Qualität einer Folacin-haltigen Creme während und nach Strahlentherapie zu untersuchen. In vitro wurden Experimente an primären Fibroblastenkulturen vorgenommen: Der Alkalincomet-Assay wurde verwendet, um die Reparaturwirkungen von Folacin auf Röntgenstrahlen-induzierte DNA-Schaden zu erfassen. Bei 41 Patienten mit Strahlentherapie führten wir in vivo Untersuchungen durch. Über nichtinvasive Verfahren wurden die Parameter Erythem, Feuchtigkeit der Haut und Talgbildung an den bestrahlten Körperregionen (Wangen, Hals oder Brust) jeweils 2, 4 und 8 Wochen nach Behandlung mit der Creme erfasst. Die Repairrate von DNA Schäden war nach 15–30 min post radiationem höher bei Folat-behandelten primären Fibroblastenkulturen als bei Kontrollen. Unsere Daten sprechen für eine Folsäure-modulierte Reparatur der DNA mit einer rascheren Verknüpfung der Strangbrüche. Wir stellen eine wirksame Verbesserung der Hautparameter durch Folin-haltige Creme unter Radiotherapie fest. Die Anwendung des Verums verminderte im Vergleich zu Kontrollen Rötung und Couperose, verbesserte aber auch Hautfeuchte und Sebumgehalt. Die Creme wurde sehr gut durch die Patienten toleriert und ihre kosmetischen Eigenschaften waren überzeugend.

V. Delvigne, E. Segot, D. Compan-Zaouati, P. Wolkenstein, S. Consoli, C. Rodary et al, Development and Validation of a Questionnaire to Evaluate How a Cosmetic Product for Oily Skin is Able to Improve Well Being in Women, 21st World Congress of Dermatology, Buenos Aires, Argentina

Purpose of the study: To develop and validate a questionnaire to assess the psychological and psychosocial effects of oily skin condition in women and the outcome of a targeted cosmetic skin care treatment. Methods: We developed a concise 18-item questionnaire (OSSIQ), including 2 dimensional scales (emotional state and social behaviour), to assess the impact on self image and confidence of oily skin condition.

C. Orlandi, R. Loubies, S. Baeza, C. Reyes, X. Worstman, Clinical Experience of the Treatment with Pro-Xylane TM, Isobioline TM and Phytocomplex TM on Chilean Women with Hormonal Aging, 21st World Congress of Dermatology, Buenos Aires, Argentina

An open and prospective study was performed in order to evaluate the action of a formulation with pro-xylane, isobioline and phyto-Complex in 59 patients with hormonal aging during a period of twelve weeks. An open and prospective study was performed in 59 patients, between 50 and 65 years

of age (average 55 years old), with hormonal aging in order to evaluate the action of a formulation with –xylane, isobioline and phyto-complex.

N. Garcia Bartels, A. Mieczko, H. Proquitté, R. Wauer, T. Schink, Ul Blume-Peytavi, Influence of Bathing in Newborns: A Prospective, Randomized Clinical Study on Skin Barrier During the First Four Weeks of Life, 21st World Congress of Dermatology, Buenos Aires, Argentina

Background: The adapting process of skin barrier to extra-uterine life and the influence of bathing on term neonates's skin is not completely understood. Thus, we investigated the effect of bathing on skin barrier during the first four weeks of life. Methods: Monocenter, prospective, randomised study with 57 healthy full-term newborns (32 boys and 25 girls).

JW. Fluhr, M. Miteva, G. Primavera, M. Ziemer, P. Elsner, E. Berardesca, Functional Assessment of an Acidic Skin Care System in Patients under Chemotherapy, 21st World Congress of Dermatology, Buenos Aires, Argentina

Background: Cancer patients undergoing chemotherapy frequently experience skin problems e.g. xerosis. The aim of this study was to verify whether a concomitant treatment with an acidic washing and emollient products (pH 5.5) can significantly improve the quality of the skin in such patients

Naveed Akhtar, Gulfishan Ahmed, Mahmood Ahmed, Nazar Ranjha, Ahmad Mahmood, Grapefruit Extract Cream: Effects on Melanin and Skin, Cosmetics and Toiletries magazine, Vol. 123, No. 1/January 2008, pp. 55-68

Emulsions are thermodynamically unstable systems defined as microscopic dispersions of liquid droplets contained within another liquid, with a diameter ranging from 0.5 to 100 um. Emulsions usually consist of mixtures of an aqueous phase with various oils or waxes.

STUDY OF FOUR ANTIDANDRUFF SHAMPOOS THERAPEUTIC EFFECTIVENESS

Dobrev H., Yankova R., Zissova L.

Department of Dermatology, Medical University, Plovdiv, Bulgaria

Summary. The aim of this study was to evaluate and compare the therapeutic effectiveness of four antidandruff shampoos, applied twice weekly for 4 weeks, using clinical assessment, measurement of skin lipids and mycological investigation. A total of 44 volunteers with seborrhoeic dermatitis of the scalp, divided into four groups, were studied. Significant improvement of the severity of scalp oiliness, scaling and itching as well as negative cultures for *Pityrosporum ovale* were observed in all patients.

Hautanalysegeräte Neue Wege

in der Hautdiagnostik Der Einstieg in die professionelle Hautberatung ist stets das persönliche Gespräch mit dem Kunden. Dabei ist es entscheidend, neben der Beurteilung des optischen Eindrucks der Haut herauszufinden, welche individuellen Lebensgewohnheiten vorliegen. Genetische Disposition, Ernährung, Risikofaktoren wie Rauchen, Stress oder hoher Alkoholkonsum, sportliche Aktivitäten, Schlafverhalten und Alter beeinflussen entscheidend den Hautzustand und müssen daher in die Beratung mit einbezogen werden. Basis einer qualitativen und auf die Bedürfnisse des Kunden zugeschnittenen Körperkosmetik ist die Bestimmung des individuellen Hautzustands. Diese Information ist unentbehrlich, um eine fundierte Hautberatung durchzuführen. Auf dieser Diagnose soll der gesamte Pflegeplan aufgebaut werden, der essentiell für den Erfolg der Behandlung und damit für die Zufriedenheit der Kunden ist. Lesen Sie, welche Methoden es gibt und wie man vorgeht.

iacinamide

Rosemarie Osborne 1, Akira Matsubara 2, Kimberly Biedermann 1, Greg G. Hillebrand 1, Beve Improvement in Facial Surface Sebum and Pore Appearance with Niacinamide (Poster)

Rosemarie Osborne 1, Akira Matsubara 2, Kimberly Biedermann 1, Greg G. Hillebrand 1, Beverly Schnell 1 and Kukizo Miyamoto 2

1 The Procter & Gamble Company, Cincinnati, Ohio, U.S.A. and 2Procter & Gamble Far East Inc., Kobe, Japan

Introduction: One of the signs of aging facial skin is the appearance of enlarged pores. Previous studies have suggested a link between excessive sebum secretion and enlarged pores. To explore this link further, two types of studies were conducted: surveys comparing surface sebum and pores in Asian and Caucasian women, and studies evaluating the effects of use of a 2% niacinamide-containing facial moisturizer. Niacinamide has been shown to reduce sebum production in an *in vitro* human skin model, and the appearance of surface sebum *in vivo*. In the present studies, the effects of a niacinamide-containing facial moisturizer on both surface sebum and pore appearance are established. Matsubara 2, Kimberly Biedermann 1, Greg G. Hillebrand 1, Beverly Schnell 1 and Kukizo Miyamoto

The Procter & Gamble Com

Study of Efficacy Comparison of 20 Anti-Oily Hair Shampoos Using Sebumeter SM 810

M. R. Pena Ferreira, Pharm.,D., P. Costa, Ph.D., M. F. Bahia, Ph.D. ; Department of Pharmaceutical Technology- Faculty of Pharmacy-Porto University ; Rua Anibal Cunha, 164, 4050-047 Porto-Portugal.

Summary: There are many different types of shampoos available to the consumer to control greasy hair. In our study we compare the efficacy of 20 shampoos in the treatment of oiliness using a non-invasive method (Sebumeter SM 810). A sample of 400 male and female volunteers with greasy hair or tendency to oily (ages 18 - 65) was tested. All products reduced the sebum excretion rate after the 10th application of the tested shampoo. No significant differences were found between the results of the shampoos. ati, Ohio, U.S.A. and 2Prr & Gamble Far East Inc., Kobe, Japan

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 hydrolipidic 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.

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; Ifssc 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.

Effect of an acute psychological stress on sebum assessed by SKINSPACE Sorbent Tape method

S Sisalli, N Voisin, A Adao, M Lebel, D Mougin. Parfums et Beauté, Sophia Antipolis ; Ifssc Barcelona 2008

Responsible for skin shininess and enlarged pores, the excess of sebum could cause inconveniences at all ages of a woman life. Among other biological and environmental factors, the stress is often mentioned as a parameter influencing the sebum hyperproduction. As the data available in literature are mainly related to young people suffering from acne, the objective of the present study is to evaluate the impact of an acute psychological stress on sebum secretion of 18 female volunteers, with healthy and normal skin, from 18 to 65 years old.

Clinical and Instrumental Evaluation of the Facial Photoageing on Indian Women; *Catherine Heusèle¹, Caroline Derome², Deepa Kanchankoti³, Rashmikant Mohile³, Armand Bernois¹, Sylvianne Schnebert;* *Ifsc Barcelona 2008*

Daily exposure to the sun leads to skin photodamage. Clinical signs of photoageing due to biological and structural alteration of the epidermis and dermis will be function of level of UV exposure and individual protection capacities. The influence of ethnic origin on skin structure and function is more and more investigated but few instrumental or clinical studies describe the characteristics of healthy skin and their evolution with age on Indian women living in India [1]. Previous clinical, instrumental or biological studies were carried on Indian subjects living in South Africa or England.

Anti-acne activity of Thyme oil and its applications for cosmeceutical acne care: An innovative Anti-acne challenger; *Ha Hyun Jo¹, Chang Gyu Han¹, Kwan Young Jeong¹, Jang Su Kim¹, Byeong Jun Park¹,* *Ifsc Barcelona 2008*

The skin disease which acne occurs in papule, pustule, cystoma and tuber for teenagers and young generation. The origin of acne takes part in various factors. The main factors are 1) increased Sebum 2) cornification of sebaceous glands 3) Propionibacterium 4) inflammation.

Parastoo Davari, MD, Farzam Gorouhi, MD, Sirous Jafarian, MD, Yahaya Dowlati, MD, PhD, and Ali-reza Firooz, MD; **A randomized investigator-blind trial of different passes of microdermabrasion therapy and their effects on skin biophysical characteristics;** *International Journal of Dermatology 2008, 47, S. 508-513*

Microdermabrasion (MDA) was developed in 1980s, and rapidly became a popular modality in superficial skin resurfacing. Its safety, simplicity, no need for anesthesia, prompt recovery and modest equipment costs hold a wide appeal for both physicians and patients. This non-invasive mechanical technique is used in management of fine rhytides, mottled pigmentation, clogged pores, acne, acne scars, and stretch marks.

S. Davoudi, B. Sadr, A. Firooz, S. Keshavarz, M. Naghizadeh; **FP0444 COMPARATIVE STUDY OF SKIN SEBUM AND ELASTICITY LEVEL IN PATIENTS WITH SULFUR MUSTARD-INDUCED DERMATITIS AND HEALTHY CONTROLS;** *Abstract; EADV Paris 09/2008*

Background: Sulfur mustard –a chemical agent- has numerous proven acute and chronic effects on skin. Xerosis which might be due to damage of hydrolipidic barrier of skin is the most common complaint of veterans. Objective: This study was designed to evaluate skin sebum and elasticity in veterans with a history of sulfur mustard contact.

J. An, K. Kim, H. Eun; **FP0710 THE EFFICACY OF LIPOSOME ENCAPSULATED 0.5% 5-ALA FOR THE TREATMENT OF ACNE IN ASIAN SKIN;** *Abstract; EADV Paris 09/2008;*

Background and objectives Photodynamic therapy using topical 5 aminolevulinic acid (5-ALA) has been proposed as a treatment option in acne vulgaris, but at least 48-hour sun avoidance after treatment was strongly recommended due to the risk of post-treatment photosensitivity. Recently, lower concentration form of 5-ALA was introduced to minimize the risk. The aim of this study was to evaluate the efficacy and safety of liposome encapsulated 0.5% of 5-ALA (PhotoSpray®,DDD, Denmark) in photodynamic therapy of inflammatory acne and its effects on sebum secretion in Asian skin

J. Nasarre, G. De la Cruz, M. León, M. Espadas, C. Trullás; FP0030 EFFECTIVENESS OF A CLEANSING GEL AND A CREAM GEL CONTAINING ZINCAMIDA® AS ADJUVANT TREATMENT AND AS SINGLE TREATMENT FOR INFLAMMATORY ACNE; Abstract; EADV Paris 09/2008

BACKGROUND. The appearance of bacterial resistance to antibiotic treatment for acne presents a serious problem. Using combined therapies, or alternating treatment with other anti-bacterial and anti-inflammatory products that do not induce bacteria resistance, such as zincamida® may offer a solution.

OBJECTIVES. To assess the effectiveness of a cleansing gel and a gel cream containing zincamida® as adjuvant treatment and as an alternative treatment to antibiotics in the resolution of inflammatory acne.

T. Chen, T. J. Stephens, J. H. Herndon, F. Forster, Y. Appa; FP0005 SKIN CLEARING BENEFITS OF A CLAY-BASED CLEANSER MASK CONTAINING SALICYLIC ACID AND A NOVEL MICROGEL COMPLEX; Abstract; EADV Paris 09/2008;

The ease and simplicity of being able to use an acne cleanser on a daily basis to treat and control acne is highly desirable for many acne sufferers. A daily acne cleanser with salicylic acid that can also be used as a mask further provides the additional benefits of softness, freshness and deep pore cleanliness that are much sought by people with acne prone skin. This dual purpose cleanser mask is now upgraded with a novel microgel complex that contains an antimicrobial, sebum solubilizers and skin conditioning agents.

Rabin Medical Center, October 2008, Botulinum Toxin for Treatment of Seborrhc Dermatitis in Parkinsonian Patients

There's high incidence of seborrhc dermatitis among patients suffering from Parkinson's disease. Seborrhc dermatitis is caused by increased exertion of sebaceous glands. Previous studies have shown an increase of sebum excretion rate in parkinsonian patients. Other studies demonstrated improvement in seborrhc dermatitis after anticholinergic treatment. From these studies we concluded that there might be hyperactivity of the parasympathetic system among PD patients, that cause increased exertion of sebum, therefore local injection of botulinum toxin, which inhibits acetylcholine release, might improve the rash of seborrhc dermatitis. 40 patients suffering from Parkinson disease or other parkinsonian disorders will participate in this study. Before treating the patients with botulinum toxin, we will measure the sebum exertion with the sebumeter device and make clinical evaluation of the rash. We will also take a picture of the rash. Then Botulinum toxin (60- 100 units) will be locally injected to the rash area. Two weeks after the injection the patients will be called and evaluated clinically and by the sebumeter. Then they will be checked again after 3 weeks, after a month and after two, three and four months.

Davari, Parastoo; Gorouhi, Farzam; Jafarian, Sirous; Dowlati, Yahya; Firooz, Alireza; A randomized investigator-blind trial of different passes of microdermabrasion therapy and their effects on skin biophysical characteristics; International Journal of Dermatology, Volume 47, Number 5, May 2008 , pp. 508-513(6)

Background: Microdermabrasion (MDA) is a safe, simple, and beneficial technique for superficial skin resurfacing. Despite its popular usage, few studies have assessed the efficacy of different MDA protocols applied at the present time. Objectives: To assess the effects of MDA generally, as well as to compare the effects of two vs. three passes of MDA in each session for a total number of six therapeutic sessions on skin biophysical characteristics.

Farsinejad K, Firooz A, Davoudi S, Robati R, Hoseini M, Ehsani A, Sadr B.; **Biophysical characteristics of skin in diabetes: a controlled study**; Department of Dermatology, Razi Hospital, University of Tehran/Medical Sciences, Tehran, Iran.

Background: Cutaneous complications are common in diabetes. Previous assays suggest that hyperglycemia and decreased insulin signal are involved in the impairment of skin function. The aim of this study was to evaluate the biophysical characteristics of skin in patients with diabetes mellitus and compares them with healthy non-diabetic controls. Objective: To measure biophysical characteristic of skin including transepidermal water loss (TEWL), water content, sebum and skin elasticity in patients with diabetes mellitus and compare them with healthy non-diabetic controls.

Hristo Dobrev **Clinical and instrumental study of the efficacy of a new sebum control cream**; Journal of Cosmetic Dermatology, 6; 113-118;

Some botanical compounds are considered useful to reduce sebum production. To evaluate the efficacy of a sebum control cream containing polyphenol-rich extract from saw palmetto, sesame seeds, and argan oil in subjects with oily facial skin. The study was carried out during the winter months (January and February).

Hristo Dobrev **Treatment of acne with a new topical product. A clinical and instrumental study.** www.teknoscienze.com; submitted to the Journal Household and Personal Care Today;

We studied the efficacy of a new topical product containing a combination of lipoaminoacid capryloyl glycine, sarcosine, and Cinnamon zeylanicum bark extract in 19 subjects with mild to moderate acne after twice daily application for a 7-week treatment period. Determination of efficacy included clinical assessment using acne lesion counting and disease severity scoring, bioengineering measurements of sebum on the facial skin using a photometric device and sebum collector foils.

S. Gong, C. Lv., KR Feingold, X. Zhang, S. Xin, C. Tu, L. Dui, PM Elias, M. Man; **Variation of skin surface pH, sebum content and stratum corneum hydration with age and gender in Chinese population**; Journal of Investigative Dermatology (2009), Volume 129

Evidence suggests the importance of skin biophysical properties in predicting diseases and in developing appropriate skin care. The results to date of studies on skin surface pH, stratum corneum (SC) hydration, and sebum content in various gender and ages have been inconclusive in part due to small sample size. Additionally, little is known about skin physical properties of Asian, especially Chinese, subjects.

Masaki Yamaguchi, Yusuke Tahara, Teruhiko Makino, Tadamichi Shimizu, Akira Date; **Comparison of Cathepsin L activity in cheek and forearm stratum corneum in young female adults**; Skin Research and Technology 2009K; 15; 370-375

Noninvasive determination of skin surface proteolytic activity may be useful for the diagnosis of human disease and the potential of skin. The cathepsin family is one of the metabolizing enzymes of the skin cell and it includes aspartic protease cathepsin D and cysteine proteases cathepsin B, H, and L. Cathepsin L is a lysosomal cysteine protease with a major role in intercellular protein catabolism.

H. Seirafi, K. Farsinejad, A. Firooz, SM Davoudi, RM Robati, MS Hoseini, AH Ehsani, B Sadr; **Biophysical characteristics of skin in diabetes: a controlled study**; JEADV 2009, 23, 146-149;

Cutaneous complications are common in diabetes, with approximately 30% of patients experiencing some skin involvement during the course of their illness; these may also be the first presenting sign of diabetes or even herald the diagnosis by many years. The skin involvement in diabetes encompasses various clinical entities such as acanthosis nigricans, necrobiosis lipoidica, diabetic dermopathy and neuropathy, sclerodema and granuloma annulare.

N. Ismaili, Y. Afifi, B. Hassam, T. Lihoreau, A. Elkhyat, A. Jeudy, P. Humbert; Typology of maghreb skins; ISBS Besancon, 2009

To study the biometric characteristics of maghreb skin using common cutaneous exploration techniques and by comparing the results by age bracket and by sex. This prospective, randomised monocentre study was carried out on the forehead, the cheeks and the forearm of healthy volunteers giving informed written consent. Healthy volunteers were included of both sexes and of maghreb origin who agreed to apply nothing to the face and arms 24 hours before the study and not to participate in any other test during the study period.

F. Morizot, J. Latreille, S. Gardinier, L. Staner, C. Guinot, A. Porcheron, E. Tschachler; Effects of partial sleep deprivation on face appearance and skin properties ; ISBS Barcelona, 2009

A reduction of sleep time on a chronic basis is a hallmark of life in modern society ("modern 24h-society"). Sleep has important homeostatic functions and sleep deprivation has effects on brain plasticity, energy conservation, tissue restoration, immune response and thermoregulatory function. Our objective was to investigate the effect of partial sleep deprivation on facial appearance and on skin functions (skin barrier, skin hydration, skin temperature, sebaceous secretions and skin sensitivity).

A Bigouret, F. de Oliveira, C. Gehin; Objectivation of the individual sensory state by the assessment of specific biophysical properties of the skin in different climatic conditions ; ISBS Barcelona, 2009

The CSTB in Nantes is specialized in the study on the climate effects on buildings and on human comfort. To improve human comfort in different climatic conditions, the CSTB must understand the interactions between the environment, the human body and individual perception. As the skin is a sensory organ and the first barrier between the environment and the human interior, some CSTB researchers have choice to study the biophysical properties of the skin to objectify human perception.

A. Elkhyat, Y. Afifi, B. Hassam, P. Humbert; Human skin wettability cartography; ISBS Besancon, 2009

For decades the surface hydrophobicity has been reported to play an important role in many biological processes, such as cellular adhesion, contact inhibition, elasticity, functionality of tissue membranes, functioning of intracellular structures, and adhesion of infectious microorganisms. The skin affinity with water is estimated by measuring of its water contact angle. To establish a cartography of skin's wettability by Ow measuring at nine sites. The hydration and lipidic index (HI, LI) and the skin pH are measured.

W. Siyu, L. Li; Effect of sweating by exercise on stratum corneum hydration, skin surface sebum content and pH value; ISBS Besancon, 2009

The physiological indexes of skin include stratum corneum hydration, skin surface sebum content and pH value, which could reflect physiological state of the local and systematic organism, and also could be affected by many factors from internal or external changes. Many studies have been put on these physiological indexes, but there is no report of studying on effect of sweating by exercise on sebum, hydration and pH value of face skin. To observe the effect of sweating by exercise on stratum corneum hydration, skin surface sebum content and pH value of forehead and pars zygomatica of healthy individuals of different ages in order to collect the numerical data as the reference for exterior use drugs and before / after sports' cosmetics.

Campos PM, Goncalves GM, Gaspar LR; In vitro antioxidants activity and in vivo efficacy of topical formulations containing vitamin C and its derivatives studied by non-invasive methods ; NCBI 2009;

Vitamins C and its derivatives, mainly due to their antioxidant properties, are being used in cosmetic products to protect and to reduce the signs of ageing. However, there are no studies comparing the effects of vitamin C and its derivatives, magnesium ascorbyl phosphate (MAP) and ascorbyl tetra-isopalmitate (ATIP), when vehiculated in topical formulations, mainly using objective measurements, which are an important tool in clinical efficacy studies. Thus, the objective of this study was to determine the in vitro antioxidant activity of AA and its derivatives, MAP and ATIP, as well as their in vivo efficacy on human skin, when vehiculated in topical formulations.

Gaspar LR, Camargo FB Jr., Gianeti MD, Maia Campos PM; Evaluation of dermatological effects of cosmetic formulations containing Saccharomyces cerevisiae extract and vitamins; NCBI 2009,

Saccharomyces cerevisiae extract (SCE) is used in cosmetics since it can act in oxidative stress and improve skin conditions. This study investigated dermatological effects of cosmetic formulations containing SCE and/or vitamins A, C and E. The formulation studied was supplemented or not (F1: vehicle) with vitamins A, C and E esters (F2) or with SCE (F3) or with the combination of vitamins and SCE (F4). Formulations were patch tested on back skin of volunteers. For efficacy studies, formulations were applied on volunteers and transepidermal water loss (TEWL), skin moisture (SM), skin microrelief (SMR) and free radicals protection were analysed after 3h, 15 and 30 days of application

Dr. med. Christine Schrammer-Drusio, Fachfrau in Sachen Haut – die Kosmetikerin als Hautpflegetherapeutin, natur & kosmetik, service, pp. 39

Die Kosmetikerin von heute muss sich in Theorie und Praxis rund um das Thema Haut auskennen. Dafür spielt die fundierte und theorie- sowie fachorientierte Ausbildung und eine stetige Weiterbildung die größte Rolle. Ohne berufliche Fortbildung ist es auf Dauer unmöglich, zeitgerecht und marktorientiert zu arbeiten. Um die Haut der Kundinnen und Kunden für die kosmetische Kabinenbehandlung spezifisch zu bestimmen, liegt ein Schwerpunkt im richtigen Erkennen der Hautgrundbilder und Hautzustände – die so genannte Profi-Hautanalyse. Noch immer werden Hauttypen und Hautgrundbilder häufig verwechselt.

Sang Woong Youn, Jun Hyung Kim, Jai Eun Lee, Sun Ok Kim, Kyoung chan Park, The facial red fluorescence of ultraviolet photography: is this color due to Propionibacterium acnes or the unknown content of secreted sebum? Skin Research and Technology 2009; 15; pp.230-236

Red fluorescence of the face induced by ultraviolet light is thought to be due to Propionibacterium acnes. However, recently there are reports correlating this red fluorescence with the amount of facial sebum secretion. This study was performed to investigate the relationship between the areas of facial red fluorescence with culture results of P. acnes and the amount of sebum secretion. Nineteen patients with acne were included. P. acnes cultures were done on specimens obtained from areas with red fluorescence.

L.-C. Gerhardt, A. Lenz, N.D. Spencer, T. Münzer, S. Derler; Skin-textile friction and skin elasticity in young and aged persons; Skin Research and Technology 2009; 15, pp. 288-298

The mechanical properties of human skin are known to change with ageing, rendering skin less resistant to friction and shear forces, as well as more vulnerable to wounds. Until now, only few and contradictory results on the age-dependent friction properties of skin have been reported. This study has investigated in detail the influence of age on the friction of human skin against textiles. In vivo skin-friction measurements on a force plate were combined with skin analyses concerning elasticity, hydration, pH value and sebum content.

Seyyed Masoud Davoudi, Bardia Sadr, Mohammad R. Hayatbaksh, Saeed Keshavarz, Majid Shohra-ti, Mohammad Mehdi Naghizadeh, Shahab Babakoochi, Mehdi Rashighi-Firouzabadi, Aliresa Firooz; **Comparative study of skin sebum and elasticity level in patients with sulfur mustard-induced dermatitis and healthy controls;** *Skin Research and Technology* 2010; 16: pp. 237-242

Sulfur Mustard is the protagonist of vesicant (blistering) agents that was widely used during the World War I and in the Iran-Iraq war between 1983 and 1988. Although the exact mechanism of SM damage is not clearly understood, this cytotoxic agent is able to alkylate nucleic acids and proteins, degrades cell structure and adducts DNA – its most critical lesion. SM has a predilection for eyes, skin and respiratory tract to induce its local toxic effects. After several hours of intracellular interactions, acute phase symptoms including erythema, itching, burning sensation and vesicles appear.

Hristo Dobrev; **Flourescence diagnostic imaging in patients with acne;** *Photodermatology, Photoimmunology & Photomedicine* 2010; pp. 1-5

Acne is a chronic inflammatory disorder of the pilosebaceous follicles with a multifactorial etiology and pathogenesis. It typically begins in adolescence when androgen hormones stimulate the production of sebum and proliferation of follicular epidermins. In consequence, the openings of hair follicles become plugged with oil secretion and corneocytes. The follicular impactions develop into initially invisible lesions (microcomedones) and then into clinically evident comedones. Microcomedones and comedones are a suitable microenvironment for colonization by cutaneous bacteria, especially *Propionibacterium acnes*.

Yoko Gozu, Mio Moriyama, Keiko Sakai, Shin-ichiro Haze; **Elucidation of Menstrual Cycle-Related Discomfort in Everyday Life and Efficacy of a “Rescue Fragrance”;** *IFSCC Magaine* 2/2010

The body maintains homeostasis in the face of environmental changes through its endocrine system and autonomic nervous system. The autonomic nervous system can operate at a subconscious level and controls many functions of the internal organs. The endocrine system includes eight major endocrine glands that secrete hormones. After delivery through the bloodstream, hormones reach different parts of the body and help to regulate cellular function. Therefore hormones are thought to be a regulatory system that complements the nervous system. In women, the secretion of sex hormones fluctuates dramatically over the course of the menstrual cycle, causing psychosomatic changes.

Mleczo, Anna; **Investigation of skin physiological parameters in term neonates and evaluation of the influence of bathing on skin barrier function in newborns during the first four weeks of life;** 2010 Universitätsbibliothek der Freien Universität Berlin

Ultrastructural studies have shown that the epidermis of full-term infants born after 40 weeks of gestation is morphologically indistinguishable from that of adults. It was therefore assumed that the biophysical properties are similar as well. The present study investigated skin physiology in neonates, especially the barrier function during the first 4 weeks of life and the influence of bathing and washing.

T. Lihoreau, C. Vidal, A. Jeudy, A. Elkhyat, S. Mac-Mary, J.M. Sainthillier, J. lung, H. Bourdin, P. Humbert; **SKIN SEBUM EXCRETION AND SLEEP APNEA;** *ISBS 2010 Buenos Aires, Argentina*

The sleeping apnea syndrome is a common disorder that affects 5% of the population, but its diagnosis is underestimated because physicians forget to ask key questions, and the establishment of polysomnography is cumbersome. But given the relationship between excretion of sweat and some brain dysfunctions (eg Parkinson's disease ...), we wanted to evaluate sebaceous excretion in a population suffering from sleeping troubles, particularly sleep apnea, compared to a control group. Methodology: A preliminary study was then carried out on 26 volunteers (11 women, 15 men, average age = 46.2 years +/-14.8, average Body Mass Index (BMI) = 26.4 kg/m³ +/-5.6) ; they were sorted in two different populations (apnea

versus, n=14, and no apnea syndrom, n=12). Skin and apnea parameters were compared between both groups: a polysomnographic record was done during the night; concerning the skin parameters, the records -realized on the wakening of the patient- concerned sebum excretion (Sebumeter SM 810, Courage & Khazaka), hydration index (Corneometer CM820, Courage & Khazaka), pH (Skin-pH-meter pH900, Courage & Khazaka).

F. Morizot, J. Latreille, S. Gardinier, L. Staner, C. Guinot, A. Porcheron, E. Tschachler; Effects of partial sleep deprivation on face appearance and skin properties; Skin Research and Technology 2010; 16; p. 473-474

A reduction of sleep time on a chronic basis is a hallmark of life in modern society ("modern 24h-society"). Sleep has important homeostatic functions and sleep deprivation has effects on brain plasticity, energy conservation, tissue restoration, immune response and thermoregulatory function. Our objective was to investigate the effect of partial sleep deprivation on facial appearance and on skin functions (skin barrier, skin hydration, skin temperature, sebaceous secretion and skin sensitivity). Fifteen healthy Caucasian women, aged from 30-40 years, have been admitted to the study centre for 12 days. The experimental period was divided into 3 sections.

W. Siyu, L. Li; Effect of sweating by exercise on stratum corneum hydration, skin surface sebum content and pH value; Skin Research and Technology 2010, 16; p. 489

The physiological indexes of skin include stratum corneum hydration, skin surface sebum content and pH value, which could reflect physiological state of the local and systematic organism, and also could be affected by many factors from internal or external changes. Many studies have been put on these physiological indexes, but there is no report of studying on effect of sweating by exercise on sebum, hydration and pH value of face skin. To observe the effect of sweating by exercise on stratum corneum hydration, skin surface sebum content and pH value of forehead and pars zygomatica of healthy individuals of different ages in order to collect the numerical data as the reference for exterior use drugs and before/after sports' cosmetics.

L. Colomb, G. Francois, C. Gevrey-Renaux, F. Flament, L. Bissey, J. Senée; Innovative combination of in vivo methods to assess pores characteristics in surface and volume; Skin Research and Technology 2010; 16

Sebaceous activity, through the number of active sebaceous gland (Sebutape) or sebum excretion (Sebumeter) is known to be highly dependant from age, gender, hormonal status, diet and many other parameters. Nevertheless, pores features, which could be also linked to sebaceous activity, was not often studied. This paper attempts to characterize age differences in skin pores features (visible size, density and volume estimation) using two *in vivo* systems. The efficacy of a cosmetic product on pore characteristics will also be presented. Two *in vivo* imaging systems were used to detect and characterize skin pores

Eunjoo Kim; Gayoung Cho; Sunhye Yu; Hosik Rho; Daejin Min; Duckhee Kim; Hankon Kim
The elasticity, depth of wrinkles, and skin color on the neck determine your neck age and shape; IFSSC 2010 Buenos Aires, Argentina

There are many reports on regional variations in skin properties, but few physiological studies have been performed on the neck. The neck is sun-exposed and we stretch or shrink our neck constantly, so the neck skin can be more apt to be aged. The purpose of this study was to find out the biomechanical and physiological parameter on the neck to change age-dependently and make the photographic scale for the neck age or neck shape. The skin properties on the neck of 56 Korean female volunteers in good health (25-64 years old, 43.1±10.5yr) were assessed non-invasively with the skin measuring devices. And we analyzed the correlation of skin physiological parameters with age.

The neck skin was changed age-dependently. The elasticity, skin lightness was reduced. The depth of wrinkles and TEWL were increased. Based on the correlation parameter to age, we chose the skin color, wrinkles and elasticity for the key parameters to determine the neck age or neck shape. As the elasticity was reduced, the sagging of the neck skin increased. The neck wrinkles increased age-dependently and changed to “U” shape because the neck skin was sagged.

Dr. med. Dipl.-Biochemiker Hans-Ulrich Jabs; Aquaporation – ein neues Verfahren zur Verbesserung der Elastizität und Feuchtigkeit der Haut; Ästhet. Dermatologie 5/2010; pp. 6-12

Als Aquaporine (AQP) werden Proteine bezeichnet, die Kanäle in der Zellmembran – auch in der Haut – bilden, um den Durchtritt von Wasser und einigen weiteren Molekülen zu erleichtern (Membrantransport). Sie werden daher auch Wasserkanäle genannt. Bei der Aquaporation gelingt der Transport von dermo-kosmetischen Substanzen, z.B. Natürlicher Feuchtigkeitsfaktor (NMF) und Hyaluronsäure in liposomaler Formulierung (Koko GmbH & Co.KG, Leichlingen) durch die Barriere der Haut mit Hilfe von hochfrequenten Strömen (radioSURG 2200, Fa. Meyer-Haake GmbH), wodurch die Feuchtigkeit und Elastizität der Haut erhöht wird. Es wird angenommen, dass die Radiowellen die Transportkapazität der Aquaporine für Wasser durch Konformationsänderungen der Proteine im Kanal und durch Lockerung der Wasserstoffbrückenbindungen vergrößern.

TURNA I' LKNUR 1, MEHTAP Ü NL Ü BI Ç AK 1, PINAR EKER 1, H Ü L YA ELL I' DOKUZ 2 & S, EBNEM Ö ZKAN 1; Effects of the 810-nm diode laser on hair and on the biophysical properties of skin; Journal of Cosmetic and Laser Therapy, 2010; 12: 269–275

Introduction : Laser therapy is clinically effective in hair removal; however, despite the development of various strategies, laser procedures still present a risk of adverse effects due to the overheating of the skin. *Objective* : To investigate the effects of 810-nm diode laser treatment on hair and on the biophysical properties of skin by using various non-invasive techniques on various parameters, including hair analysis, surface color changes, integrity of skin barrier, sebum production rate and pH level. *Methods* : In this randomized, right – left comparison study, 35 women with axillary hair received single-session diode laser therapy. Hair analysis and biophysical properties of the skin were assessed before treatment and at weeks 2, 4 and 6 after the therapy. *Results* : Hair density and thicknesses statistically significantly decreased after the first post-treatment evaluation. Regarding comparison of the biophysical properties of the skin, there was no statistically significant difference in the assessments, except for the increase determined during the second week in the erythema index in the laser-treated areas. *Conclusion* : The findings of this study showed that the diode laser can perform a significant reduction in the hair amount without significant epidermal damage, at least for a short period.

Hristo Dobrev; Products for Impure, Acne-Like Skin; J. Fluhr (ed.), Practical Aspects of Cosmetic Testing, Springer-Verlag Berlin Heidelberg 2011

Many people suffer from impure, acne-like skin. This type of skin looks greasy and glossy, rough with enlarged pores, and has a tendency to develop comedones, pimples, and pustules. It feels unpleasant and may be a serious cosmetic problem. The effective control over the impure skin requires daily application of multifunctional cosmetic products for cleansing and intensive care of the skin. Market products should have a proven effect. Testing on human volunteers using sensorial self- and expert evaluation, instrumental skin bioengineering techniques, and questionnaires for quality of life assessment are the preferred ways to prove products claims.

Razvigor Darlenski, Theresa Callaghan, Joachim W. Fluhr; Antiaging and Antiwrinkle Products; J.W. Fluhr (ed.), Practical Aspects of Cosmetic Testing; Springer-Verlag Berlin Heidelberg 2011

The chronological (intrinsic) and extrinsic aging demonstrate typical macroscopic, histological and functional characteristics. The relative improvement in different parameters characterizing aging skin can be used in efficacy proof of antiaging and antiwrinkle cosmetic products. Different ap-

proaches to investigate the efficacy of antiaging products exist such as clinical evaluation and objective assessment with non-invasive methods and invasive procedures. A multiparametric approach is useful in the assessment of antiaging products efficacy. There is no uniform consensus on the protocol and the design of studies aiming efficacy proof of antiaging cosmetics.

Norberto Arnejo, Oscar Carballo, Federico Svarc, Andrea Branca; A renewable, biodegradable substitute for petrolatum; Personal Care, March 2011, pp 120-122

The usage of petrolatum in cosmetics has been under scrutiny recently, particularly within the EC, due to the potential carcinogen and mutagenic effects attributed to traces of impurities generated during its manufacturing process. Even though these questions have been around for a while, its unsurpassable properties as an occlusive have made difficult its replacement in hydrating and moisturising products. But the enforcement of REACH in Europa has accelerated the process, which is the reason why we have focused on searching for (and finding) a viable substitute. The objective of this study was to test a possible substitute to solid Vaseline (petrolatum) to replace it advantageously in treatment creams with a natural, renewable non-toxic and ecologically sound product.

Luigi Rigano, Chiara Andolfatto, Luca Stucchi, Marco Bosco; Hyaluronic Acid Butyric Esters for the Improvement of Skin Functionality; Cosmetic & Toiletries Vol. 126, No. 2/February 2011, pp. 104-111

The word hyaluronic is derived from the Greek *hyalos* meaning “glass” or “transparent” and refers to the vitreous humor, the ocular tissue from which it was first isolated by Karl Meyer and colleagues in 1934. It was later located in many other animal tissues, i.e. synovial fluid, cartilage and the umbilical cord, where it has the same structure and biological activities, described in this article. Hyaluronic acid (HA) is a linear polysaccharide of thigh molecular weight that belongs to the family of mucopolysaccharides or glycosaminoglycans (GAGs), the physiological constituents of the dermal connective tissue in the extracellular matrix. In adult humans, the total amount of HA is equal to approximately 15g, half of which is found in the skin.

Maria Minguet, Rut Barcelona, Eduard Casas, Maite Beltrán, Joan Seguer; Ethyl Lauroyl Arginate HCL for Natural Preservation; Cosmetics & Toiletries magazine, Vol. 126, N0.12/December 2011, pp. 876-883

In recent years, several preservatives either have been banned or their use strongly limited, which is the case for formaldehyde, its releasers and isothiazolinones. In addition, some studies have misleadingly related parabens with a higher risk of cancer; so although parabens are the most commonly used preservatives in skin care due to their low sensitizing potential and good efficacy, with continued scrutiny from the market, many manufacturers are omitting them and promoting their cosmetics as “paraben-free”. Currently, the ideal antimicrobial must show high antibacterial activity yet remain safe for human use and for the environment – and if possible, be based on naturally occurring substances

John Herfs; Sinn und Zweck der kosmetischen Hautanalyse; Manuell oder apparativ?; Beauty Forum 09/2011 pp. 68-70

Was ist Diagnose? Aus dem Griechischen übersetzt, bedeutet das Wort „Beurteilung“. Der ebenfalls griechische Begriff Analyse bedeutet: Bestimmung, Untersuchung, Zergliederung und Auflösung – man möchte also den Dingen auf den Grund gehen. Der sich daraus ergebende Befund ist die Arbeitsgrundlage für die Kosmetikerin. Doch was ist für eine erfolgreiche und nutzbringende Hautanalyse wichtig? Sind es die vielen kostspieligen Geräte, die notwendig sind, um eine professionelle Beurteilung durchzuführen? Oder ist es das geschulte Auge oder gar die feinfühligste Hand der Kosmetikerin, die vieles über das Hautgeschehen wahrnimmt? Auf keinen Fall dürfen Erfahrung und kompetentes Wissen, um negative Hautveränderungen detektivisch aufzuspüren.

Miriam Mateu; Aknehaut – Ein Tripeptid für die Abwehrkräfte der Haut; COSSMA 12/2011; pp. 14-15

Die Haut ist ständig Verletzungsrisiken und Mikroorganismen der Umwelt ausgesetzt und das Stratum Corneum (SC) stellt die erste Schutzbarriere der Haut gegen externe Aggressionen dar. Normale Humanhaut ist von einer grossen Zahl von Mikroorganismen besiedelt, von denen die meisten harmlose Kommensalen sind, die keine Krankheiten verursachen. Physiologische, biochemische, mechanische, immunologische und Umweltvariablen tragen zu einer gesunden Balance zwischen der Haut und ihrer normalen Flora bei. Die Haut ist ständig pathogenen Keimen ausgesetzt. Die physikalische Barriere der Epidermis ist essenziell, aber viele Mikroben haben effektive Strategien entwickelt, die Epidermis zu überwinden. Dennoch wird gesunde Haut nur selten infiziert.

Dr. med. C. Schrammek-Drusio; Haut- und Gesichtsdiaognosen – eine Kernkompetenz jeder Kosmetikerin; dermatologie pp. 32-33

Neben dem Dermatologen ist eine kompetente Kosmetikerin die Experte in Sachen Hautpflege. Doch wodurch zeichnet sie sich aus? Selbstverständlich ist ein umfassendes theoretisches und praktisches Fachwissen erforderlich, komplettiert durch stetige Weiterbildung. Doch wenn Kunden ins Institut kommen, möchten sie auch schnelle Analyseergebnisse und Behandlungspläne erfahren. Grundlage hierfür ist die professionelle Hautdiagnose. Denn alle sich anschliessenden Fragen, etwa welche Produkte und Behandlungen in der Kabine angewendet werden, wie das individuelle Pflegekonzept aussehen soll und welche Präparate sich für die Heimpflege empfehlen, hängen von dem Ergebnis der Hautanalyse ab. Für die kosmetische Praxis bedeutet dies das Erkennen und Einordnen des Hautgrundbildes, des Hautzustandes und der Anomalien bzw. unerwünschten Hautveränderungen.

Sayuri Hyodo, Shuichi Yamana; Fullerene: topical application for acne treatment; Personal Care, March 2012, pp. 30-33

Acne vulgaris is one of the most common diseases of the skin and has increased in frequency over the last 50 years. Skin diseases, such as acne, may not be life threatening but have been associated with depression, anxiety, and serious psychological damage in sufferers. Acne is characterised by the formation of non-inflammatory comedos and inflammatory papules, pustules, nodules, and cysts. Generally, the major pathogenic factors involved in acne are sebum overproduction, follicular hyperkeratinisation, and bacterial hypercolonisation, as well as immune reactions and inflammation. Androgens, microbes, and other pathogenic influences may also lead to acne, this the disease has a complex pathogenesis. Sebum produced by sebaceous glands, altered follicular contents, and reactive oxygen species (ROS) may release fom serious damaged follicular walls.

Thais H. Sakuma, Howard I. Maibach ; Oily Skin : An overview; Skin Pharmacology and Physiology 2012 ; 25 :227-235

Abstract : Oily skin (seborrhea) is a common cosmetic problem that occurs when oversized sebaceous glands produce excessive amounts of sebum giving the appearance shiny and greasy skin. This paper overviews the main concepts of sebaceous gland anatomy and physiology, including the biosynthesis, storage and release of sebum, as well as its relationship to skin hydration and water barrier function. We also address how skin oiliness may vary according to diet, age, gender, ethnicity and hot humid climates. The deeper understanding of this skin type provides the opportunity to better guide patients regaring skin care and also assist in the development of sebosuppressive agents.

S Mac-Mary, A Elkhyat, J Sainthillier, A Jeudy, K Perrot, S Lafond, O Predine, P Mermet, C Tarrit, P Humbert; Specific cosmetic for children: an in vivo randomized single-blind study of efficacy in 7- to 12-year-old children, IFSCC 2012, 15-18 Oct. 2012, Sandton, South Africa

Few cosmetics are dedicated to the skin of children: most of them have been developed for babies or the acneic skin of adolescents. However, literature seems to indicate that the children's sebum levels are very low. The aim of this study was to assess the acceptability and efficacy of a cosmetic specifically formulated for the skin of prepubertal children.

*S Hitzel, R Graf, M Lefort, G Witte, S Daehnhardt-Pfeiffer, H Tronnier, U Heinrich; **Acne prevention based on a specific antioxidant***, IFSCC 2012, 15-18 Oct. 2012, Sandton, South Africa

The sun as the center of our solar system is essential for all life on earth. Yet, excessive exposure to the sun's rays can have negative effects, among which are many potentially damaging consequences to the human body which have been attributed to free radicals. There is also evidence that radical induced peroxidation of squalene in the sebum is one of the conditions for the occurrence of impure skin or acne. Skin tending to acne is a frequent appearance especially in juveniles and young adults and often results from oily skin. It is understood as a complex condition with skin subject to an increased formation of sebum lipids, a bacterial population and an inflammatory alteration.

*Werner Voss, Ilisabe Bunge; **Dermatological Reports on Cosmetics: Intentions and Possibilities***, IFSCC 2012, 15-18 Oct. 2012, Sandton, South Africa

Dermatological reports and claims in accordance with scientific criteria are of decisive value for the safety and efficacy of cosmetics. Whether a cosmetic product is well tolerated or causes irritations or allergic reactions must be proven by dermatological tests. The value of dermatological reports directly depends on the respectability of the commissioned dermatologists. Pitfalls occur, whenever non qualified scientific results are generously used for advertising campaigns like "dermatologically tested", "allergy tested", "hypo-allergen" etc. Additionally a lot of reports are scientifically insufficient. Dermatological reports on cosmetics therefore must be valid in methodology and practical execution. With Dermatest you benefit from more than 30 years of testing experience and dermatological expertise.

*André Barel, R Divisova, P Clarys ; **Determination of the sebum capitation factor of the sebumeter method: effect of application pressure***; ISBS Copenhagen 2012

The determination of the sebum casual level can be carried out using the photometric method (Sebumeter). The Sebumeter measuring probe (cassette) is applied with a constant pressure on the skin surface using a spring system. In the literature values ranging from 6.6 to 10N are reported. The measured quantity of sebum is only a fraction of the real quantity of sebum present (captation factor). Reported captation factor vary from 0.40 to 0.60. It is the purpose of this work to evaluate the captation factor as a function of the applied probe pressure.

*Neelam Muizzuddin, M Matsui, D Yarosh, R Sparacio, T Mammone ; **Topical 5-alpha reductase inhibitors may effectively reduce skin surface sebum production***, ISBS Copenhagen 2012

Many individuals are distressed about having excessively oily skin and seek topical remedies for this condition. Skin having a high water content and low sebum secretion is considered to be highly desirable (moisturized and hydrated but without visible sheen). Sebum lipids are primarily a product of follicular sebocytes, and synthesis is believed to be positively modulated by androgens. The transformation of precursors to androgens such as testosterone is dependent on the enzyme 5-alpha reductase.

*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.

FRITZ Klaus; skin physiologic changes before and after laser treatment; IMCAS , Lecture number: 5462, <http://www.imcas.com/zh/imcas2013/schedule/abstract/id/5462>

The aim of the study was to compare the changes of the biophysical properties and to objectify the effects of treatments with various lasers on skin physiology. Few studies have been reported to compare the effects of various lasers on the skin physiology which could result in a customized skin care post treatment recommendation. The recent development of various biophysical devices has made it possible to have more accurate and objective assessment methods. The functional properties of the skin are measured by utilizing non invasive techniques, including the assessments for, skin color, trans-epidermal water loss (TEWL) and skin hydration and pH (Courage and Khazaka).

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.B. Stefaniak, J. du Plessis, S.M. John, F. Eloff, T. Agner, T.-C. Chou, R. Nixon, M.F.C. Steiner, I. Kudla, D.L. Holness; International guidelines for the in vivo assessment of skin properties in non-clinical settings: part 1. pH; Skin Research and Technology 2013; 19: 59-68

Background: Skin surface pH is known to influence the dissolution and partitioning of chemicals and may influence exposures that lead to skin diseases. Non-clinical environments (e.g. workplaces) are highly variable, thereby presenting unique measurement challenges that are not typically encountered in clinical settings. Hence, guidelines are needed for consistent measurement of skin surface pH in environments that are difficult to control. Methods: An expert workshop was convened at the 5th International Conference on Occupational and Environmental Exposure of Skin to Chemicals to review available data on factors that could influence the determination of skin surface pH in non-clinical settings with emphasis on the workplace as a worst case scenario.

K. Mizukoshi, H. Akamatsu; The investigation of the skin characteristics of males focusing on gender differences, skin perception, and skin care habits; Skin Research and Technology 2013; 19: 91-99

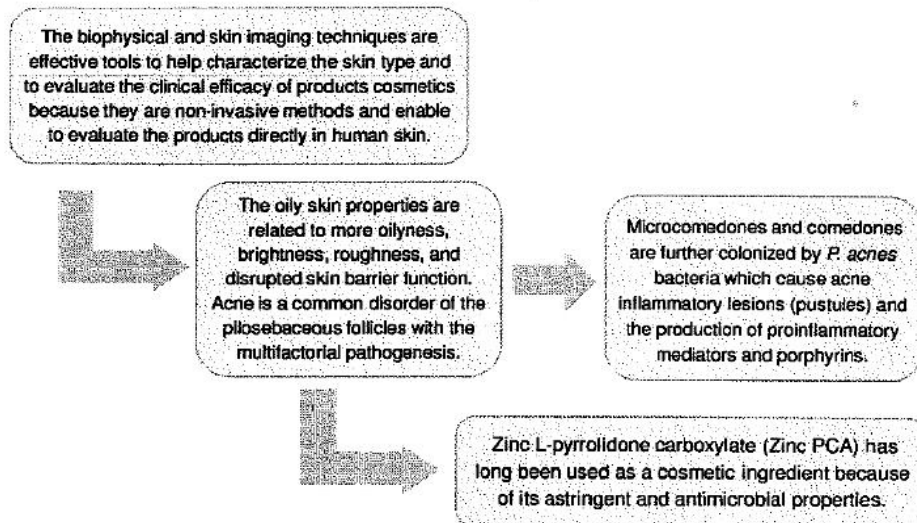
Background/purpose: Various studies have examined the properties of male skin. However, because these studies mostly involved simple measurement with non-invasive devices, a lack of understanding of the properties of male skin remains. Methods: In this study, we focused and investigated not only on simple instrumental measurements but also on gender differences and men's subjective perceptions of skin and daily skin care habits.

C.W. Choi, J.W. Choi, S.W. Youn; Subjective facial skin type, based on the sebum related symptoms, can reflect the objective casual sebum level in acne patients; Skin Research and Technology 2013; 19: 176-182

Background: The relationship between the subjective skin type and the casual sebum level was not fully clarified. Objectives: To investigate the characteristics of subjective skin type and to find the relationship between the subjective skin types and the skin type-related symptoms, casual sebum level, along with the objective skin type. Methods: Seven hundred and nine patients, clinically diagnosed with acne, were included. The questionnaire and the casual sebum level measurement were performed. The determining symptoms of each subjective skin type were investigated. The 95% confidence interval of casual sebum level of each subjective skin type was calculated.

Teixeira, Raquel S., Araújo, Lidiane A., Mercúrio, Daiane G., Application of biophysical techniques to evaluate the efficacy of a gel with zinc pca; University of Sao Paulo, 2013

Introduction



Tomoko Sugawara, Noriaki Nakagawa, Norio Shimizu, Nami Hirai, Yoshifumi Saijo, Shingo Sakai; Non-invasive analysis using three-dimensional ultrasound tomography demonstrates gender- and age-wise differences in facial sebaceous glands; ISBS, Milan 15-16.10.2013

Summary Facial skin is rich in large sebaceous glands (SGs). Although age and gender related differences in SG activity and sebum levels have been reported, changes in SG morphology remain inconclusive. Three dimensional ultrasound microscopy with a central frequency of 120 MHz allows, with a spatial resolution of 20 μm , non-invasive visualization of the structure of skin appendages such as SGs. To explore the differences in SG morphology by age or gender, we measured facial

skin using a high-frequency 3D ultrasound microscope. SG images of the cheek of young male, young female and elderly female subjects were obtained using 3D ultrasound microscopy over an area of 4.8 mm × 4.8 mm and to a depth of 1.5 mm. Then, 150 consecutive B mode images were reconstructed to obtain volume data, and en face images were processed at 700 or 900-µm beneath the skin surface to measure the SG area. In young male subjects, the areas of the low-intensity circular regions, which represent SG morphology, at 900-µm beneath the skin surface were significantly larger than at 700 µm. In contrast to the male subjects, in young female subjects the areas of low-density circular regions at 900 µm did not differ from those at 700 µm.

L. Rigano, A. Bonfigli, S. Cherel, R. Walther; **Quillaja saponin normalises dermal sebaceous imbalance**; Personal Care November 2013

Abstract: Saponin rich extracts of the Chilean soapbark tree *Quillaja saponaria* were traditionally used by the Mapuche Indians for washing and for medical practices. Intense research in recent decades has further proven the applicability of quillaja extracts in food, feedstock and pharma. Due to their exceptional ability as a non-irritant tensioactive, quillaja extracts are widely used in cosmetics as a cleanser, foaming agent, emulsifier and dispersing agent, but its objective efficacy as a bioactive in skin treatment was never studied. Thus the aim of this study was to confirm the property of quillaja saponins to improve the condition of sensitive, greasy and acne-prone skin.

H. Ohno, N. Nishimura, K. Yamada, Y. Shimizu, S. Iwase, J. Sugeno, M. Sato; **Effects of water nanodroplets on skin moisture and viscoelasticity during air-conditioning**; Skin Research and Technology 2013;19;375-383

Background/purpose: In air-conditioned rooms, dry air exacerbates some skin diseases, for example, senile xerosis, atopic dermatitis, and surface roughness. Humidifiers are used to improve air dryness, which often induces excess humidity and thermal discomfort. To address this issue, we investigated the effects of water nanodroplets (mist) on skin hydration, which may increase skin hydration by penetrating into the interstitial spaces between corneocytes of the stratum corneum (SC) without increasing air humidity. Methods: We examined biophysical parameters, including skin conductance and transepidermal water loss (TEWL), and biomechanical parameters of skin distension/retraction before and after suction at the forehead, lateral canthus, and cheek, with or without mist, in a testing environment (24°C, 35% relative humidity) for 120 min.

F. Pouradier, C. Céline, D. Marie-Florence, F. Frédéric, P. Ségolène, D. Stéphane, L. Geneviève; **Functional and structural age-related changes in the scalp skin of Caucasian women**; Skin Research and Technology 2013;19;384-393

Background: Ageing of the skin, being chronological or sun induced is highly documented. Scalp, as a specific skin site, has, however, received little attention. This work attempted to describe functional and structural alterations that occur in scalp skin with ageing. Methods: Two different age groups (N=15 each; 30 ± 3 and 62 ± 2 y.o. respectively) of Caucasian women participated in the study. Some functional parameters (TEWL, Sebum level, Hydration, T°) were recorded on the vertex part of the scalp, after having cut the hair flat on the scalp surface. Imaging of some structural criteria was carried out using high-frequency ultrasound technique and optical coherence tomography on the same scalp site and on the mid-forehead, as a close control skin site.

C. Galzote, R. Estanislao, M.O. Suero, A. Khaiat, M.I. Mangubat, R. Moideen, H. Tagami, X. Wang; **Characterization of facial skin of various Asian populations through visual and non-invasive instrumental evaluations: influence of age and skincare habits**; Skin Research and Technology 2013;19; 454-465

Background/purpose: We aimed to evaluate the impact of age and skincare habits on facial skin of different Asian ethnicities by comparing skin properties and skincare habits among various

Asian populations of varying age groups. Methods: We evaluated approximately 100 female subjects each from a total of eight Asian cities in China, Indian, South Korea, Japan and the Philippines grouped according to age ranging from 14 to 75 years during a summer season. Facial skin was characterized using dermatological examinations of the cheek. Information regarding personal skin-care habits was collected using a questionnaire.

Y. Wu, Y. Niu, S. Zhong, H. liu, Y. Zhen, D. Saint-Leger, M. verschoore; A preliminary investigation of the impact of oily skin on quality of life and concordance of self-perceived skin oiliness and skin surface lipids (sebum); Abstracts from the Member Society Journals, IFSCC Magazine Volume 16, Number 4 2013

Objectives: This preliminary study investigated both the impact of oily skin on quality of life (QoL) and the agreement between subjective oily skin self-assessment and objective skin surface sebum measurement in young to middle-aged Chinese women in Beijing. Methods: A 18-item Chinese version of the Oily Skin Self-Image Questionnaire (QSSIQ) was used to assess the impact of oily skin on QoL in 300 healthy female subjects (age groups: 20-25; 26-30; 31-35). The subjects were divided equally into the oily skin group and the non-oily skin group based on their self-perception of skin oiliness. The level of skin surface lipids (SSL) was measured on the middle of the forehead, and both cheeks using the Sebumeter. In order to assess the agreement between self-perceived skin oiliness and measured SSL, we tentatively used the SSL median value as a dividing point to regroup all subjects.

S. Luebberding, N. Krueger, M. Kerscher, Skin physiology in men and women: in vivo evaluation of 300 people including TEWL, SC hydration, sebum content and skin surface pH; IFSCC Magazine Volume 16, Number 4 2013

Objectives: Evidence is given that differences in skin physiological properties exist between men and women. However, despite an assessable number of available publications, the results are still inconsistent. Therefore, the aim of this clinical study is the first systematic assessment of gender-related differences in skin physiology in men and women, with a special focus on changes over lifetime.

S. Luebberding, N. Krueger, M. Kerscher, Age-related changes in skin barrier function – Quantitative evaluation of 150 female subjects; International Journal of Cosmetic Science, 2013, 35, 183–190

Synopsis: The protection against water loss and the prevention of substances and bacteria penetrating into the body rank as the most important functions of the skin. This so-called 'skin barrier function' is the natural frontier between the inner organism and the environment, and is primarily formed by the epidermis. An impairment of the skin barrier function is often found in diseased and damaged skin. An influence of ageing on skin barrier function is widely accepted, but has not been conclusively evaluated yet. Therefore, the aim of this clinical study was to assess the potential influence of ageing on skin barrier function, including transepidermal water loss (TEWL), stratum corneum hydration, sebum content and pH value. One hundred and fifty healthy women aged 18–80, divided into five age groups with 30 subjects each, were evaluated in this study. TEWL, hydration level, sebum secretion and pH value of hydro-lipid acid film were measured with worldwide acknowledged biophysical measuring methods at cheek, neck, décolleté, volar forearm and dorsum of hand. Whereas TEWL and stratum corneum hydration showed only very low correlation with subject's age, the sebum production decreased significantly with age, resulting in the lowest skin surface lipids levels measured in subjects older than 70 years. The highest skin surface pH was measured in subjects between 50 and 60 years, whereas the eldest age group had the lowest mean pH. The dorsum of the hand was the location with the highest TEWL and lowest stratum corneum hydration in all age groups. The results show that only some parameters related to skin barrier function are influenced by ageing.

Whereas sebum production decreases significantly over lifetime and skin surface pH is significantly increased in menopausal woman, TEWL and stratum corneum hydration show only minor variations with ageing.

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.

B. Gabard, A.O. Barel, P. Clarys; Sebumetry and Sebumtape; Non Invasive Diagnostic Techniques in Clinical Dermatology; Springer Berlin Heidelberg 2014; ISBN 978-3-642-32108-5

Introduction: Sebum is the general term defining the lipids excreted by the sebaceous glands and spreading on the surface of the skin. These skin surface lipids (SSL) are in fact a mixture of the epidermal lipids and lipids from the sebaceous glands (sebaceous lipids). The quantity and the composition of SSL are not the same on different areas of the human body. Epidermal lipids are found on the whole body and are the sole component of SSL in anatomical regions where no or only few sebaceous glands are present. High quantities of SSL are present on cutaneous areas with many sebaceous glands such as the face (forehead, nose and cheeks), the scalp and the upper parts of the trunk and of the back. Here the proportion of sebaceous lipids may be important (up to 95-97%) and the one of epidermal lipids negligible (3-5%).

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.

S.H. Youn, C.W. Choi, J.W. Choi, B.R. Kim, S.Y. Byun, S.W. Youn; Novel facial cosmetic area 'O zone' shows unique characteristics in sebum excretion and acne lesion distribution; Skin Research and Technology 2014; 20: 164-169

Background: We usually divided cosmetic facial zone into the T zone and U zone by the level of sebum secretion. Our recent studies suggested that the perioral area showed different characteristics in the aspect of acne development. Objective: To investigate the unique characteristics of the O zone (perioral area) among the three facial areas. Methods: A total of 102 patients clinically diagnosed as acne vulgaris were included. The acne lesions were counted from the clinical digital photographs by facial areas. The sebum level was measured using Sebumeter. Area-weighted (AW) sebum and AW density of three areas of face were calculated. Statistical analysis was performed according to age and gender.

S. Luebberding, N. Krueger, M. Kerscher; Age-Related Changes in Male Skin: Quantitative Evaluation of One Hundred and Fifty Male Subjects; Skin Pharmacol Physiol 2014;27:9–17

Background/Purpose: Modern men have changed their beauty and grooming habits, which has resulted in an increasing demand for cosmetics for men. However, very little information is available about the dermatological needs of male skin. Therefore, the aim of this present clinical study was to conduct the first systematic assessment of the skin physiology of men with special attention to lifetime changes. *Methods:* A total of 150 healthy male subjects (aged 20– 70 years) were selected following strict criteria, including age, sun behavior and smoking habits. Transepidermal water loss (TEWL), hydration level, sebum production and pH values were measured with worldwide-acknowledged biophysical measuring methods at the forehead, cheek, neck, volar forearm and dorsum of hand. *Results:* TEWL and sebum production vary by localization, but generally not with increasing age, whereas stratum corneum (SC) hydration decreases significantly at the face and neck. The greatest decrease was assessed at the forehead. Skin surface pH significantly increases with aging in the face.

E.J.Kim, J.Y.Han, H.K.Lee, Q.Q.He, J.C.Cho, L.Wei, X.Wang etc.; Effect of the regional environment on the skin properties and the early wrinkles in young Chinese women; Skin Research and Technology 2014; 20: 498-502

Background: There are ethnic differences in the skin characteristics, also the skin is susceptible to be influenced by the external environment such as UV radiation and the climates. It can be shown that the skin in same race or twins varies by the environment. *Objectives:* This study was designed to investigate the skin characteristics and the early wrinkles of young Chinese women from four different regions, and to identify the correlation among the wrinkles, the other skin characteristics, and environmental conditions. *Methods:* A total of 441 healthy Chinese women aged between 20 and 35 years participated in the study: 110 from Beijing, 110 from Shanghai, 111 from Wuhan, and 110 from Guangzhou. The skin hydration, sebum contents, TEWL, pH, elasticity, and wrinkles were measured on the cow's feet area.

K.Shingaki, S. Kawaguchiya, Y. Hasegawa, M. Sumitani, Y.Yamamoto, K. Torii; Analysis of environmental factors and related molecular mechanisms that reduce cutaneous sensation and the development of cosmetics to prevent and improve functional decline of cutaneous sensation; IFSCC 2014 Paris

Summary: The beneficial effects of touch have been well investigated in infant psychological and physiological development and adult homeostasis. Cutaneous sensation, which facilitates the beneficial effects of touch, alters under the influence of disease and aging. However, the environmental factors that affect cutaneous sensation, their related molecular mechanisms, and the possibility of cosmetics against decline have not been well studied. In this study, we showed a significant positive correlation between age and the perception threshold of a 2000-Hz current which stimulates A -fibres and a significant negative correlation between a 2000-Hz current perception threshold (CPT) and the skin's physiological parameters. In addition, ultraviolet (UV) radiation significantly increased the 2000-Hz CPT in the skin, decreased the expression of neuroprotective growth factors, and altered the expression of matrix components which are the scaffoldings of nerve fibres in the normal human dermal fibroblasts. Furthermore, we showed a significant 2000-Hz CPT decrease 1 month after treatment with cosmetics that included moisturizing ingredients and vitamins. From these results, it is suggested that chronic UV exposure induces the functional decline of cutaneous sensation by decreasing the neuroprotective functional components of the skin and that cosmetics are useful for preventing and improving the decline of cutaneous sensation.

L. Gallego; **Pore refining and control of sebum production**; Household and Personal Care Today, Vol. 9 nr. 3 May/June 2014

Introduction: Oily skin is a prevalent problem affecting men and women of all ages and ethnic groups. Although, generally speaking, an oily skin does not have serious consequences on body functions, a chronically oily skin can lead to obvious aesthetic problems (a greasy shiny skin with enlarged pores, acne...) and it can cause negative psychological effects (1). Several studies claim that between 66 percent and 75 percent of young people from 15 to 20 years are affected by this problem. However, it does not affect only young people, since it has been seen that half of women between 20 and 30 years old and also 70 percent of Asiatic women from 40 to 60 years complain about problems related to oily skin such as enlarged pores (2). Pores are conically shaped holes, full of nucleated cells, located in the skin furrows. Nowadays, pore size is known to be related to the size and activity of sebaceous gland, thus if we reduce this activity we will also obtain narrower pores (3).

G.W. Nam, J.H. Baek, J.S. Koh, J.K. Hwang; **The seasonal variation in skin hydration, sebum, scaliness, brightness and elasticity in Korean females**; Skin Research and Technology 2015; 21: 1-8

Background/purpose: Age, gender, regional, and ethnic differences influence skin conditions. The purpose of this study was to observe the effects of environments, especially the air temperature, relative humidity, air pressure, duration of sunshine, and precipitation on skin and the seasonal variation in skin hydration, sebum, scales, brightness, and elasticity in Korean females.

K. Isoda, Y. Takagi, K. Endo, M. Miyaki, K. Matsuo, K. Umeda, K. Umeda-Togami, H. Mizutani; **Effects of washing of the face with a mild facial cleanser formulated with sodium laureth carboxylate and alkyl carboxylates on acne in Japanese adult males**; Skin Research and Technology 2015; 21: 247-253

Background/purpose: Washing the face with a mild cleanser is generally recommended for acne care. Occasionally, the general public has the misconception that acne is exacerbated by cleansers and furthermore it has concerns about inducing skin irritation and xerosis by intensive washing. Recently, we developed a new cleanser based on sodium laureth carboxylate and alkyl carboxylates (AEC/soap) that cleans sebum well without penetrating the stratum corneum.

H. Chajra, F. Lefevre, P. Salmassinia; **Multifunctional actives for oily skin and scalp disorders**; Personal Care; May 2015

Though the conventional hair care market is a mature one, there are still many opportunities to innovative and radicalise this sector. As the needs of consumers are becoming more complex, the corresponding products evolve towards more sophisticated and solution-oriented concepts by default. Just in the first half of 2014, 72% of global hair care launched had a "beauty enhancing" claim. Between 2009 and 2014, there were almost 10,000 product launches that addressed oily skin and oily hair concerns.

Y. Takagi, N. Tanaka, M. Miyaki, K. Takeuchi, K. Matsuo; **An effective novel facial cleanser for mild acne: Cleanser formulated with Sodium Laureth Sulfate and Alkyl Ether Carboxylates**; H&PC Vol. 10 (2) March/April 2015

Abstract: Many people suffer from acne. Washing the face with cleansers is generally recommended for acne care and cleansers containing salicylic acid are frequently used in the United States. However, salicylic acid has many side effects such as inducing dryness and irritation. Here we demonstrate that a facial cleanser based on alkyl ether carboxylates (AEC) and sodium laureth sulfate (SLES), which does not contain anti-acne ingredients including salicylic acid, improved the acne more quickly than general cleansers containing salicylic acid (1.5%). No side effects were observed

and a favorability rating was obtained from the subjects in a questionnaire. These results suggest that the skin cleanser formulated with AEC and SLES is an effective cleanser for the care of mild acne.

C. Uhl, D. Khazaka; Claims and measurement methods for hair and scalp; Personal Care March 2015

Hair diversity (style, shape, growth pattern or colour) is one of the most important features to define us physically. Therefore it is no surprise that the market of hair care products with a value of US\$39 billion is one of the most important sectors in the complete area of cosmetic products. Hair care products for women are the most frequently bought and used cosmetic products of all. Shampoos and conditioners are leading in the field. For men, hair care is the most important and favoured sector of all cosmetics.

I. Waller, B. Suter, S. Hettwer, B. Obermayer, S. Bänziger; In-Vitro Corneometry and Tewametry – Setting up skin substitute models to evaluate cosmetic moisturising materials; H&PC, Vol. 10 (4) – July/August 2015

Abstract: Moisturisers improve skin hydration by using humectants and/or occlusive agents. Their efficacy is investigated by monitoring skin hydration or transepidermal water loss. In-vivo measurements, however, are costly and we therefore aimed to provide equivalent skin substitute in-vitro models. Two major models were established: collagen or synthetic membranes placed on agar-agar 'subsurface' gels. Their suitability for in-vitro hydration testing was evaluated by assessing their ability to accurately differentiate well-established moisturising ingredients. Second, the models were used for proof-of-concept investigations, e.g. assessing a novel active ingredient's moisturising efficacy. Indeed, the models successfully discriminated between occlusive and emollient, as well as between formulations with different moisturising characteristics. Taken together, each model had its strengths and weaknesses. In combination, however, such models may facilitate preliminary efficacy testing and thereby prove supportive for product development.