The EDEN–IDEA Congress: 3rd International Meeting on Epidemiology and Prevention of Skin Diseases and the 6th Annual Scientific Meeting of the International DermatoEpidemiology Association

June 9–11, 2001, Noorwijkerhout, the Netherlands

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0022-202X/01/$15.00 •

01

Calcium Channel Blockers as Precipitating or Exacerbating Factors in Hospitalized Patients with Psoriasis Vulgaris: A Case Control Study

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Background *In vitro* evidence suggests that intracellular calcium metabolism influences keratinocytes differentiation. However, only few reports described exacerbation of psoriasis or psoriasiform eruptions due to intake of calcium channel blockers.

Objectives We conducted a case-control study in order to evaluate the association between exposure to calcium channel blockers and psoriasis or psoriasiform eruptions.

Methods Data were obtained through a retrospective assessment of the files of 150 patients hospitalized for psoriasis or psoriasiform eruptions in the Department of Dermatology and 150 matched control patients. Exposure to calcium channel blockers was recorded in case and control patients. F-Step multivariate logistic regression model was used for analysis of data.

Results Calcium channel blockers were taken by 13 patients in the case group as compared to 3 patients in the control group. Exposure to calcium channel blockers was significantly associated with psoriasis (odds ratio: 4.6, 95% confidence intervals; 1.2–21.0). Calcium channel blockers were associated with precipitation of new onset psoriasis ($n = 2$), as well as with the exacerbation of existing psoriasis ($n = 11$), but not with psoriasiform eruptions. 3/13 patients (23.1%) had palmo-plantar involvement and 1/13 patients (7.7%) had a positive family history of psoriasis. The calcium channel blockers consumed by the patients were as follows: nifedipine ($n = 10$), felodipine ($n = 2$) and amlodipine ($n = 1$). The median latent period between the beginning of intake of calcium channel blockers and precipitation or exacerbation of psoriasis was 28 months, ranging from 4 to 143 months. Seven patients had concomitantly taken beta blockers. A multivariate logistic regression analysis demonstrated that intake of calcium channel blockers was significantly associated with psoriasis ($p < 0.02$).

02

Gender Differences in Quality of Life of Subjects with Psoriasis

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Objective To describe health-related quality of life (QOL)of subjects with psoriasis, and to explore which conditions are linked to poorer levels of QOL.

The Italian version of the Skindex-29 QOL questionnaire was administered to subjects with psoriasis seen at IDI from Feb.-Aug. 2000. Higher scores indicate poorer QOL.

Results A total of 377 subjects (227 males) agreed to participate, and 369 (97.9%) completed the Skindex-29. The overall total Skindex-29 mean scores were 40.0 for males and 49.1 for females. Scores were consistently higher for females in all subscales (data not shown). Factors associated with poorer quality of life both for males and females were SAPASI, physicians' severity rating, arthritis (self-reported), symptoms (e.g. pruritus, burning), and lesions on the palms of the hands.

		Males	Females				
Variable	Levels	N	Scores	p-value	N	Scores	p value
Age at onset (years)	<15	19	32.7	0.150	22	37.7	<0.001
	15–29	91	38.3		51	44.0	
	30–39	35	44.2		19	47.4	
	40+	82	41.7		50	59.9	
BMI (NIH classif.)	<18.5	–	–	0.456	10	41.4	0.061
	18.5-24.9	70	41.6		61	45.3	
	25.0-29.9	100	38.0		34	49.4	
	30+	54	41.2		32	57.8	
Lesions on face	No	152	38.9	0.293	105	46.8	0.092
	Yes	73	41.9		34	54.4	
Lesions on genitals	No	54	39.1	0.299	105	46.3	0.033
	Yes	171	42.3		34	55.9	

Conclusions Older age at onset, obesity, and lesions on the face or on the genitals are associated with poorer quality of life only in women. Dermatologists should be aware that similar ''objective'' levels of severity imply a higher disease burden for women.

03

Incidence of Atopic Dermatitis Among Children in Denmark During the 1990s. Results of Two Population Based Studies

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Objectives To study the 1993 and 1998 cumulative incidence of atopic dermatitis at age 7 among children born in Denmark in order to throw light on possible changes of the incidence during the 1990s. Further to study a possible association between atopic dermatitis and socio-economic factors, i.e. Maternal/parental educational level.

Methods Historical follow-up among two random samples of children born in Denmark from 1984 to 1994 drawn from the Danish Medical Birth Register. Data was collected by: mailed questionnaire collecting data on atopic dermatitis using the UK diagnostic algorithm and physician diagnosis; the Danish National Population Register collecting data on deaths, emigrations and family members; the Children's database at Statistics Denmark collecting data on maternal and the highest parental educational level.

Results In 1993 the cumulative incidence of atopic dermatitis at age 7 was 18.9% among 1060 children (response rate 93%). In 1998 the cumulative incidence rate at age 7 was 19.6% among 9744 children (response rate 79%). In the study performed in 1998 the cumulative incidence of atopic dermatitis at age 14 using a physician diagnosis was 20.1% in the families with the lowest educational level and 20.6% in the families with the highest educational level; p-value (trend) = 0.28. Using the UK diagnostic algorithm did not change the result substantially.

Conclusions No difference in the age-adjusted atopic dermatitis incidence at age 7 was observed within the 5 years observation period in Denmark during the 1990s. Maternal/parental educational level was not associated with the incidence of atopic dermatitis neither using the physician diagnosis nor the UK diagnostic algorithm.

04

The Italian Epidemiological Study on Atopic Dermatitis (SEIDA): Prevalence in 9-Year-Old Children

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Objective To estimate the prevalence of atopic dermatitis (AD) in a population of 9-year-old children in different Italian areas, and to investigate factors associated with presence of AD.

Methods To minimize sampling variability we used a proportional sampling design, with children selected in 4 geographical areas according to the distribution (by sex, age, and region) reported in the 13th Italian general census. In each participating center the number of children was proportional to the population of the sampled city. In each city, using systematic sampling, the appropriate number of schools was chosen, and within each school classes were selected using simple random sampling without replacement. The total target population (hypothetical AD prevalence 0.14, $\alpha = 0.05$, $\beta = 0.20$, exposure prevalence [data not shown] 0.50–0.10, minimum detectable significant difference OR 1.6–2.0) was 1444 children. Parents and teachers answered standardized questionnaires on potential risk factors, and children were examined by an experienced dermatologist. AD was defined according to the UK Working Party's diagnostic criteria for AD.

Results Overall, 1356 children were visited, and 88 had AD (6.7*%, 95%CI 5.3–8.1 [*estimates corrected for sampling design]). The area and sex specific estimates are summarized below:

	Males			Females			Total		
Area	N	AD	(%)	N	AD	(%)	N	AD	(%)
North-West	129	5	3.9	126	4	3.2	255	9	3.5
North-East	85	10	11.2	79	7	9.3	164	17	10.3
Central	175	3	1.9	171	8	4.7	346	11	3.3
South	319	30	9.4	272	21	7.2	591	51	8.3
Overall	708	48	6.8	648	40	6.2	1356	88	6.7*

Conclusions This is the first Italian population-based study estimating prevalence of AD. Although it is limited to 9-year-old schoolchildren in urban/metropolitan areas, it provides sound evidence on the occurrence of AD in this population. This information should be useful for associations of patients and their families, teachers and other educational workers, dermatologists, and health care planners and providers.

05

The NHS Systematic Review of Treatments for Atopic Eczema

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Objectives This scoping review sought to produce an up-to-date ''map'' of randomized controlled trials (RCTs) of interventions for the prevention and treatment of atopic eczema in order to identify research gaps and, where possible, to inform treatment recommendations.

Methods Data sources included electronic searching of MEDLINE, EMBASE, the Cochrane Controlled Clinical Trials Register, the Cochrane Skin Group Register, handsearches of conference proceedings, follow-up of citations in articles and personal contacts with researchers and industry. Only RCTs where a physician diagnosed atopic eczema were included. 2 people conducted data extraction, and eligible studies were quality-rated and quantitatively summarized where possible.

Results Although a total of 1165 possible RCTs were identified, 893 of these had to be excluded due to lack of appropriate data. The 272 remaining RCTs covered at least 47 different treatment interventions. Quality of reporting was generally poor. Statistical pooling was only possible for oral cyclosporin. Although there was reasonable RCT evidence to support interventions such as topical corticosteroids and ultraviolet light, there was insufficient evidence to make recommendations on some interventions such as allergen avoidance, evening primrose oil and topical doxepin. There was no convincing RCT evidence to suggest any clear benefit to avoidance of enzyme washing powders, biofeedback, twice-daily as opposed to once-daily topical steroids, topical steroid/antibiotic combinations and antiseptic bath additives. There was a complete absence of RCT on issues such as oral prednisolone, wet-wrap bandages and salt baths.

Conclusions The evidence base for atopic eczema is characterized by a profusion of short-term trials of 'me too' products, a lack of common outcome measures which measures things that are important to patients, poor standards of trial reporting and lack of data on questions that people with atopic eczema and their physicians deem to be important.

06

Topical Steroids in Mild to Moderate Eczema – Short Bursts of Strong Preparations or Continuous Use of Mild Ones?

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Background Topical corticosteroids have been in use for over 40 years to treat atopic eczema, yet it is still not known if using a strong steroid for a short burst is better than milder ones. There is a large variation in practice surrounding this issue, reflecting the lack of evidence.

Objectives (a) To demonstrate that a 3-day burst of a potent steroid, followed by a 4-day rest period, is more effective in treating disease exacerbations and in maintaining remissions in children with atopic eczema, when compared with weak preparations used for longer periods; (b) To establish that such a ''short burst'' regimen does not increase the frequency of thinning of the skin.

Methods 174 community and 33 hospital patients participated with mild to moderate atopic eczema. This was a randomized, double-blind, parallel group study of 8-week duration. Two primary outcomes were examined (i) the number of relapses and (ii) the number of days free of scratching. Other secondary outcomes included the number of nights during which sleep was disturbed; the number of treatment failures in each arm; a severity index (SASSAD); two quality-of-life measures (CLQI, DFI) and change in skin thickness as measured by B-mode ultrasound.

Results Data collection is due for completion by March 2001. Preliminary results will be presented at the meeting.

Conclusion Atopic eczema is usually a chronic relapsing disease. This study provides new data on the effects of different topical corticosteroid regimens on disease chronicity as well as short-term control.

07

A Twin Study of Eczema and other Atopic Disorders in a Large UK Female Population

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Objectives and methods We sought by use of a classical adult twin study to investigate the relative contribution of genetic and environmental effects on the expression of eczema and further to explore the relationship between eczema and other atopic disorders such as hay fever and asthma. A cotwin control analysis and a cross sectional study were carried out with potential risk factors for eczema examined by comparing twins with eczema to those without. 456 monozygotic (MZ) twin pairs and 1090 dizygotic (DZ) pairs with a mean age of 46 years (18–79) were recruited between 1996 and 2000 from the St Thomas UK Adult Twin Register. History of eczema, hay fever and asthma was ascertained via a validated questionnaire in addition to other demographic and epidemiological data. Model-fitting analyses were performed to quantify the genetic and environmental components of the variance in eczema. Conditional logistic regression was used to analyze 139 MZ and 356 DZ twin pairs discordant for eczema.

Results The prevalence of eczema was 31% in both MZ and DZ twins. The case-wise concordance for eczema was 0.53 in MZ compared with 0.38 in DZ. The best fitting model showed that 61% of the variance in eczema was explained by additive genetic factors (95% CI, 49–72%) and the remaining 39% by unique environmental effects (95% CI 28–51%). Analyses of twin pairs discordant for eczema yielded odds ratios for hay fever associated with eczema of 1.8 (95% CI 0.96–3.4, $p = 0.07$) and 1.4 (95% CI 0.96–2.0, $p = 0.08$) for MZ and DZ twins, respectively. The odds ratio for asthma associated with eczema in discordant MZ twins was 1.6 (95% CI 0.95–3.5, $p = 0.24$) and was 1.0 (95% CI 0.63–1.6, $p = 1.0$) in discordant DZ twins. However, in unmatched, analyses of the overall twin population using the General Estimating Equation, significant association was also observed between eczema and asthma for both MZ and DZ twins.

Conclusions Genetic effects are important in the development of atopic dermatitis with 61% of the variance explained by genetic effects. An elevated risk of eczema in the presence of hay fever and possibly asthma persisted in the MZ discordant pairs suggesting that environmental factors are also critical in the expression of atopic phenotypes. Further studies will investigate genetic correlations between these atopic phenotypes. (This work was funded in part by MRC, Wellcome, ARC, Chronic Diseases Research Fund and Genomics).

08

Epidemiology of Food Allergy in Adults: Associations with Atopy

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Objective Food allergy is believed to be a frequent medical problem, however, information from epidemiological studies in adults is scarce. We determined the frequency of adverse reactions and allergic sensitization to food in a large adult sample. Furthermore, the associations between food allergy and other outcomes of atopy were studied.

Methods Within a population-based, nested case-control-study a standardized interview was performed to obtain detailed information on adverse food reactions and the history of atopic diseases. In addition a skin prick test with 10 common food and nine aeroallergens was performed.

Results Overall, 20.8% of the 1537 studied subjects (50.4% female, age median 50 years) reported adverse food reactions (women 27.5%, men 14.0%; OR 2.35, CI 1.80–3.08). Nuts, fruits, and milk most frequently led to adverse effects and the sites of manifestation were oral (42.9%). skin (28.7%), gastrointestinal (13.0%), systemic (3.2%), and multiple (12.2%). One quarter of the subjects (25.1%) was sensitized to at least one food allergen in the prick test, with hazelnut l7.8%), celery (14.6%), and peanut (11.1%) accounting for most of the positive reactions. The corresponding frequency estimates for the representative study base ($n = 4178$) were 15.5% for reported adverse reactions and 16.8% for allergic sensitization. Relevant cross sensitization between food and aeroallergens were observed. Food allergic subjects (positive history and sensitization to corresponding allergen) suffered significantly more often from urticaria. asthma, atopic eczema and especially hay fever (89.1%) than controls (8.1%; $p < 0.001$). Furthermore, hay fever was treated significantly more often in subjects who suffered from concomitant food allergy.

Conclusion Food allergy in adults is frequently reported and if associated with hay fever tends to aggravate the latter since therapeutic needs are enhanced.

09

Incidence Rates of Irritant Contact Dermatitis in Different Occupational Groups

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Objectives Irritant contact dermatitis (ICD) is believed to be more frequent the cause for occupational skin diseases (OSD) than allergic contact dermatitis (ACD). However, one has to consider that a distinction between ICD and ACD can be difficult, because of the simultaneous exposure to irritant and sensitizing agents playing an essential part in the development of occupational contact dermatitis. We conducted a population-based prospective study to identify occupational "high-risk" groups for ICD. The data are based on all cases of workers' disability claims reported to our Register of OSD (BKH-N) in North Bavaria, Germany.

Methods In the time period from 1990 to 1999, 5285 cases were closed and recorded. Due to the cooperation with the German State Institute of Labor and Occupation and the known number of employees in the occupations we were able to calculate the incidence rates in different occupations classified to 24 groups.

Results In the 24 occupational groups in 3097 (58.6%) cases (38.7% males, median age 25 years) an QSD was stated with an overall annual incidence rate of ICD of 3.8 cases per 10 000 workers and of ACD of 3.5 cases per 10 000 workers, respectively. The highest incidence rate of ICD was found in hairdressers (46.9), bakers (23.5), and pastry cooks (16.9), while the highest incidence rate of ACD was in hairdressers (67.2), florists (15.5), and tile setters and terrazzo workers (13.7). ICD, without ACD, was the main reason of OSD in pastry cooks (75.6%), cooks (69%), food-processing industry and butchers (63%), mechanics (60%), locksmiths and automobile mechanics (58.8%), housekeepers, restaurant business, cleaners (56.3%), and bakers (55.7%). A positive patch test result of occupational relevance was detected in 1611(52.0%) cases.

Conclusions In analyzing the risk factors for work-related ICD, the incidence figures of the BKH-N are of great value. "High-risk" groups with exposure to irritants at the workplace are highlighted. Irritants mostly involved are water (wet work), detergents and cleansing agents, hand cleaners, chemicals, cutting fluids, and abrasives, with wet work being the most important one. The results assist in working out tools (e.g. German regulation of hazardous substances at the workplace of recent date: TRGS 531 "wet-work") which might have an essential impact on the prevention of work-related ICD.

10

The Problem of Grading Hand Eczema

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Objectives Hand eczema is a disease entity with a high prevalence among patients seen in the general practitioner's and dermatologist's practice. Although a number of therapeutic options are available, clinicians are often confronted with its chronic relapsing course and its unfavorable prognosis. This prompted us to review the clinical evidence underlying the therapeutic options discussed in the major textbooks. Assessing the severity of hand eczema in these studies confronted us with a methodological problem. In contrast to diseases such as psoriasis and atopic eczema, for which scoring systems (e.g. PASI, EASI, SCOPAD) are available, hand eczema lacks such a widely used and validated tool to assess its severity and/or its extend. Therefore, we set up a study to evaluate which parameters of outcome are used in papers assessing the treatment of hand eczema.

Methods We searched computer databases, ranging from 1966 (Medline) and 1989 (Embase) through 2001, and the Cochrane databases for clinical trials and therapy oriented case reports concerning hand eczema. All dermatological journals and other major medical journals from 1977 through 2001 were hand searched. In addition, we went through the reference lists of the previously found papers. We restricted our search to papers written in English or German.

Results So far, over the period 1966–2001 78 papers were identified, of which 27 were randomized controlled trials. A quick scan of the methodology sections of these papers revealed a wide variety of unvalidated outcome parameters.

Conclusions The information derived from (grouping of) different scoring systems and endpoints will enable us to make a more rational choice of these parameters for future studies.

11

Occurrence of Hand Eczema in Swedish Adults – Changes in Prevalence Between 1983 and 1996

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Objectives To study changes in the prevalence of hand eczema in Swedish adults.

Methods Two cross-sectional studies were performed in 1983 and 1996, respectively. Random samples from the population of Göteborg of age 20–65 years were drawn from the population register. Data were collected by a postal questionnaire, which was identical in the two studies. The response rate was 83.5% (16,708/20 000) in 1983 and 73.9% (2218/3000) in 1996.

Results The reported 1-year prevalence of hand eczema decreased from 11.8% in 1983 to 9.7% in 1996 ($p < 0.0$ L). The largest difference was found in the youngest age group. However reported childhood eczema increased from 10.4% to 12.4% ($p < 0.01$). Of those with childhood eczema 27.9% and 25.2% reported hand eczema, in comparison to 10.0% and 7.5% among those without childhood eczema. In total 76.8% were gainfully employed in 1983 and 68.3% in 1996 ($p < 0.001$). In 1983 23.0% were employed in "high-risk" occupations for hand eczema compared to 19.4% in 1996 ($p < 0.001$). The difference was largest in the youngest age group.

Conclusions The study indicates that the prevalence of hand eczema in Swedish adults had decreased between 1983 and 1996 despite an increasing prevalence of childhood eczema. The most probable cause is a decreased occupational exposure to skin irritants. Thus, this study shows that occupational factors are important predictors of hand eczema.

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Self-Reported Hand Eczema – Symptom-Based Reports do Not Increase the Validity

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Objectives Hand eczema affects about 10% of the general population of working ages. There is an interest to find validated cost-effective means of epidemiological surveillance.

Methods Consecutive patients ($N = 95$) referred because of hand eczema and persons in an ongoing epidemiologic survey ($N = 113$) participated in the study. Before seeing an experienced dermatologist they (a) had to answer a short questionnaire about current signs and symptoms from the hands. (b) state if they had hand eczema on the day of examination. The minimum criteria of hand eczema diagnosed by the dermatologist ("gold standard") were defined as erythema and papules/vesicles or erythema and scaling and fissures/lichenification.

Results Of the 208 examined persons 93 fulfilled the criteria for hand eczema according to the 'gold standard'. Hand eczema diagnosis based on clinical signs reported in the questionnaire by the participants gave a sensitivity of 0.62 and a specificity of 0.87 in comparison with the dermatologists diagnoses. Regarding the question about current hand eczema the agreement was good between the judgements of the participants and thc dermatologists giving a sensitivity of 0.87 and a specificity of 0.79. Comparing clinical signs reported by the participants and the findings by the dermatologists showed the best agreement for fissures, with a kappa value of 0.65 (CI 95%, 0.55–0.75) and the lowest kappa value was found for papules 0.47 (CI 95%, 0.32–0.62).

Conclusion In the present study was shown that it is difficult for the individual person to identify skin signs compatible with the clinical diagnosis of hand eczema. However it was demonstrated that asking 'Do you have hand eczema?' had high sensitivity and specificity compared to the suggested gold standard for hand eczema.

SECTION 2: SKIN CANCERS AND PRECURSORS

13

Relative Contribution of Genes and Ultraviolet Radiation in the Expression of Naevi. A UK Adult Twin Study

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Objectives Studies comparing total body naevus counts (TBNC) between Australia and the UK have shown that ultraviolet radiation (UVR) significantly influences numbers of naevi in both children and adults. This twin study was set up to investigate the relative contribution of genetic and environmental factors on the variance in TBNC and to examine potential associations between high naevus counts and exposure to natural and artificial UVR.

Methods 291 pairs of monozygotic (MZ) female twins and 791 pairs of dizygotic (DZ) female twins (mean age 43 years) recruited from the St Thomas UK Adult Twin Registry underwent a skin examination with naevus counts performed by trained examiners. Data on sun and sunbed exposure as well as number of sunburns and skin type were also collected.

Results The mean TBNC was 34 (0–362). Age was negatively associated with TBNC ($p < 0.0001$).

Table 1 shows the intrapair correlations for MZ and DZ, respectively.

Trait or exposure	No of sunburns	Use of sunbed	Weeks abroad	TBNC	Skin type
r(MZ)	0.87	0.80	0.54	0.53	0.58
r(DZ)	0.50	0.30	0.38	0.38	0.52

Analyses of variance in Mx showed that up to 55% of the variance in TNBC was attributed to additive genetic effects. In a multivariate analysis using General Estimating Equation including all twins, high naevus counts were significantly associated with sunbed use ($p < 0.0001$) and age ($p < 0.0001$) but not with skin type, number of weeks abroad or number of sunburns. In 480 DZ twin pairs discordant for sunbed use, the OR for high naevus count was 2.4 ($p = 0.06$). In 64 MZ pairs discordant for sunbed exposure, the OR for high naevus count was 1.5 ($p = 0.6$).

Conclusions These results show that genetic factors are important in the expression of naevi and skin type but that environmental factors such as sunbed exposure also influences numbers of naevus counts. Future studies looking at these complex gene–environment interactions with linkage studies are currently underway. This work was funded in part by MRC, Wellcome, ARC, Chronic Diseases Research Fund and Gemini Genomics.

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Non-Solar Ultraviolet (UV) Light Exposure and the Risk of Dysplastic Nevi

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Objectives and methods We sought to assess the relation of artificial UV light to the development of dysplastic nevi and melanoma by analysis of a 1 : 1 age and gender matched case-control study of members of a staff model health maintenance organization between 1989 and 1994. Cases ($n = 722$) were members diagnosed with dysplastic nevi or melanoma, chosen as a random sample with selection stratified by degree of dysplasia. Variables of interest were ascertained by telephone interview, and where indicated. interview of a relative or examination of medical records was performed. Information regarding total years of non-solar UV exposure and average yearly treatments or uses was ascertained for all participants with a history of non-solar UV exposure. We analyze the data using logistic regression conditional on matched pair and controlled for sun sensitivity and a confirmed melanoma family history of melanoma in all models.

Results 5.8% (84) of the study population reported a history of phototherapy treatment with an overall odds ratio (OR) of 1.7 (95% CI 1.0–3.0) for dysplastic nevi. Specifically, the OR for melanoma was 3.1 (95% CI.9–10.5), for moderate or severe dysplastic nevi was 3.5 (95% CI 1.3–9.8) and for mild dysplastic nevi was 1.1 (95% CI.6–2.1). Analysis of all dysplastic nevi and total phototherapy exposure, coded: 0 = non-e, 1 = < 50 treatments, and 2 = > 50 treatments, revealed an increased odds of 1.5 (95% CI 1.0–2.4) for each unit increase in exposure. We further analyzed the risk of all dysplastic nevi separately in individuals with low sun sensitivity (index < 0.5) and high sun sensitivity (index > 0.5) and found odds of 1.4 (95% CI.6–3.1) and 1.7 (95%CI.9–3.3), respectively, without a statistically significant effect modification. Use of tanning beds or sun lamps was reported by 41% (592). Analysis by ever use of non-solar recreational UV light showed a OR's of 1.2(95% CI 0.7–2.0) for melanoma only, 1.3 (95% CI 1.0–1.7) for all dysplastic nevi, 1.5 (95% CI 1.0–2.2) for moderate or severe dysplastic nevi, and 1.1 (95% CI.8–1.4) for mild dysplastic nevi. Analysis of all dysplastic nevi and total tan bed and sun lamp exposure, coded: 0 = non-e, 1 = < 50 uses, and 2 = > 50 uses, revealed an OR of 1.2 per unit (95% CI 0.8–1.7).

Conclusions The data suggests that there is an increased risk of dysplastic nevi and melanoma associated with exposure to phototherapy with evidence of a dose–response relation. We have no information about possible exposure to psoralens. Our analyses do not suggest that recreational non-solar UV is associated with dysplastic nevi.

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Rapidity of Primary Melanoma Growth as a Prognostic Marker

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Objectives There is still a crucial need for prognostic markers in melanoma (MM). The main objective of this study was to assess whether "Rapidity of MM Growth" (RMG) could be a prognostic factor.

Methods 4 years ago, we conducted an already published large multicenter study to assess the impact of delays before diagnosis on Breslow thickness. Very precise and exhaustive data about the history of each MM were thus recorded including: d1 the date when the patient first noticed a lesion on the site of the MM, d2 the date when the patient first noticed a change in this lesion, and d3 date of MM removal. Most centers accepted to participate in a new prospective study to obtain follow-up data in the patients included in the first study. Cases coincidentally detected by doctors were excluded, since information about d1 and d2 was often missing. RMG can be assessed by the ratio: "Breslow thickness/growth-period" with *growth-period* defined by the time-period between the starting-point of tumor growth and tumor removal. As MMs often develop on nevi, d2 was considered to be the representative starting-point for MM growth when studying all cases. In the subgroup of patients with a d1-d2 < 5 years, MMs were likely to be de-novo, and d1 was considered more representative of the starting-point for MM growth-period. d2-d3 period was thus used as an assessment of growth period to calculate RMG in all patients, and d1-d3 period was used to calculate SMG in probably de-novo melanoma. Follow-up provided the date of 1st relapse, last visit and death. Cox and logistic models were used to assess the relapse risk according to RMG. Lg (RMG) was used to take into account the proportionality of RMG rather than the absolute difference between 2 RMG.

Results In all self-detected primary MMs (328 cases) with a median follow-up of 4 years, $Lg(RMG_{d1-d3})$ was found to be a significant risk factor for recurrence (0R = 1.57/1.38–1.79) using Cox model, and RR for recurrence at 1 years was 2.22 (1.69–2.92) using logistic model. When Breslow, ulceration, Clark, age and sex were included, $Lg(RMG_{d1-d3})$ was no more significant in Cox, but RR was still 1.55 (1.15–2.10) using logistic model. In probably de-novo MMs (i.e. 201 patients with d1-d2 < 5 years), $Lg(RMG_{d2-d3})$ was significantly predictive of recurrence using Cox model (OR = 1.84/1.51–2.25) and RR of recurrence at 1st year was 2.93 (1.84–4.69). When Breslow and usual prognostic markers were included, Lg (RMG_{d2-d3}) was still retained just after Breslow both in Cox model (0R = 1.30/1.06–1.60),and in logistic model with a RR 1.74 (1.21–2.51) of recurrence at 1 years.

Conclusions This is the first prospective study showing that the rapidity of the growth of a primary MM, as recorded by the patients, is predictive of an early relapse. It seems to be a risk marker partly independent from Breslow especially in de-novo MMs. Although it may be difficult to standardize rapidity of growth, in order to use it as a prognostic marker for clinical practice, these results underline 1/that celerity of tumor growth is probably a relevant assessment of biological aggressiveness 2/that listening to a patient able to describe his MM history may provide a better prognostic information than many complex biological tests.

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Sun Sensitivity, Sunscreen Use, and the Risk of Dysplastic Nevi

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Objectives and methods We sought to assess the relation of sun sensitivity and sunscreen use to dysplastic nevi in a matched case-control study of dysplastic nevi and melanoma. We recruited 1444 subjects who were members of a staff model health maintenance organization between 1989 and 1994. Cases were members diagnosed with dysplastic nevi or melanoma, chosen as a random sample with selection stratified by degree of dysplasia. Controls were individually age and gender matched to cases. Participants were interviewed by telephone regarding sun sensitivity, sun exposure, sunscreen use. and other variables. Analyses used logistic regression conditional on the matched pair; confirmed family history of melanoma was controlled a priori in all analyses.

Results The odds ratios (OR) of having dysplastic nevi, for the most sun sensitive phenotype vs. the least, were 1.5 (95% CI 1.3–1.7) for hair color, 1.7 (95% CI 1.3–2.1) for skin color, and 1.8 (95% CI 1.4–2.3) for burning easily in the sun. An index of sun sensitivity was created by averaging all three of the above variables with equal weights (cronbach's alpha = 0.59). We modeled the index along with each sun sensitivity variable and found the index to be a better indicator of dysplastic nevus risk than any of its components alone. The odds of melanoma, any dysplastic nevi, moderate/severe dysplastic nevi, and mild dysplastic nevi were 10.5 (95%CI 3.3–33.0), 4.3 (95% CI 2.7–6.8), 5.5 (95% CI 2.5–11.8), and 3.3 (95%CI 1.8–5.8) for the most sun sensitive phenotype vs. the least. We found the odds of being a case increased with increasing sunscreen use, after controlling for sun sensitivity. Risk of melanoma, any dysplastic nevi, moderate or severe dysplastic nevi, or mild dysplastic nevi were similar, with OR = 1.4 (95% CI 1.0–2.0), 1.4 (95% CI 1.2–1.6), 1.5 (95% CI 1.2–1.8), and I.5 (95% CI 1.2–1.7). The results were similar when the analysis was restricted to those reporting greater than 10 years of regular sunscreen use. Pearson correlation between sunscreen use (categorized on a 4 point scale) and sun sensitivity was modest ($r = 0.25$), but far in excess of chance ($p < 0.0001$).

Conclusions We have validated our index of sun sensitivity against relevant biologic outcomes, and documented a direct association between degree of dysplasia in dysplastic nevi and sun sensitivity. These analyses also indicate that reported sunscreen use is directly associated with the diagnosis of dysplastic nevus. We hypothesize that an antecedent of the dysplastic nevus diagnosis causes increased sunscreen use, although the distinction between that hypothesis and the direct hypothesis that sunscreens cause dysplastic nevi cannot be confidently inferred from these data.

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Platelet Derived Growth Factor Gene Polymorphisms are Associated with Non-Melanoma Skin Cancer Risk in Renal Transplant Recipients

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Objectives Non-melanoma skin cancer (NMSC) is a major cause of morbidity following renal transplantation. Some recipients appear to be at particularly high risk in terms of tumor numbers or rate of accrual. Although environmental and clinical factors are important, genetic factors are also likely to influence individual risk. We examined the association between polymorphisms in the platelet derived growth factor genes (PDGF-A & -B) and NMSC risk.

Methods 182 (95% of population) unrelated Caucasian renal transplant recipients with a mean (SD) age at transplantation of 38.9 (15.6) years and mean follow-up of 8.5 (6.3) years were recruited from a single Northern European center. Subjects were interviewed and examined using a standard proforma by a single dermatologist. All case-notes were carefully reviewed. All histologically proven NMSC were included in the analysis. DNA was extracted from peripheral blood leukocytes. PDGF polymorphisms were determined using standard PCR-RFLP methodology. Logistic regression, negative binomial regression and Cox's proportional hazards analyses were used to examine the association with NMSC risk, tumor numbers and time from transplantation to first tumor. Basal and squamous cell carcinomas were considered separately (BCC, SCC).

Results 16.5% developed NMSC (53 BCC, 28 invasive and 33 in-situ SCC in 18, 11 and 14 patients, respectively) since transplantation. Compared with the wild type A/A genotype, PDGF-A + 286 G/A was associated with a lower risk ($p = 0.047$, Odds ratio 0.32, 95% CI 0.1–0.98), and fewer numbers of BCC ($p = 0.008$, Rate ratio 0.21, 95%CI 0.07–0.66). Furthermore individuals with this genotype showed a significantly shorter time from transplantation to first BCC (Hazards ratio 0.26, 95% CI 0.08–0.80) The homozygous G/G genotype showed similar trends but did not achieve statistical significance due to lower numbers. Similar, but generally less significant results were seen for the PDGF-B + 1135 A/C genotype. No significant results were found identified with SCC or with the PDGF-A + 135 polymorphism.

Conclusions It may prove possible to identify recipients at highest risk of NMSC on clinical and/or genetic grounds, allowing the development of more targeted surveillance strategies than generally exist. Confirmation of these early findings is required in a larger cohort.

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Variants of the Melanocortin-1-Receptor (MC1R) are Associated with Malignant Melanoma Independent of Skin Type

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Objectives Variants of the MC1R-gene are associated with fair skin and red hair and increase the risk for the occurrence of malignant melanoma (MM). The question remains whether MC1R-gene variants show a causal association with the development of MM or whether MC1R-gene variants exert their influence via fair skin type.

Methods Utilizing a case-control, 123 patients with non-familial melanoma and 385 controls were evaluated. Information concerning skin type was collected by utilizing a questionnaire and dermatological examination. MC1R-gene variants were determined via SSCP and "direct sequencing". Odds ratios were calculated and stratified according to skin type and hair color.

Results The presence of MC1R-gene variants was associated with a higher risk for melanoma independent of skin type and hair color. The melanoma risk was higher when patients possessed two gene variants as compared to possession of one gene variant. The risk after adjusting for skin type was 3.6 (95% CI:1.7–7.2) when two variants were present and 2.7(95% CI:1.5–5.1) when one variant was present. Presence of Asp84Glu and Arg151Cys were associated with the highest melanoma risks namely 16.1 (95% CI:2.3–13.9) and 7.2 (95% CI:2.9–18.1) when combined with another variant allele.

Discussion The presence of MC1R-gene variants increase the risk for the development of MM independent of skin type and red hair. Aside from an influence on melanogenesis, MC1R-gene variants also have an influence on melanocyte proliferation and immunomodulation which is also of importance for the development of MM.

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Do Lipid-Lowering Drugs Prevent Melanoma?

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Objectives To evaluate the hypothesis that lipid-lowering medications prevent melanoma.

Methods This was a case-control study utilizing computerized hospital Denver Veterans Administration Medical Center (VAMC) pharmacy and diagnosis databases.

Results Two large, randomized, placebo-controlled trials of lipid-lowering agents, gemfibrozil and lovastatin, have each detected lower melanoma rates in the treated patients of the trials. Lovastatin has also been shown to inhibit melanoma cell growth in tissue culture, and melanoma metastasis in mice injected with melanoma cells. The hypothesis that lipid-lowering medication prevents melanoma was addressed via a melanoma case-control analysis of Denver VMAC pharmacy and diagnosis patient computer databases. The database yielded 328 melanoma cases. From 1992 to 2000, the melanoma cases had lower ever-exposure rates to statins (18% vs. 30%) and fibrates (4.9% vs. 5.9%) than a random sample of two thousand control cases.

Conclusions Preliminary evaluation of case-control data revealed lower lipid-lowering medication use rates among melanoma cases at the Denver VAMC than among controls. Analysis of the extent and temporal relation of these exposures is underway to determine the significance of this finding. Further evaluation of lipid-lowering medications for the chemoprevention of melanoma will determine whether randomized trials of these agents should be initiated in persons at high risk of developing melanoma.

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Cryotherapy vs. Topical 5-Fluorouracil Therapy of Actinic Keratoses: A Systematic Review

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Objective To critically review the published body of literature that studied the response of actinic keratoses to topical 5-fluorouracil and cryotherapy and to compare the efficacy of both treatment modalities.

Methods Reviewed MEDLINE, EMBASE, and CancerLit from 1966 through October 1999 and proceedings from the AAD meetings (1997–2000) to identify studies of 5-fluorouracil and cryotherapy in patients with actinic keratoses. Compared the summary efficacy to both the binomial and chi square distribution using a range of probabilities that an AK will progress to a malignant tumor.

Results Despite an initial identification of 88 reports of 5-fluorouracil in the treatment of actinic keratoses, only 3 could be meta-analyzed because they used different concentrations and/or vehicles for the drug. In addition, main outcome measures varied widely. Using a fixed-effect model, the overall efficacy of 5% 5-FU ointment ranged from 79% (using patient-level data) to 84% (using study-level data). Only one study reported quantifiable results for cryotherapy; a cure rate of 98.8% was achieved. All other cryotherapy studies were qualitative. When compared to potential natural regression rates of actinic keratoses, 5% 5-FU is better than leaving lesions alone if the spontaneous regression rate is below 84% (by binomial distribution; 90% for chi-square). There is no statistical difference ($p > 0.05$) between 5% 5-FU and leaving the lesions alone if the spontaneous regression rate falls between 75% and 84% (60%–89% for chi-square).

Conclusions Although cryotherapy is the method of choice in the treatment of actinic keratoses in everyday practice, there are no studies in the literature evaluating its efficacy. Despite the well-accepted use of topical 5-FU, the supporting data is sparse. A therapy can be judged relative to the natural regression rates of actinic keratoses. The best available source is the Queensland study but the comparison with our finding should be interpreted with caution as it reports patient outcomes as number of regressed actinic keratoses rather than persons cleared. Currently, there is no evidence to justify the Medicare initiative to use 5-FU as first-line treatment for actinic keratoses.

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Association Between Human Papillomavirus Seroreactivity and a History of Multiple Non-Melanoma Skin Carcinomas

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Objectives Epidermodysplasia verruciformis (EV) patients are known to develop multiple squamous cell carcinomas (SCC) which contain a particular subset of human papillomaviruses (HPV). These EV-HPV types are also regularly found in non-melanoma skin cancers (NMSC) in the general population, as well as in healthy skin. In both cases multiple EV-HPV types are detected, frustrating the search for oncogenic EV-HPV types. In order to investigate EV-HPV oncogenicity, we studied EV-HPV seroreactivity in NMSC patients and controls.

Methods A case-control study was designed containing individuals with a history of SCC ($n = 161$), of nodular ($n = 301$) and of superficial multifocal ($n = 153$) basal cell carcinoma (BCC), of malignant melanoma (MM) ($n = 125$), and matched controls (386). All individuals were interviewed and underwent physical examination with emphasis on skin pathology. Sera from these individuals were tested in an ELISA using L1 virus like particles from four EV-HPV types (HPV8, 20, 24 and 38), representatives of all EV-HPV subgroups. ELISA cut-offs were determined on randomly selected hospital employees ($n = 100$).

Results Preliminary analyses indicate a positive association between EV-HPV seroreactivity and a history of multiple NMSC (SCC and/or BCC). EV-HPV seroreactivity was also associated with a current status of multiple solar keratoses. Both associations were most prominent in males. Solar keratoses as such and a history of a single SCC or BCC were not associated with EV-HPV seroreactivity.

Conclusions EV-HPV seroreactivity in patients with a history of non-melanoma skin cancer is associated with a history of multiple NMSC and a high number of solar keratoses. These data may suggest that HPV seroreactivity depends on HPV load or, alternatively, that HPV seroreactivity is short lived. Whether EV-HPV is causally involved in NMSC requires further study.

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Epidemiology of ''senile'' Lentigos: A Case-Control Study

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Objectives Incidence of melanoma is increasing in the elderly. The epidemiology of lentigo maligna (LM), a cancer related to chronic sun-induced skin damage, is different from other melanomas, and no clear risk marker is yet identified. LM may be linked to senile lentigos (SLs), like carcinoma to solar keratoses. However, nothing is known about the epidemiology of SLs (lentigo senilis, solar lentigos, actinic lentigines or liver spots). They are mainly located on the face, the dorsum of the hands, and the external side of the forearms in elderly people. They are distinct from lentigos simplex, freckles, solar keratoses, and seborrheic keratoses. Although they are a common feature of ageing, they do not develop in all people, and their density is highly variable. A case-control study was conducted to identify and assess the risk factors for developing a high density of SLs.

Methods In patients between 60 and 80, not followed for skin diseases or severe chronic conditions, consecutive cases who presented with a very high number of SLs on the face were recruited up to fulfilling 30 individuals (15m, 15f) per 5-year age-section, i.e. a total of 120 cases. Similar procedure was used to enroll 120 individuals with no SL on the face.

Results 120 cases and 120 age- and sex-matched controls were thus recruited. Risk of having a high number of SLs on the face increased significantly in people with dark skin type, high number of solar keratoses, marked skin aging features (wrinkles, guttate hypomelanosis, skin laxity) and number of SLs on the forearms, hands and back. In patients with a high number of SLs, the total life amount and the last-10 years amount of leisure sun exposure, and the estimation of total number of sunburns, were found to be significantly increased. The occupational cumulative exposure was not significantly different in cases and controls. No link was found with hormonal factors, or number of nevi on the trunk. In multivariate analysis, last 10 years-cumulative leisure exposure, total number of sunburns, and skin type were retained.

Discussion In contrast with freckles and nevi, multiple SL develop mainly in dark skin type. In contrast with usually admitted concepts for sun-aging, SLs seem to develop in people submitted to a high total cumulative amount received through intermittent exposure, rather than through regular exposure. A regular sun exposure is however, required since SL occurred mainly on the face and forearms.

Conclusions Unexpectedly, high number of SLs does not appear to be a marker of regular exposure in light-skinned people, but rather a marker of life-cumulative excess of intermittent exposure in easy-tanners who still expose themselves late in their life. A study of SL as risk markers for lentigo maligna is warranted.

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Is the MC1R-Gene the Freckle-Gene?

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Objectives Ephelides (freckles) and solar lentigines are different types of pigmented skin lesions. Ephelides appear early in childhood and are associated with fair skin type and red hair. Solar lentigines appear with increasing age and are a sign of photo damage. Both lesions are strong risk indicators for melanoma and non-melanoma skin cancer. Melanocortin-1 receptor (MC1R) gene variants are also associated with fair skin, red hair and skin cancer. The purpose of this study was to investigate the relation between MC1R-gene variants, ephelides and solar lentigines.

Methods In a large case-control study patients with melanoma and non-melanoma skin cancer, and subjects without a history of skin cancer were studied. Of all participants the presence of ephelides in childhood and solar lentigines by physical examination was assessed according to strict definitions. In the analyses, ephelides were divided into absent and present, and solar lentigines were divided into non-severe and severe. The entire coding sequence of the MC1R gene was analyzed by Single Stranded Conformation Polymorphism analysis followed by sequence analyses.

Results Carriers of one or two MC1R-gene variants had a 3 and 11-fold increased risk of developing ephelides, respectively (both $p < 0.0001$), whereas the risk of developing severe solar lentigines was 1.5 and 2-fold increased ($p = 0.035$ and $p < 0.0001$), respectively. These associations were independent of fair skin type and red hair, and were comparable in patients with and without a history of skin cancer.

Conclusions As nearly all individuals with ephelides were carrier of at least one MC1R-gene variant, our data suggest that MC1R-gene variants are necessary to develop ephelides. The results of the study also suggest that MC1R-gene variants play a role in the development of solar lentigines.

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Relative Contribution of Cumulative Solar Ultraviolet A vs. B Radiation Exposure to Skin Photoageing: An Epidemiological Study

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Objectives Both ultraviolet-A (UVA) and ultraviolet-B (UVB) radiation have been implicated in skin photoageing, a multifaceted phenomenon of clinical, cellular, histological, and immunological changes. Much of the *in vivo* evidence of the relationship between wavelength-dependent ultraviolet radiation exposure and photoageing has been based on animal models. This study considered the relative contributions of UVA and UVB radiation exposure to the hallmark feature of photoageing, degree of dermal elastosis, in an unselected human population.

Methods An age-stratified random sample of 338 adults aged over 17 years was chosen from the electoral roll of the community of Nambour, Australia. Subjects were recruited between May 1994 and May 1995, and asked to provide a 2-mm punch biopsy of the skin of the back of the left hand, and to complete a one-page sun exposure questionnaire from which several indices of ultraviolet radiation exposures were defined. Haematoxylin–and-eosin stained sections were assessed for degree of dermal elastosis on a scale from 0 (no evidence of elastotic fibres) to 6 (severe elastosis). Multiple linear regression models considered the association between ultraviolet radiation exposure indices and dermal elastosis grade.

Results Lifetime sun exposure hours and actinic UVA exposure were both associated with degree of dermal elastosis in a log-linear relationship ($p < 0.001$). These associations persisted after stratification for skin color. No consistent trends were demonstrated for either, total hours of sun exposure between 10am and 2 pm, or actinic UVB exposure.

Conclusions UVA exposure is more clearly implicated in the accumulation of dermal elastosis than is UVB exposure. Since the majority of ultraviolet radiation is composed of UVA, and given the association between photoageing and skin cancer, this effectively suggests that public health messages should emphasize equal avoidance of all sun exposure.

SECTION 3: HEALTH SERVICES RESEARCH

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The Value of Dermato-Epidemiology in the Development of a Schools Education Program

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Objectives School-based studies on the frequency of common skin conditions revealed that warts, tinea pedis, acne and atopic dermatitis were sufficiently common to suggest the need for an education program. Data collected in the original study showed also a lack of understanding of these conditions and where they should seek advice by adolescents and their parents.

Methods Development of a skin health education program on common skin conditions was undertaken. An education package for teachers and a resource for students and parents was produced. Resources were piloted and then delivered to every secondary school in the State of Victoria, Australia. Follow up evaluation included surveying the 524 schools to which the program was developed.

Results A 70% response rate from the teachers revealed 91% had said they received the resources, of these 62% had incorporated them into the current curriculum. Of the remaining 38%, 95% planned to use them in next year's curriculum, as a library resource or in some other way. An in-depth telephone interview of a sample of teachers who had used the material revealed that over 80% of teachers considered their resource to be useful or very useful with the majority claiming it to be very useful. An intervention study on 249 students from six Victorian secondary schools tested students prior to and post delivery of the education program. There was an increase in knowledge for each of the areas covered by the education program. There was some variation according to the school which was related to the particular teacher involved and the way in which they used the resources.

Conclusions In summary, epidemiology was used as a tool to assess needs in relation to common skin conditions in school students in Victoria, Australia. It was also used to develop, a pilot, deliver, and assess the effectiveness of an education program to be used on the basis of the demonstrated need. This model is now being used to develop further education programs on common skin conditions for primary schools and the preschool Maternal and Child Health Service in Victoria.

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Hospital Waiting Lists Subject to Power Law Distributions

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Objectives To see whether waiting list activity may be described by the power law distributions that govern self-organizing phenomena and complex systems.

Methods Monthly waiting list figures were analyzed for four dermatology consultants over seven years in a similar way to Mandelbrot's analysis of monthly cotton prices published in 1963[1]. The percentage change in waiting time to see a particular consultant from one month to the next was calculated and a frequency distribution for these changes then generated.

Results Evidence for $1/f^{\alpha}$ (signal dependant) noise in the frequency distribution for the percentage monthly variation in waiting list length was discovered. The frequency of occurrence of a particular size of change was dependent upon that size. A straight-line logarithmic plot ($R = 0.92$, $p < 0.00005$) of this distribution for waiting list figures suggests that it is a self-organized phenomenon.

Conclusions We have demonstrated a real application of complexity theory to health services research. Efficiency within the waiting lists system is perversely implied because of the fundamental nature of self-organizing systems[2]. This efficiency is not of the conventional type. Forest fires, disease epidemics and the slopes of a pile of sand are all subject to similar power laws and defy minor or moderate interventions. The extent to which waiting lists can be altered or manipulated is questioned in light of these findings.

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Do Estrogens Protect Against the Development of a Chronic Wound?

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Objectives Pressure ulcers and venous leg ulcers affect a significant portion of the population. Both of these chronic wounds are more common in the elderly (age 65). They occur due to repetitive insults requiring the patient to repeatedly attempt to repair cutaneous structure. When the patient fails to successfully repair a chronic wound occurs. Several lines of laboratory and clinical evidence have implicated that estrogen supplementation may positively mediate wound repair.

Methods To that end, we utilized a 10% random sample of elderly patients in the General Practice Research Database from the UK to investigate the association of hormone replacement therapy on the incidence of pressure ulcers and venous leg ulcers. Previously validated criteria were used to ascertain those with venous leg ulcers or pressure ulcers. A Cox proportional hazards model was used to estimate the instantaneous relative risk (RR) with 95% confidence intervals (CI) for hormone replacement (HRT) use and the onset of one of these two chronic wounds.

Results Approximately 42 000 elderly individuals were evaluated and 1744 had a venous leg ulcer, 802 had a pressure ulcer, and 5006 used HRT. Users of HRT were significantly less likely to develop a venous leg ulcer (RR: 0.60, 95% CI: 0.50,0.73) or a pressure ulcer (RR: 0.68 95% CI: 0.51,0.91) than non-users. The risk of venous leg ulcer (RR: 1.07 95% CI: 1.06, 1.08) and pressure ulcer (RR: 1.11 95% CI: 1.10, 1.12) increased with age (per year). Age did not confound the HRT point estimate nor was an age by HRT interaction noted. Finally, the HRT point estimates were not confounded by history of deep venous thrombosis, cellulitis, myocardial infarction, osteoporosis, diabetes, congestive heart failure, or cerebral vascular accident.

Conclusion This observational study demonstrates that HRT may prevent two different chronic wounds. This was hypothesis-generating study. Definitive understanding of the effect of HRT on chronic wounds would require a randomized controlled trial.

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The Effect of a Brief Nurse-Delivered Intervention Utilizing Digital Photographs on Patient Adherence with Skin Self-Examination

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Objectives The identification and excision of thin lesions may be important in reducing mortality from melanoma. Results from a single case control study suggest that skin self-examination has the potential to reduce mortality from melanoma by 63%. Despite these encouraging results, little is known about patients' adherence in performing skin self-examination to detect new or changing moles. The purpose of this pilot study was to assess the impact of a brief nurse-delivered intervention utilizing digital photographs on patients' adherence to performing skin self-examination.

Methods Patients at high risk for skin cancer (5 or more dysplastic nevi) ($n = 34$) were recruited from the outpatient clinic at Memorial Sloan-Kettering Cancer Center. All participants had baseline whole-body digital photography as part of their clinical evaluation. Patients were randomized: Group A ($n = 20$) received a teaching intervention (physician encounter and nurse education module) with a photo book (personal whole-body photographs compiled in the form of a booklet with nurse instruction) and Group B ($n = 14$) received the teaching intervention only without a photo book. A self-administered questionnaire was given to the patient at three time points: baseline, after the delivery of the interventions at the baseline visit, and at 4 months post baseline visit.

Methods To assess skin self-examination, we asked patients, "How many times in the past 4 months did you (or someone else) thoroughly examine your skin." *Results*: In Group A (teaching intervention with photo book), 5% of the patients at baseline reported skin examination 3 or more times during the past 4 months, while at the 4 month follow-up, 55% reported skin examination 3 or more times ($p = 0.039$ for paired comparison). Fourteen percent of the patients at baseline in Group B (teaching intervention only) reported skin examination 3 or more times during the past 4 months; at the 4 month follow-up, 29% reported skin examination 3 or more times ($p = 0.63$). We compared the increase in reported skin examination between the two groups (+ 50% vs. + 15%, $p = 0.083$).

Conclusions Our results suggest that a brief nurse-delivered intervention is effective at increasing patient adherence with skin self-examination. Utilizing digital photographs as an adjunct to screening appears to increase patient adherence to performing skin self-examination.

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Patient and Referring Provider Satisfaction with Teledermatology

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Objectives and methods In response to a clinical need within the Veterans Health Administration, and in the context of limited staffing and fiscal austerity, we implemented a teledermatology consultation service using the store-and-forward approach. The patients were referred by their primary care clinician to the service, staffed by a nurse practitioner or physician assistant, who captured and transmitted the data and images, which were then reviewed by the teledermatologist. The impression and plan was then transmitted back to the nurse practitioner/physicians assistant, who discussed the results with the patient, performed skin biopsies if needed, and arranged follow-up. Our study evaluated patient and provider satisfaction.

Results Of the 1030 patient visits with this service, 100 randomly selected patients completed a telephone interview (89% of those eligible or possibly eligible). The mean age was 61 years and 95% were men. 86% (19) of the primary care clinicians who referred patients responded to this survey. The program was rated excellent or good at treating their skin condition by 41%, and 52% felt that the clinic did an excellent or good job of meeting their health care needs. 75% of the patients said they would recommend the program to someone they knew. Patient comments mentioned: (1) the clinician-patient relationship, which many commented was poor due to lack of direct contact with the treating dermatologist (37%); (2) the long waiting time for an appointment with the teledermatology clinic (22%); (3) inadequacies in follow-up (21%); (4) the absence of written feedback (5%); and (5) accessibility to the site where the teledermatology clinic was held (4%). Privacy concerns were rarely mentioned. 74% of providers said they would recommend the program to another provider. The same percentage rated the written feedback as excellent or good, and that the usefulness of the program as excellent or good. Clinician comments focused on the lengthy process to get the teledermatology consultation and associated backlog of referrals, and inadequacies in follow-up by the teledermatology clinic.

Conclusions Our evaluation indicates that both patients and clinicians generally viewed this program as useful and would recommend it to a friend or colleague. The main concern expressed by patients was the lack of direct contact with their dermatologist. Other concerns of both patients and providers related to resources devoted to the service. A teledermatology consultation is a dermatology consultation split in place and, with the store-and-forward approach, in time. The result is a great need for communication, and the potential for inadequate communication and delay, as well as loss of the direct dermatologist-patient relationship, which is important to patients. In return a needed service is provided that was previously unavailable.

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Scalpdex: A Quality of Life Instrument for Scalp Dermatitis

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Objectives An instrument that can quantify scalp dermatitis-related quality of life would be helpful for both physicians and pharmaceutical companies. Although there are several generic cutaneous quality of life (QOL) instruments, a scalp dermatitis-specific survey does not exist.

Methods Based on the results of directed focus sessions with 8 patients with scalp psoriasis and seborrheic dermatitis, we conceptualized three major constructs that explain the way scalp dermatoses affect patients' QOL: symptoms (sx), functioning (fcn), and emotions (em). We constructed a 23-item instrument, Scalpdex. We tested the validity, reliability, and responsiveness of the instrument by interviewing patients at baseline, 72 h, and 1 years. We also compared the results of Scalpdex to that of Skindex, a generic cutaneous QOL instrument to determine its discriminant validity.

Results 52 Stanford dermatology patients completed the study; 25 had psoriasis and 27 had seborrheic dermatitis. We demonstrated construct validity by confirming that the factors derived by principal axes factor analyses with orthogonal rotation correlated to our hypothesized scales ($r = 0.76$–0.84) and that differences in sx, fcn, and em scores differed among the varying levels of self-reported scalp severity than would be expected by chance ($p < 0.05$ by ANOVA). The instrument demonstrated reliability with internal consistency (Cronbach's α: 0.62–0.93) and reproducibility (intraclass correlation coefficient: 0.90–0.97). To test responsiveness, baseline and 1-year scores were compared in subjects who either improved (18), worsened (3), or did not change (31). The QOL scores changed in the expected direction ($p \leq 0.05$, by paired t-test for fcn and em) for those who improved. We found no significant differences in the scores of those who reported no change. We expected and found no significant difference in the scores of the worsening category given the small number of patients. We ascertained discriminant capability of Scalpdex from Skindex by demonstrating superior responsiveness ($p < 0.05$ by paired t-test in fcn and em) and differentiation among self-rated severity levels.

Conclusions This study represents the first QOL instrument specifically for patients with scalp dermatitis that is reliable, valid and responsive. Clinicians can use the instrument to determine which aspect of the disease most bothers the patient and to evaluate QOL as one parameter of responsiveness to the therapeutic intervention.

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Three Studies on Psychiatric Morbidity in Dermatological Outpatients

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Objective It is commonly believed that psychiatric disorders are frequent among dermatological patients. However, epidemiological studies are not abundant. We performed a series of studies to estimate the magnitude of the problem and to identify factors associated the presence of psychiatric disorder.

Methods Two prevalence studies were carried out. In both studies, all adults attending the outpatient clinics of a dermatological hospital on predetermined days were given a questionnaire comprising the 12-item General Health Questionnaire (GHQ-12). The dermatologists indicated the diagnosis and the location of skin lesions, and rated the disease severity. Also, a longitudinal study was performed. The GHQ-12 was used to identify subjects free from psychiatric morbidity at their first dermatological visit. It was administered again after one month during a computer-assisted telephone interview to identify new cases. In the course of this interview, subjects also rated the course of their skin disease on a 5-point scale.

Results In the first study, complete data were available for 2579 subjects. Using a stringent cut-off threshold for psychiatric case identification, the prevalence of psychiatric morbidity was 25.2% (95% C.I. 23.6%-27.0%). The prevalence was higher in females and in widows/widowers, controlling for age and marital status. Health-related quality of life was a much stronger predictor of psychiatric morbidity than physician-rated clinical severity. In the second study, 389 patients with complete information were included in the analysis. The prevalence of psychiatric morbidity was 20.6% (95% C.I. 16.7%-25.0%). Again, we found higher probability of psychiatric disorders in females, controlling for age, clinical severity, and localization of lesions. In females, but not in males, the prevalence of psychiatric morbidity was higher in patients with lesions on the face or hands. A total of 277 subjects identified as non-cases at baseline were included in the incidence study. At the follow-up interview, 21 (7.6%) subjects were identified as psychiatric cases. Lack of improvement was the only variable associated with increased incidence of psychiatric morbidity (13.6%), with an odds ratio of 3.1 (95% C.I. 1.2–7.8) adjusting for gender, age, educational level, and clinical severity.

Conclusions have depicted the situation that is actually faced by dermatologists in their daily practice. The high prevalence of psychiatric disorders is an issue to be recognized. The identification and appropriate management of psychiatric morbidity is important. It seems that dermatologists should be particularly alert to the possibility of a concurrent psychiatric disorder in female patients with lesions on the face or the hands, and in patients suffering from a disease that is not improving with treatment.

All abstracts (oral presentations and posters) are published in: *Allergologie* 25:May issue, 2001.