DGEpi Nachwuchspreisträger/innen 2013

1. Preis

C Bock, K Diehl, D Litaker, E Breitbart, R Greinert, S Schneider
Sunbed Use in Germany: Trends, User Histories and Factors Associated with Cessation und Readiness to Change

in: British Journal of Dermatology. 2013(Aug); 169(2):441-9

ABSTRACT:
Background: Sunbed use is considered carcinogenic in humans. Studies that examine behavioural patterns related to sunbed use over time are needed for developing skin cancer prevention strategies.
Objectives: To explore age-related trends in the initiation age, to investigate individual histories of sunbed use and to identify characteristics associated with cessation.
Methods: We analysed cross-sectional data of 4851 sunbed users and nonusers from a representative sample of Germans, aged 14–45 years, interviewed in 2011/2012. Biographical data were reconstructed based on reported tanning frequency/duration and changes in sunbed use over time. We used survival analysis to model the initiation age and created birth cohorts to assess age-related trends. Characteristics associated with sunbed use cessation were identified using logistic regression.
Results: Among sunbed users, median sunbed exposure was 180 min per year. Annual exposure remained constant in 85·6% of this subgroup with no changes over time during periods of sunbed use. Age at initiation decreased significantly across birth cohorts from 25 to 19 years (25th percentile; cohorts 1966–75 to 1986–93). Characteristics associated with sunbed use cessation included educational level [odds ratios (OR) 1·53 and 1·71 for medium and high education, respectively], greater awareness of skin cancer risk (OR 2·41) and immigrant background (OR 0·54; all $P < 0·01$).
Conclusions: Initiation of sunbed use at an increasingly younger age suggests the need for interventions targeted at young adults. Approaches that increase general skin cancer risk awareness and that are sensitive to participants' educational level and immigrant background may also be helpful.

2. Preis

B Schöttker, U Haug, L Schomburg, J. Körle, L Perna, H Müllert, B Holleczek, H Brenner
Strong Associations of 25-hydroxyvitamin D Concentrations with All-Cause, Cardiovascular, Cancer, and Respiratory Disease Mortality in a Large Cohort Study

in: Am J Clin Nutr 2013; 97:782-93

ABSTRACT:
BACKGROUND: Serum 25-hydroxyvitamin D [25(OH)D] concentration has been linked to mortality in several studies, but appropriate cutoffs to define risk categories are under debate.
OBJECTIVE: We aimed to conduct a repeated-measurements analysis on the association of serum 25(OH)D concentrations with all-cause and cause-specific mortality, with particular attention given to the shape of dose-response relations.
DESIGN: Concentrations of 25(OH)D were measured in n = 9578 baseline and n = 5469 5-y follow-up participants of the ESTHER study, which is a German population-based cohort aged 50-74 y at baseline. Deaths were recorded during 9.5 y of follow-up (median). Restricted cubic splines were used to assess dose-response relations, and Cox regression with time-dependent variables was used to estimate hazard ratios.
RESULTS: During follow-up, 1083 study participants died; of those, 350 individuals died of cardiovascular diseases, 433 individuals died of cancer, and 55 individuals died of respiratory diseases. The overall mortality [HR (95% CI)] of subjects with vitamin D deficiency [25(OH)D concentrations <30 nmol/L] or vitamin D insufficiency [25(OH)D concentrations from 30 to 50 nmol/L) was significantly increased [1.71 (1.43, 2.03) and 1.17 (1.02, 1.35), respectively] compared with that of subjects with sufficient 25(OH)D concentrations (>50 nmol/L)]. Vitamin D deficiency was also associated with increased cardiovascular mortality [1.39 (95% CI: 1.02, 1.89)], cancer mortality [1.42 (95% CI: 1.08, 1.88)] and respiratory disease mortality [2.50 (95% CI: 1.12, 5.56)]. The association of 25(OH)D concentrations with all-cause mortality proved to be a nonlinear inverse association with risk that started to increase at 25(OH)D concentrations <75 nmol/L.
CONCLUSIONS: In this large cohort study, serum 25(OH)D concentrations were inversely associated with all-cause and cause-specific mortality. In particular, vitamin D deficiency [25(OH)D concentration <30 nmol/L] was strongly associated with mortality from all causes, cardiovascular diseases, cancer, and respiratory diseases.

3. Preis

A Flögel, N Stefan, Z Yu, K Mühlenbruch, D Drogan, HG Joost, A Fritsche, HU Häring, M Hrabe de Angelis, A Peters, M Roden, C Prehn, R Wang-Sattler, T Illig, MB Schulze, J Adamski, H Boeing, T Pischon

Identification of Serum Metabolites Associated with Risk of Type2 Diabetes Using a Targeted Metabolomic Approach

in: Diabetes, 62/2013, 639-648

ABSTRACT:
Metabolomic discovery of biomarkers of type 2 diabetes (T2D) risk may reveal etiological pathways and help to identify individuals at risk for disease. We prospectively investigated the association between serum metabolites measured by targeted metabolomics and risk of T2D in the European Prospective Investigation into Cancer and Nutrition (EPIC)-Potsdam (27,548 adults) among all incident cases of T2D (n = 800, mean follow-up 7 years) and a randomly drawn subcohort (n = 2,282). Flow injection analysis tandem mass spectrometry was used to quantify 163 metabolites, including acylcarnitines, amino acids, hexose, and phospholipids, in baseline serum samples. Serum hexose; phenylalanine; and diacyl-phosphatidylcholines C32:1, C36:1, C38:3, and C40:5 were independently associated with increased risk of T2D and serum glycine; sphingomyelin C16:1; acyl-alkyl-phosphatidylcholines C34:3, C40:6, C42:5, C44:4, and C44:5; and lysophosphatidylcholine C18:2 with decreased risk. Variance of the metabolites was largely explained by two metabolite factors with opposing risk associations (factor 1 relative risk in extreme quintiles 0.31 [95% CI 0.21-0.44], factor 2 3.82 [2.64-5.52]). The metabolites significantly improved T2D prediction compared with established risk factors. They were further linked to insulin sensitivity and secretion in the Tübingen Family study and were partly replicated in the independent KORA (Cooperative Health Research in the Region of Augsburg) cohort. The data indicate that metabolic alterations, including sugar metabolites, amino acids, and choline-containing phospholipids, are associated early on with a higher risk of T2D.