Barišić I, Tokić V, Loane M, Bianchi F, Calzolari E, Garne E, et al. Descriptive epidemiology of Cornelia de Lange syndrome in Europe. Am J Med Genet A. 2008;146:51-9.

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Cornelia de Lange syndrome (CdLS) is a multiple congenital anomaly/mental retardation syndrome consisting of characteristic dysmorphic features, microcephaly, hypertrichosis, upper limb defects, growth retardation, developmental delay, and a variety of associated malformations. The authors present a population-based epidemiological study of the classical form of CdLS. The data were extracted from the database of European Surveillance of Congenital Anomalies (EUROCAT) database, a European network of birth defect registries which follow a standard methodology. Based on 23 years of epidemiologic monitoring (8,558,346 births in the 1980-2002 period), the authors found the prevalence of the classical form of CdLS to be 1.24/100,000 births or 1:81,000 births and estimated the overall CdLS prevalence at 1.6-2.2/100,000. Live born children accounted for 91.5% (97/106) of cases, fetal deaths 2.8% (3/106), and terminations of pregnancy following prenatal diagnosis 5.7% (6/106). The most frequent associated congenital malformations were limb defects (73.1%), congenital heart defects (45.6%), central nervous system malformations (40.2%), and cleft palate (21.7%). In the last 11 years, as much as 68% of cases with major malformations were not detected by routine prenatal US. Live born infants with CdLS have a high first week survival (91.4%). All patients were sporadic. Maternal and paternal age did not seem to be risk factors for CdLS. Almost 70% of patients, born after the 37th week of gestation, weighed ≤ 2,500 g. Low birth weight correlated with a more severe phenotype. Severe limb anomalies were significantly more often present in males.

Mujkić A, Peek-Asa C, Young T, Rodin U. Effect of war on weapon-related deaths in Croatian children and youth. Arch Pediatr Adolesc Med. 2008;162:140-4.

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The aim of this study was to identify trends in weapon-related deaths associated with the Homeland War (1991-1995) among children in Croatia. Croatian children aged from birth through 19 years who died as the result of a weapon-related injury from 1986 through 2005. Main Exposure Injury deaths of children by intent (homicide, suicide, operations of war, and unintentional), cause, and age. Compared with the period before the war, weapon-related homicide and suicide rates increased by more than 3-fold, and unintentional weapon-related deaths increased by more than 6-fold during the war. These increases persisted for 5 years following the end of the war and decreased more than 5 years after the war. Death rates from non-weapon causes did not increase during this period. Overall, 81.9% of the weapon-related deaths were caused by firearms and 18.1% were caused by explosive devices. In conclusion, the Homeland War led to an increase in weapon-related deaths of all intents. Programs that focus on the prevention of weapon-related injuries should be integrated into programs that assist countries in rebuilding after political unrest.

Garaj-Vrhovac V, Đurinec M, Kopjar N, Oreščanin V. A survey on the cytogenetic status of the Croatian general population by use of the cytokinesis-block micronucleus assay. Mutat Res. 2008;649:91-100.

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The cytokinesis-block micronucleus assay (CBMN) was used to assess the variability and determine possible influences of external and internal factors on the background levels of cytogenetic damage in peripheral blood lymphocytes (PBL) of 50 healthy volunteers selected at random from the general population of Croatia. The mean MN frequency for all subjects was 4.74 ± 0.31 per 1000 cells and the mean cytokinesis-block proliferation index (CBPI) was 1.82 ± 0.01. The mean frequency of nucleoplasmic bridges (NPB) for all subjects was 0.06 ± 0.04 and of nuclear buds (NB) 0.12 ± 0.05. The canonical correlation analyses indicate a positive non-significant correlation between the MN frequency and age, gender and smoking habits. Results of factor structure and canonical weights showed that age and gender rather than smoking habits control the incidence of MN in PBL of healthy volunteers. The lowest median value of MN was observed in subjects younger than 30 years (both smoking and non-smoking). Generally, non-smokers had

lower median values of MN compared to smokers. In non-smokers, males showed lower micronucleus incidence than females. Within the non-smokers smaller differences in the median values of MN between subgroups (male and female; age subgroups) were observed. Among smokers, females had a two-fold higher median value of MN frequency than males, but this difference was not significant (p=0.2643, Mann-Whitney U test). Canonical correlation analyses indicate a strong and significant correlation between cell proliferation parameters (M1-M4 and CBPI) and age, gender and smoking habits. The most sensitive parameters were M3 and M4. Age had the strongest effect on M3, while M4 was highly influenced by smoking habits. Gender had an equal non-significant effect on both parameters. The usefulness of the new criteria for the cytokinesis-block MN assay measuring DNA damage as a sensitive biomarker in biomonitoring studies is confirmed.

Klepac N, Trkulja V, Relja M, Babić T. Is quality of life in non-demented Parkinson's disease patients related to cognitive performance? A clinic-based cross-sectional study. Eur J Neurol. 2008;15:128-33.

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Whilst the association between dementia and poorer health-related quality of life (Hr-QoL) in Parkinson's disease (PD) has been well established, the authors aimed to explore the relationship between cognitive performance and Hr-QoL in PD without dementia. Consecutive PD patients (n=124, 54% men, age 60.4 ±10.3 years) judged as non-demented based on DSM-IV criteria and Mini Mental State Examination, free of other neurodegenerative diseases or psychotic difficulties and antipsychotic/antidepressive/anxyolitic treatment were assessed in a battery of neuropsychological tests. The authors used Parkinson's disease questionnaire (PDQ-39) to asses Hr-QoL and Beck's Depression Inventory (BDI) to quantify depression. In the univariate analysis, better performance in each of the tests evaluating visual attention/memory or visuospatial and executive functions was associated with better Hr-QoL. In multivariate analysis [adjustment for BDI score, PD severity and duration, l-dopa dose, age, sex, education, employment status and early PD onset (<50 years of age)] in which these tests were either represented by a common variable identified in a principal components analysis or were considered individually, better cognitive performance was independently associated with better Hr-QoL. The association was conditional on the level of depression, i.e., apparent only in patients with low(er)

BDI scores. Cognitive performance appears associated with Hr-QoL even in non-demented PD patients.

Milošević SA, Varga ML, Slaj M. Analysis of the soft tissue facial profile of Croatians using of linear measurements. J Craniofac Surg. 2008;19:251-8.

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One hundred and ten subjects (52 males and 58 females) between 23-28 years of age with dental Class I occlusal relationship, good soft tissue profile, and Caucasian ethnicity were selected from the population of dental students at the University of Zagreb, Croatia. The soft tissue facial profiles were digitally analyzed using linear (11 vertical and 14 horizontal) measurements made with standardized photographic records, taken in natural head position, to determine average soft tissue facial profile for males and females. The application of Student t-test showed gender dimorphism in most parameters of the labial, nasal. and chin areas. Almost all vertical variables were larger in the males, except the length of the nasal tip, which was larger in females. In the height of the vermilion, no gender dimorphism was observed. The females exhibited shallower labial sulci than the males and their chins were at least as prominent as those of the males. This study showed that male chins are not absolutely more prominent than female chins, but only appear to be such because their labial sulci are deeper.

Škrobot Vidaček N, Čukušić A, Ferenac Kiš M, Ivanković M, Jevtov I, Mrsić S, et al. Telomere dynamics and genome stability in the human pancreatic tumor cell line MIAPaCa-2. Cytogenet Genome Res. 2007;119:60-7.

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In the present study, the authors analyzed telomere dynamics of the telomerase positive human pancreatic tumor cell line MIAPaCa-2. The cells demonstrated genomic instability with a high frequency of chromosomal aberrations resulting in differences between individual karyotypes within the same cell population. The telomeres were short when compared with normal human fibroblasts, and about 39% of the chromosome ends did not have detectable telomere repeats as demonstrated by PNA-FISH. In many cases telomere signals were missing even when sister chromatids were strongly labeled. In addition, the authors used an internal PNA probe specific for the X chromosome, present in a sin-

gle copy in these cells, in order to follow telomere dynamics on individual chromatids. High heterogeneity in telomere signals among individual X chromosomes as well as between their sister chromatids suggested sudden and stochastic loss or gain of telomere repeats. Such constant genomic instability often results in apoptosis and death of a fraction of cells present in the culture at all times. The authors discuss possible molecular mechanisms that may explain this observed telomere heterogeneity and possible adaptive repair mechanisms by which these cells maintain their chromosomes in order to survive such extreme and permanent genomic instability.

Kosor Krnić E, Gagro A, Draženović V, Kuzman I, Jeren T, Čečuk-Jeličić E, et al. Enumeration of haemagglutinin-specific CD8+ T cells after influenza vaccination using MHC class I peptide tetramers. Scand J Immunol. 2008;67:86-94.

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With emergence of MHC class I tetramers loaded with CD8+ T-cell viral epitopes, it is possible to study virus-specific CD8 cells in humans during infection and after vaccination. MHC class I tetramers was used to detect the frequency of haemagglutinin (HA)-specific T cells in 26 healthy influenza-vaccinated humans. Peripheral blood was collected before, and 7, 14 and 28 days after vaccination. Four-colour flow cytometry was used for monitoring of vaccine induced T-cell response. In 15 donors, two- to fivefold increase in frequency of HA-specific T cells was observed 7 days after vaccination. In addition, in 12 of these donors, this increase was accompanied with fourfold increase of H1N1 antibody titre. The increase in frequency of HA-specific CD8+/IFN-gamma+ cells was low and peaked 28 days after vaccination in three of the six donors tested. Frequencies of HA-specific CD8+ T cells and antibody titre returned to prevaccination values 1 year after vaccination. Subunit influenza vaccines have the ability to induce HA-specific CD8+ cells. As the immune response to this vaccine decreased significantly after 1 year, these results confirm the importance of annual immunization for adequate protection.

Pizent A, Macan J, Jurasović J, Varnai VM, Milković-Kraus S, Kanceljak-Macan B. Association of toxic and essential metals with atopy markers and ventilatory lung function in women and men. Sci Total Environ. 2008;390:369-76.

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The association of age, smoking, alcohol, superoxide dismutase (SOD), glutathione peroxidase (GPx), blood lead (BPb) and cadmium (BCd) levels, and serum levels of copper (SCu), zinc (SZn) and selenium (SSe) with atopic status and ventilatory function was examined in the groups of 166 women and 50 men with no occupational exposure to metals or other xenobiotics. Markers of atopy included serum total IgE, skin prick test (SPT) to common inhalatory allergens, non-specific nasal reactivity (NNR) and non-specific bronchial reactivity (NBR). Parameters of ventilatory function included forced vital capacity (FVC) and forced expiratory volume in the first second (FEV1). Significantly higher BPb, SZn, IgE and prevalence of positive SPT, and lower SCu and NNR was found in men than in women. Fifteen women taking female sex hormones (HT) had significantly higher SCu than women without HT. Regression models showed significant inverse associations between IgE and SCu (p=0.021) and NNR and SCu (p=0.044) in women. When excluding women with HT, the association of SCu and total IgE became of borderline significance (p=0.051), association between SCu and NNR disappeared, and significant positive association between total IgE and BPb emerged (p=0.046). In men, significant inverse association was found between positive SPT and SSe, and between NBR and SSe. A decrease in FVC% and FEV1% was associated with an increase in smoking intensity (p<0.001) and a decrease in SZn (p=0.043 and p=0.053, respectively). These results were observed at the levels of the metals comparable to those in general populations worldwide. The observed differences between men and women may partly be explained by different levels of relevant toxic and essential metals, and their combination. The role of female HT in associations of atopy markers and SCu should be further investigated.