[Acid-base state of blood in pregnant rats after application of lead acetate]
https://arctichealth.org/en/permalink/ahliterature89837

Author: Tkachenko T A
Source: Ukr Biokhim Zh. 2008 Sep-Oct;80(5):112-6
Language: Ukrainian
Publication Type: Article
Keywords: Acid-Base Equilibrium - drug effects
Acidosis - blood - etiology - metabolism
Animals
Anoxia - blood - etiology - metabolism
Blood Gas Analysis
Female
Lead Poisoning - blood - complications - metabolism
Liver - embryology - metabolism
Organometallic Compounds - blood - pharmacokinetics - poisoning
Placenta - metabolism
Pregnancy
Pregnancy Complications - blood - metabolism
Rats

Abstract: It was shown that the increase of lead content in the blood, liver, placenta of female rats, rat embryo and embryo’s liver (by 80.4; 30.9; 26.8; 18.2 and 22.7%, respectively) of rats poisoned by lead causes pH decrease in blood, reduction of HCO3- concentration, content of general CO2, level of pCO2 and pO2, that evidences for development of subcompensated metabolic acidosis. It was determined, that the poisoning of pregnant rats causes deep metabolic acidosis and hypoxia in their organisms that can result in the prenatal death of fetus.

PubMed ID: 19248624 View in PubMed

https://arctichealth.org/en/permalink/ahliterature226244

Author: A. Yassi
M. Cheang
M. Tenenbein
G. Bawden
J. Spiegel
T. Redekop

Author Affiliation: Department of Community Health Sciences, University of Manitoba, Winnipeg.
While regulations for workplace lead exposure become more strict, their effectiveness in decreasing blood lead concentrations and the method by which this is attained have not been evaluated.

An analysis was conducted of 10,190 blood lead samples from employees of 10 high-risk workplaces collected in Manitoba, 1979-87, as part of regulated occupational surveillance.

A significant decrease in blood lead concentrations was observed overall as well as for each individual company. A 1979 government regulation to reduce blood lead to below 3.38 mumol/L (70 micrograms/dl) was followed by a drop in blood lead concentrations; a 1983 order to reduce blood leads to below 2.90 mumol/L (60 micrograms/dl) was not followed by such a drop. Longitudinal analysis by individual workers suggested that companies were complying by use of administrative control, i.e., removing workers to lower lead areas until blood lead levels had fallen, then returning them to high lead areas.

Focusing upon blood lead as the sole criterion for compliance is not effective; regulations must specifically require environmental monitoring and controls. Biological surveillance serves as "back-up" to environmental surveillance and this database illustrates the usefulness of a comprehensive centralized surveillance system.
Assessing the risk of lead environmental pollution for children's health status in Russia.

https://arctichealth.org/en/permalink/ahliterature193658

Author: A A Bykov
       B A Revich

Source: Med Tr Prom Ekol. 2001;(5):6-10

Date: 2001

Language: Russian

Publication Type: Article

Keywords: Child
          Child Welfare
          Child, Preschool
          Environmental Pollution - adverse effects
          Humans
          Infant
          Lead - adverse effects - blood
          Lead Poisoning - blood - diagnosis - epidemiology
          Risk assessment
          Russia - epidemiology

Abstract: The calculations prove that average serum lead level in children residents of cities with low environmental lead content approximates 10 mg/dl. This value in cities with high environmental lead content could be nearly 2 times higher and equals 18.9 mg/dl. The main lead sources influencing serum lead levels in children are mainly foods, the soils with dust, polluted air and drinkable waters play minor roles. The estimates show that nearly 400,000 children require medical examination and repeated measurements of serum lead levels, 10,000 children may need specific therapy.

PubMed ID: 11508223 View in PubMed
Blood lead in children.

https://arctichealth.org/en/permalink/ahliterature219620

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<td>Cites: JAMA. 1993 Apr 7;269(13):1647-548455298</td>
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<td>8261343 View in PubMed</td>
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Blood lead levels.

https://arctichealth.org/en/permalink/ahliterature31484

Author: William O Robertson
Source: Pediatrics. 2002 Jul;110(1 Pt 1):196; author reply 196
Date: Jul-2002
Language: English
Publication Type: Article
Keywords: Alaska - epidemiology
Child
Emigration and Immigration - statistics & numerical data
Humans
Lead - blood
Lead Poisoning - blood - epidemiology - prevention & control
Mass Screening - legislation & jurisprudence - statistics & numerical data
Medicaid - legislation & jurisprudence - standards
Population Surveillance - methods
Risk assessment
United States - epidemiology
PubMed ID: 12093976 View in PubMed

Blood lead levels and delayed onset of puberty in a longitudinal study of Russian boys.

https://arctichealth.org/en/permalink/ahliterature144434

Author: Paige L Williams
          Oleg Sergeyev
          Mary M Lee
          Susan A Korrick
          Jane S Burns
          Olivier Humblet
          Julie DelPrato
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          Russ Hauser

Author Affiliation: Harvard School of Public Health, Department of Biostatistics, Boston, MA 02115, USA. paige@hsph.harvard.edu
Source: Pediatrics. 2010 May;125(5):e1088-96
Date: May-2010
Language: English
Publication Type: Article
Abstract: We evaluated the association of blood lead levels (BLLs) with pubertal onset in a longitudinal cohort of Russian boys.

A total of 489 Russian boys were enrolled in 2003-2005, at 8 to 9 years of age, and were monitored annually through May 2008. Cox proportional-hazards models were used to evaluate the association of BLLs at enrollment with time to pubertal onset during follow-up monitoring.

A total of 481 boys had BLLs, with a median of 3 microg/dL and 28% with values of ≥ or =5 microg/dL. The proportion of pubertal boys increased with age, from 12% at age 8 to 83% at age 12 for testicular volume of >3 mL, from 22% to 90% for genitalia stage 2 or higher, and from 4% to 40% for pubic hair stage 2 or higher. After adjustment for potential confounders including BMI and height, boys with high BLLs (> or =5 microg/dL) had 24% to 31% reduced risk of pubertal onset, on the basis of testicular volume of >3 mL (hazard ratio [HR]: 0.73 [95% confidence interval [CI]: 0.55-0.97]; P = .03), genitalia staging (HR: 0.76 [95% CI: 0.59-0.98]; P = .04), and pubic hair staging (HR: 0.69 [95% CI: 0.44-1.07]; P = .10), compared with those with lower BLLs. Pubertal onset occurred 6 to 8 months later, on average, for boys with high BLLs, compared with those with BLLs of
Blood lead levels in children aged 24 to 36 months in Vancouver.

https://arctichealth.org/en/permalink/ahliterature215463

Author: A. Jin
C. Hertzman
S H Peck
G. Lockitch

Author Affiliation: University of British Columbia, Vancouver.

Source: CMAJ. 1995 Apr 1;152(7):1077-86

Date: Apr-1-1995

Language: English

Publication Type: Article

Keywords: Age Factors
British Columbia - epidemiology
Child, Preschool
Cross-Sectional Studies
Female
Humans
Infant
Lead Poisoning - blood - epidemiology
Male
Parents
Population Surveillance
Questionnaires
Risk factors
Urban health

Abstract: To determine the blood lead levels in children and to identify risk factors for elevated levels.

Cross-sectional study.

Vancouver.

Random sample of children aged 24 to 36 months, born and still resident in Vancouver. The sample was stratified proportionally by the median annual family income in the census tract where each family resided.

Blood lead levels and risk factors for elevated blood lead levels, determined from a questionnaire administered to parents.

Of the children in the sample, 42% (178/422) were ineligible or could not be located. Of the remaining children, 73% (177/244) participated and adequate blood specimens were obtained from 172. The mean blood lead level was 0.29 mumol/L (standard deviation 0.13 mumol/L). (A blood lead level of 1 mumol/L is equivalent to 20.7 micrograms/dL.) The lowest level was 0.06 mumol/L, and the highest was 0.85 mumol/L. Of children with adequate samples, 8.1% (14/172) had blood lead levels of 0.48 mumol/L or higher, and 0.6% (1/172) had a level higher than 0.72 mumol/L. The logarithms of the levels were normally distributed, with a geometric mean (GM) of 0.26 mumol/L (geometric standard deviation 1.56). Of approximately 70 possible predictors of blood lead levels analysed, those that showed a statistically significant association (p
Blood lead levels in children and pregnant women living near a lead-reclamation plant.

https://arctichealth.org/en/permalink/ahliterature226597

Author: P. Levallois
M. Lavoie
L. Goulet
A J Nantel
S. Gingras

Author Affiliation: Centre de toxicologie du Québec, Sainte-Foy.

Source: CMAJ. 1991 Apr 1;144(7):877-85

Date: Apr-1-1991

Language: English

Publication Type: Article
Abstract: To determine the effect of lead contamination around a lead-reclamation plant on the blood lead levels of children and pregnant women living in the area.

Prevalence study.
Resident living 150 m or less (high-exposure area), 151 to 400 m (intermediate-exposure area) or 401 to 800 m (low-exposure area) southeast from the plant.

All children aged 10 years or less and all pregnant women living in the designated area.

Correlation of venous blood lead levels with soil lead concentrations in the areas in which the subjects lived and with sociodemographic and behavioural factors.

Of the estimated 57 pregnant women 38 (67%) participated: 20 were in the high-exposure area and 18 in the other two areas; their geometric mean blood lead levels were low (0.15 and 0.13 mumol/L respectively). Of the 625 eligible children 510 (82%) participated: 169 were in the high-exposure area, 179 in the intermediate-exposure area and 162 in the low-exposure area; their geometric mean lead levels were 0.43, 0.30 and 0.26 mumol/L respectively. Within each age group children in the high-exposure area had the highest levels. The mean levels for children aged 6 months to 5 years were 0.49, 0.35 and 0.28 mumol/L in the three areas respectively. Within each exposure group children aged 1 to 2 years had the highest levels. No potential confounding variables could explain the relation between blood lead level and soil lead concentration.

The pregnant women’s blood lead levels did not seem to be affected by exposure level, but the children’s levels were primarily related to the soil lead concentration.
Environmental health collaboration: United States and Russia.

Author: C H Rubin, R L Jones, B. Revich, S L Avaliani, E. Gurvich

Author Affiliation: Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Environmental Hazards and Health Effects, Health Studies Branch, Atlanta, GA 30333, USA. CRubin@cdc.gov


Date: Aug-2003

Language: English

Publication Type: Article

Keywords: Centers for Disease Control and Prevention (U.S.)
Child, Preschool
Environmental Exposure - analysis
Environmental health
Environmental Pollutants - poisoning
Humans
Infant
International Cooperation
Lead Poisoning - blood
Medical Laboratory Science - instrumentation - methods
Pesticides - poisoning
Risk Assessment - methods
Russia
United States

Abstract: Developed nations share similar challenges to human health from commercial and agricultural chemicals that are released into the environment. Although Russia and the United States are historically distinct and unique, both countries are geographically large and economically dependent on emission-producing surface transportation. This paper describes U.S.-Russian collaborative activities that grew from a 1995 conference in Moscow that brought together environmental health investigators from both countries to discuss common concerns about the human health impact of environmental pollutants. Lead, pesticides, volatile organic compounds, and mercury were identified as contaminants of greatest concern. Collaborative studies were initiated that included collecting blood and hair samples and splitting samples for analyses in both countries, and introducing and sharing new portable blood and environmental sample analyses instruments. The findings demonstrated that hair analysis was not a good predictor of BLL and that Russian children in the first city sampled had a mean BLL of 7.7 microg/dl. Although higher than the U.S. mean, this level was below the 10.0 microg/dl CDC level of concern. This manuscript summarizes additional study results and describes their impacts on Russian policy. On-going collaborative environmental investigations are described.

PubMed ID: 12971688 View in PubMed