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1,3-Butadiene and leukemia among synthetic rubber industry workers: exposure-response relationships.

https://arctichealth.org/en/permalink/ahliterature166384

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Publication Type: Article

Keywords: Butadienes - adverse effects
Canada - epidemiology
Carcinogens - chemical synthesis - chemistry - toxicity
Chemical Industry - manpower - statistics & numerical data
Confidence Intervals
Dimethyldithiocarbamate - adverse effects
Humans
Leukemia, Lymphoid - chemically induced - epidemiology
Leukemia, Myeloid - chemically induced - epidemiology
Likelihood Functions
Male
Middle Aged
Occupational Exposure - statistics & numerical data
Proportional Hazards Models
Rubber - adverse effects - chemical synthesis - chemistry
United States - epidemiology

Abstract: Previous research updated the mortality experience of North American synthetic rubber industry workers during the period 1944-1998, determined if leukemia and other cancers were associated with several employment factors and carried out Poisson regression analysis to examine exposure-response associations between estimated exposure to 1,3-butadiene (BD) or other chemicals and cancer. The present study used Cox regression procedures to examine further the exposure-response relationship between several unlagged and lagged, continuous, time-dependent BD exposure indices (BD parts per million (ppm)-years, the total number of exposures to BD concentrations >100 ppm ("peaks") and average intensity of BD) and leukemia, lymphoid neoplasms and myeloid neoplasms. All three BD exposure indices were associated positively with leukemia. Using continuous, untransformed BD ppm-years the regression coefficient (beta) from an analysis that controlled only for age was 2.9 x 10(-4) (p

PubMed ID: 17123495 View in PubMed ☰
1,3-Butadiene has been assessed as a Priority Substance under the Canadian Environmental Protection Act. The general population in Canada is exposed to 1,3-butadiene primarily through ambient air. Inhaled 1,3-butadiene is carcinogenic in both mice and rats, inducing tumors at multiple sites at all concentrations tested in all identified studies. In addition, 1,3-butadiene is genotoxic in both somatic and germ cells of rodents. It also induces adverse effects in the reproductive organs of female mice at relatively low concentrations. The greater sensitivity in mice than in rats to induction of these effects by 1,3-butadiene is likely related to species differences in metabolism to active epoxide metabolites. Exposure to 1,3-butadiene in the occupational environment has been associated with the induction of leukemia; there is also some limited evidence that 1,3-butadiene is genotoxic in exposed workers. Therefore, in view of the weight of evidence of available epidemiological and toxicological data, 1,3-butadiene is considered highly likely to be carcinogenic, and likely to be genotoxic, in humans. Estimates of the potency of butadiene to induce cancer have been derived on the basis of both epidemiological investigation and bioassays in mice and rats. Potencies to induce ovarian effects have been estimated on the basis of studies in mice. Uncertainties have been delineated, and, while there are clear species differences in metabolism, estimates of potency to induce effects are considered justifiably conservative in view of the likely variability in metabolism across the population related to genetic polymorphism for enzymes for the critical metabolic pathway.
1.4 billions crowns to 1 881 projects renew rehabilitation and habilitation.

https://arctichealth.org/en/permalink/ahliterature202185

Author: G. Wallgrund
Author Affiliation: Sahlgrenska Universitetssjukhuset, Göteborg.
Source: Lakartidningen. 1999 Apr;96(15):1823
Date: Apr-14-1999
Language: Swedish
Publication Type: Article
Keywords: Community Health Services - economics - trends
         Humans
         Rehabilitation - economics - methods - trends
         Sweden
PubMed ID: 10319646 View in PubMed
1,4-Dioxane biodegradation at low temperatures in Arctic groundwater samples.

https://arctichealth.org/en/permalink/ahliterature97831

Author: Mengyan Li
Stephanie Fiorenza
James R Chatham
Shaily Mahendra
Pedro J J Alvarez

Author Affiliation: Department of Civil and Environmental Engineering, Rice University, Houston, TX, USA.

Source: Water Res. 2010 May;44(9):2894-900

Date: May-2010

Language: English

Publication Type: Article

Abstract: 1,4-Dioxane biodegradation was investigated in microcosms prepared with groundwater and soil from an impacted site in Alaska. In addition to natural attenuation conditions (i.e., no amendments), the following treatments were tested: (a) biostimulation by addition of 1-butanol (a readily available auxiliary substrate) and inorganic nutrients; and (b) bioaugmentation with Pseudonocardia dioxanivorans CB1190, a well-characterized dioxane-degrading bacterium, or with Pseudonocardia antarctica DVS 5a1, a bacterium isolated from Antarctica. Biostimulation enhanced the degradation of 50 mg L(-1) dioxane by indigenous microorganisms (about 0.01 mg dioxane d(-1) mg protein(-1)) at both 4 and 14 degrees C, with a simultaneous increase in biomass. A more pronounced enhancement was observed through bioaugmentation. Microcosms with 50 mg L(-1) initial dioxane (representing source-zone contamination) and augmented with CB1190 degraded dioxane fastest (0.16 +/- 0.04 mg dioxane d(-1) mg protein(-1)) at 14 degrees C, and the degradation rate decreased dramatically at 4 degrees C (0.021 +/- 0.007 mg dioxane d(-1) mg protein(-1)). In contrast, microcosms with DVS 5a1 degraded dioxane at similar rates at 4 degrees C and 14 degrees C (0.018 +/- 0.004 and 0.015 +/- 0.006 mg dioxane d(-1) mg protein(-1), respectively). DVS 5a1 outperformed CB1190 when the initial dioxane concentration was low (500 microg L(-1), which is representative of the leading edge of plumes). This indicates differences in competitive advantages of these two strains. Natural attenuation microcosms also showed significant degradation over 6 months when the initial dioxane concentration was 500 microg L(-1). This is the first study to report the potential for dioxane bioremediation and natural attenuation of contaminated groundwater in sensitive cold-weather ecosystems such as the Arctic.

PubMed ID: 20199795 View in PubMed
[1,4 millions Swedes are on the donation registry. Still several thousands newly registered persons per month].

https://arctichealth.org/en/permalink/ahliterature208386

Author: H. Gäbel
N. Rehnqvist
B. Eriksson

Author Affiliation: Transplantationskirurgiska kliniken, Huddinge sjukhus, Stockholm.

Source: Lakartidningen. 1997 May 28;94(22):2105-8

Date: May-28-1997

Language: Swedish

Publication Type: Article

Keywords: Humans
Public Opinion
Registries
Sweden
Tissue Donors
Tissue and Organ Procurement - statistics & numerical data

PubMed ID: 9213668 View in PubMed 

$1.5 billion at stake as tobacco smuggling lawsuit relaunched.

https://arctichealth.org/en/permalink/ahliterature183644

Author: Louise Gagnon

Source: CMAJ. 2003 Sep 16;169(6):593

Date: Sep-16-2003

Language: English

Publication Type: Article

Keywords: Canada
Crime - economics - legislation & jurisprudence
Health Promotion - economics - legislation & jurisprudence
Humans
Marketing of Health Services - economics - legislation & jurisprudence
Smoking - economics - legislation & jurisprudence
State Health Plans - economics - legislation & jurisprudence
Taxes - economics - legislation & jurisprudence
Tobacco Industry - economics - legislation & jurisprudence
United States

PubMed ID: 12975235 View in PubMed 

Arctic Health
1,005 delayed days: a study of adult psychiatric discharge.

https://arctichealth.org/en/permalink/ahliterature244608

Author: P A Barrette
Date: Apr-1981
Language: English
Publication Type: Article
Keywords: Adult
Canada
Hospitals, Community
Hospitals, Psychiatric - organization & administration
Humans
Length of Stay
Patient Acceptance of Health Care
Patient Discharge

Abstract: Delay in discharge of psychiatric patients frequently is attributed to the lack of available community resources, or to the unwillingness of the patient or his family to accept discharge or transfer to another facility. The role of the psychiatric system itself rarely is mentioned as a factor. A study of 138 psychiatric patients in a Canadian community hospital in 1978 showed that 35 per cent were judged to be delayed in their discharge. By far the greatest source of delay was the administration of the various psychiatric services within the system. Delayed patients were found to be statistically similar to nondelayed patients, except for the delayed patients tendency to be poorer and to be overrepresented on two of the six wards studied. The cost implications of the delays in discharge are discussed, as are suggestions for solving the problems within the administrative framework.

PubMed ID: 7227988 View in PubMed
[1,5 ppm fluoride in natural drinking water. Impressions of a journey to Vordingborg, Denmark]


Author: Bremer
Source: Zahnarztl Mitt. 1971 Nov 2;61(21):1070
Date: Nov-2-1971
Language: German
Publication Type: Article
Keywords: Adolescent
Child
Child, Preschool
Denmark
Dental Caries - epidemiology
Fluorides
Humans
Water supply
PubMed ID: 5286845 View in PubMed

A < 1.7 cM interval is responsible for Dmo1 obesity phenotypes in OLETF rats.

https://arctichealth.org/en/permalink/ahliterature47295

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Ayako Mizoguchi-Miyakita
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Yoshihiro Goto
Hiroichi Shinomiya
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Language: English
1. Dmo1 (Diabetes Mellitus OLETF type I) is a major quantitative trait locus for dyslipidaemia, obesity and diabetes phenotypes of male Otsuka Long Evans Tokushima Fatty (OLETF) rats. 2. Our congenic lines, produced by transferring Dmo1 chromosomal segments from the non-diabetic Brown Norway (BN) rat into the OLETF strain, have confirmed the strong, wide-range therapeutic effects of Dmo1 on dyslipidaemia, obesity and diabetes in the fourth (BC4) and fifth (BC5) generations of congenic animals. Analysis of a relatively small number of BC5 rats (n = 71) suggested that the critical Dmo1 interval lies within a
The 1.9 A crystal structure of heat-labile shrimp alkaline phosphatase.

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Source: J Mol Biol. 2002 May 17;318(5):1265-74

Date: May-17-2002

Language: English

Publication Type: Article

Keywords: Alkaline Phosphatase - chemistry
          Animals
          Crystallography, X-Ray
          Decapoda (Crustacea) - chemistry - enzymology
          Humans
          Models, Molecular
          Protein Conformation
          Temperature

Abstract: Alkaline phosphatases are non-specific phosphomonoestersases that are distributed widely in species ranging from bacteria to man. This study has concentrated on the tissue-nonspecific alkaline phosphatase from arctic shrimps (shrimp alkaline phosphatase, SAP). Originating from a cold-active species, SAP is thermolabile and is used widely in vitro, e.g. to dephosphorylate DNA or dNTPs, since it can be inactivated by a short rise in temperature. Since alkaline phosphatases are zinc-containing enzymes, a multiwavelength anomalous dispersion (MAD) experiment was performed on the zinc K edge, which led to the determination of the structure to a resolution of 1.9 A. Anomalous data clearly showed the presence of a zinc triad in the active site, whereas alkaline phosphatases usually contain two zinc and one magnesium ion per monomer. SAP shares the core, an extended beta-sheet flanked by alpha-helices, and a metal triad with the currently known alkaline phosphatase structures (Escherichia coli structures and a human placental structure). Although SAP lacks some features specific for the mammalian enzyme, their backbones are very similar and may therefore be typical for other higher organisms. Furthermore, SAP possesses a striking feature that the other structures lack: surface potential representations show that the enzyme's net charge of -80 is distributed such that the surface is predominantly negatively charged, except for the positively charged active site. The negatively charged substrate must therefore be directed strongly towards the active site. It is generally accepted that optimization of the electrostatics is one of the characteristics related to cold-adaptation. SAP demonstrates this principle very clearly.

PubMed ID: 12083516 View in PubMed