131I content in the human thyroid estimated from direct measurements of the inhabitants of Russian areas contaminated due to the Chernobyl accident.

https://arctichealth.org/en/permalink/ahliterature30700

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Language: English

Publication Type: Article

Keywords: Accidents, Radiation
Adolescent
Adult
Aged
Child
Child, Preschool
Computer simulation
Female
Humans
Infant
Infant, Newborn
Iodine Radioisotopes - analysis - pharmacokinetics
Male
Metabolic Clearance Rate
Middle Aged
Models, Biological
Power Plants
Radiation Dosage
Radioactive fallout - analysis
Radiometry - methods
Russia
Thyroid Gland - metabolism
Ukraine
Abstract: The method of processing and the results of measurements of 131I content in the thyroids of Russian people performed in May-June 1986 are presented. The contribution of radiation from Cs radionuclides in the human body was taken into account in the processing of measurement data with an SRP-68-01 device. The greatest individual 131I content was found in the thyroids of inhabitants of the Bryansk region, up to 250-350 kBq, and in the Tula and Orel regions, up to 100 kBq. The average 131I thyroid activity in the middle of May 1986 reached 80 kBq for inhabitants of some settlements in the Bryansk region, 5-8 kBq in the Tula region and 5 kBq in the Orel region.

PubMed ID: 14527038 View in PubMed
131I dose-dependent thyroid autoimmune disorders in children living around Chernobyl.

https://arctichealth.org/en/permalink/ahliterature34164

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Source: Clin Immunol Immunopathol. 1997 Sep;84(3):251-9

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Publication Type: Article

Keywords: Accidents, Radiation
Adolescent
Autoantibodies - blood
Autoimmune Diseases - etiology
Child
Humans
Iodine Radioisotopes - adverse effects
Lymphocyte Count
Lymphocyte Subsets - chemistry - immunology
Radioactive fallout
Radioactive Pollutants - adverse effects
Thyroglobulin - immunology
Thyroid Diseases - immunology
Thyroid Gland - ultrasonography
Thyroid Hormones - blood
Thyrotropin - blood
Ukraine

Abstract: We assessed the major lymphocyte subsets in the peripheral blood, thyroid ultrasonography, levels of serum autoantibodies to thyroglobulin (AbTg), thyroid hormones, and thyroid-stimulating hormone (TSH) in 53 children without any chronic diseases living continuously around Chernobyl. The subjects ranged in age from 7 to 14 years and had different doses of 131I to their thyroid. Healthy children living on noncontaminated areas were assessed as controls. The majority of children with doses of 131I had normal levels of thyroid hormones. However, the percentages of positive sera for AbTg, TSH levels, ultrasonographic thyroid abnormalities, and abnormal echogenicity were significantly higher in children with doses of 131I than in controls. The dose of 131I to thyroid correlated positively with serum AbTg levels, percentage of CD3+CD4+ cells, and CD3+CD4+/CD3+CD8+ cell ratio and negatively with number of CD3+CD8+ and CD3-/CD16, CD56+ cells. Thus, our study demonstrates an association between dose of 131I and autoimmune thyroid disorders in this population of children.

PubMed ID: 9281383 View in PubMed

Arctic Health
131I dose to the human fetal thyroid in the Zagreb district, Yugoslavia, from the Chernobyl accident.

https://arctichealth.org/en/permalink/ahliterature65399

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Date: Aug-1988

Language: English

Publication Type: Article

Keywords: Accidents  
Female  
Humans  
Iodine Radioisotopes - metabolism  
Maternal-Fetal Exchange  
Nuclear Reactors  
Pregnancy  
Radiation Dosage  
Radioactive fallout  
Thyroid Gland - metabolism  
Ukraine  
Yugoslavia

Abstract: The 131I activity was measured in 30 human fetal thyroids in Zagreb district after the Chernobyl accident. A model of radioiodine metabolism in the mother and human fetus which takes into account the age dependence of the uptake and retention of radioiodine in the fetal thyroid was developed. Having assessed that the total intake by the average mother was about 1330 Bq, a good correlation between calculated and measured fetal thyroid activities was found (r = 0.77, P less than 0.001). The fetal thyroid dose reached the maximum of 0.43 micro Gy/Bq intake at about the fifth month of gestation. It was concluded that the risk of having a child with a harmful trait due to 131I absorbed by the mother was negligible.

PubMed ID: 2900274 View in PubMed

210Pb and 210Po in tissues of some Alaskan residents as related to consumption of caribou or reindeer meat.

https://arctichealth.org/en/permalink/ahliterature5061

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Date: Feb-1970

Language: English

Publication Type: Article

Physical Holding: Alaska Medical Library
Keywords:
Adolescent
Adult
Aged
Alaska
Animals
Bone and Bones - analysis
Child
Diet
Female
Food analysis
Gonads - analysis
Humans
Intestine, Small - analysis
Kidney - analysis
Lead - analysis
Lichens - analysis
Liver - analysis
Lung - analysis
Male
Meat
Middle Aged
Muscles - analysis
Polonium - analysis
Radiation monitoring
Radioisotopes
Radium
Reindeer
Spleen - analysis
Thyroid Gland - analysis
Anaktuvuk Pass
Platinum
Barrow
Akiak
Kivalina
Koyuk
Radioactive fallout
Lead-210
Polonium-210

Notes:

PubMed ID: 5416365 View in PubMed
A 1982-1992 surveillance programme on Danish pottery painters. Biological levels and health effects following exposure to soluble or insoluble cobalt compounds in cobalt blue dyes.

https://arctichealth.org/en/permalink/ahliterature15957

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Source: Sci Total Environ. 1994 Jun 30;150(1-3):95-104

Date: Jun-30-1994

Language: English

Publication Type: Article

Keywords: Cobalt - adverse effects - blood - pharmacokinetics - urine
Denmark
Environmental monitoring
Female
Humans
Lung - drug effects - physiology
Male
Mutagenicity Tests
Occupational Exposure - adverse effects - analysis
Paint
Reference Values
Thyroid Gland - drug effects - physiology
Time Factors

Abstract: This paper provides a short overview of cobalt-related diseases with particular reference to the potential carcinogenicity of cobalt compounds, and a review of a 10-year surveillance programme on plate painters exposed to cobalt in two Danish porcelain factories. Clinical experience and epidemiological studies have demonstrated that cobalt exposure may lead to severely impaired lung function, i.e. hard metal lung disease and occupational cobalt-related asthma, contact dermatitis and cardiovascular effects. However, the evidence for the carcinogenicity of cobalt and cobalt compounds is considered inadequate (IARC, 1991). Most frequently, exposure to cobalt occurs simultaneously with exposure to other elements known to pose a health risk, e.g. nickel, arsenic, chromium, tungsten. The importance of cobalt as sole causal agent in hard metal lung diseases, cardiomyopathy and cancer are still a matter of controversy. In the two Danish porcelain factories, cobalt blue underglaze dyes have been used since 1888. In contrast to the exposure experience of hard metal factories, the exposure of plate painters occurs with only low trace levels of other potentially harmful compounds such as the carcinogenic metals nickel, arsenic and chromium. Consequently, the nearly-pure cobalt exposure makes the plate painters an attractive group for studies on the health effects of cobalt. During the period 1982-1992 the surveillance programme showed a profound reduction in the urine level of cobalt (Co-U) from 100-fold to 10-fold above the median level of the unexposed control subjects. In the same period, the airborne cobalt exposure declined from 1356 nmol/m3 to 454 nmol/m3, the Danish occupational exposure limit being 845 nmol/m3. In 1982, when the cobalt exposure was above the occupational exposure limit, the plate painters showed a chronic impaired lung function. The obstructive effects may be similar to some of the effects observed in hard metal workers. In 1988, a study on the effect of cobalt exposure at low levels revealed no inhibitory effects on thyroid function, but the ratio between T4 and T3 increased, indicating that low cobalt exposure may have an impact on the metabolism of thyroid hormones. Parallel studies were conducted on the metabolism and excretion of cobalt. The gastrointestinal uptake of soluble CoCl was considerably higher than the uptake of insoluble cobalt(II) oxide. In addition, it was demonstrated that ingestion of controlled amounts of the soluble cobalt compound resulted in significantly higher concentrations of cobalt in urine and blood (Co-B) from females compared with males (P

PubMed ID: 7939615 View in PubMed
Acclimation of a non-indigenous sub-Arctic population: seasonal variation in thyroid function in interior Alaska.

https://arctichealth.org/en/permalink/ahliterature214965

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Date: Jun-1995

Language: English

Publication Type: Article

Keywords: Acclimatization - physiology  
Adolescent  
Adult  
Alaska - ethnology  
Arctic regions - ethnology  
Body Weight  
Humans  
Male  
Military Personnel  
Pineal Gland - physiology  
Seasons  
Thyroid Gland - physiology  
Thyroxine - blood  
Triiodothyronine - blood  
Weight Gain

Abstract: Total, as well as free, T4 and T3 levels were obtained over four seasons for young male infantry soldiers assigned to interior Alaska. Significant seasonal variations were found in both T3 and T4. Total T4 and T3 levels were highest in winter, while free T4 and T3 levels were highest in early spring. Correlations with melatonin levels from a concurrent study showed an association between late day (17.00) mean spot melatonin levels during the preceding summer and T3 levels in winter and spring. Differences in seasonal T4 and T3 levels between indigenous and newly arrived people in the sub-Arctic may be related not only to cold acclimation but also to light.

PubMed ID: 7788348 View in PubMed
A comparative morphometric analysis of the degree of thyrocyte aggregation in preoperative and postoperative cytological material from patients with the identical thyroid pathology

https://arctichealth.org/en/permalink/ahliterature22084

Author: V A Kirillov
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Language: Russian

Publication Type: Article

Keywords:
Accidents, Radiation
Adolescent
Adult
Byelarus
Cell Aggregation
Child
Child, Preschool
Comparative Study
English Abstract
Female
Humans
Male
Middle Aged
Postoperative Period
Power Plants
Statistics, nonparametric
Thyroid Diseases - pathology
Thyroid Gland - pathology
Ukraine

Abstract: The similarity of average parameters of thyrocyte aggregates and their distribution on histograms was revealed using comparative morphometric analysis of pre- and postoperative samples from thyroid glands of patients with identical histologic analyses. These regularities may be used as additional diagnostic criteria of thyroid cancer at both pre- and postoperative stages.

PubMed ID: 9297290 View in PubMed
Abstract: The chromosome dicentric aberrations in the lymphocytes and levels of antibodies to human thyroid microsomal antigen in the serum of the children lived in the area of Bryansk Province suffered from the Chernobyl accident was examined. Correlation between those tests was not estimated: the autoantibodies were revealed in group with dicentrics and without those in 4.0% and 4.5% of cases correspondingly. Antimicrosomal antibodies were revealed more frequently (5.0%) and in higher titers in the children from the more polluted Bryansk Province than in those from Kaluga Province (3.1%). These data can testify about the role of inside radiation of thyroid gland in appearance of autoimmune thyroiditis signs.
[A comparative study of the morphofunctional changes in the thyroid of carp and rats as a result of being in an environment with an elevated lead level].

https://arctichealth.org/en/permalink/ahliterature210108

Author: G G Kornienko
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Date: 1997

Language: Russian

Publication Type: Article

Keywords: Animals
Carps - physiology
Environmental Pollutants - adverse effects
Humans
Lead - adverse effects
Prevalence
Rats
Russia - epidemiology
Thyroid Diseases - chemically induced - epidemiology
Thyroid Gland - drug effects - physiopathology
Urban Population

Abstract: It has been noticed that the morphofunctional organization of the thyroid gland is similar in representatives of two different classes of vertebrates: in fishes and in rats. Exposure of experimental animals to ecological factors with increased lead levels was followed by a phase response (activation, depression) of various structural elements of the thyroid gland. Obvious differences in morphofunctional mechanisms of adaptation to chemical stress factors in fishes and rats were found. A possible relationship is discussed between the environmental pollution with heavy metals and the increased incidence of thyroid gland disease in human population.

PubMed ID: 9173625 View in PubMed

Age- and sex-specific relative thyroid radiation exposure to 131I in Ukraine after the Chernobyl accident.

https://arctichealth.org/en/permalink/ahliterature32325

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Date: Mar-2001

Language: English

Publication Type: Article
Abstract: The age- and sex-dependence of the 131I induced count rates is determined for the measurements performed in Ukraine after the Chernobyl accident on the thyroids of over 60,000 persons. For this, the individual measurements are scaled in such a way that the mean values over age and sex on one side and the mean values over measurement series on the other side are normalized to one. The resulting distribution of all scaled measurements is roughly log-normal. Half of them lie within a factor 1.6 of the median. 131I induced count rates have a minimum at birth year 1986, about half the value of adults. The maximum count rates with about 30% above adults are reached for males around age 16 y. The count rates are up to about 40% (at age 14-17 y) higher for males than for females. The results are within statistical uncertainties independent of the geographical area and the urban or rural nature of the settlements. Starting from the relative count rates, the age- and sex-dependence is calculated for the thyroid activities 1 mo after the accident for the integrated activities and for the doses. The dose of young children is a factor of about 6.5 higher than that of adults. Uncertainties are estimated throughout.