

The French-German Initiative for Chernobyl

Programme 3: HEALTH consequences of the Chernobyl accident

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Goals

The main objectives of the health programme are collection and validation of existing data on cancer and non cancer diseases in the most highly contaminated regions of Ukraine, Russia and Belarus, common scientific expertise on main health indicators and reliable dosimetry, and finally communication of the results to the scientific community and to the public.

General Tasks

- 1- Comparison between high and low exposed regions
- 2- Description of trends over time,
- 3- Consideration of specific age groups

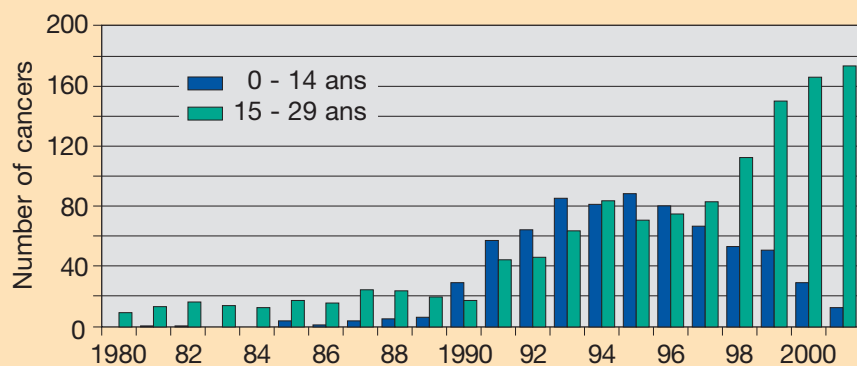
This methodological approach is applied on

- **Solid cancer incidence and leukaemia** incidence in different regions in Ukraine, Belarus and Russia,
- With a special focus on **thyroid cancer** in young exposed ages

Thyroid cancer

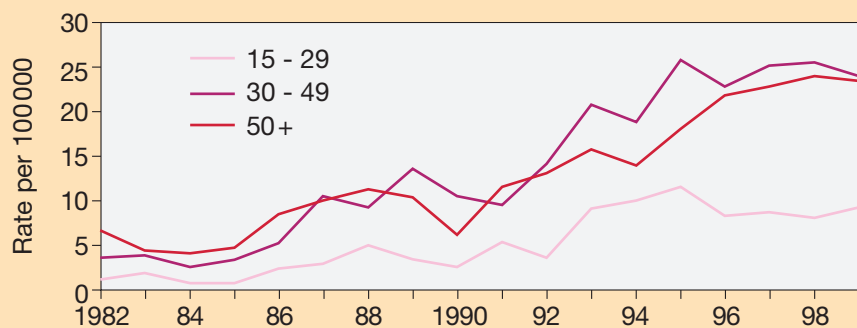
Those exposed in very young ages continue to express a relatively high excess of thyroid cancer even though they have now reached the age group 15-29.

Those exposed as young adults show a small increase, at least partly due to better screening conditions.



Thyroid cancer incidence rates in children and young adults as a function of age at diagnosis in Belarus.

Source: Belarusian Cancer Registry (BCR)



Thyroid cancer incidence rates in adults as a function of age at diagnosis in Russia (Bryansk et Orel)

Ivanov V.K., Maksioutov M.A., Korelo A.M / Medical Radiological Research Center of RAMS

Leukemia

Description of leukemia trends for various age groups show no clear difference between exposed and unexposed regions when focusing on those exposed at very young ages.

The rates of childhood leukemia before and after the accident show no evidence of any increase (oblasts in Belarus over 1982-1998) [Radiat Environ Biophys 40 (4) 2001]

General conclusions

At present stage, not all the possible effects of the Chernobyl accident have been studied: some of them may arise after a long latency period. The basic data that are supporting our present descriptive analyses are stored in our common HEDAC database. Final reports of all the sub-projects are available and most of our results are presented in our CD summarizing the workshop in Kiev on October 5 and 6, 2004.

Specific studies

- Incidence of **congenital malformations** in Belarus
- **Infant mortality and morbidity** in the most highly contaminated regions
- **Potential effects of prenatal irradiation on the brain** as a result of the Chernobyl accident
- **Nutritional status** of population living in regions with different levels of contamination
- **Dosimetry** of Chernobyl **clean-up workers**
- Radiological passports in contaminated settlements

Congenital malformations

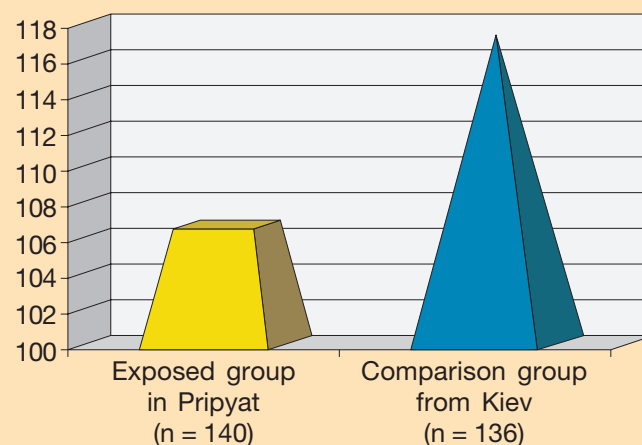
As a national register was existing since the 1980s and gives the possibility to compare trends before and after the accident, results of congenital malformations describe large results collected over Belarus,

There is no evidence of a difference in the trends when comparing exposed and unexposed oblasts.

Potential effects of prenatal irradiation on the brain

Intelligence Assessment of Ukrainian children is measured by an adapted and normalised tool: the Wechsler Intelligence Scale for Children, WISC (the verbal, performance and full scale IQs).

- There are significant ($p < 0.001$) differences on intelligence scale of exposed children: the full scale IQ and verbal IQ are lower in exposed versus non exposed children.
- Differences on performance IQ are non significant ($p > 0.05$)



Intelligence of children (WISC) in Ukraine Verbal IQ
A.I. Nyagu, K.N. Loganovsky, R. Pott-Born / Research Center for Radiation Medicine of AMSU