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## Cancer incidence in the cohort of Chernobyl accident fighters

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On 26 April 1986 at 01:23:44 a.m. reactor number four at the Chernobyl plant, near Prip'yat in the Ukrainian SSR, exploded. Further explosions and the resulting fire sent a plume of highly radioactive fallout into the atmosphere and over an extensive geographical area.

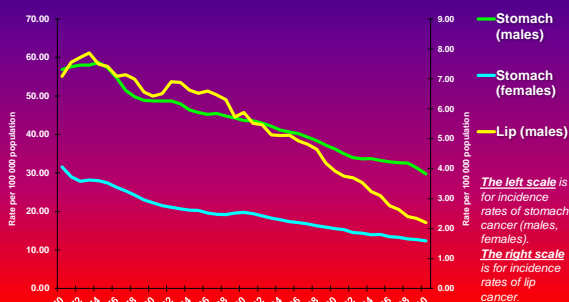


23% of land in Belarus (46.45 thousand km<sup>2</sup>) were contaminated with radionuclides. More than 3,300 settlements were located in this area (27 cities with a population of 2.2 million people, 26.9% of whom were children and adolescents. The most contaminated areas were Gomel (1528 localities), Mogilev (866) and Brest (167) regions.

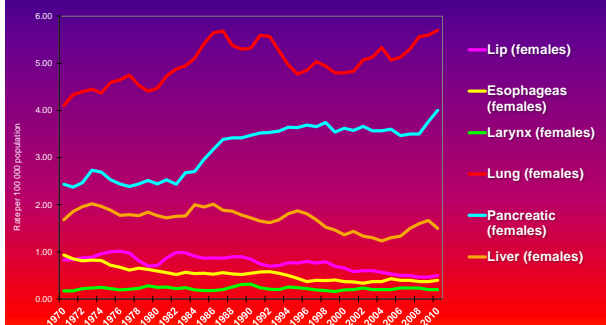


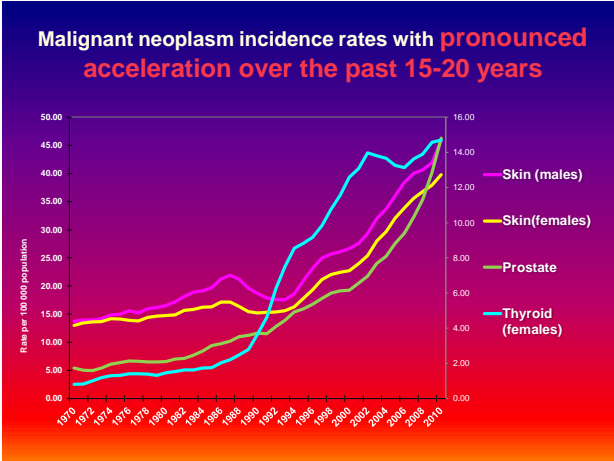
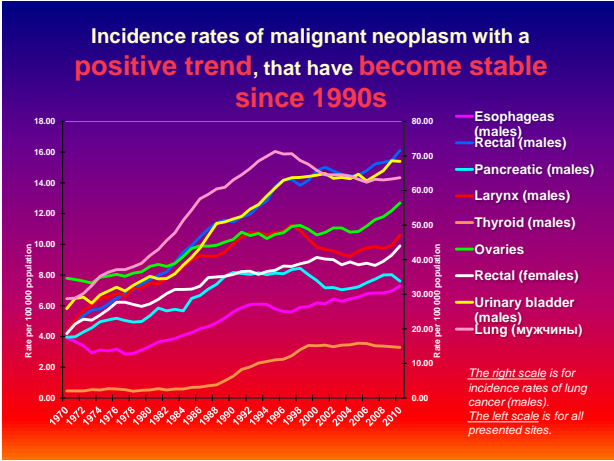
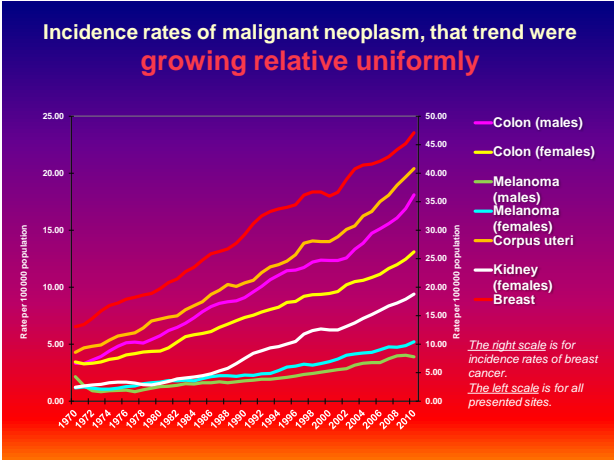
There were many speculations, assumptions and predictions about the role of Chernobyl accident in cancer growth in Belarus. Most assumptions have been varying with the time. And till the present the question about damage of Chernobyl accident has not been answered.

### Incidence rates of malignant neoplasm with a negative trend



### Trends in malignant neoplasm incidence rates with insignificant changes





About 600 000 people were occupied in liquidation of aftermath of disaster in 1986-1989. They got the dose of radiation approximately 100 mSv.

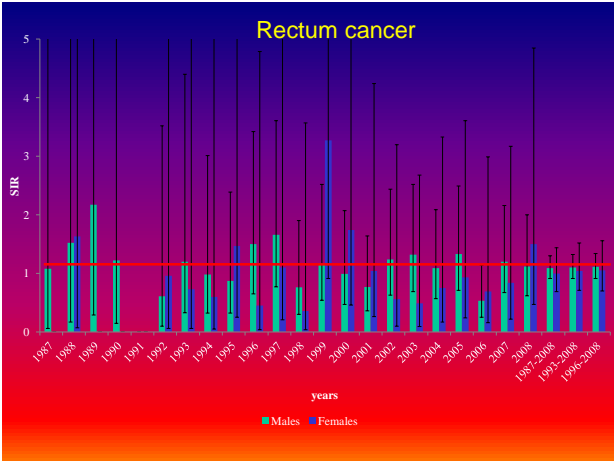
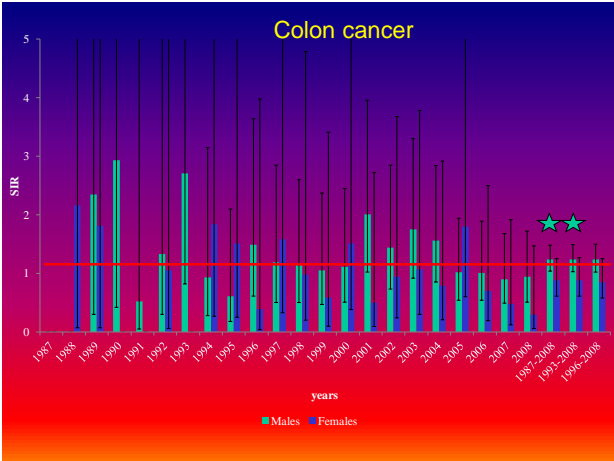
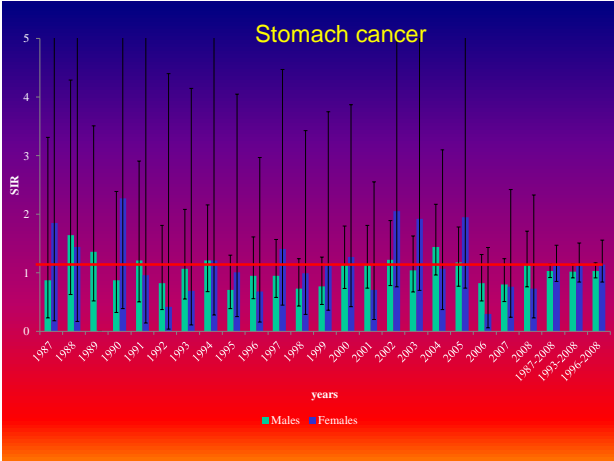
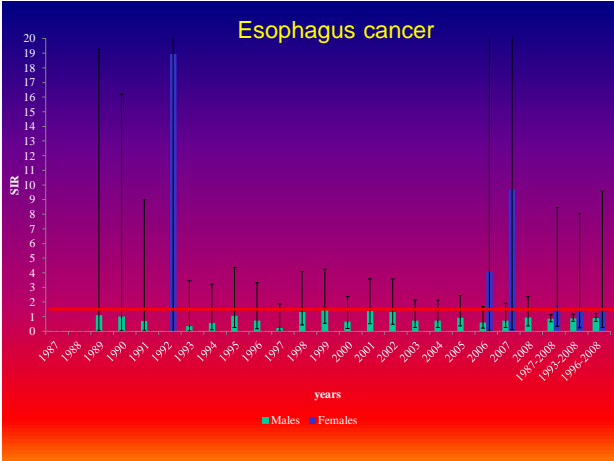
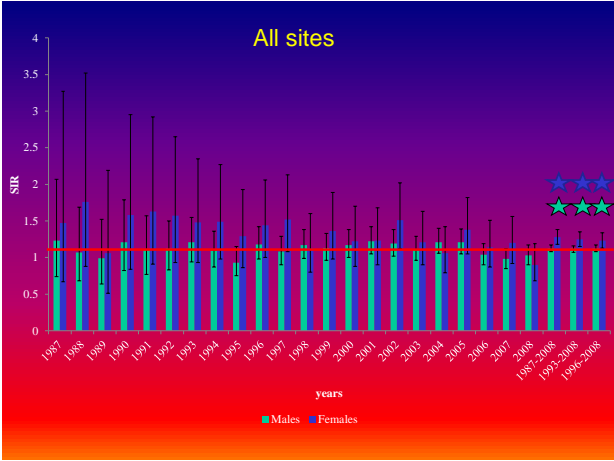
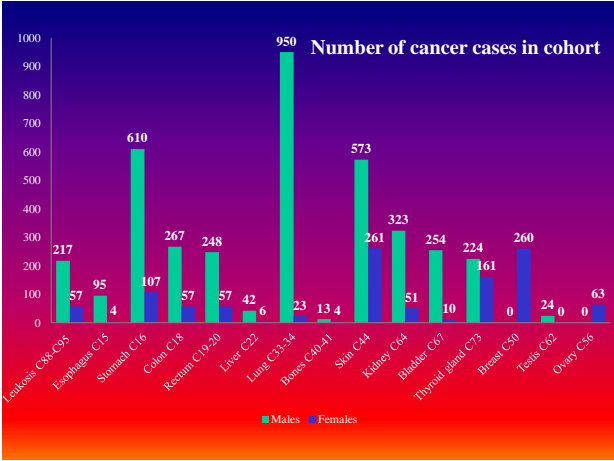
237 people suffered from acute radiation sickness (ARS), 31 of them died within the first three months, 60-80 persons died within 15 years from long-term effects

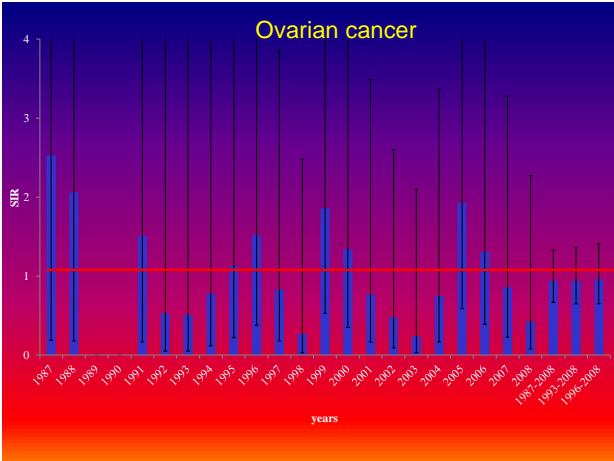
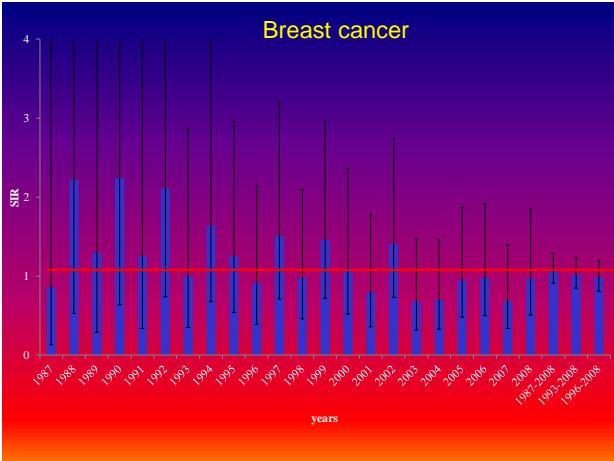
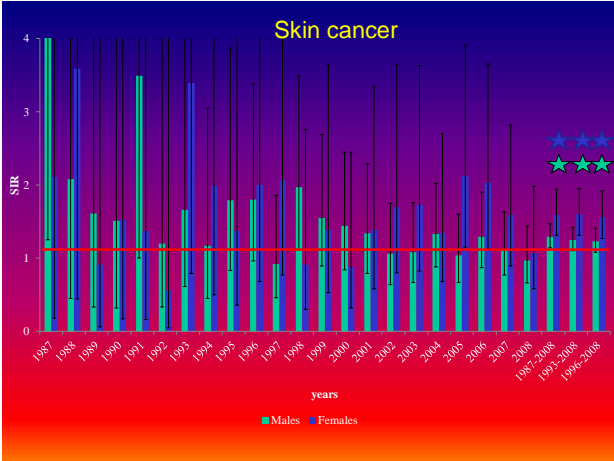
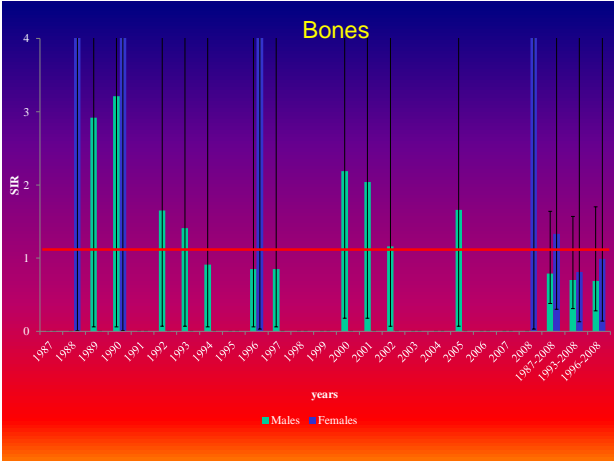
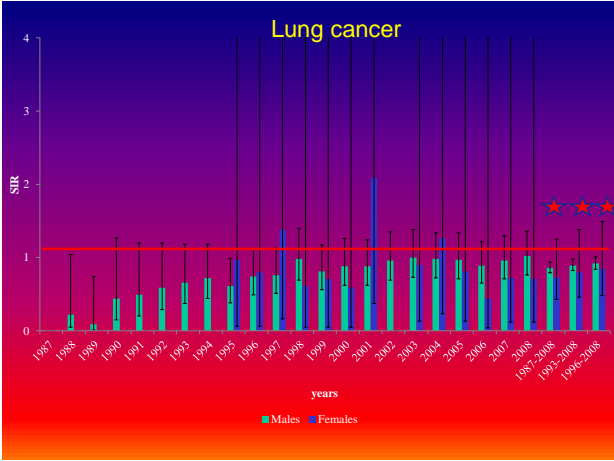
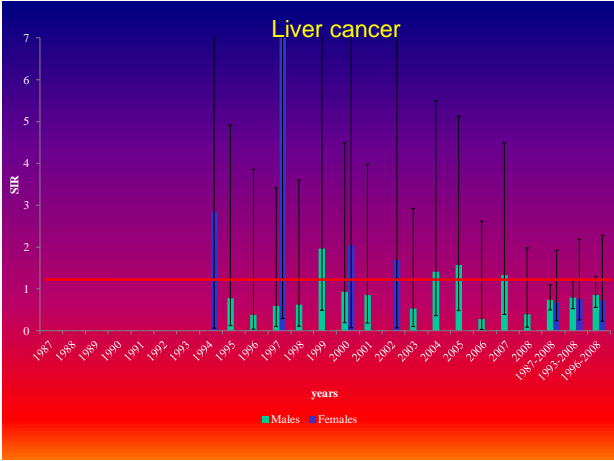
The aim of this study was to estimate the cancer incidence in the cohort of people who were occupied in removal of disaster outcomes in 1986-1987.

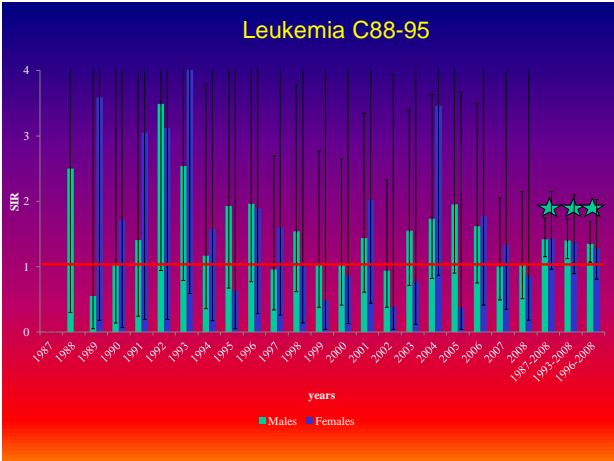
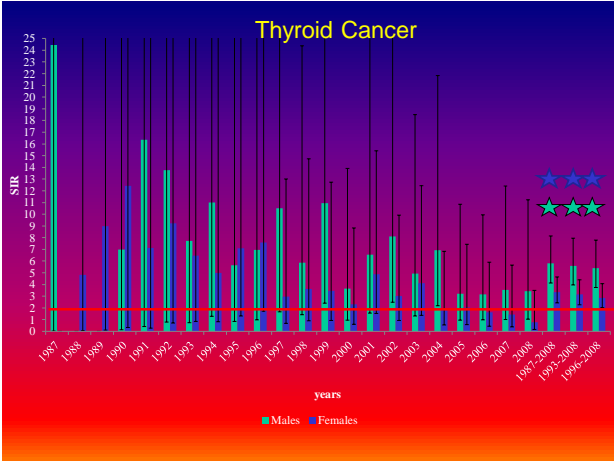
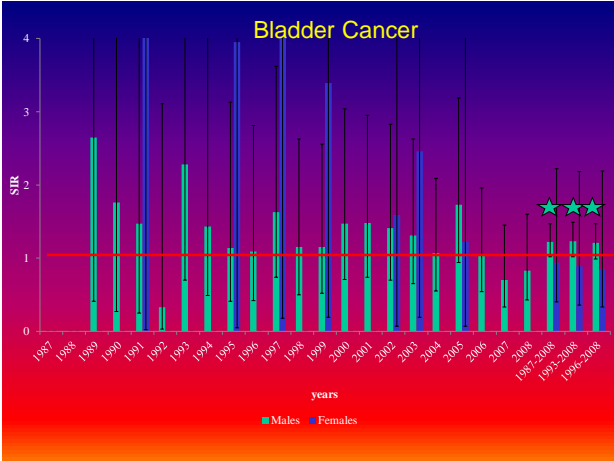
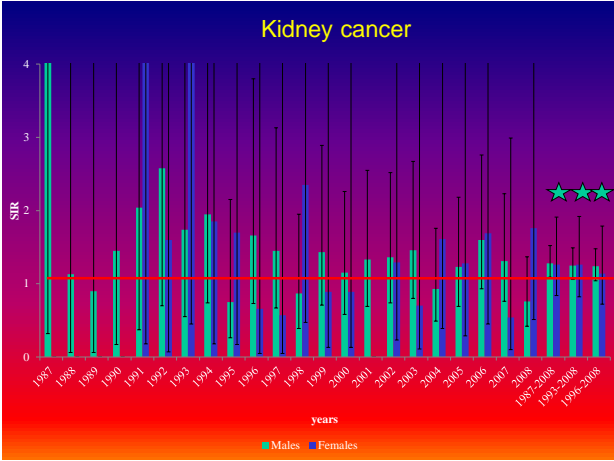
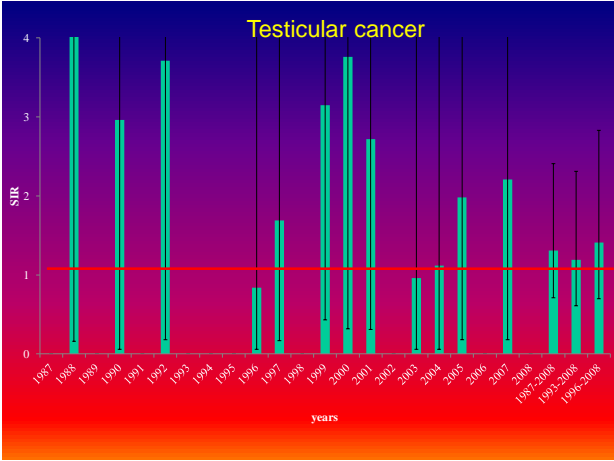
Materials: The cohort of Chernobyl Accident Fighters (CAF) were identified from Belorussian State Chernobyl Register and verified for cancer by Belorussian Republican Cancer Registry. It was investigated for cancer incidence from 1987 till 2008.

	Number of persons	Number of pyrs
Males	79 722	938 401
Females	18 497	251 751
Total	98 219	1 190 152

Standardized incidence ratios (SIRs) were calculated using the adjusted (by age, sex, residence and calendar time) Belorussian population cancer incidence rates to generate expected numbers.







### Conclusions

There was found a little excess of cancer cases of all sites (SIR=1,12; 95%CI=1,08-1,17 in males and SIR=1,28; 95%CI=1,18-1,38 in females).

The significantly highest risk of thyroid cancer was noted (SIR=5,8; 95%CI=4,12-8,15 in males and SIR=3,36; 95%CI=2,43-4,64 in females).

Also certain significant excess in cancer incidence in the investigated cohort was found in males colon cancer (SIR = 1,24; 95%CI=1,04-1,48); kidney cancer (SIR = 1,28; 95%CI=1,09-1,52); bladder cancer (SIR = 1,22; 95%CI=1,02-1,47) and leukemia (SIR= 1,42; 95%CI=1,15-1,75); skin cancer (SIR = 1,29; 95%CI=1,14-1,47 in males and SIR = 1,59; 95%CI=1,31-1,94 in females). No excess in breast cancer (SIR = 0,93; 95%CI=0,81-1,08) and lung cancer (SIR = 0,84; 95%CI=0,79-0,9 in males) were shown.



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**Thank you !**

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