

Tumor epidemiology

It is a separate discipline that collects and analyzes data on the incidence and mortality of cancer.

Descriptive epidemiology

- Describes data on the incidence and mortality of individual tumors,
- usually uses relative numbers per 100,000 inhabitants,
- terms:
 - **incidence** (number of new tumors),
 - **prevalence** (number of tumors over a period of time),
 - **mortality**

Analytical epidemiology

- He tries to find causal links in the description (eg smoking - lung cancer, stomach cancer - Japan...),
- the number of tumors is growing, the second place in mortality (behind diseases of the cardiovascular system),
- **rise** - lung cancer (today mainly in women, in men it begins to decline),
- **decrease** - stomach cancer , cervical cancer (effective prevention),
- **steady state** - breast cancer ,
- in the Czech Republic there is a high incidence - colorectal cancer, kidney cancer,
- Currently, there is a decline in lung cancer - in the 70s, IM began at a younger age, people stopped smoking.
- **in what the Czech Republic leads** ,
 - the most in the world are kidney cancers (they do not have such a mortality, they are not talked about so much), colorectal cancer , pancreatic cancer ,
 - We are the 1st in Europe in mortality from uterine and ovarian cancers.
- The country with the highest incidence of cancer - Hungary,
- the highest incidence of melanomas - Scandinavia (residents travel a lot).

Incidence of carcinomas in the Czech Republic (year 2017):

Incidence

- men
 1. Prostate cancer (C61)
 2. ZN of large intestine and rectum (C18 - C20)
 3. ZN trachea, bronchi and lungs (C33, C34)
- women
 1. ZN breast (C50)
 2. neoplasms in situ (D00-D09)
 3. ZN of large intestine and rectum (C18 - C20)
 4. ZN trachea, bronchi and lungs (C33, C34)

Mortality

- men
 1. ZN trachea, bronchi and lungs (C33, C34)
 2. ZN of large intestine and rectum (C18 - C20)
 3. Prostate cancer (C61)
- women
 1. ZN trachea, bronchi and lungs (C33, C34)
 2. ZN breast (C50)
 3. ZN of large intestine and rectum (C18 - C20)

Prevalence

- men
 1. Prostate cancer (C61)
 2. ZN of large intestine and rectum (C18 - C20)
 3. Kidney ZN (C64)

- women

1. ZN breast (C50)
2. neoplasms in situ (D00-D09)
3. ZN uterus (C54, C55)
4. ZN of large intestine and rectum (C18 - C20)

CAVE! - skin tumors do not count here, non-melanoma skin ZN (C44) is in the first place in the incidence

Carcinogens

More detailed information can be found on the pages [Physical carcinogenesis](#) , [Chemical carcinogenesis](#) , [Viral carcinogenesis](#) .

- Tobacco - 15-30% of tumors,
- chronic infections 10-25%,
- nutrition 30%,
- other 5%,
- tobacco - lungs, tongue + oral cavity, stomach, kidneys, suppository, bladder, pancreas (?),
- chron. infections - EBV (Burkitt's lymphoma), *Helicobacter pylori* , HBV , HCV , papillomaviruses,
- ca stomach - famous is Japan - probably thanks to Sushi - raw meat (many infections),
- 99% of cervical cancers - papillomavirus .

Screening

See [Cancer Screening](#) for more information .

Hereditary cancers

See [Hereditary Tumor Syndromes](#) for more information .

- Only 10% of tumors can be traced family,
- they have some common features, they occur at a younger age, they are usually AD hereditary, they are more often multifocal,
- the most common hereditary tumors include:
 - **retinoblastoma** - Rb gene mutations , bilateral retinoblastoma, more common bone sarcomas and breast and lung tumors,
 - **familial colon polyposis** - APC gene mutation,
 - **Gardner's and Turcot's syndrome** - GIT polyps, a cancer of both the colon and elsewhere (often medullary thyroid carcinoma), it is a deletion on chromosomes 17 and 18,
 - **FAMMM** (familial atypical multiple mole melanoma) syndrome - deletion on the 1st chromosome, dysplastic nevi and melanoma,
 - **Li-Fraumeni syndrome** - familial occurrence of breast cancer and other tumors (p53 defect),
 - **Lynch's sy I** (HNPCC - hereditary nonpolyposis colorectal cancer) - colon carcinoma without polyposis (repair defect),
 - **Lynch's sy II** - in addition to colon cancer, there are other cancers (stomach, breast, endometrium, endocrine...),
 - others - Wilms' tumor , Neurofibromatosis , MEN sy, Hereditary breast and ovarian cancer (BRCA1, BRCA2 genes).

Related Articles

- Incidence of tumors
- Hereditary tumor syndromes
- Cancer prevention
- Cancer screening
- Risk factors for cancer