

Brain tumors are increasing in Denmark

January 20, 2017

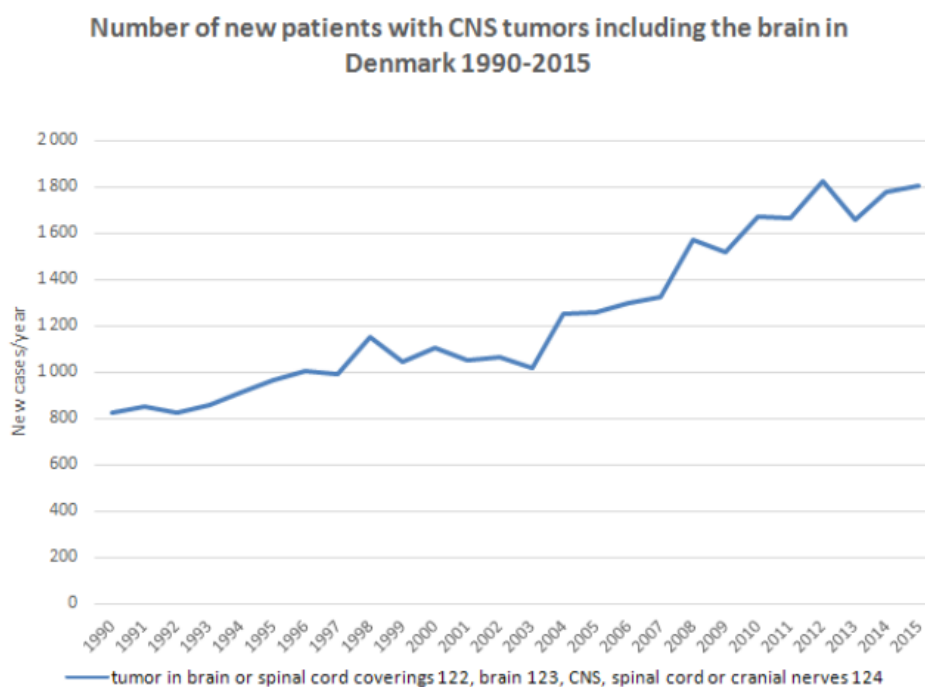
The number of people diagnosed with tumors of the central nervous system (CNS, including brain tumors) in Denmark has more than doubled since 1990 according to new statistics and the largest increase has been in the last 10 years until 2015. Among young people aged 0-39 years, tumors in the CNS are the type of cancer that has increased the most.

According to the latest statistics from the Danish Cancer Registry that include new cancer cases diagnosed in 2015, an increasing number of people in Denmark are diagnosed with tumors of the central nervous system, CNS, including the brain, in recent years. The number of patients diagnosed per year with CNS tumors increased from the 827 in 1990 to 1807 in 2015.

The increase appears to have accelerated in the last ten years according to the data from the Danish Cancer Registry, analyzed by the Swedish Radiation Protection Foundation. The data includes both malignant and benign brain tumors. During the same period, the use of mobile phones has increased tremendously.

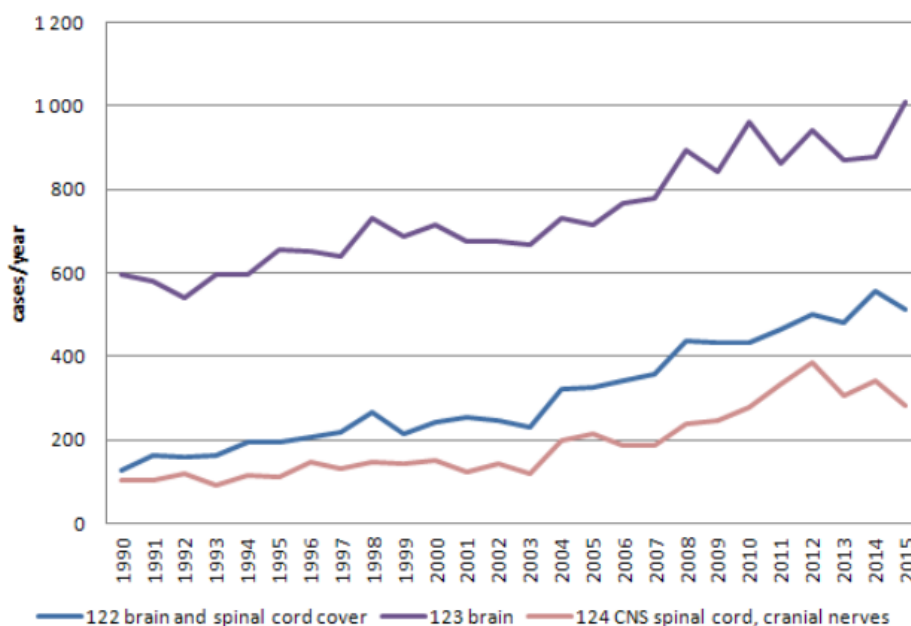
In addition, the number of young patients diagnosed with a CNS tumor is on the rise. Among young people under 40 years of age in Denmark, also this age group is seeing a rise in the number of diagnosed cases.

The figure below shows the development of the number of patients (all ages), who each year are reported to have been diagnosed with a CNS tumor code 122, 123 or 124 in the Danish Cancer Registry. Nearly 1,000 more patients were diagnosed on an annual basis in 2015 compared with 1990. Code 122 applies to brain and spinal cord cover (including meningioma), code 123 includes brain tumors such as glioma and code 124 includes acoustic neuroma. All have repeatedly been linked to mobile phone use.



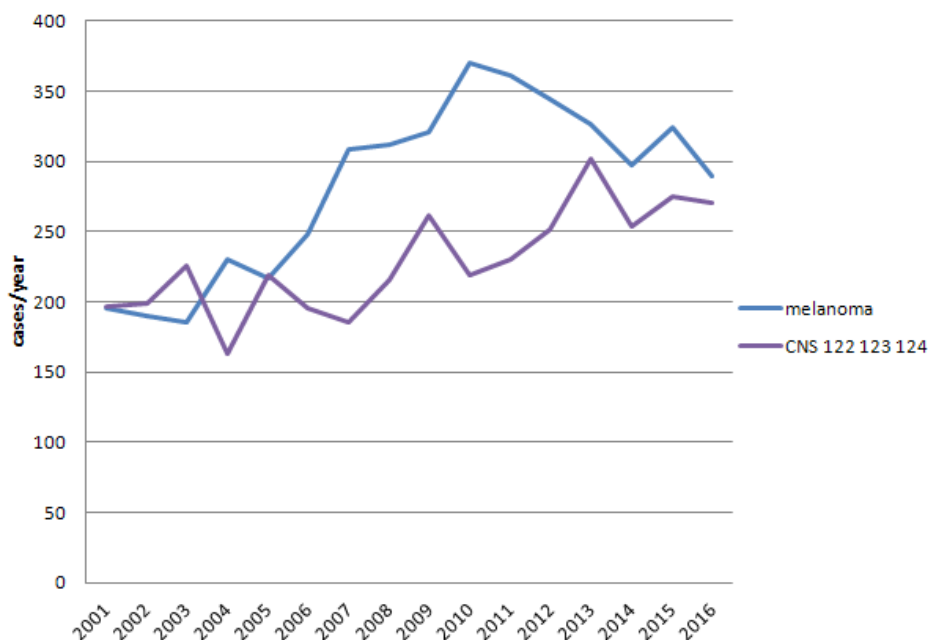
The figure below shows that the number of new patients with brain tumor (code 123) increased, particularly during the last 10 years. In 2015, 1010 patients with brain tumor were reported compared with 714 patients in 2005, an increase with 41% in just 10 years.

Number of new patients with CNS tumors codes 122, 123 and 124 Denmark 1990-2015, all ages



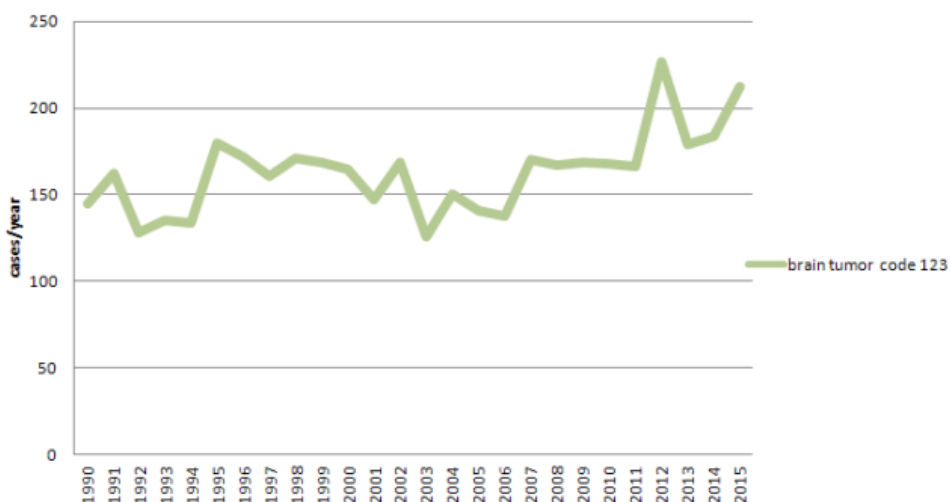
CNS tumors are also increasing among the young and are now almost as common as malignant melanoma among those aged 0-39 years. CNS tumors have increased more than any other tumor type over the past ten years in this age group. In 2006, 186 young persons aged 0-39 years were reported with a CNS tumor, but in 2015 the number had increased to 271.

Number of new patients 0-39 years with malignant melanoma or CNS tumors Denmark 2000-2015



Looking at only the tumors in the brain (code 123) the figure below shows the development since 1990 in the age group 0-39. While the number of patients with brain tumors under 40 years of age was relatively stable between 1990 and 2010, the number has increased between 2011 and 2015. 212 persons in the age 0-39 were diagnosed with a brain tumor in 2015 compared to 166 in 2011.

Number of new patients 0-39 years with brain tumors, Denmark



Incorrect claims: “no increase in brain tumor incidence”

Some reports and organizations have argued in recent years that mobile phones do not increase the risk of brain tumors with reference to “no observed increase in the incidence of brain tumors” in the Nordic countries, for instance in Denmark. In the Swedish Radiation Authority’s [last report](#) from May 2016, it is argued that:

“cancer rates in Sweden and other countries do not show any increase that might be attributed to the massive mobile phone use that started in the beginning of this century.”

The US [National Cancer Institute](#) claims that no increase in incidence of brain tumors is taking place in Denmark:

An analysis of incidence data from Denmark, Finland, Norway, and Sweden for the period 1974–2008 similarly reported no increase in age-adjusted incidence of brain tumors.

Clearly these statements are not correct in light of the data available in the Danish Cancer Registry. Also there is a problem with the reliability of the data on CNS tumors in some registries. For instance, brain tumors in the Swedish Cancer Registry are underreported. This underreporting in the Swedish Cancer Registry was described in [a report](#) in 2009:

“for specific research questions our findings have implications, as the degree of underreporting is site specific, increases with age, and does not seem to be random, as diagnoses without histology or cytology verification are overrepresented”

Brain tumors are often diagnosed without histology or cytology and are therefore underreported.

Case control studies repeatedly show increased risks for CNS tumors from mobile and cordless phone use

Ever since 2010 all studies investigating risks for brain tumors from mobile phone use over 30 minutes to one hour a day over several years have found increased risks for CNS tumors (glioma, acoustic neuroma and also meningioma).¹ Today 75% of Swedish 16 year old girls use their “smart phone” over 3 hours a day and they have been wrongly informed that there are no health risks observed, often with reference to incorrect claims about brain tumor incidence trends.

- It is unethical to wait for even more people to be diagnosed with brain tumor before the industry, government and authorities warn mobile phone users of the serious health risks with today’s intense and prolonged use, says Mona Nilsson, President of the Swedish Radiation Protection Foundation.

¹ Hardell et al. 2013 (glioma, acoustic neuroma, meningioma); Interphone 2010 (glioma, meningioma) and 2011; Coureau et al. 2014 (glioma and meningioma); Pettersson et al. 2014 (acoustic neuroma); Sato et al. 2011 (acoustic neuroma)