

Important to remember

- Radiation doses must be kept as low as reasonably achievable.
- From the time you inform your employer of your pregnancy, your unborn child must not receive a total radiation dose of more than 1 mSv as a result of your work.
- Inform your manager about your pregnancy as early as possible so that your work can be adjusted until you begin maternity leave.

For more information

If you have questions about radiation and pregnancy, you may contact your employer, the Danish Health Authority, or your doctor for advice

Further information about cosmic radiation is available at www.sis.dk



Information for flight crew members

Cosmic radiation and pregnancy

Cosmic radiation

Flight crew members are more exposed to cosmic radiation than the general population. Therefore, special consideration must be given when planning the work of pregnant crew members.

From the time you inform your employer of your pregnancy, your unborn child must not receive a total radiation dose of more than 1 mSv as a result of your work*. It is therefore important for crew members to inform their employer of the pregnancy as early as possible.

**The dose limit of 1 mSv is in addition to background radiation at sea level.*

A radiation dose is expressed in the unit mSv = millisievert.

Where does the radiation come from?

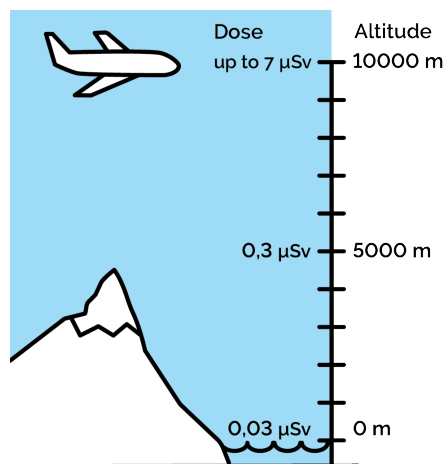
We are all constantly exposed to what is known as background radiation. It is natural and comes from several sources, including radon, the Earth's crust and cosmic radiation. On average, the population in Denmark receives an annual dose of around 3 mSv from background radiation.

Cosmic radiation originates from the Sun and our galaxy. Its intensity increases with altitude above sea level. The Earth's magnetic field deflects the radiation, resulting in lower levels of cosmic radiation at the equator than at the poles. Flight crew members working at high altitudes and on flight routes close to the Earth's polar regions are therefore exposed to significantly higher levels of cosmic radiation than people on the ground.

How large a dose do you receive?

At flight altitudes of 10–12 km, the intensity of cosmic radiation can be several hundred times higher than at sea level. The illustration shows examples of doses that may be received during one hour at different

altitudes above sea level. On flight routes near the equator, approximately 600 flight hours are required to receive a dose of 1 mSv. Near the poles, the same dose is reached in about 200 hours.



Dose during one hour at different altitudes above sea level
1.000 µSv = 1 mSv

Read more:

[Radiation – A part of your everyday life.](#)
Danish Health Authority, 2024

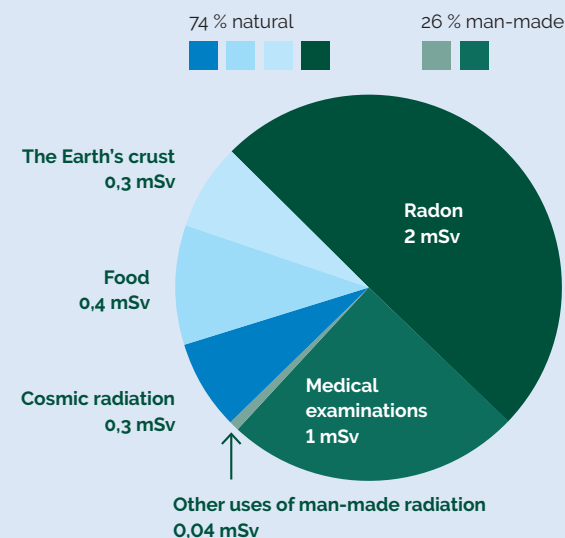
How does radiation affect the body?

People are constantly exposed to radiation. When the body is exposed to radiation, energy is deposited in the cells, which can cause damage. Cellular damage occurs continuously, but the body is very effective at repairing this type of damage. However, some damage may be permanent and, in some cases, may lead to the development of cancer later in life.

How are you and your dose monitored?

It is the employer's responsibility to draw up work schedules aimed at reducing doses for all crew members and to calculate these doses. The calculations are based on data on flight routes and flight time. Individual annual doses are reported to Danish Health Authority, Radiation Protection, which is responsible for national dose surveillance.

Distribution of the average annual dose among residents in Denmark



Source:
Radiation – A part of your everyday life.
Danish Health Authority, 2024