

Mobile-phone radiation damages lab DNA

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European studies point to cellular harm.

Radiation from mobile or cellular phones harms the DNA in human cells, according to an extensive, pan-European laboratory study.

The research does not provide definitive proof that equivalent radiation harms people who use mobile phones. But the researchers emphasize that more extensive studies to test this link should be done, and that, until then, phone users should be cautious.

Controversy has raged for years over whether the electromagnetic radiation emitted by mobile phones can trigger tumours or Alzheimer's disease, or can otherwise harm human health. But the evidence showing whether and how radiation damages cells, and so might cause disease, has been scant and contradictory.

The most recent news comes from the REFLEX study, a four-year project performed by twelve research groups in seven European countries, whose results were published online this month, although they have not yet appeared in a peer-reviewed journal. "We have found a mechanism that could cause chronic disease," concludes study leader Franz Adlkofer of Verum, a research organization based in Munich, Germany.



Phone users should exercise caution, researchers warn.

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Study leader Franz Adlkofer
Verum, a research organization based in Munich, Germany

The team found that levels of radiation equivalent to those from a phone prompted breaks in individual strands of DNA in a variety of human cells. These types of damage have been linked with cancer. The level of injury increased with the intensity of radiation and the length of exposure.

The researchers also saw hints, but not conclusive evidence, of other cell changes, including damage to chromosomes, alterations in the activity of certain genes and a boosted rate of cell division.

Doubtless damage

The damaging effects occurred when cells were exposed to electromagnetic radiation of intensities between 0.3 and 2 watts per kilogram. This overlaps with the level of radiation typically emitted by phones of around 0.2 to 1 watt per kilogram.

Adlkofer acknowledges that the work, like previous studies showing harm from mobile phone radiation, is likely to be criticized. But he says: "I've seen experiments done 100 times in several labs. To me there is no doubt that it causes DNA damage under certain conditions."

Adlkofer says that other research groups might have missed radiation for too short a time or used laboratory cell types that are resistant to damage.

Based on these data, Adlkofer says there is a need for more extensive studies to test whether mobile phone radiation damages DNA in people, and whether this is linked to disease. "I urge industry and government to go forward in this as fast as possible," he says.

Until then, he advises caution in using mobile phones. He reiterates, for example, that users should keep their time on the phone to a minimum and use headsets if they are concerned about the risks.

Story from news@nature.com:

<http://news.nature.com/news/2004/041220/041220-6.html>

