

1 Using a cell phone may help fight Alzheimer's disease

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3 After years of speculation that cell phones may **harm** your brain, new research **suggests** they may actually **fight** Alzheimer's
4 **disease**. Yes, you heard right. **Microwave** radiation from cell phones may **protect against** and even **reverse** Alzheimer's-like
5 symptoms, according to a new study involving genetically tweaked mice. The results were so surprising that study co-author Juan
6 Sanchez-Ramos didn't believe them at first. "It's such a dramatic and counterintuitive effect," said Sanchez-Ramos, a University of
7 South Florida neuroscientist. "I joked that the animals must have been mislabeled or that the power wasn't switched on."

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9 Cell Phones Provide Protective Radiation?

10 The primary **culprits** in Alzheimer's disease—which is marked by dementia and cognitive **decline**—appear to be sticky brain
11 **deposits** known as beta amyloid plaques, which can **build up** between nerve cells. In the experiment, scientists **examined** the
12 effects of cell phone radiation on 96 mice that were genetically engineered to develop beta amyloid plaques and thus Alzheimer's-
13 like symptoms. The mice normally **developed** the first signs of the disease around 6 months. By 8 months they were already
14 **experiencing** cognitive declines. Both the Alzheimer's-prone mice and normal mice were then **exposed** to cell phone-level
15 microwave radiation for two one-hour periods daily for seven to nine months. The study found that if cell phone **exposure** began
16 before the genetically engineered mice started showing signs of Alzheimer's, they were less **likely** to develop symptoms later on in
17 life. These mice **performed** as well on memory and thinking-skills tests as normal mice without Alzheimer's. For instance, the
18 mice were given a cognitive interference **task** that tested their ability to remember something after an **interruption**. The team also
19 put the mice through a three-armed Y **maze**, which measures basic memory function. Furthermore, the genetically engineered mice
20 that were exposed to the cell phone radiation after they had already begun to show cognitive deficits generally saw their memory
21 **impairment** disappear after several months of the radiation exposure.

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23 Of Mice and Men and Alzheimer's

24 No one knows how the radiation protects against Alzheimer's, but the team has some ideas. One is that the microwaves create
25 cellular stress in the brain, and that the stress jump-starts DNA repair mechanisms in the brain. For instance, scientists already
26 know that "minor insults" such as toxic **substances** or low oxygen will **improve** the brain's ability to **repair** damage to proteins
27 and DNA, Sanchez-Ramos said. However he **cautioned** that the experiment was not "a perfect replication of cell phone use in
28 humans." For instance, the lab mice were exposed to cell phone radiation over their **entire** bodies—not just to their heads. "It's
29 an interesting **finding** and perhaps it could be translated somehow to a human test," said David Knopman, an Alzheimer's expert
30 at the Mayo Clinic in Rochester, Minnesota. But he also urged **caution** against assuming the findings would **apply** to humans.
31 "What goes on in mice may not have anything to do with people," said Knopman, who did not **participate** in the study. "This
32 animal model of Alzheimer's is useful, but there's still many questions about whether it's ultimately **valid** [to humans] or not."
33 That's because Alzheimer's disease does not **manifest** itself in the same way in humans, said George Perry, an Alzheimer's expert
34 at the University of Texas, San Antonio, who was not **involved** directly with the research. "In most people, the development of
35 amyloid plaques is related to the aging process—not because they're genetically modified," Perry said.

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37 Not All Bad?

38 Nevertheless, the "pretty dramatic" research **raises the possibility** that health effects of cell phone radiation are not all **harmful**,
39 added Perry, who is also editor in chief of the Journal of Alzheimer's Disease, in which the January 6 study was published. How,
40 cell phone radiation affects humans—if it all—is **currently** a topic of intense debate. Some scientists, for instance, claim that cell
41 phones can lead to increased risks of brain cancer. Such **concerns** have led the U.S. state of Maine to consider requiring that cell
42 phones carry **warning** labels. The new study, though, "puts the debate in a perspective where we need to consider a broad range of
43 effects of cell phone radiation," Perry said.

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45 Source: [The National Geographic](#)