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Radiation Damage May Be Passed to Offspring

NEW YORK (Reuters Health) - The harmful effects of radiation may be passed down from one generation to the next, researchers report. In a study in mice, the offspring of male mice that had been exposed to radiation had an increased number of genetic mutations, as did their offspring - even though the two generations of younger mice had not been exposed to radiation. The passing down of these mutations could increase the risk of genetic disorders in later generations, according to the report published in the May 4th issue of Nature.

In the study, researchers led by Dr. Yuri E. Dubrova, of the University of Leicester in England and the Russian Academy of Sciences in Moscow, exposed male mice to radiation and then bred the mice with females that had not been exposed. When the investigators examined the DNA of the offspring of these mice, they found instabilities in regions of repeated sequences of DNA. The mice also appeared to have DNA mutations in sperm and egg cells, which could be passed on to the next generation.

"These findings have potential implications for risk evaluation in humans," the authors write. They point out that most of the concern about radiation has centered on the direct effects on the exposed generation.

But the evidence that the effects of radiation are passed down to the next generation suggests that some of the effects of radiation may be delayed, possibly leading to genetic disorders years after the exposure to radiation, according to the report.

SOURCE: Nature 2000;405:37.