

Monkey studies important for brain science

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Studies with non-human primates have made major contributions to our understanding of the brain and will continue to be an important, if small, part of neuroscience research, according to a recent review published in the British medical journal, The Lancet.

Authors John P. Capitanio, professor of psychology at UC Davis and associate director of the California National Primate Research Center, and Professor Marina E. Emborg at the University of Wisconsin-Madison and the Wisconsin National Primate Research Center describe the importance of non-human primates in studies of Alzheimer's disease, Parkinson's disease, neurological complications of AIDS and stress.

"The key contribution of these studies is based on the similarities between the brains of humans and those of non-human primates," said Capitanio, who studies animal behavior. Human and monkey brains show similar organization and structure, and the animals show complex behavior that can be compared to human behavior. However, he said, several complicating factors will always limit the number of animals used, including the financial expense, ethical issues and the relative difficulty of breeding compared to other model animals such as rodents.

All animal models have their strengths and limitations, Capitanio said. But just as a model building helps engineers and architects understand how a structure will work, animal models can help researchers understand body systems.

For example, the drug MPTP -- first synthesized in an illegal drug

laboratory -- causes symptoms similar to Parkinson's disease in both humans and monkeys, but not in rats or mice, which lack a crucial enzyme. Researchers are now studying monkeys treated with MPTP to better understand new treatments for Parkinson's disease -- the second most common neurodegenerative disease in people over 65.

"A model is not the real thing, but it can help you understand the real thing," Capitanio said.

Source: University of California - Davis

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