



WE URGE YOU TO PROTECT EXISTING NONHUMAN PRIMATE RESEARCH WHICH IS CRITICAL TO PROMOTING HUMAN HEALTH AND TREATING DISEASE

The Importance of Research Using Nonhuman Primates

How behavioral research with primates* is advancing solutions for health conditions.

Federally funded research with primates grounded in psychological science has been critical to the development of diagnostics and treatments for numerous health conditions:

HEALTH CONDITION	AMERICANS AFFLICTED**	IMPACT! PRIMATE RESEARCH HAS LED TO...
Alzheimer's Disease	6.7 million	the discovery of targets for intervention and treatment ¹
Depression	21 million	the discovery of biochemical causes and the development of medical treatments. ²
PTSD	13 million	the development of guanfacine, one of the few drug treatments for abused and traumatized children. ³
Parkinson's Disease	.9 million	the development of various treatments. ⁴
Alcohol Dependence	14.5 million	the identification of genetic risk factors in humans. ⁵

Primate research improves public health.

Primates play critical roles in advancing our understanding of human health, brain function, and disease because of their many similarities – including structure, physiology, and genetics – with humans.

The complexity of human behavior requires research with primates to yield vital findings that simply cannot be replaced with alternate methods. Groundbreaking primate research from psychological scientists has led to the development of prevention strategies and treatments for numerous illnesses and diseases, such as:

- **Parkinson's Disease** Research with primates was instrumental in the development of deep brain stimulation which was first developed with monkeys and has now been used to treat over 100,000 people. Testing is underway to assess its efficacy in treating Alzheimer's Disease, depression, and obsessive-compulsive disorder.
- **Depression** Research with primates showed an increased risk of heart disease in depressed female monkeys being treated with selective serotonin reuptake inhibitors (SSRIs). These findings indicate physicians should exercise caution when using this frequently prescribed class of drug to women for prolonged periods.
- **Early life trauma** Primate research has enhanced our understanding of the impact of early life experiences in ensuring healthy brain and psychological functioning later in life. Epigenetic discoveries demonstrate—at a very specific molecular level—how infant environments can change the brain and have lasting effects. Primate research has improved interventions for children who experienced adverse early life events such as maltreatment or neglect.
- **Spinal cord injury/Paralysis** Primate research on harnessing brain activity to control neuroprosthetic devices has enabled patients with paralysis or other mobility conditions to move independently with brain-controlled wheelchairs and exoskeletons.

Primate wellbeing is a priority.

Research with primates has also led to a better understanding of, and improvements to, the housing and care of animals. Research-based advancements in environmental enrichment and psychological well-being have improved the welfare of primates not only in laboratories but in other settings such as zoos and sanctuaries. Maximizing the wellbeing of primates used in biomedical research also improves the fidelity with which animal studies translate into clinical practice.

The US—like other leading nations—has developed and adheres to a robust system of regulatory oversight:

- The US Department of Agriculture's Animal Plant and Health Inspection Service conducts unannounced annual primate facility inspections as mandated by the Animal Welfare Act.
- The Public Health Service requires review and approval of all proposed research with primates by a duly constituted Institutional Animal Care and Use Committee.
- The Institute of Laboratory Animal Resources of the National Academies of Sciences, Engineering and Medicine maintains the Guide for the Care and Use of Laboratory Animals. Researchers who receive federal funding for primate research must adhere to the Guide and in some cases must file a legal assurance of compliance.

APA is the leading scientific and professional organization representing psychology in the United States, with more than 146,000 researchers, educators, clinicians, consultants, and students as its members.

Our mission is to promote the advancement, communication, and application of psychological science and knowledge to benefit society and improve lives. We do this by:

- Utilizing psychology to make a positive impact on critical societal issues.
- Elevating the public's understanding of, regard for, and use of psychology.
- Preparing the discipline and profession of psychology for the future.
- Strengthening APA's standing as an authoritative voice for psychology.

For questions or more information, please contact Pat Kobor at pkobor@apa.org

*For the purposes of this fact sheet, "primates" and "animals" refer to non-human primate research subjects.

**Estimates of those affected by various conditions are from the following sources:

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U.S. Department of Health and Human Services. (n.d.). *Alcohol Facts and Statistics*. National Institute on Alcohol Abuse and Alcoholism. <https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/alcohol-facts-and-statistics>

- 1 Arnsten, A. F., Datta, D., & Preuss, T. M. (2021). Studies of aging nonhuman primates illuminate the etiology of early-stage alzheimer's-like neuropathology: An evolutionary perspective. *American Journal of Primatology*, 83(11). <https://doi.org/10.1002/ajp.23254>
- 2 Rudebeck, P. H., Rich, E. L., & Mayberg, H. S. (2019). From bed to bench side: Reverse translation to optimize neuromodulation for Mood Disorders. *Proceedings of the National Academy of Sciences*, 116(52), 26288-26296. <https://doi.org/10.1073/pnas.1902287116>
- 3 Arnsten, A. F. T. (2020). Guanfacine's mechanism of action in treating prefrontal cortical disorders: Successful translation across species. *Neurobiology of Learning and Memory*, 176, 107327. <https://doi.org/10.1016/j.nlm.2020.107327>
- 4 Vitek, J. L., & Johnson, L. A. (2019). Understanding parkinson's disease and deep brain stimulation: Role of monkey models. *Proceedings of the National Academy of Sciences*, 116(52), 26259-26265. <https://doi.org/10.1073/pnas.1902300116>
- 5 Cervera-Juanes, R., Wilhelm, L. J., Park, B., Grant, K. A., & Ferguson, B. (2017). Alcohol-dose-dependent DNA methylation and expression in the nucleus accumbens identifies coordinated regulation of synaptic genes. *Translational Psychiatry*, 7(1). <https://doi.org/10.1038/tp.2016.266>