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Alex M. Azar II
Secretary
U.S. Department of Health and Human Services

Francis Collins, M.D., Ph.D.
Director
National Institutes of Health

Via e-mail: Secretary@HHS.gov, execsec1@od.nih.gov

Dear Secretary Azar and Dr. Collins,

Good morning. I hope this letter finds you well. On behalf of People for the Ethical Treatment of Animals (PETA) and our more than 6.5 million members and supporters worldwide, I am writing to share several serious ethical and scientific concerns about a series of experiments being conducted on primates by Elisabeth A. Murray in the National Institute of Mental Health's Intramural Research Program (NIMH IRP). Murray has received tens of millions of taxpayer dollars—more than $36 million in just the past 13 years—to carry out these experiments on dozens of monkeys without any tangible benefits to humans.

Through a Freedom of Information Act (FOIA) request, PETA has obtained disturbing videos of monkeys being subjected to deliberately terrifying experiments conducted under NIH Project Number 1ZIAMH002887, "Neural Substrates of Reward Processing and Emotion." Monkeys in this laboratory are placed in frightening, stress-inducing situations so that experimenters can measure their defensive, submissive, and aggressive behavioral responses. Prior to these cruel procedures, the monkeys undergo invasive surgical procedures, sometimes repeatedly, in which experimenters inject toxins into their brains—creating lesions and causing permanent damage to various brain regions.

The purported aim of these experiments is to investigate which regions of the brain are critical to typical and atypical human emotional reactivity, behavioral flexibility, and value updating. However, as explained in the review below, these experiments have little relevance to normal human behavior or human neuropsychiatric illness. **We hope that after reviewing our ethical and scientific concerns about these experiments, you will seriously reconsider NIH's continued support of them and close this laboratory.**

Monkey Experiments Cannot Provide Meaningful Data for Humans
As you already know, holding highly intelligent, social, sensitive primates captive in laboratories, performing invasive surgical procedures, and subjecting them to stressful, painful, and fear-inducing experiments causes extreme long-

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term psychological and physical harm. Primates in laboratories exhibit signs of extreme distress, including pacing, rocking, head-twisting, biting their own flesh, pulling out their own hair, and engaging in other forms of severe self-mutilation.[1,2,3,4] They also display a wide variety of aberrant immune system abnormalities, including increased stress-related hormones, dysregulation of the hypothalamic-pituitary-adrenal axis, and immune system depression.[5] This stress-induced immune dysfunction results in significant health consequences, including increased vulnerability to infection,[6] chronic autoimmune disease,[7] delayed wound healing and recovery from surgery,[8] and accelerated aging.[9] This is unacceptable not only ethically but also scientifically—the myriad behavioral and physiological abnormalities induced by the acute and chronic stress of laboratory life render all data from these experiments unreliable. Moreover, humans differ from other primates in gene expression and protein function,[10] immune system functioning,[11,12] neurodevelopment,[13,14] and neuroanatomy,[15,16] further limiting the applicability and translatability of the data obtained.

Murray's Experiments Are Flawed

In addition to the numerous confounding factors introduced by the negative effects of captivity and the critical species differences between humans and monkeys, Murray's experiments are rife with design flaws that render them meaningless.

The monkeys subjected to lesions in this laboratory are of a variety of ages at the time the lesions are inflicted and the time of testing, their rearing histories and genotypes vary, they may be male or female, and their previous exposure to the behavioral tasks also varies. These are all critical factors known to influence typical and atypical human emotional, social, and cognitive behavior. Additionally, the monkeys used in these experiments are forced to live alone or in pairs in an impoverished environment lacking in normal social, cognitive, or emotional stimulation, which is known to have a negative effect on primates' social, emotional, and cognitive functioning—precisely the types that Murray is purporting to study.

The justification given for carrying out these cruel experiments on primates is that destroying specific brain regions in these animals will inform us about human neuropsychiatric groups with atypical functioning in these neural regions. However, individuals with most neuropsychiatric ailments do not suffer from the type of brain damage being inflicted on primates in Murray's laboratory. Rather, most neuropsychiatric conditions involve atypical neurotransmitter functioning, hormonal regulation, and/or subtle structural and functional brain abnormalities.

Murray's studies can inform us only about the effects of very precise lesions on unhealthy, overstressed, asocial, and emotionally and cognitively stunted primates—information that doesn't seem valuable enough to warrant this cruelty or the expense of millions of taxpayer dollars.

Humane, Effective, Non-Animal Methods

In vivo imaging in humans who are at risk for developing or are already living with various neuropsychiatric disorders,[17,18] postmortem analysis of brain tissue from patients,[19,20,21,22] and large-scale epidemiological studies[23,24] are helping researchers understand the neurobiological underpinnings[25,26] of a variety of human neuropsychiatric illnesses. More specifically, researchers have already been studying the roles of specific brain regions for emotional regulation,[27,28] behavioral flexibility,[29,30,31] and value updating[32,33] in humans extensively for decades. This includes studying patients with naturally occurring focal lesions,[34,35,36] using neuroimaging to localize regions of the brain involved in these functions,[37,38,39] using transcranial magnetic

stimulation to study the effects of temporarily disabling regions of the brain,[40] and studying brain structure and function in neuropsychiatric patient groups that exhibit difficulties with these types of behavior.[41,42,43]

These studies have successfully revealed the precise roles of different brain regions and neurotransmitters in behavioral flexibility and emotional regulation and are allowing researchers to unravel the effects of age, gender, and experience on these sorts of behaviors and to understand complex genetic and environmental factors that contribute to neuropsychiatric illness.[44] These critical findings are not obtainable from Murray's experiments on primates.

Given the wealth of humane research methods and data available, it is both alarming and disheartening to see these cruel, crude, and costly experiments continue to be funded and conducted in the NIMH IRP.

Conclusion

As you no doubt know, data from animal experiments consistently fail to provide accurate information about human behavior and physiology and rarely, if ever, translate into usable human treatments or cures.[45,46,47,48,49,50,51,52] Artificially inducing lesions in severely stressed captive primates and forcing them to perform hopelessly confusing, oversimplified, and repetitious behavioral tasks cannot and does not faithfully simulate the complex and variable etiology, symptomatology, and treatment responsivity found in human neuropsychiatric patients. We strongly urge you to stop supporting these cruel and worthless experiments and instead to fund more clinically relevant, human-based research.

I look forward to receiving a response from your office about the concerns outlined above.

Thank you for your consideration.

Sincerely,

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