Q & A with Jonathan Lipton, MD, PhD

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2009 Clinical Research Training Fellowship Recipient

Q: Please explain your research during your Clinical Research Training Fellowship?

A: My research seeks to understand the biological basis for sleep disturbance in patients with neurodevelopmental diseases such as autism. Specifically, I have focused on a genetic disorder called Tuberous Sclerosis Complex (TSC), which results in epilepsy, autism, intellectual disability, and sleep disturbance. By using mouse models of TSC, I have uncovered novel mechanisms by which the internal body clock regulates sleep and circadian phenotypes in the disease. The mechanisms point the way toward novel therapies for TSC and for circadian rhythm disorders as well.

Q: What has the impact of securing a Clinical Research Training Fellowship had on determining your career in research?

A: I entered medical school already knowing that I would pursue a career in neurology and neuroscience. The prospect of understanding the basis of consciousness and emotion was very exciting to me. My grandfather had also recently suffered a stroke and I was able to witness first-hand the ravages of neurologic disease. His neurologist at the time, Dr. Sidney Diamond, was also a tremendous inspiration to me, both for his enormous knowledge of the nervous system and for his humanism. The fellowship was a critical part of the immediate post-residency years as it formatively and financially contributed toward giving me the adequate time and resources to develop an independent research program that includes preparing data.

Q: What have you been working on since the completion of your fellowship and please explain how your work benefits patients or the public?

A: I was awarded a grant from the National Institutes of Health to research sleep. Mounting evidence points to a crucial role for normal sleep in health and disease. This may be especially true for children with neurodevelopmental disorders such as Tuberous Sclerosis Complex (TSC). TSC is a syndrome that results from mutations in genes that cause epilepsy, intellectual disability, and autism. The development of meaningful therapies relies on a better understanding of what causes the disease.