

An Interview with Jeff Noebels, MD, PhD

Where we are in the search FOR A CURE



Dr. Noebels serves on CURE's Scientific Advisory Board. He is Professor of Neurology, Neuroscience, and Molecular and Human Genetics at Baylor College of Medicine in Houston, TX.

Tell us a little about yourself and how you became interested in epilepsy research.

JN: I was fortunate to join the laboratory of David Prince at Stanford University, a world leader in training and launching young epileptologists. I realized I could hardly commit my life to the riddle of epilepsy without understanding the clinical disorder, and decided to go to medical school to become a neurologist. For 20 years, I have been training scientists and neurologists to consider DNA when they see a patient with seizures. Every day, we look for new molecular and cellular troublemakers in the clinic and laboratory, and search for better ways to prevent or reform them.

What progress have we seen in epilepsy research over the past ten years?

JN: The field of epilepsy research is vibrant and has made great strides in three key areas that improve the care of patients with epilepsy. First, detecting sites of abnormality by brain scanning is greatly enhanced; we now have stronger magnets, more pixels, faster image analysis, and astonishing 3-dimensional software. The second area is in genetics, which has revealed the striking diversity of inherited errors in genes that lead to the risk of seizures. Gene tests also promise to explain why some drugs are effective in certain individuals and not in others. Finally, biotechnology and bioengineering approaches in the laboratory are revolutionizing the ways we can modify the activity of very specific circuits in the brain.

What do you see as the most promising advances in the field?

JN: The development of safe and 'smart' molecular probes that could be administered to a patient orally or by injection before a brain scan is very exciting. These probes, already on the drawing board, illuminate the specific brain networks involved in a seizure, even if it occurred a day or even a week earlier and could make an enormous difference in improving the speed and accuracy of clinical diagnosis. Other probes for molecules that transmit chemical signals between cells may also help pinpoint which class of drug to try first. Combining this information with gene testing will enable us to take a giant step forward in the treatment of epilepsy.

What is the single largest obstacle to finding a cure?

JN: The major obstacle is raising and directing the necessary resources to both attract talented young researchers to the field of epilepsy and to support all of the critically needed basic research that is on the verge of leading to real breakthroughs. The number of patients affected and the severity of the problem calls for more support directed toward epilepsy research—both from the government and from private foundations like CURE. With a more appropriate infusion of funding, we will be able to unlock the mysteries of epilepsy and offer our patients the long overdue solutions they deserve.