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Why Support NARSAD?

Dear NARSAD community:

As a clinical neuroscientist, I am constantly thankful for living now, at this time in history, during an unprecedented revolution in understanding how the human mind and brain work in health and disease. I was drawn into the fields of neurology and psychiatry jointly because of my interest in the brain and behavior, **and** the fact that there was, and still is, so much untapped potential for new understanding and developing new treatments. As our population ages and we develop good treatments for most medical disorders, the diseases that remain and that are truly costly to society are primarily those involving the brain. In no particular order they are pain, dementia, depression, schizophrenia and substance abuse. Finding new treatments for these conditions is NARSAD's mission.

And what an exciting next few decades it will be. When I talk with medical students about future careers, I know that the future orthopedic surgeons and the cardiologists in 20 years will be practicing their specialty much like we are doing today, with a few minor improvements. However when I talk with young doctors who are thinking of going into psychiatry or neurology, I sketch for them the enormous changes that have happened in my short career, and I tell them that *they cannot conceive of the array of new tools and understanding in neuroscience that we will have over the next 30 years*. I challenge even the brightest to dream out of the box. And I think they will still underestimate the revolution to come, that is already starting.

I will never forget the day 30 years ago when I was on call as a neurologist and our hospital had just gotten its first CT scanner. Wow. We could finally actually see the brain without having to do surgery. Over my short career we now have PET and SPECT scanners as well as CT and the new imaging miracle of MRI. Those CT images from 30 years ago are embarrassing compared to what we can now do. Work with these imaging tools has now roughly mapped out the brain, much like the early explorers in the 1400's mapped the continents. In my career I have often felt like Magellan or Columbus as we have discovered new modules of the brain, charting new 'continents' with our discoveries. This analogy with the early sailors is correct as well because although we may now know the regions involved in a behavior (like working memory), we still do not understand how that region accomplishes the behavior. We truly have only seen the coastlines at this point, and haven't begun exploring the continents. There is so much that we will learn just with brain imaging over the next decade as we get off the boats and explore.

Also during my career we have had an explosion of a new field of brain stimulation methods. Starting with electroconvulsive therapy (ECT), we now have over 30 different methods to focally interact with the brain. Some of these methods are already in clinical practice and have transformed the treatment of Parkinson's Disease (deep brain stimulation DBS) or epilepsy (vagus

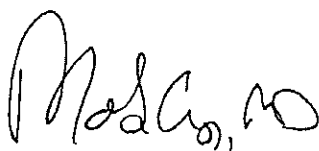
nerve stimulation). Psychiatry recently had a new first – transcranial magnetic stimulation was FDA approved for treating depression. [This research was greatly facilitated by NARSAD, especially in the early days of research when the NIH backed away and dropped funding.] Psychiatry will be getting its first new treatment billing code in over 30 years this Spring. In the first year since FDA approval there have been about 600 patients treated with TMS, about ½ of whom remit. These are patients for whom medications were not working. I find myself repeating the phrase, ‘a new remission a day’. That is, every day now, thanks to NARSAD support and the discovery of a new treatment, some person in the US gets their life back and is no longer depressed. From my perspective, TMS in its current form likely would not be around without NARSAD help. It is unclear how large the TMS use will be eventually (‘100 remissions a day?’), or when an even better treatment will come along and make it obsolete. However it is very clear that we are on the edge of a new field in psychiatry, which I call ‘focal neuropsychopharmacology’ where we can use brain stimulation methods, with or without oral medications, to change the local neurochemistry in regions, and reset them into behaving in healthy patterns.

In talking with these medical students and dreaming about the future, I try and imagine the future discoveries. I truly think that over the next 20 years we will be able to treat almost all depressions quickly and without side effects and inexpensively. Think of what penicillin did in terms of clearing the insane asylums from people with general paresis of the insane (syphilis) and letting them return to function and go home. We will do that, I hope, with depression, and suicide. Brain imaging and brain stimulation will continue to make a big impact. We may some day soon have Bob Post’s dream of a combination scanner and brain stimulator that depressed patients go in, get diagnosed, and treated, and cured, all in a single session. I also think we will make enormous strides with the dementias and developmental disorders like autism and schizophrenia.

Science magazine several years ago stated that the most important science question of the next 100 years will be, ‘How do we form a thought?’. Or, what is the brain basis of consciousness? I agree with their vote, and we are making steady progress.

So why donate to NARSAD, or participate in a clinical trial, or pursue a research career in neuroscience? You could say ‘a new remission a day’, and know that we are just getting started.

Sincerely,



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