Science AMA Series: I'm Michael S. Okun, M.D., chair of the University of Florida department of neurology and medical director of the Parkinson's Foundation. I wrote a book "Parkinson's Treatment: 10 Secrets to a Happier Life" AMA!

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April 17, 2023

Abstract

Hello Reddit, I'm Michael S. Okun. I received my M.D. from the University of Florida and was also trained at Emory University, one of the world's leading centers for movement disorders research. I am currently chairman of neurology, professor and co-director of the Center for Movement Disorders and Neurorestoration at the University of Florida College of Medicine. The center, which is part of the Center for Translational Research in Neurodegenerative Diseases and the McKnight Brain Institute, is unique in that it is comprised of 40+ interdisciplinary faculty members from diverse areas of campus, all of whom are dedicated to care, outreach, education and research. I helped construct a one-stop, patient-centered clinical-research experience for national and international patients seen at the University of Florida. In 2015, I was recognized at the White House for being a Champion of Change for Parkinson's Disease. I serve as national medical director for the Parkinson's Foundation and have been supported by grants from the National Institutes of Health, the Smallwood Foundation, the Tourette Syndrome Association, the Parkinson Alliance, the Bachmann-Strauss Foundation, the Parkinson's Foundation and the Michael J. Fox Foundation. During my research career, I have explored non-motor basal ganglia brain features and I currently hold two NIH R01 grants on deep brain stimulation. I've been an integral part of pioneering studies exploring the cognitive, behavioral and mood effects of brain stimulation. I hold the Adelaide Lackner Professorship in Neurology and have published over 350 peer-reviewed articles. I'm a poet ("Lessons From the Bedside," 1995) and my book "Parkinson's Treatment: 10 Secrets to a Happier Life" was translated into over 20 languages. My latest book, "Tourette Syndrome: 10 Secrets to a Happier Life" was recently published. I'll be answering your questions about Parkinson's disease and other movement disorders at 1 p.m. EST. Ask me anything! Thank you for spending an hour with me. It was a lot of fun and your questions were great. Here are some recent articles that you may be interested in reading: https://jamanetwork.com/journals/jama/article-abstract/2650798 https://theconversation.com/parkinsons-disease-new-drugs-and-treatments-but-where-are-the-doctors-83334 Michael S. Okun, M.D.

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MICHAEL_OKUN R/SCIENCE

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I’ll be answering your questions about Parkinson’s disease and other movement disorders at 1 p.m. EST. Ask me anything!

Thank you for spending an hour with me. It was a lot of fun and your questions were great. Here are some recent articles that you may be interested in reading:

https://jamanetwork.com/journals/jama/article-abstract/2650798

https://theconversation.com/parkinsons-disease-new-drugs-and-treatments-but-where-are-the-doctors-83334

Michael S. Okun, M.D.

READ REVIEWS

WRITE A REVIEW

CORRESPONDENCE:

DATE RECEIVED:
November 04, 2017

DOI:

Hi Michal, and thank you for doing this AMA,

I've recently started wondering about what regulates the localization of Lewy Bodies in Parkinson's disease. My understanding is that much of the debilitating nature of PD is due to the Lewy body-driven death of neurons in the substantia nigra. This prevents the dompaminergic neurons in this part of the brain from converting levodopa to dopamine, which would ultimately act on neuronal receptors in the

10.15200/winn.150970.09877

ARCHIVED:
November 03, 2017

CITATION:
Michael_Okun , r/Science , Science AMA Series: I'm Michael S. Okun, M.D., chair of the University of Florida department of neurology and medical director of the Parkinson's Foundation. I wrote a book "Parkinson's Treatment: 10 Secrets to a Happier Life" AMA!, *The Winnower* 4:e150970.09877 , 2017 , DOI: 10.15200/winn.150970.09877

putamen. Do we know why Lewy bodies localize to this brain region over others?

If this is a fair summary of the pathology, I wonder what it says about different treatment options. Levodopa is commonly given, but as neurons in the substantia nigra die, does the brain retain the capacity to convert levodopa to dopamine? What is limiting dopamine from crossing the blood brain barrier - would it be possible to use slow release neural implants to restore dopamine levels in the brain? What about a gene therapy approach specifically targeting the neurons in the putamen with an enzyme to catalyze levodopa to domaine?

Thanks!

SirT6

Thank you for the wonderful question. Frederick Lewy first described a pathological inclusion under a microscope (using human brain tissue). This inclusion contains a protein called alpha synuclein and it deposits across many brain regions in Parkinson. It is not only limited to the substantia nigra but pathologists like to see it in this region to confirm a diagnosis. The Lewy Body does not function in helping in conversion of dopamine. There is a hypothesis that PD starts in the gut and lower brainstem (as well as smell centers) and spreads throughout the brain. This hypothesis is based on spread of Lewy bodies and pathological changes. We actually are able to get dopamine to the brain very well despite the Lewy bodies. Many of the therapies are now aimed at preventing or removing the Lewy bodies. The billion dollar question is if a drug or vaccine accomplishes this removal will it change disease symptoms or course of the disease. Great question! Thank you. Michael S. Okun, MD

Oh hi! I was wondering whether you are looking into the relationship between PD and depression. We were pondering whether it might be not a correlated phenomenon, or a consequence of worsening health, but instead somehow a cause.

Is there anyone working on this?

lucaxx85

This is a really great question. A number of years ago one of our neuropsychology students studied PD and depression and found that it was common and a core feature of PD. Many researchers have also shown the same relationship between PD and depression and have used pathological, clinical and other studies. The chemicals in the brain beyond dopamine are affected in PD and it is a biological change and a treatable condition. The non-motor symptoms of Parkinson's disease are far more disabling than the motor symptoms. -Michael S. Okun, MD

Dr Okun, Thank you for doing this AMA. I've recommended your book and the National Parkinson web site on our sub /r/Parkinsons

In addition to Parkinson's Treatment: 10 Secrets to a Happier Life what are your top three books that you would recommend for those with Parkinson's and family and friends of those affected?

Exercise is important. What do you recommend as a minimum (intensity, amount of time, how often per week)?

Diet is important. What are thoughts for those with Parkinson's?

ParkieDude

Five of my favorite Parkinson's disease books include:

Parkinson's Treatment: 10 Secrets to a Happier Life 10 Breakthrough Therapies in Parkinson's Disease The New Parkinson''s Disease Treatment Book Parkinson's Disease for Dummies Brain Storms

There are more but I will stop at 5 since you asked for 3.

Exercise is like a drug and now almost all experts recommend it and it seems to be very helpful for people symptomatically and there is a possibility it may alter disease course. Believe it or not we don't know the best regimen, type, and all the details....more work to be done. Same with diet, we need more than just self help books, we need data. For diets we have some risk data but little data on diets that may lead to symptomatic improvement.

Hi Dr. Okun, thanks for doing an AMA! I'm actually an undergrad volunteering at Movement Disorders, and I wanted to know your thoughts on where deep brain stimulation technology is headed. I recently saw a TEDx talk from you and Dr. Foote. In the talk, there was a video that showed a woman being stimulated to laugh while on the operating table. Do you think uses that extend beyond disease treatment and into domains such as enhancement or modification are the next step of DBS tech?

robsquad

Thank you for the question. We were amazed when so many people watched the TEDx video from us located at: https://www.youtube.com/watch?v=7udZ5ux0dYE

The video starts and end by saying: Your brain controls everything and we can control your brain.

We start from simple applications and then show how we have the potential to alter mood, emotion, and smiling and this raises serious ethical concerns.

We conclude that to do DBS we really need to have an underlying ethical principle: We do it only to relieve suffering.

This idea however could change much like plastic surgery and we will need to be ready to deal with the implications. It is a really interesting and at the same time scary subject.

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Thanks for informing us. -Michael S. Okun, MD

Can you comment on the link between Parkinson treatment and marijuana?

ikeachimp

There has been a recent and evolving media blitz concerning the potential use of medical marijuana (tetrahydrocannabinol, THC) in Parkinson's disease patients. All of the attention to marijuana has been largely a result of multiple states passing legislation to legalize and regulate the drug. The ultimate goal of this activity is to make marijuana available for select and appropriate medical diagnoses. Recent advocates for this position, including Sanjay Gupta from CNN, have been gaining unprecedented momentum.

There are several cannabinoid receptors in the brain. CB1 receptors are common in the regions of the brain most important to Parkinson's disease. CB2 receptors, in contrast, seem to be more important for immunity to disease, but these receptors also are present in the brain. CB2 receptors could be important in regulating Parkinson's disease symptoms such as dyskinesia. The many different formulations of marijuana and synthetic versions can be tweaked to affect different receptor classes and also can be changed to curb or enhance euphoria and other drug effects. Additionally, cannabidiol (CBD) which is a cannabis constituent may have therapeutic value with a better adverse effect profile. It is important to keep in mind that there are potential drugs available that can stimulate the cannabinoid receptor (agonists) and those that can block it (antagonists). Interestingly, sometimes the blocker drugs in low dose actually stimulate the cannabinoid receptors.

Studies are underway to clarify best use for marijuana in PD. We need to understand which symptom for which patient. Anxiety seems to be a symptom that for example it is very helpful for...we also need to caution providers of the risk of car accidents (double) on marijuana. -Michael S. Okun, M.D.

Hi Michael. Thank you for all that you do for Parkinson's. My father has had PD for over 10 years. We've been "lucky" that its progression has been rather slow, but it seems as if he's finally entering into a stage where it's just going to continue to get worse.

Anyway, I was just curious if you've studied the effects of marijuana use + Parkinson's. I know the disease is different for everyone, but my dad insists on smoking pot (which I'm not against at all) but we're just not sure if it's helping or hurting.

Any info you can share would be greatly appreciated.

thing1not2

In addition to my response above to a similar question there have been a few recent papers supporting the use of marijuana for specific Parkinson's disease symptoms, such as motor, mood, quality of life and sleep; however, all of these papers have suffered from methodological issues such as small numbers of patients and lack of a control group. In a 2004 issue of the Movement Disorders journal, a survey by Katerina Venderova was published regarding Parkinson's disease patients using marijuana (cannabis). She reported that "39 patients (45.9%) described mild or substantial alleviation of their Parkinson's disease symptoms in general, 26 (30.6%) showed improvement of rest tremor, 38 (44.7%) had improvement in bradykinesia, 32 (37.7%) had alleviation of muscle rigidity, and 12 (14.1%) had improvement of L-dopa-induced dyskinesia. Only 4 patients in this survey (4.7%) reported that cannabis actually worsened their symptoms. Patients using cannabis for at least 3 months reported significantly more alleviation of their Parkinson's disease symptoms in general." Like Venderova, who conducted her survey in Prague, we have collected anecdotes from Parkinson's disease patients who have phoned us at the free National Parkinson Foundation hotline (1-800-4PD-INFO), and we have heard personal experiences and positive stories supportive of the use of marijuana in Parkinson's disease. Collectively, the problem with all of these types of personal reports has been the lack of scientific rigor necessary to truly understand the effects of marijuana on Parkinson's disease.

I am aware that medication recommendations are highly tailored for each patient by their MDS (movement Disoorder Specialist).

What medications are the often overlooked by MDS by may be of benefit?

What have you found the help alleviate sever neuropathy? Lyrica is heavily promoted, but what else to consider for pain relief?

ParkieDude

Thank you for the question.

Neuropathy which is a different disease (than PD) can be addressed symptomatically with drugs such as Lyrica, Gabapentin, pain medications, and TCA antidepressants (among others).

Most movement specialists know the armamentarium for PD drugs but here are a few you may think about:

1- amantadine for dyskinesia 2- Duopa pumps or DBS for motor fluctuations and dyskinesia 3- antidepressants for mood issues 4- drugs for orthostatic hypotension (midodrine, florinef, Northera) 5- drugs for psychosis (clozapine, pimavanserin, quetiapine)

Hope that helps.

What do you think is the most promising Parkinson's research taking place right now?

parkinsons37

The most promising...well that is hard to say.

Vaccines and neuroimmunology is very exciting. New Adaptive Deep Brain Stimulation and Neuromodulation. Gene Therapy Research with optogenetics and with new drug development

These are just a few exciting areas.

I had not realized you had written poetry.

How do you organize your day? Cal Newport's "Deep Work" gives insight into how to be very productive. So I am interested in your typical day/week on how you get so much accomplished!

ParkieDude

Great question. I think the philosophy is to be organized and positive and to be efficient. I think it is possible to do many things but you have to stay cool and realize that sometimes it is just not possible to get everything done in a single day. The other trick is to have simple life philosophies and to surround yourself by great and inspiring people.

In addition to "Ask The Doctor" forum on Parkinson dot org, is there anywhere else you are active online?

Usually when someone ask for addition information I refer them to Parkinson.org What other resources should I use?

ParkieDude

Some other places I post are:

http://parkinson.org/ http://parkinsonsecrets.com/ https://www.tourette.org/blogs/research-medical/10-secrets-happier-life-2/ https://www.google.com/search?

ei=cK_8WcqaAtLNmQHwvKSQBg&btnG=Search&q=nejm+journal+watch+neurology+okun

I have the Aware in Care kit for Hospital stays, but what do you wish every Emergency Room Physician knew about Parkinson's?

http://parkinson.org/Living-with-Parkinsons/Resources-and-Support/Patient-Safety-Kit

ParkieDude

I think it would be a great day if every ER physician had an aware in care kit which is free from Parkinson's Foundation...however they are as you know designed for patients to help educate others and keep people safe in the hospital.

I think it would be great if ER docs knew the importance of medication and medication timing and also had a general knowledge that some drugs make PD worse (like headache drugs, compazine, phenergan)....to stay away from Haldol and to only use clozapine, pimavanserin or quetiapine for hallucinations...

I wish they knew the risk of admitting to the hospital and that we could help them to manage patients in the outpatient setting.

I have Parkinson's. How do you recommend patients decide when to do DBS? Because it's surgery and there can always be complications some recommend putting it off as long as possible. Others say get it soon to maximize the timeline of the benefit. This is complicated by new (possibly better?) DBS units coming in the relatively near future.

Ferante

Great question. I think you need to be seen by an experienced DBS team. Each member of the team needs to weigh in on risks and benefits and a decision on whether to have DBS can be made...also when to have DBS, and also the approach (unilateral, bilateral, target,etc.).

Typical DBS teams have experienced neurologists, neurosurgeons, neuropsychologists, psychiatrists, PT/OT/Speech and social workers...among others.

Hope that helps.