

5 hot topics

Parkinson Society BC Regional Meeting
Kelowna, BC | June 22, 2019
Daryl Wile, MD





disclosure

I might talk about...

treatments that aren't available yet

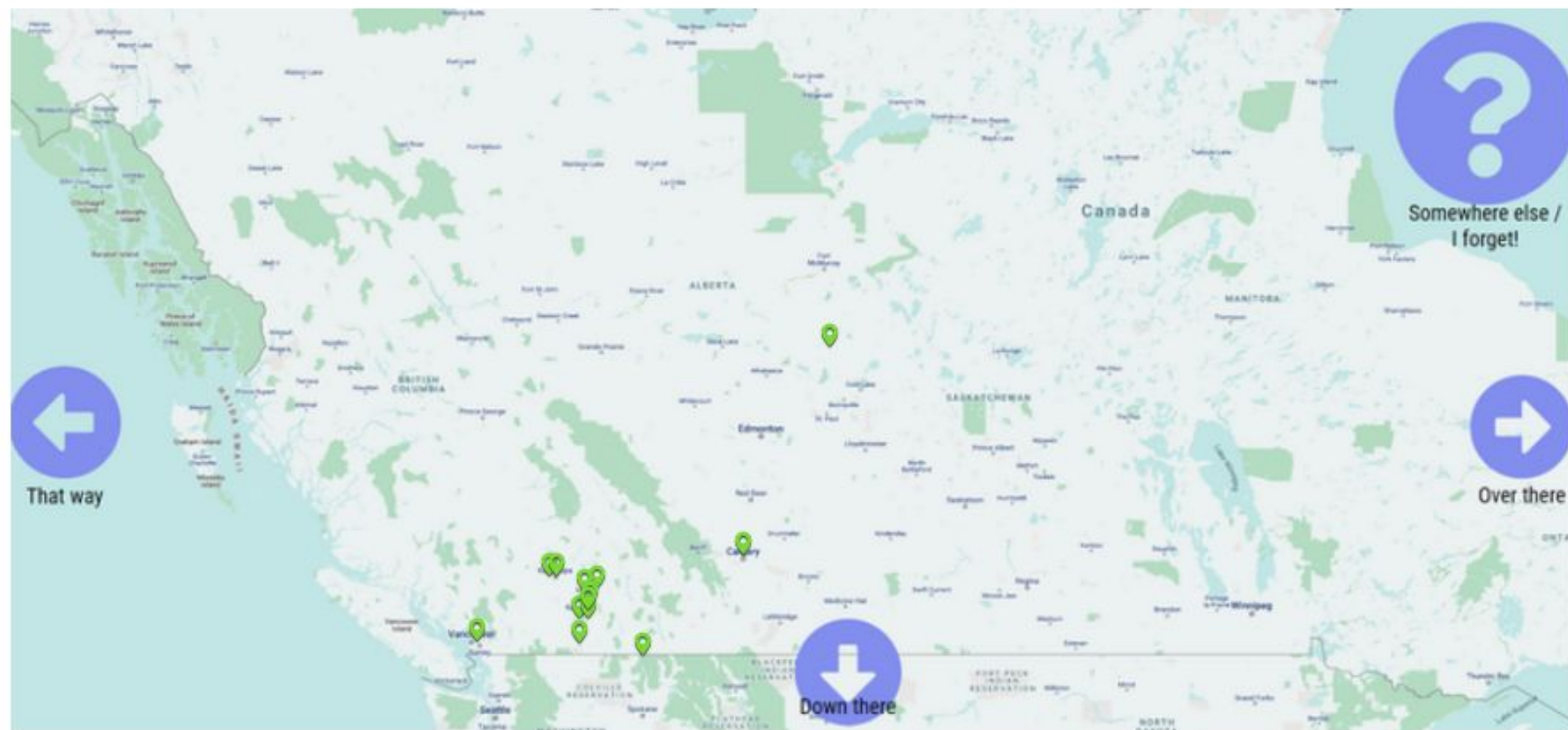
treatments that might work but aren't proven

theoretical stuff that doesn't seem practical

Where are you from?



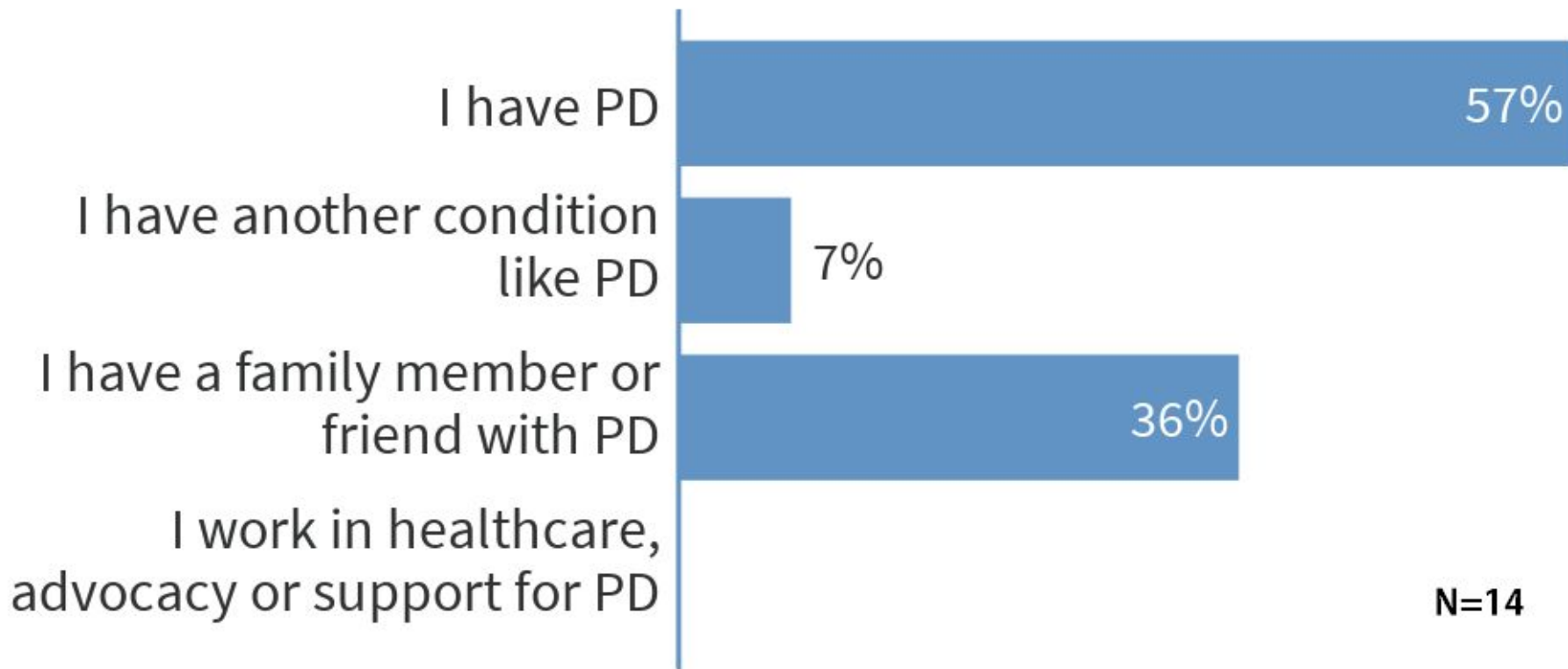
When poll is active, respond at **PollEv.com/darylwlile627**



What's your connection to PD?



When poll is active, respond at **PollEv.com/darylwile627**  Text **DARYLWILE627** to **22333** once to join



What symptom bothers you the most?

Respond at [PollEv.com/daryl-wile627](https://www.poll-ev.com/daryl-wile627) Text **DARYLWILE627** to **22333** once to join, then text your message

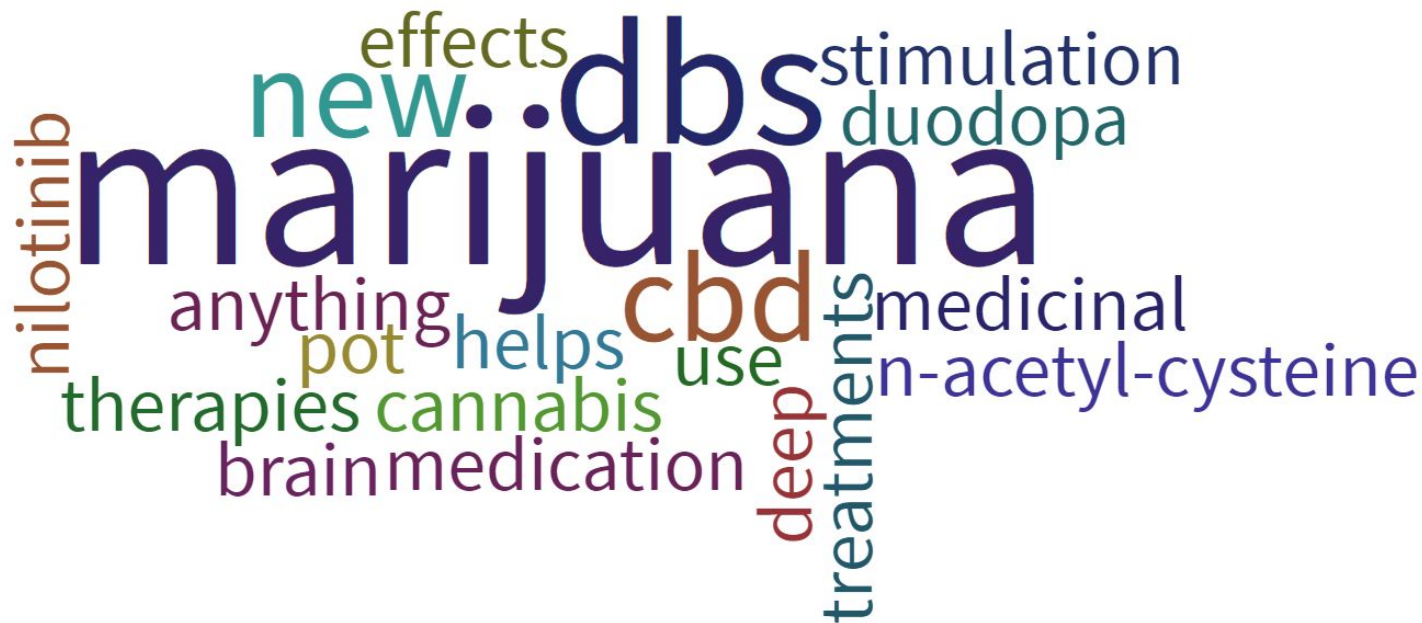


A word cloud of symptoms. The words are arranged in a circular pattern. The largest word is 'insomnia' in the center. Other prominent words include 'tremor' and 'walking'. Smaller words include 'gait', 'mentioned', 'problems', 'fatigue', 'tract', 'dyskinesia', 'nausea', 'weakness', and 'tremors'.

gait mentioned problems tremor gi
insomnia
fatigue tract walking tremors
dyskinesia fatigue nausea weakness

What treatment do you want to learn more about?

Respond at [PollEv.com/daryl-wile627](https://poll.ev.com/daryl-wile627) Text **DARYLWILE627** to **22333** once to join, then text your message







1

Marijuana

aka
"Reefer"
"Pot"
"Ganja"
""bc broccoli""

Have you used cannabis for PD symptoms?

 Respond at **PollEv.com/darylwire627**  Text **DARYLWILE627** to **22333** once to join, then **A, B, or C**

N=17

Yes

A

53%

No

B

47%

What'd you
say man?

C

If you have used cannabis for PD, what positive effects did it have?

A word cloud visualization of responses to the question. The words are arranged in a cluster, with 'none' being the largest and most central word. Other prominent words include 'tremors', 'anxiety', 'lessens', 'help', 'sleep', 'controlled', 'appetite', 'early', 'bit', 'use', 'worse', 'much', 'evaluate', and 'didn't'. The words are in various colors including purple, brown, green, blue, and red.

tremors
much evaluate
didn't
lessens none help
anxiety sleep
worse use bit appetite early controlled

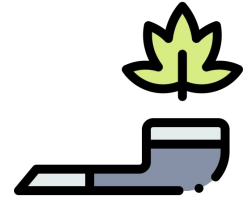
If you have used cannabis for PD, what negative effects did it have?



A word cloud visualization of responses to the question. The word 'none' is the largest and most central, rendered in a brown color. Other words are smaller and arranged around it: 'tremors' is at the top in purple; 'dissapointed' is to the left in purple; 'non' is below 'dissapointed' in green; 'worse' is below 'none' in green; and 'far' is to the right of 'none' in purple.

tremors
dissapointed none far
non worse

What are cannabinoids used for in PD?

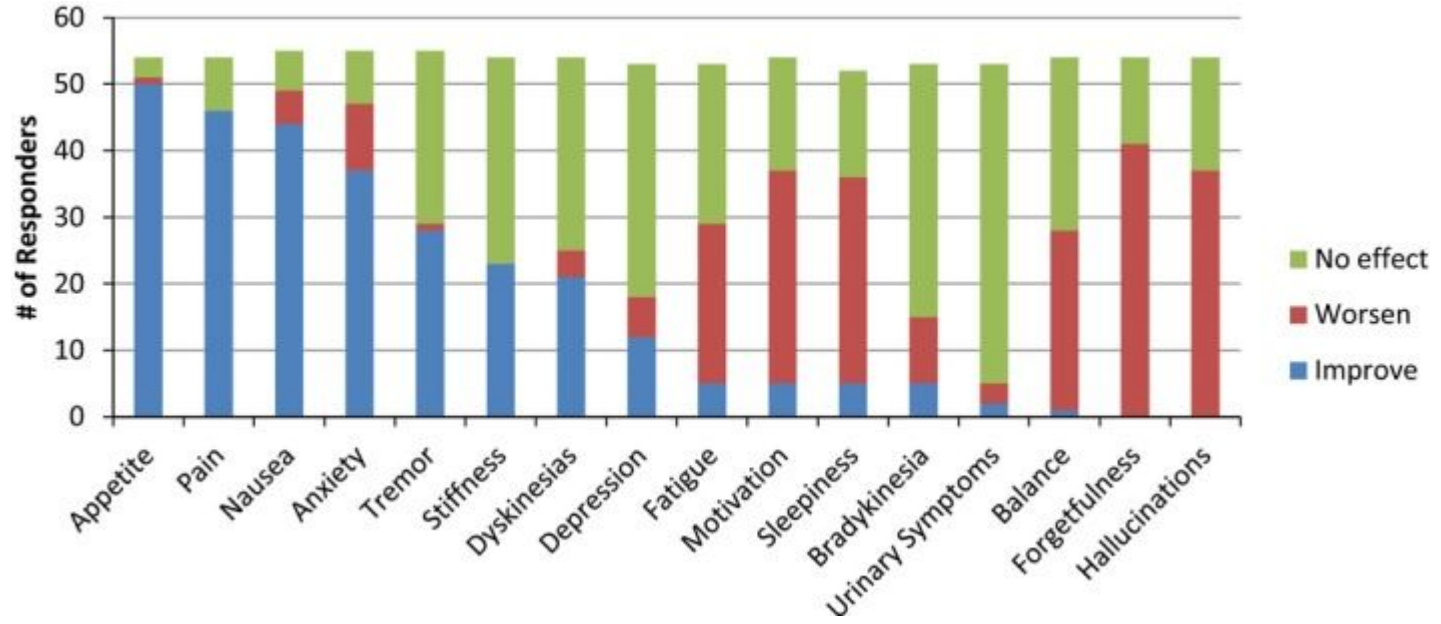


Good quality evidence	"Evidence"	Anecdotes
	<ul style="list-style-type: none">+/- Dyskinesia+/- Tremor+/- Protective	<ul style="list-style-type: none">Appetite/nauseaInsomniaPainAnxiety

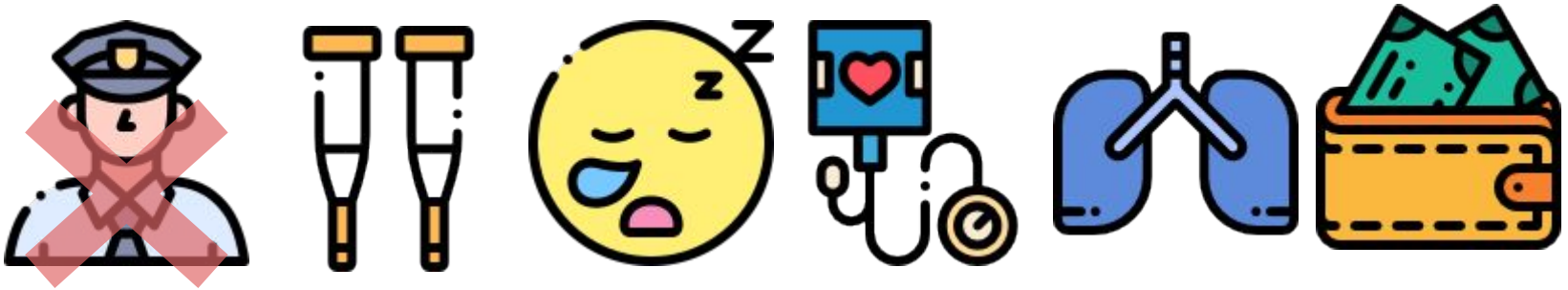


Expected effect of Cannabinoids

'Opinion' of 56 Movement Disorder Specialists



What are the risks?



What are you smoking? (Part 2)



Forensic Science International
Volume 294, January 2019, Pages e25–e27



Short Communication

The unexpected identification of the cannabimimetic, 5F-ADB, and dextromethorphan in commercially available cannabidiol e-liquids

Justin L. Poklis^{a,*}, Haley A. Mulder^b, Michelle R. Peace^b

Table 1
Detection of CBD and other psychoactive compounds in CBD e-liquids.

Sample (Received for Analysis)	CBD	THC	5F-ADB	DXM
Liquid Gold Strawberry	X		X	
Diamond CBD Vape Additive	X		X	

Samples (Purchased)	CBD	THC	5F-ADB	DXM
Liquid Gold Strawberry	X		X	
Liquid Gold Jungle Juice	X	X	X	
Diamond CBD Vape Additive	X			X
Blue CBD 250 mg	X			
Blue CBD 1000 mg	X			
Diamond CBD 50 mg	X			
Diamond CBD 1000 mg	X	X		

X-indicates detection.

DRUG DETECTION LABORATORIES, INC.
Forensic Toxicology
Drug and Alcohol Testing

DDL Number: 81100089
LAB DIRECTOR: MINH X. TRAN
Consulting Toxicologists: Jeffrey L. Zimander, Edwin A. Smith

To: [REDACTED] Report printed: November 26, 2018

LABORATORY REPORT

Item Name: DIAMOND CBD
Agency/Other ID: CBD Vape Additive
Specimen Received: 11/20/18, 1045 Hours
Specimen Collected: Unknown

Test	Specimen	Result	Date Completed
Pill / Powder / Liquid Screen	Liquid Oil	See Below	November 22, 2018

Yellow liquid oil contains cannabidiol (CBD) and melatonin.

No other illicit drugs, synthetics, or pharmaceuticals were identified.

Note: Melatonin detected as the major constituent and CBD detected as the minor constituent.

The risk of contaminants and false labeling in the exploding CBD industry

by Lisa Fletcher/ABC7 | Wednesday, May 15th 2019



"Comparing this to other supplements that we've tested, we found really high levels of pesticides, really high levels of heavy metals," Callan said.

The lab tested the top-selling 240 products for 300 contaminants and for truth in labeling.

Was the amount of CBD claimed actually in the product?

After thousands of tests, 70 percent of products were found "highly contaminated" with heavy metals like lead and arsenic, herbicides like glyphosate (the active ingredient in RoundUp) and a host of other contaminants including pesticides, BPA and toxic mold.

One product - by [Ananda Hemp](#) - contained levels of lead so high, it exceeded by 100-times what the EPA would consider actionable for drinking water.

More than half the products tested had labels that inaccurately reflected the concentration of CBD in the product.

"There were several that claimed to have CBD on the label where we found no CBD whatsoever," Callan said. "All the way up to, on the other end of the spectrum, there are products that have five, six times as much CBD in them as they say they do."



The Goods
BY **Vox**



2

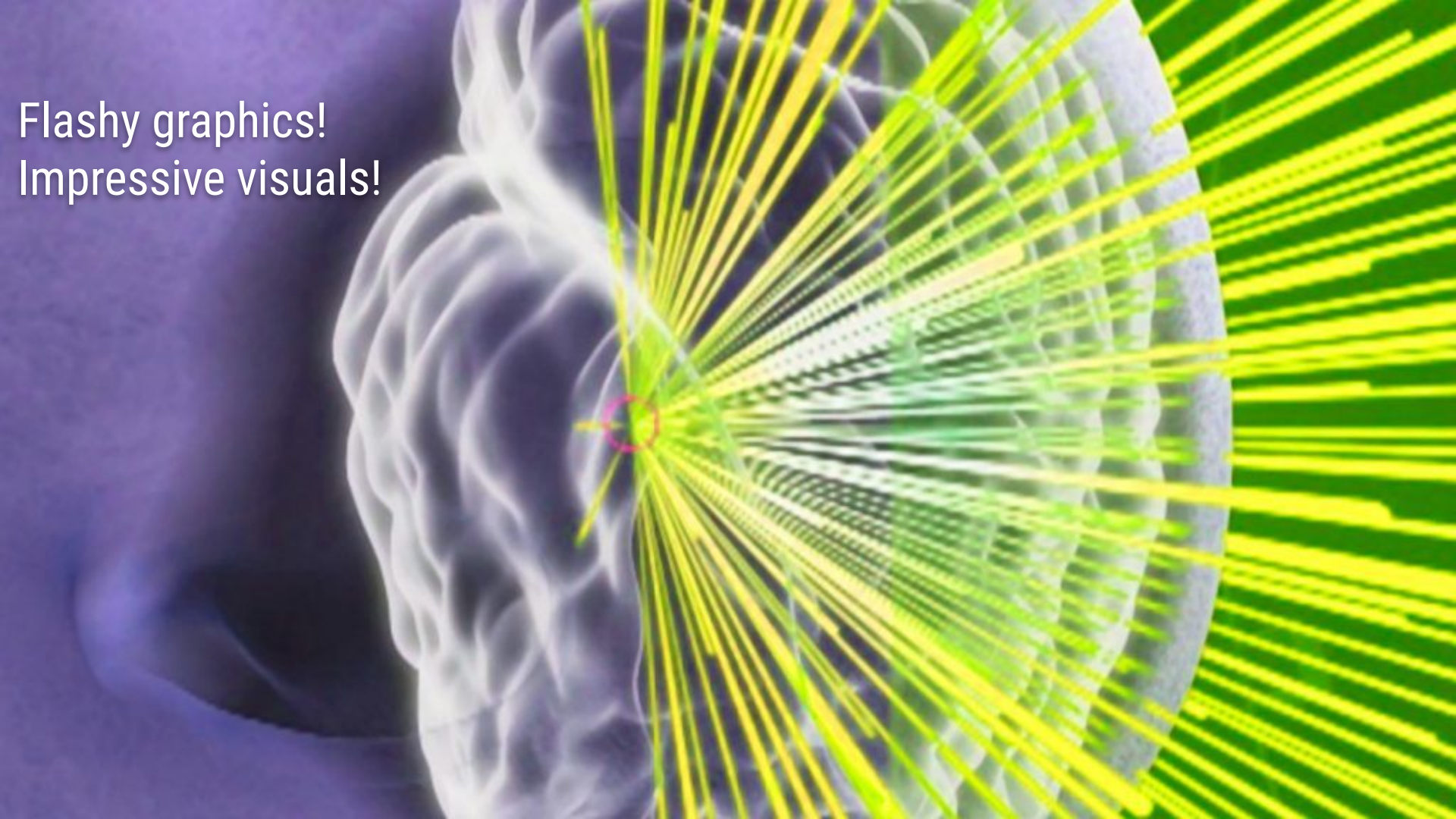
*focused
ultrasound*

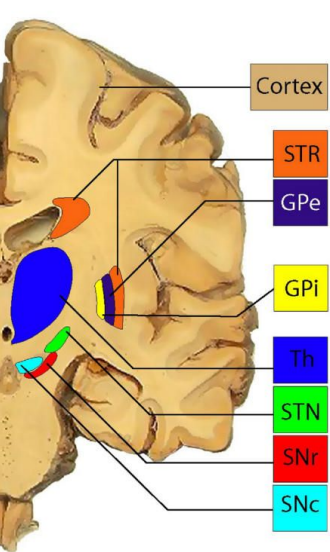
aka

"hifu"

"scalpel-free surgery"

Flashy graphics!
Impressive visuals!





Cortex

STR

GPe

GPi

Th

STN

SNr

SNc

Pallidotomy and thalamotomy
introduced for PD

1952-1970s

Levodopa
(1960s)

DBS explored for other conditions,
technical refinements

DBS approved by US FDA for
PD, essential tremor

1997

Deep brain stimulation first
used for PD

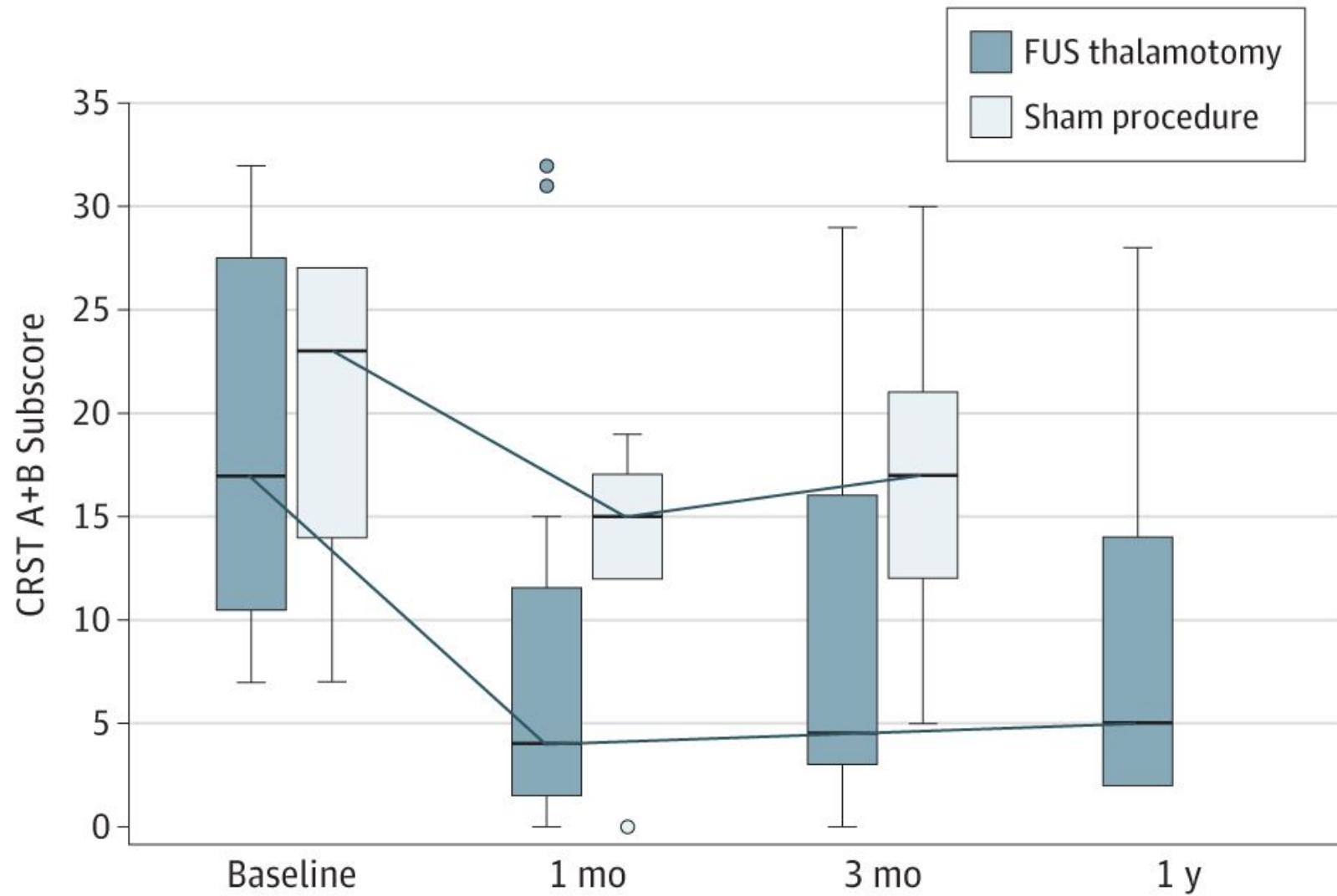
1986

Focused ultrasound approved
for essential tremor

2016

HIFU thalamotomy trials for PD
Dec: FDA approval for PD tremor

2018







3

Growth factors

*This was also a hot topic
In 2006*

Radical Parkinson's treatment tested in patients

By Alex Therrien
Health reporter, BBC News

🕒 27 February 2019



The drug is delivered via a "port" in the side of the head

Randomized trial of intermittent intraputamenal glial cell line-derived neurotrophic factor in Parkinson's disease ^{FREE}

Alan Whone, Matthias Luz, Mihaela Boca, Max Woolley, Lucy Mooney, Sonali Dharia, Jack Broadfoot, David Cronin, Christian Schroers, Neil U Barua Lara Longpre, C Lynn Barclay, Chris Boiko, Greg A Johnson, H Christian Fibiger, Rob Harrison, Owen Lewis, Gemma Pritchard, Mike Howell, Charlie Irving, David Johnson, Suk Kinch, Christopher Marshall, Andrew D Lawrence, Stephan Blinder, Vesna Sossi, A Jon Stoessl, Paul Skinner, Erich Mohr, Steven S Gill ✉

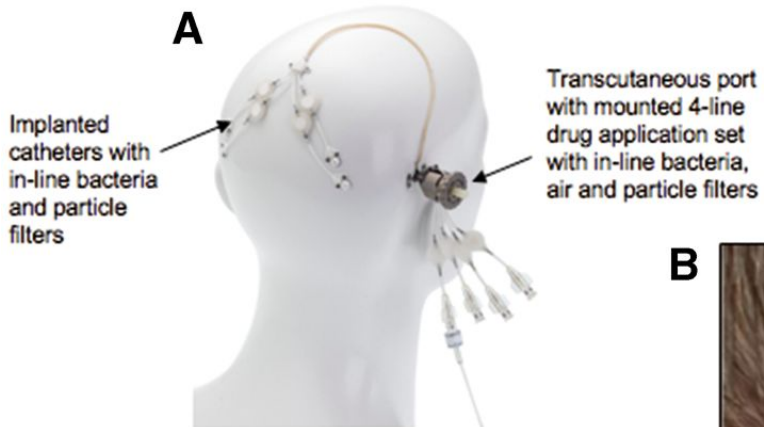
Brain, Volume 142, Issue 3, March 2019, Pages 512–525,

<https://doi.org/10.1093/brain/awz023>

Published: 26 February 2019 **Article history** ▼

Robot surgery implanted brain port

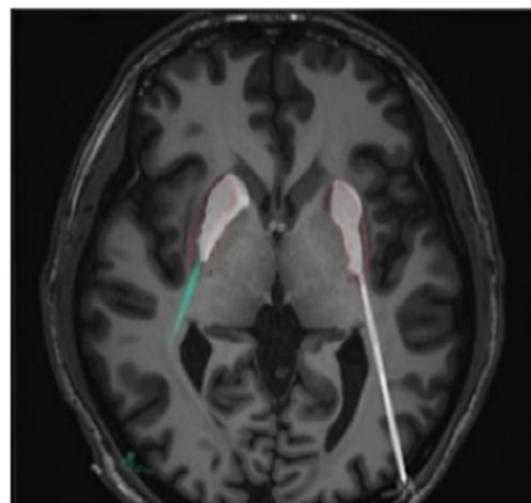
Infusion of growth factor into brain targeting areas important to PD (GDNF)



Drug delivery system used in study



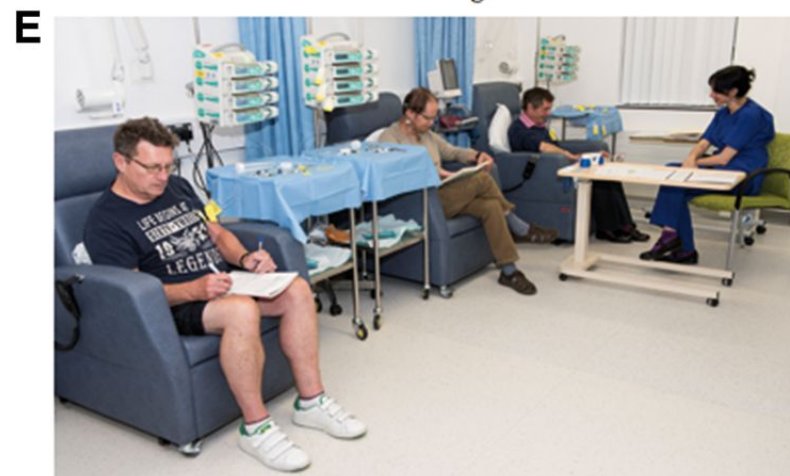
Skull-mounted port



Gadolinium test infusion

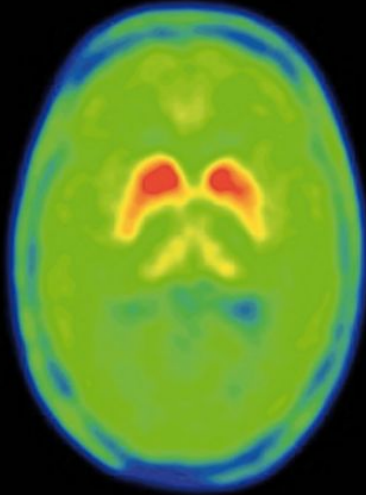


Patient receiving infusion

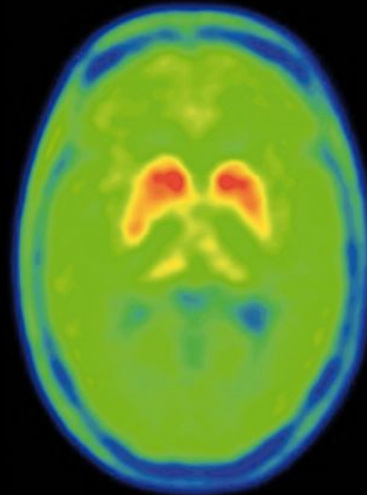


GDNF study Infusion suite

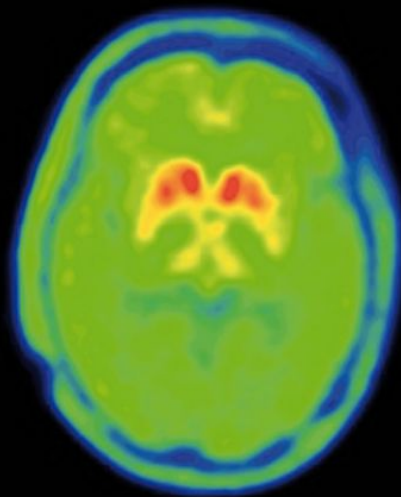
Baseline , Placebo



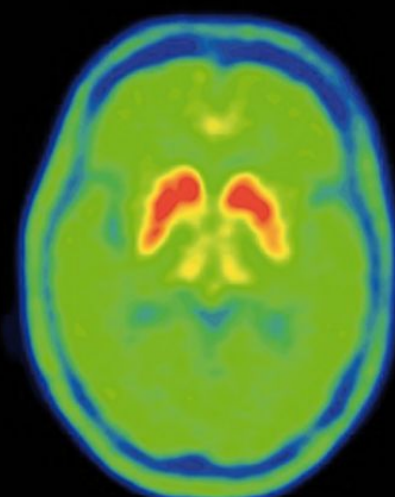
Week 38 , Placebo

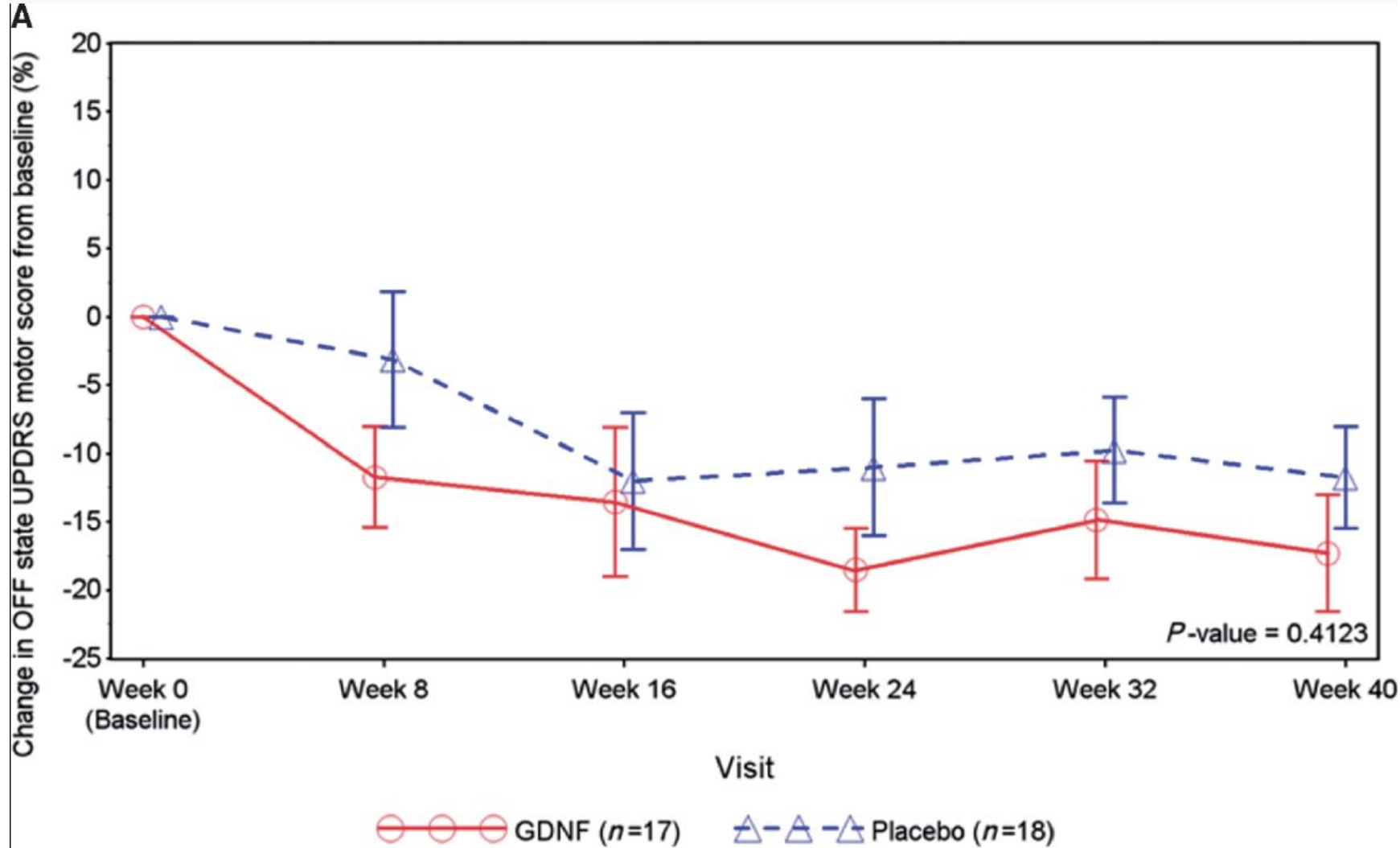


Baseline , GDNF



Week 38 , GDNF





A delivery person wearing a red jacket and a large silver insulated delivery bag is riding a bicycle down a narrow city street. The street is lined with buildings and parked cars, including a white car in the foreground. The scene is captured from behind the cyclist, looking down the street.

4

Better
Delivery

Apomorphine



In Canada as MOVAPO



Not available in Canada

Kynmobi

FDA Declines to Approve APL-130277 for Treating 'Off' Periods; More Information Requested

 FEBRUARY 5, 2019  BY JOSE MARQUES LOPES, PHD  IN NEWS.



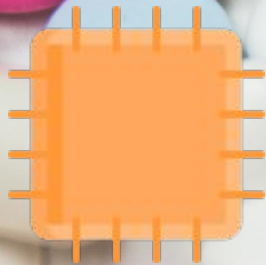
CADTH submission

Key Milestones

Call for patient input posted	January 25, 2019
Patient group input closed	March 18, 2019
Clarification: - Patient input submission received from the David Phinney Foundation for Parkinson's, Parkinson Association of Alberta, Parkinson Canada, Parkinson Society BC and The Michael J. Fox Foundation for Parkinson's Research	
Patient input summary sent for review to patient input groups	March 27, 2019
Patient group comments on input summary closed	April 02, 2019
Clarification: - Patient input summary feedback received	
Submission received	February 25, 2019
Submission accepted for review	March 11, 2019
Review initiated	March 12, 2019
Draft CADTH review report(s) sent to applicant	May 27, 2019
Comments from applicant on draft CADTH review report(s) received	June 05, 2019
Redaction requests from applicant on draft CADTH review report(s) received	June 12, 2019
Clarification: - Voluntarily withdrawn by the manufacturer on 2019-Jun-19	

Not currently available in Canada







5

*Slowing
Progression*

Alpha-synuclein

This protein forms toxic clumps in some brain and body cells of people with PD.

BIIB054

Biogen's antibody aims to prevent aggregated alpha-synuclein from spreading. MJFF is funding tool development and data collection that support study design.



NPT088

Proclara's (previously Neurophage) drug candidate aims to prevent alpha-synuclein from clumping together. MJFF funded pre-clinical work.

[View Grant >](#)



PD01A

AFFiRiS' vaccine aims to stimulate antibodies against alpha-synuclein. MJFF funded pre-clinical work, a portion of the Phase I trial and boost studies.

[View Grant >](#)



RO7046015

Prothena/Roche's antibody aims to prevent aggregated alpha-synuclein from spreading. MJFF is funding tool development and data collection that support study design.



GBA

Mutations in the *GBA* gene are associated with Parkinson's disease and are linked to certain cellular dysfunction.

GZ/SAR402671

Sanofi Genzyme's drug reduces production of lipids that build up with *GBA* mutations. MJFF is funding tool development and data collection that support study design.



LTI-291

Lysosomal Therapeutics' oral drug may offset dysfunction associated with *GBA* mutation. MJFF funded the pre-clinical work.

[View Grant >](#)



LRRK2

Mutations in the *LRRK2* gene are associated with Parkinson's disease and linked to greater activity of the LRRK2 protein.

DNL201

Denali's LRRK2 inhibitor aims to lower heightened LRRK2 activity. MJFF funded safety studies that supported the trial.





*Therapies that
didn't make it*

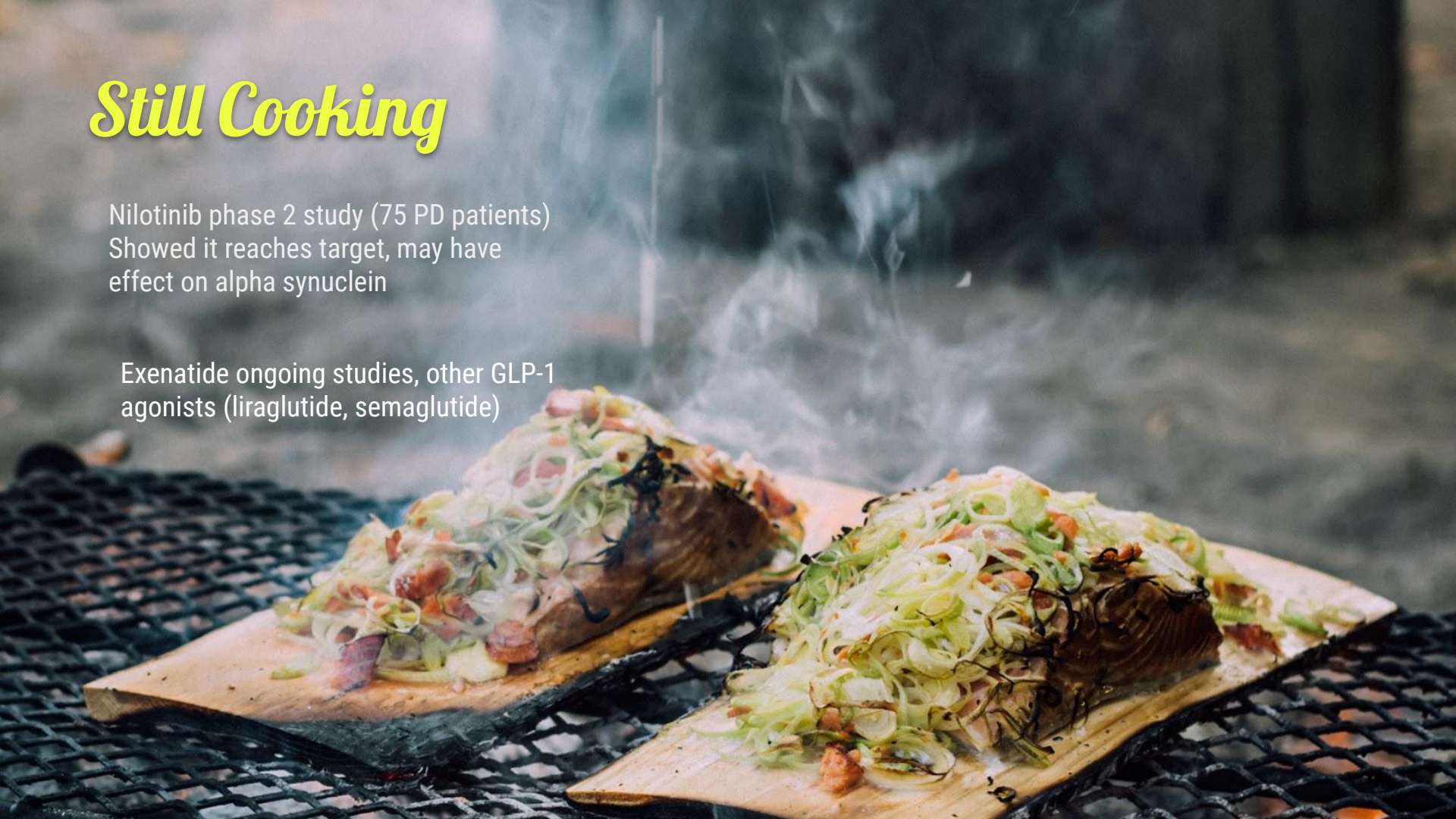
Inosine ("SURE-PD") early termination
Dec 2018

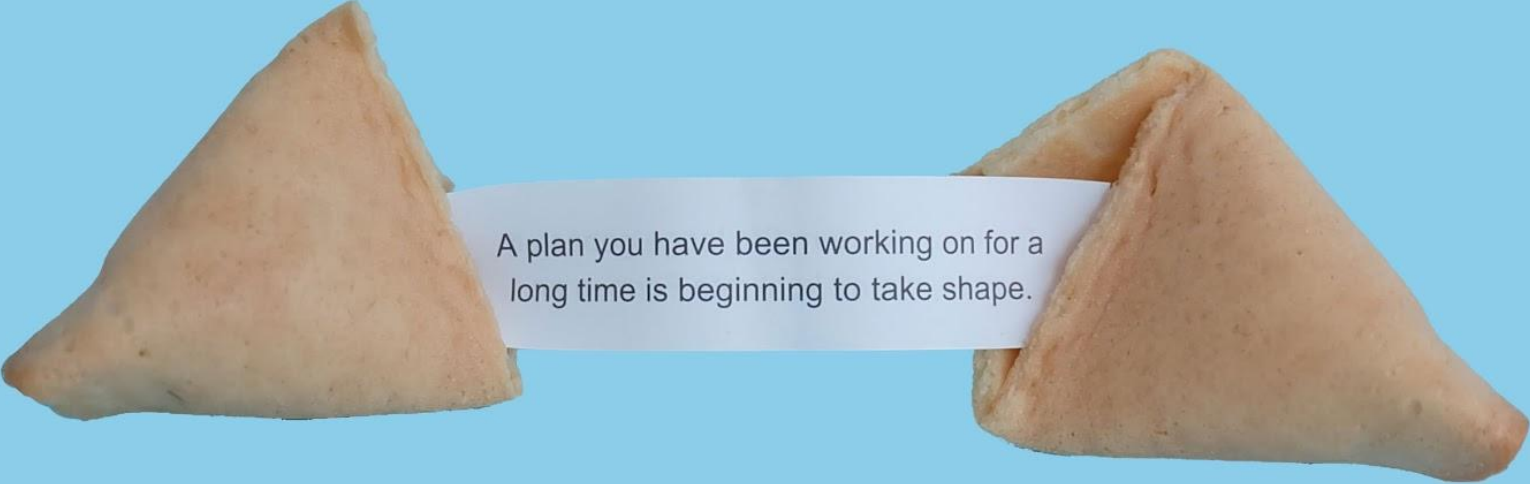
Isradipine (STEADY-PD) no improvement
over 3 years (May 2019)

Still Cooking

Nilotinib phase 2 study (75 PD patients)
Showed it reaches target, may have
effect on alpha synuclein

Exenatide ongoing studies, other GLP-1
agonists (liraglutide, semaglutide)



Two golden-brown, triangular samosas are positioned on a solid light blue background. They are facing each other with their pointed ends towards the center, where they hold a white rectangular strip of paper. The paper contains a message in a simple, black, sans-serif font.

A plan you have been working on for a
long time is beginning to take shape.



The fruit of your labor

Ongoing clinical research - thank you Diane
and Eddie Aizen!

Coming soon...
Expanded allied health services

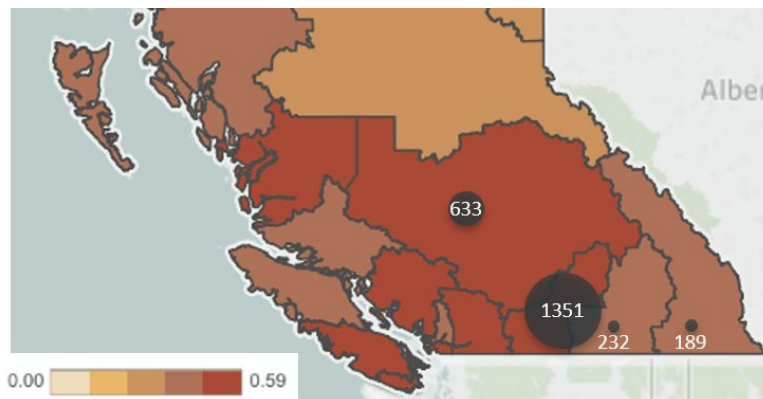
physical therapy
speech pathology
social work

for PD patients through the Okanagan
Movement Disorder Clinic

Thanks to your fundraising efforts
And the PSBC!

Meeting the needs

Northern Health	494	(0.34)
Interior Health	2405	(0.52)
Island Health	2649	(0.56)
Vancouver Coastal	3067	(0.48)
Fraser Health	4480	(0.49)
British Columbia	13095	

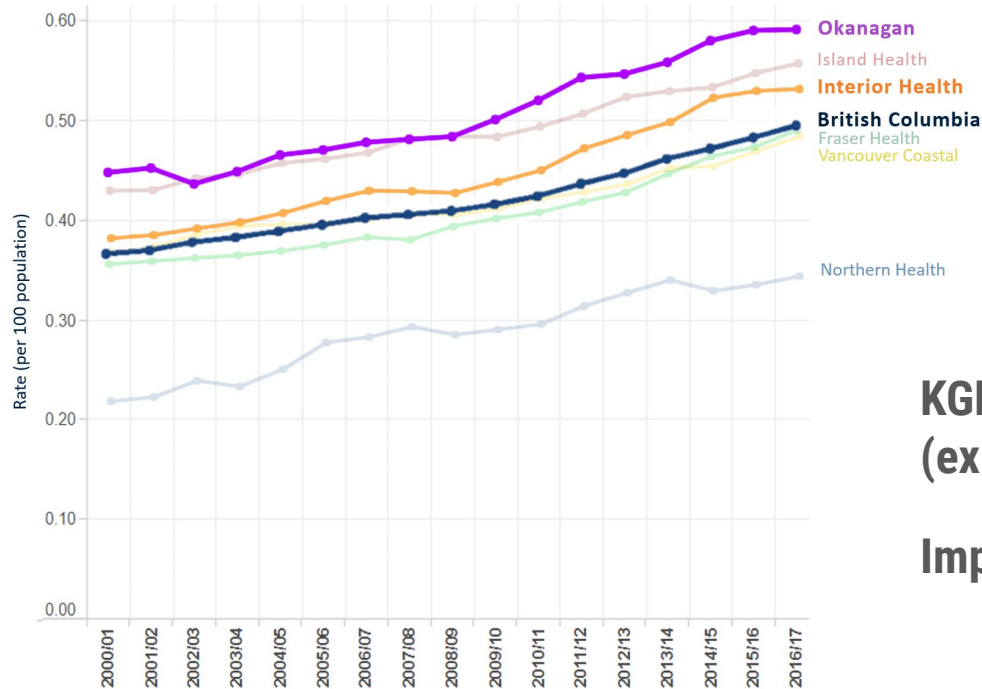


2016-2017

Movement disorder clinic progress

Year	Patient visits / month
2015	69
2016	124
2017	128
2018	112
2019	116

Long Term Planning



**KGH Foundation Brain Health Campaign
(expected 2020)**

Improve patient care for brain disorders

What is on your wish list?



A word cloud visualization with 'neurologist' as the largest, central word in a green font. Other prominent words include 'cure' in a dark purple font, 'disease' in a teal font, and 'neurologists' in a green font. Smaller words scattered around include 'access', 'nurse', 'area', 'something', 'invasive', 'parkinson', 'stimulation', 'brain', 'specialist', 'stabilize', 'non', and 'po'. The words are in various colors including brown, teal, green, purple, and blue.

access disease
neurologist
nurse area cure something
invasive parkinson non
stimulation brain neurologists
specialist stabilize po

thanks!

