



Using the PRO-21 Diet to Slow Parkinson's Progression

Laurie K Mischley, ND PhD MPH

27 Aug 2025

Introduction

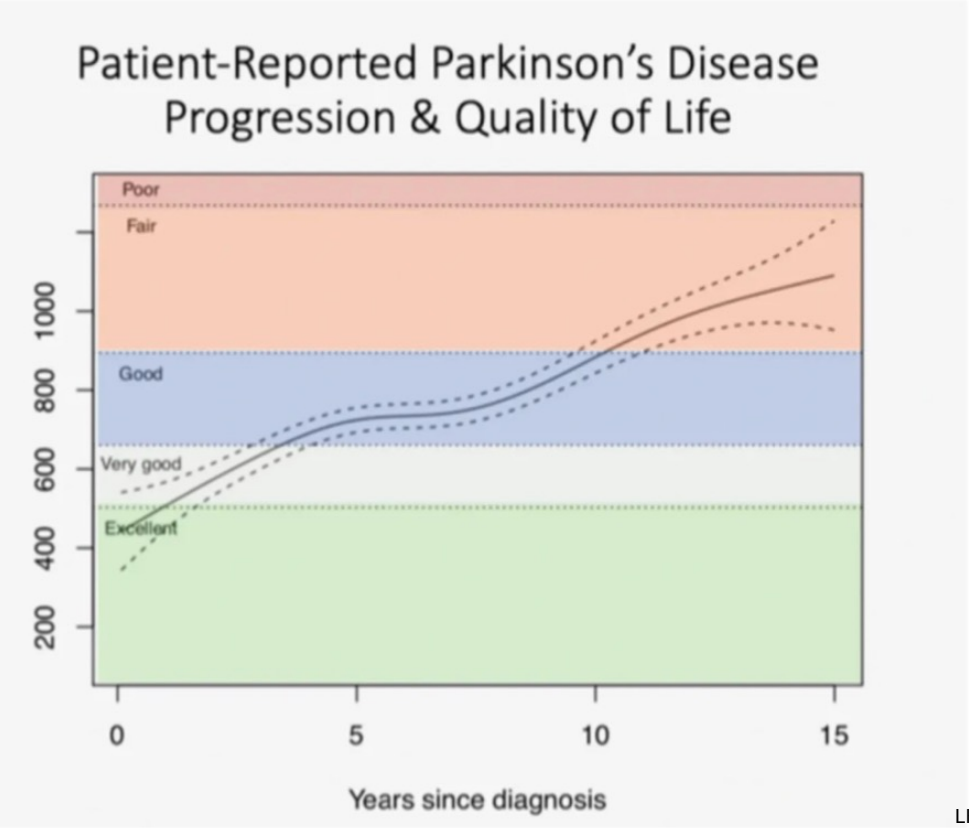
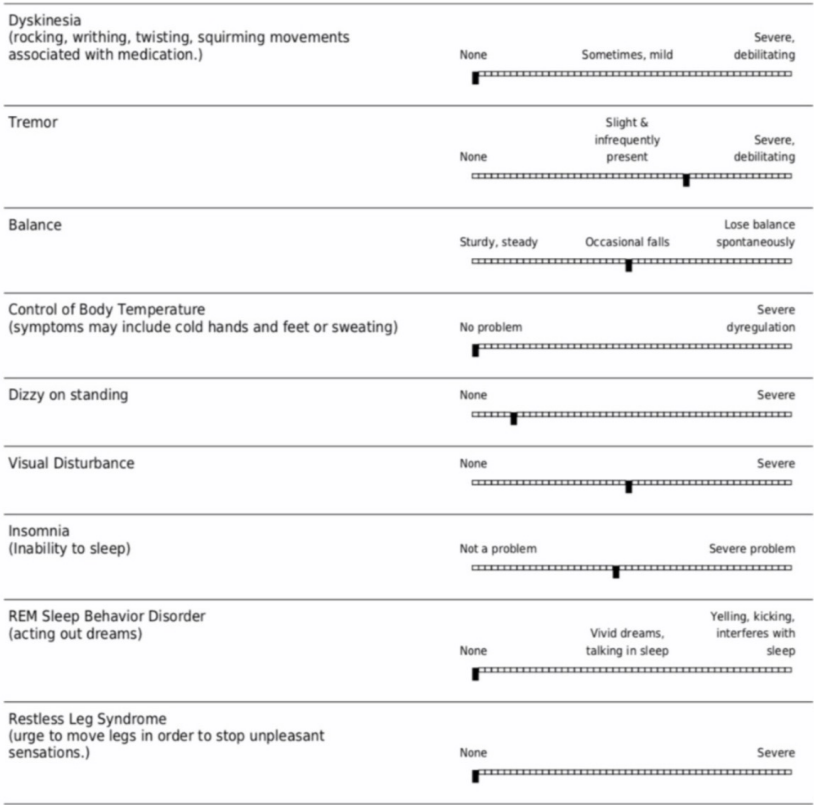
- BS, PhD Nutrition Science
- MPH Epidemiology
- ND Naturopathic Medicine
- Intranasal Glutathione
- Glutathione Deficiency in PD
- Lithium Deficiency in PD

NIH K-01: 2010— Your tax dollars paid for me to get trained in research and find better ways to do research on complicated stuff like diet and mindfulness (placebo not an option)

How to do research when placebo isn't an option?

Universal Agreement

0= Everyone is Happy



FREE for iOS & Android



Parkinson Symptom Tracking

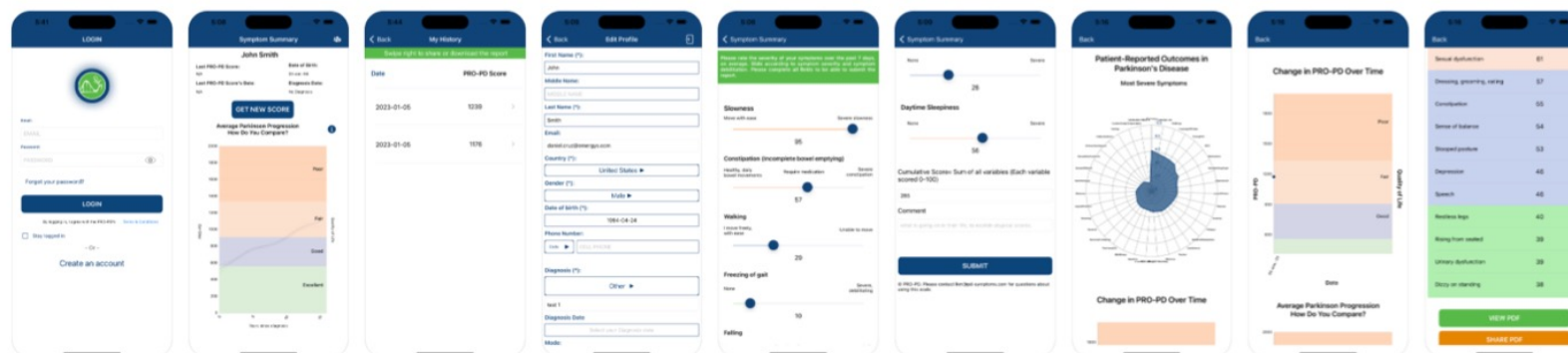
✓ iOS 1.9.8 Ready for Sale

Parkinson Symptom Tracking (PRO-PD App)

A Tool for Taking Control

FREE PRO-PD SCORE HERE

iPhone 6.7" Display (Optional) | iPhone 6.5" Display (Required) | iPhone 5.5" Display (Required) | iPad Pro (6th Gen) 12.9" Display (Required) | iPad Pro (2nd Gen) 12.9" Display (Required)



RESEARCH ARTICLE | [Open Access](#) | [CC](#) | [BY](#) | [NC](#) | [ND](#)

Validation of the Swedish Patient-Reported Outcomes in Parkinson's Disease Scale in Outpatients

Daniel von Below MD, Susanna M. Wallerstedt MD, PhD, Filip Bergquist MD, PhD

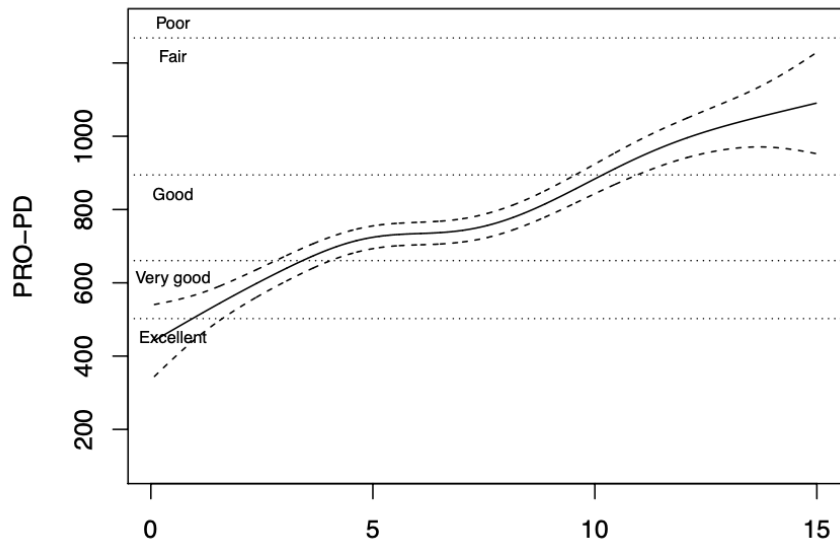
First published: 29 June 2023 | <https://doi-org.offcampus.lib.washington.edu/10.1002/mds.29517>



LK Mischley 2025

Symptom Severity Over the Past 7 Days

- Each slider bar is 0-100
- The greater the symptom severity, the greater the score
- Added up: 0-3300 points



Please rate the severity of your symptoms over the past 7 days, on average. The more severe and debilitating the symptom, slide right. If you're not having that symptom, slide to the left.

Slowness
* must provide value

Move with ease Severe slowness

reset

Constipation (incomplete bowel emptying)
* must provide value

Healthy, daily bowel movements Require medication Severe constipation

reset

Walking
* must provide value

I move freely, with ease Unable to move

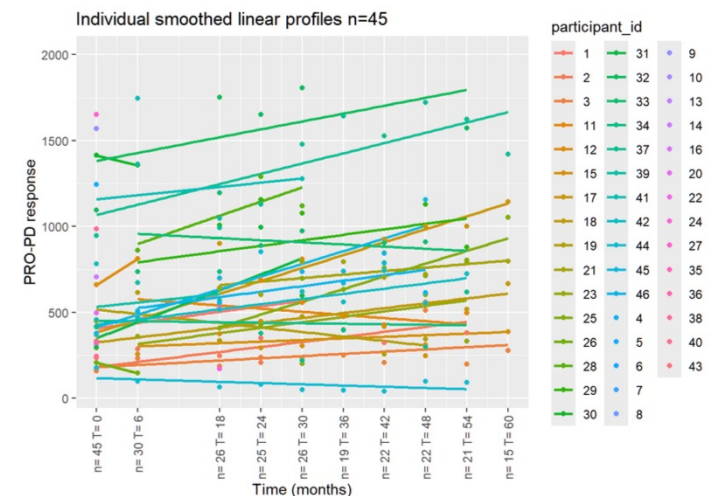
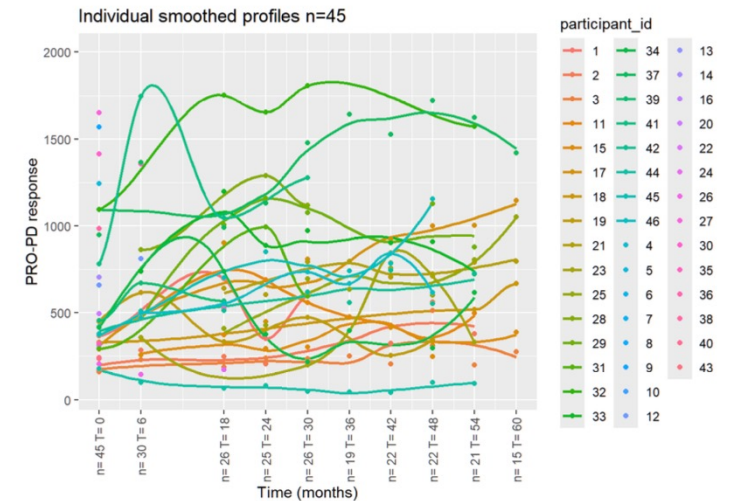
reset

Freezing
* must provide value

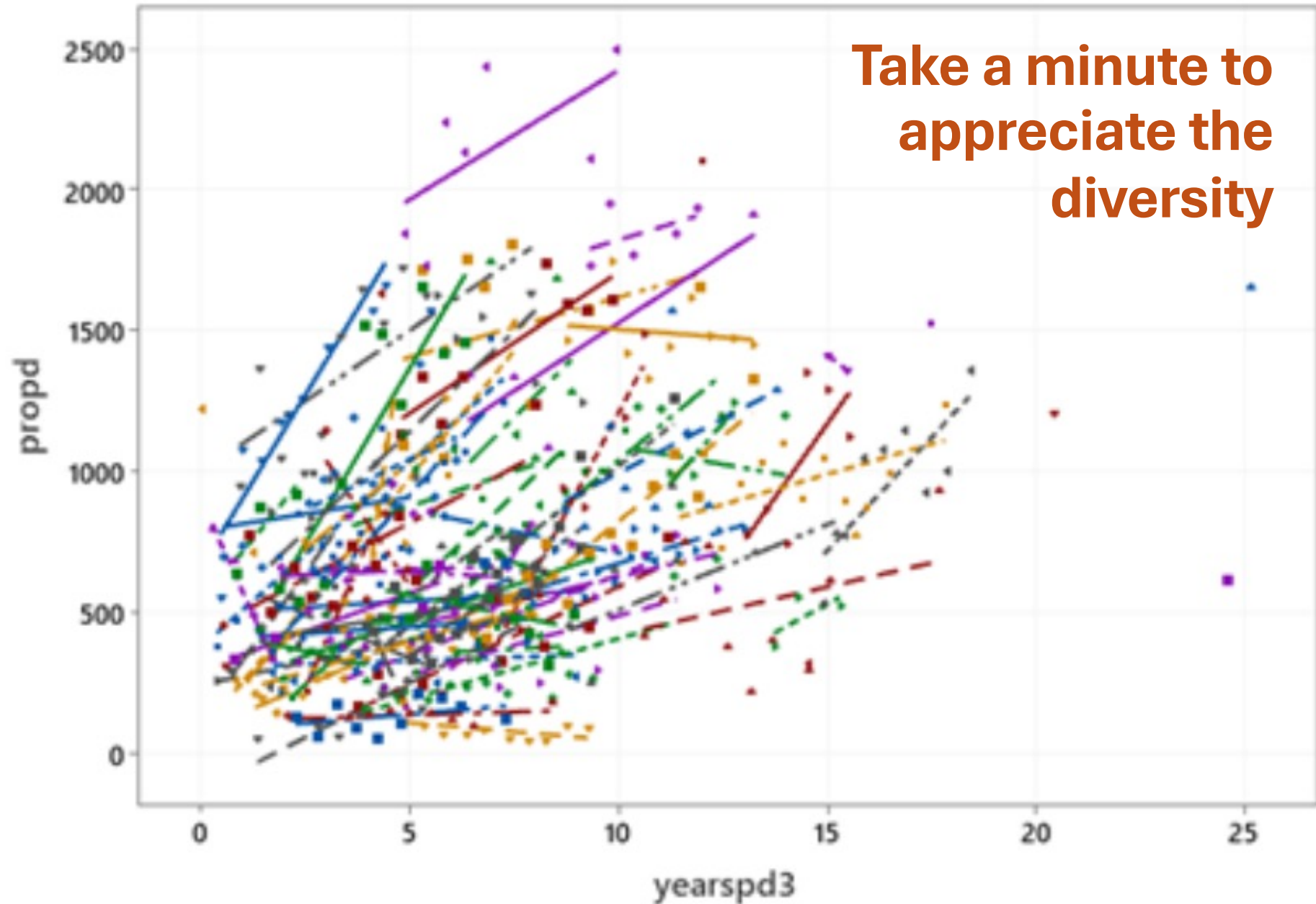
None Severe, debilitating

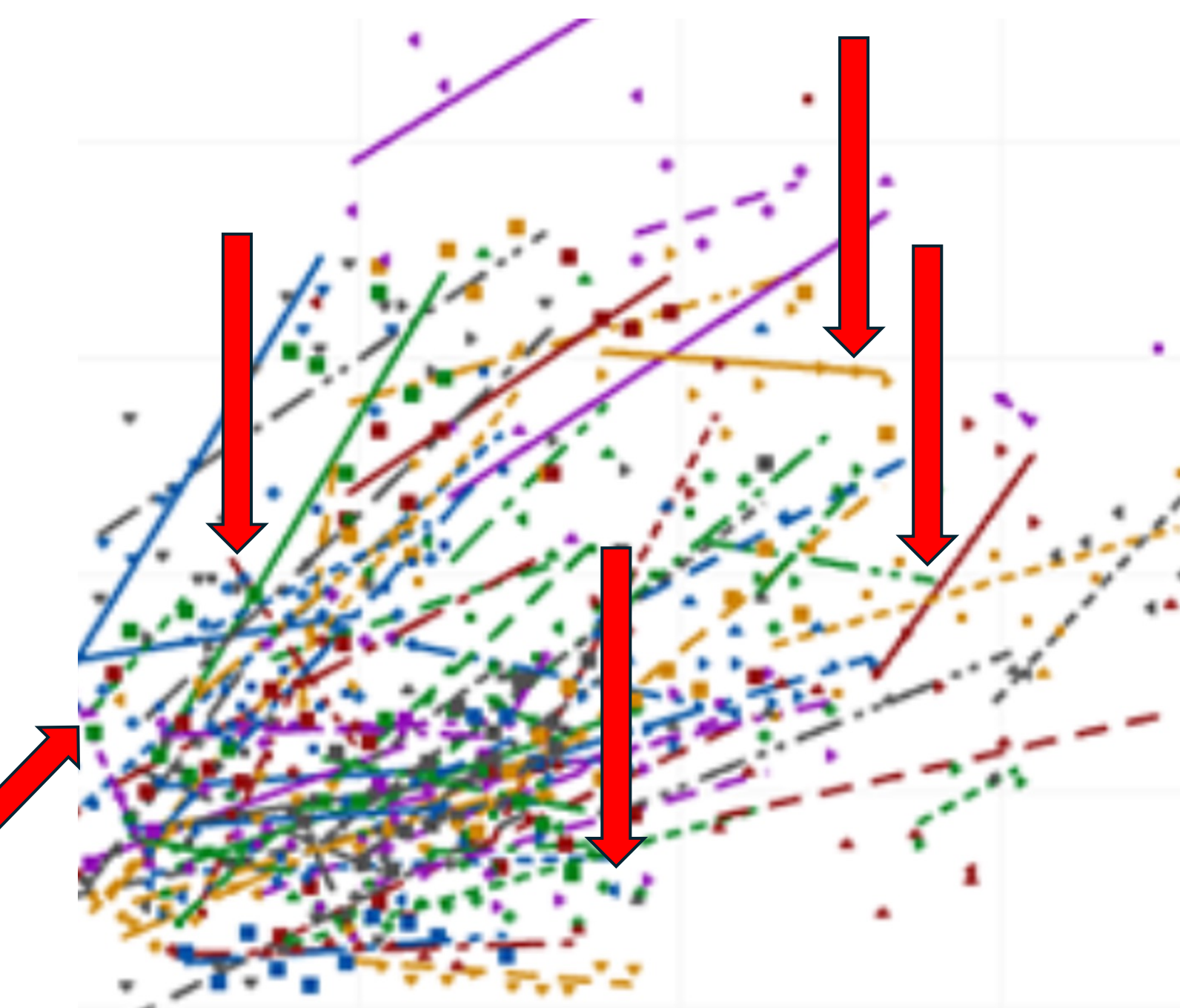
Assessing Symptom Severity

- The nature of Parkinson's is that it fluctuates- over minutes, hours, days, weeks, months, and years.
- Symptoms fluctuate in response to stress, medication, sleep, ...
- There is diversity within one person, and diversity between people
- If you're enrolled in the **MVP-study.com**, one of these lines could be yours....



Scatterplot of propd vs yearspd3 for participants 1-100





Zoom In

Can you
find the
lines
sloping
down?

Positive Deviance Model

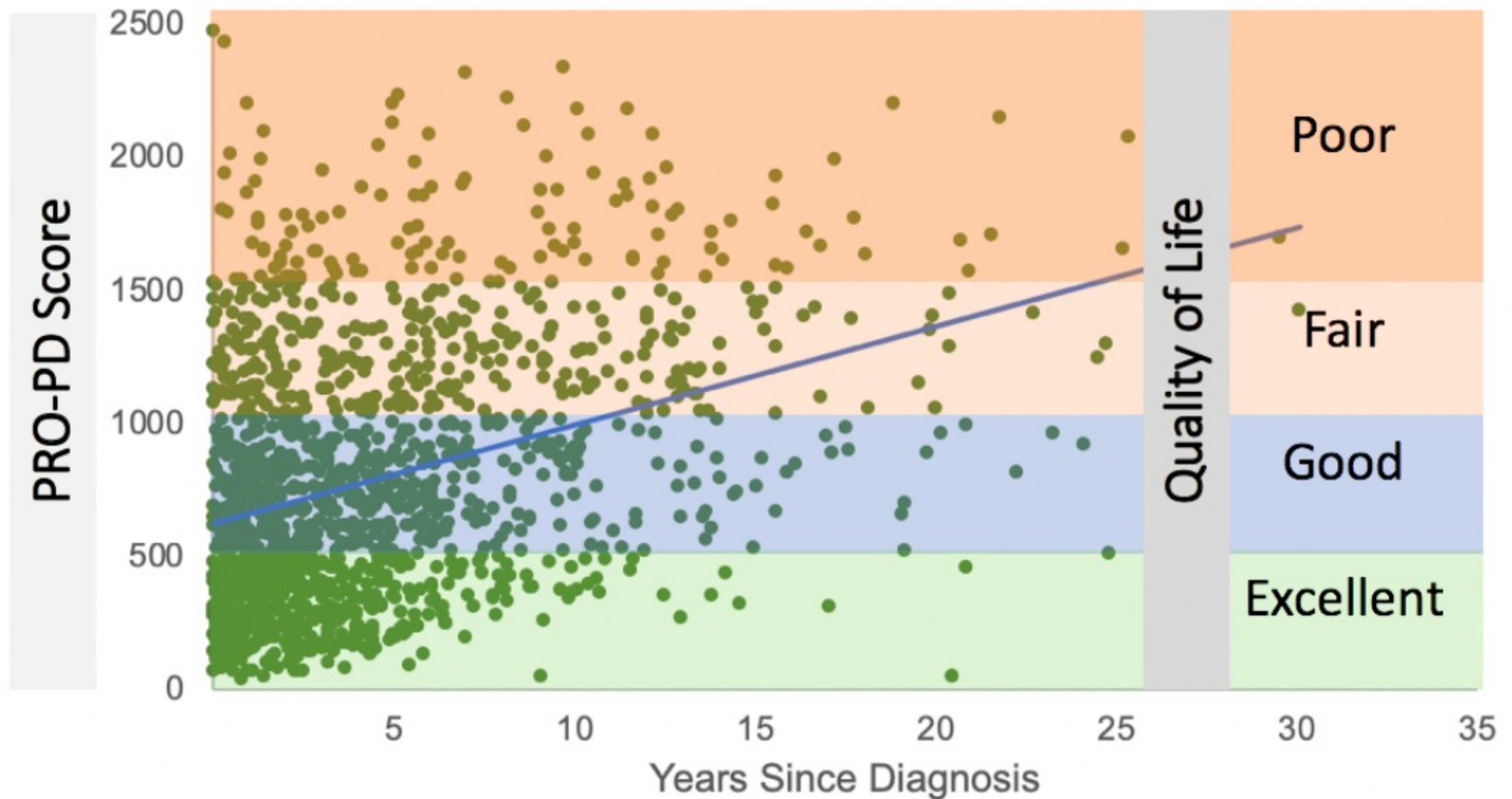


- Model for learning from groups.
- Ideal when there is a lot of diversity.
- Assumes that within any group, there are going to be a few people doing unusually well– defeating the odds
 - Who are those folks getting better?
 - Where do they live? What pills do they take? What is their faith? Their credit score?
 - Can we learn from them?
 - Can the rest of us start doing what they are doing and also do unusually well?



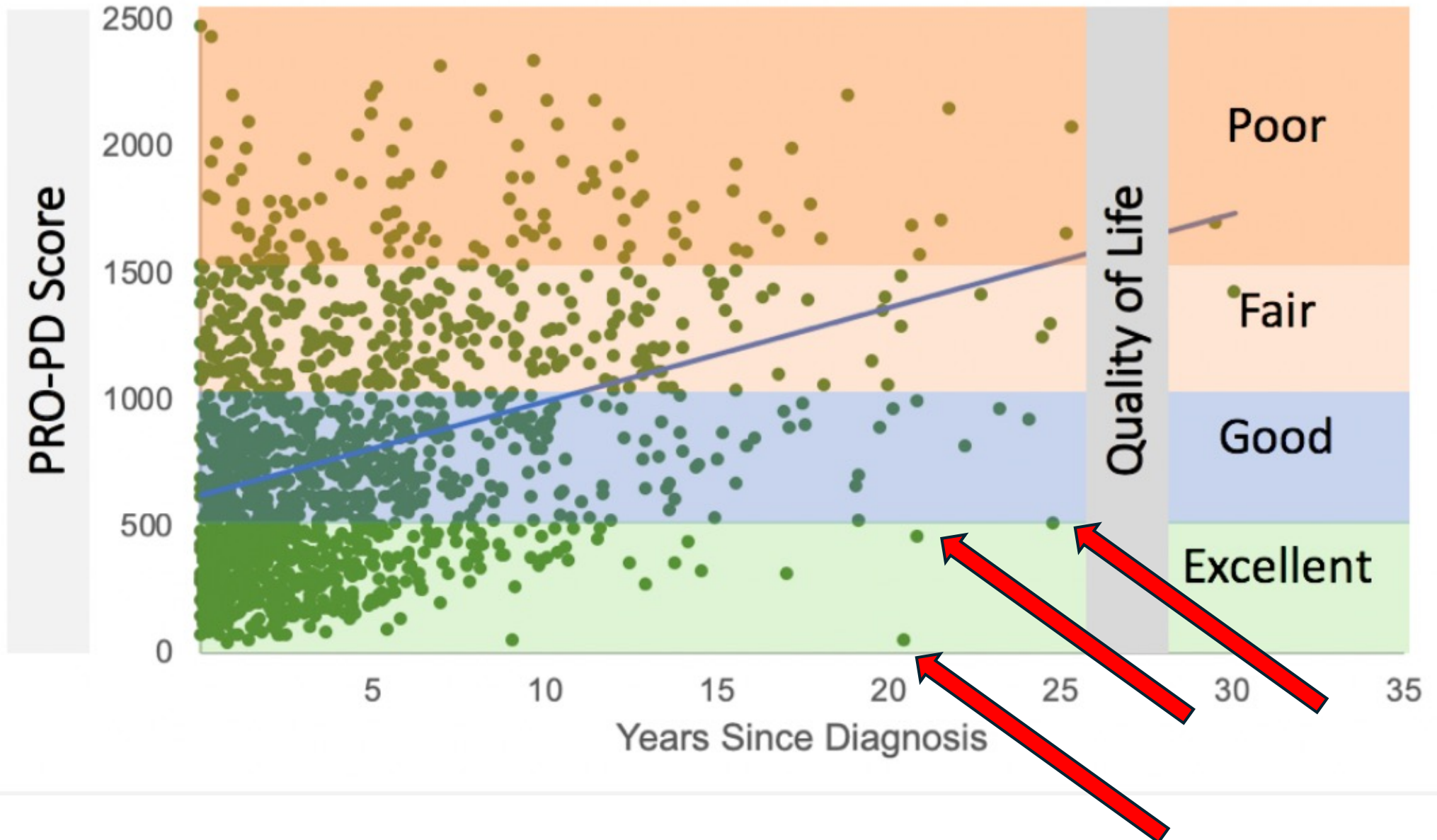
Correlation Between Quality of Life and PRO-PD Score

Mischley LK 2019

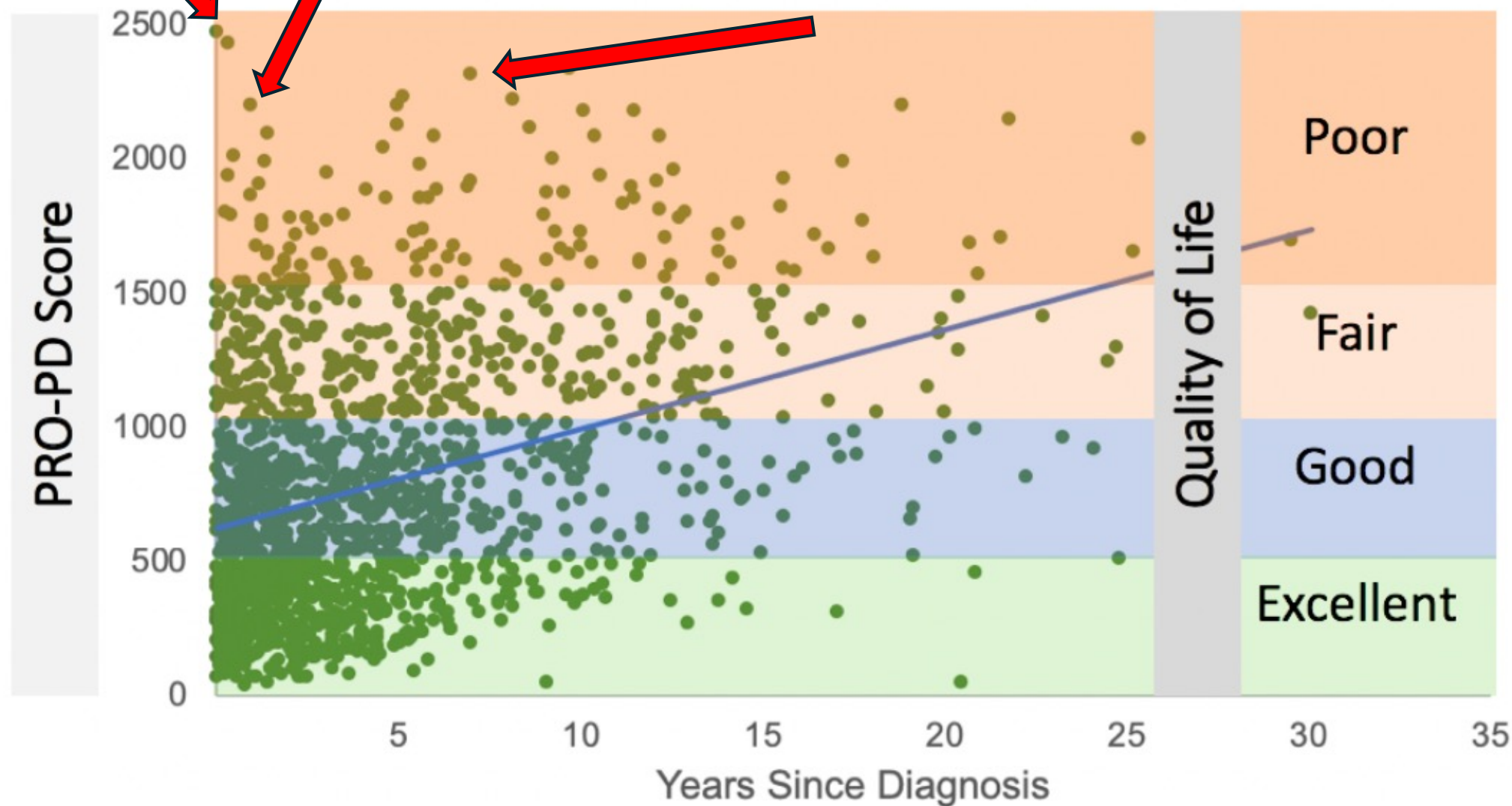


Correlation Between Quality of Life and PRO-PD Score

Mischley LK 2019



Correlation Between Quality of Life and PRO-PD Score

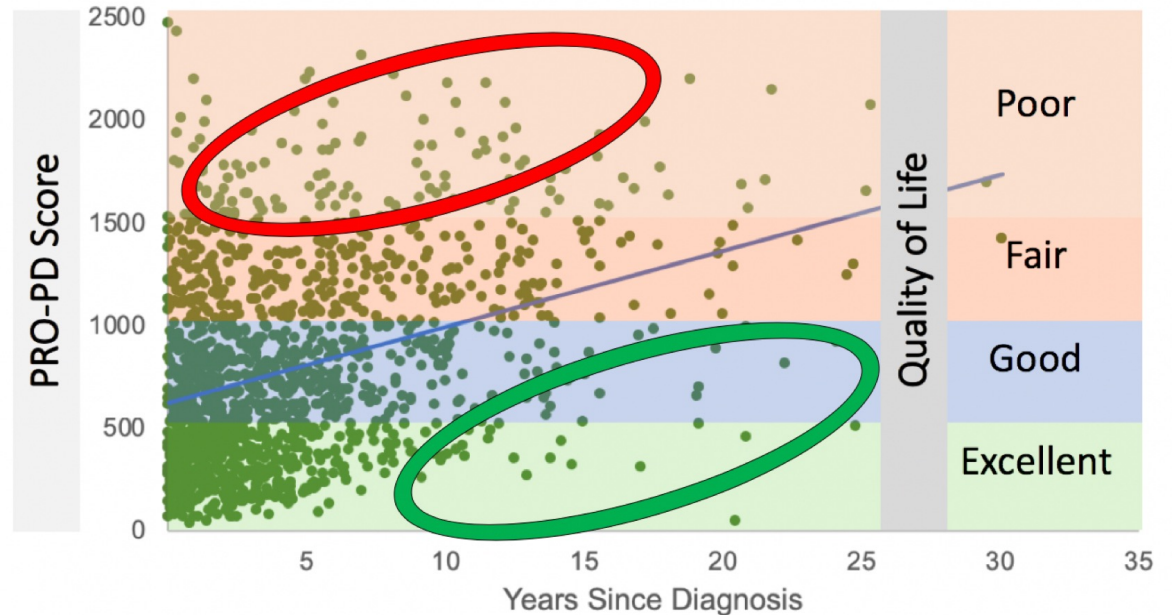


Positive Deviance Model:

Identify the People Doing Best/ Worst

What are they Doing Differently?

- Instead of trying to control for diversity, use it to our advantage.
- What are the people doing best doing differently?
- Patient-reported outcomes.



Modifiable Variables in Parkinsonism

www.MVP-Study.com

The Purpose of the Study

There is a tremendous amount of diversity among people with Parkinsonism (PwP); some people seem to progress quickly and others barely at all. Our goal is to collect information that will make it possible to identify relationships between your daily choices and therapies associated with different rates of progression.

mvp-study.com

Formerly known as Complementary and Alternative Medicine in Parkinson's Disease

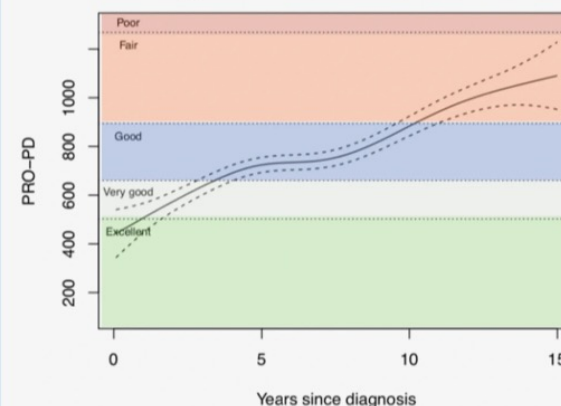
[HOME](#) [WHAT IS MVP?](#) [CONTACT US](#) [10 YEAR SUMMARY REPORT](#)

Modifiable Variables in Parkinsonism (MVP) Study

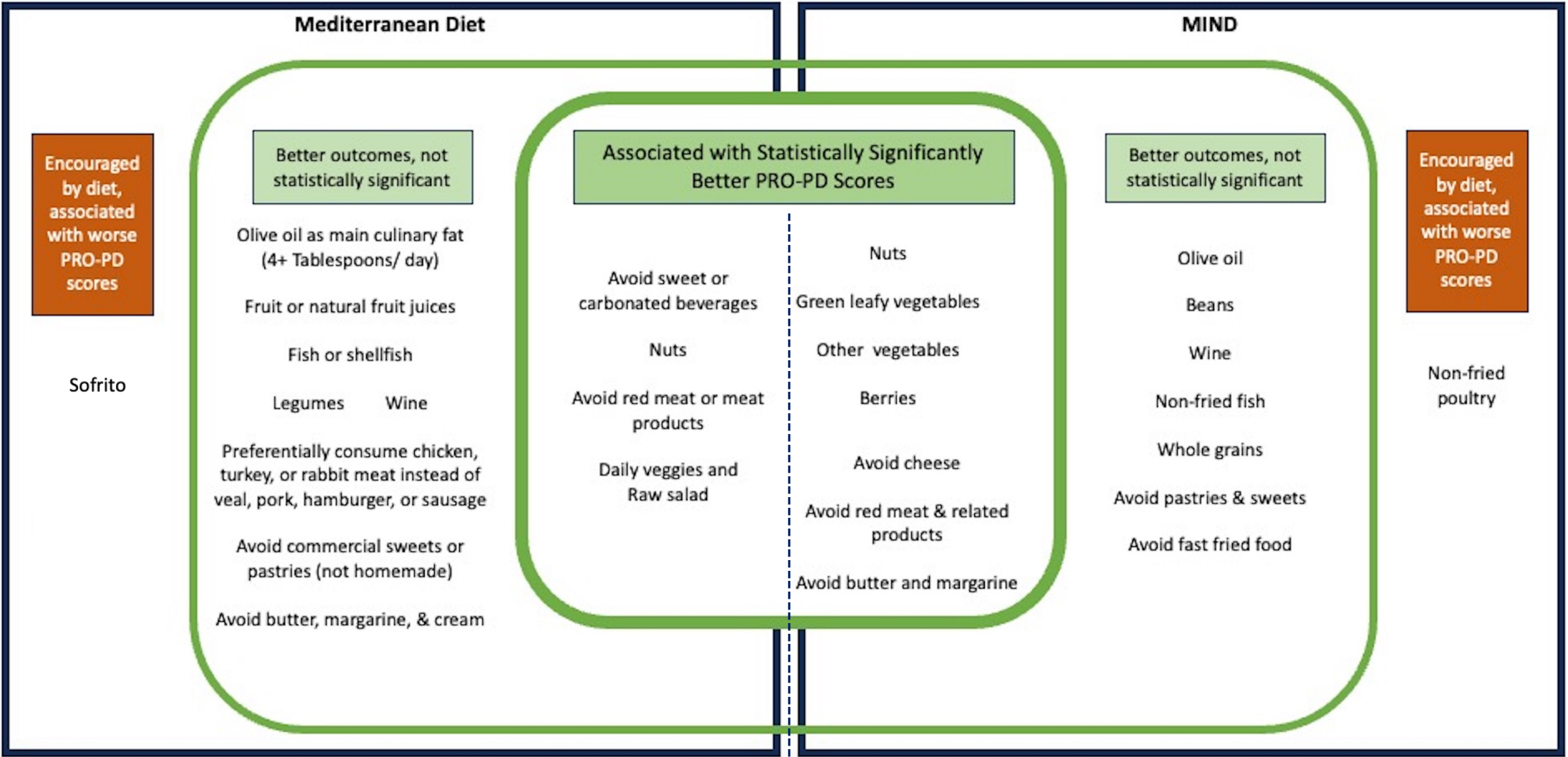
Do Your Decisions Impact Rate of Progression?

[JOIN THE STUDY HERE](#)

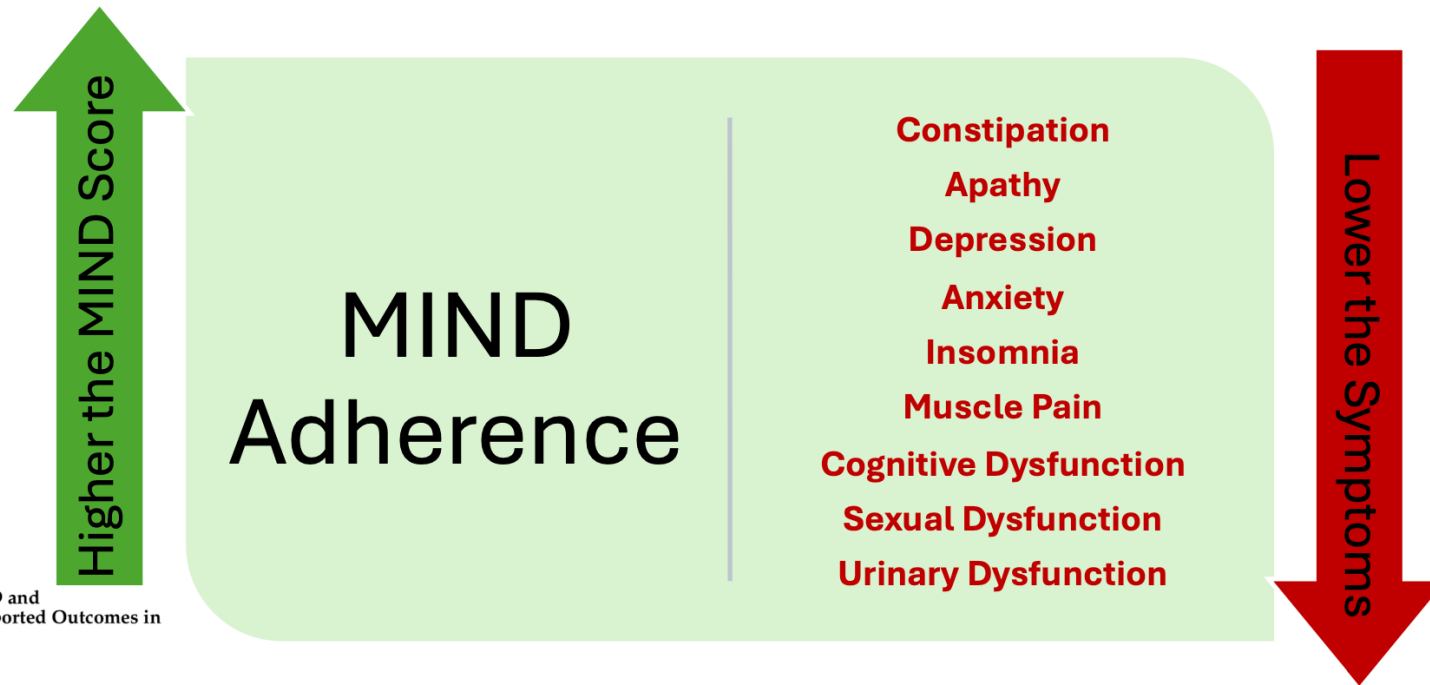
Patient-Reported Parkinson's Disease Progression & Quality of Life



Components of MIND & Mediterranean Diets Associated with Parkinson Outcomes



Symptoms Associated with MIND Adherence



Comparison of Associations between MIND and Mediterranean Diet Scores with Patient-Reported Outcomes in Parkinson's Disease

Devon J. Fox¹, Sarah JaeHwa Park² and Laurie K. Mischley^{1,2,3,*}

Table 2. Non-motor symptom correlation with MEDI and MIND diet scores. Correlations were assessed via linear regressions adjusted for age, gender, income, and years since diagnosis with a Holm-Bonferroni post hoc adjustment.

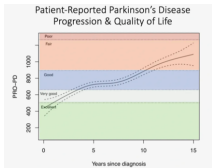
PRO Diet

Attempt at
turning this
into a diet
1.0

LK Mischley Jan 2025

	Baseline Only (2013-2022)			
	n	Impact (SE)	p-value	R*2
Herbs & Spices				
Spices-1/4 teaspoon	1789	-5.31 (4.43)	0.2	0.146
Fresh Herbs-1 tsp	1781	-11.1 (4.13)	0.007	0.147
Vegetables & Fruits				
Frozen Vegetables	1789	16.1 (4.56)	<0.001*	0.149
Frozen Fruit	1787	-3.53 (4.26)	0.4	0.145
Fresh Fruit	1785	-23.7 (6.38)	<0.001*	0.151
Fresh Vegetables	1787	-29.9 (6.06)	<0.001*	0.158
Nuts, Seeds, Beans				
Beans	1773	-10.8 (5.32)	0.04	0.146
Soy - 3 ounces	1778	-8.92 (5.41)	0.1	0.142
Nuts/Seeds-1/4 cup	1788	-25.6 (4.90)	<0.001*	0.156
Oils				
Fried foods-4 ounces	1774	34.7 (6.01)	<0.001	0.161
Plant-based oils	1776	5.43 (4.40)	0.2	0.145
Olive oil	1782	-9.5 (4.39)	0.03	0.149
Coconut oil	1769	-16.3 (3.91)	<0.001*	0.155
Grains				
Millet	14	70.1 (64.5)	0.3	0.119
White rice	200	18.8 (22.6)	0.4	0.162
Pasta-1 cup	1788	15.9 (6.24)	0.01	0.147
Bread-1 slice	1768	9.20 (4.52)	0.04	0.145
Oats	196	5.79 (16.2)	0.7	0.138
Oatmeal - 1 cup	1778	-2.77 (4.28)	0.5	0.142
Barley	1807	-2.64 (57.1)	0.9	0.179
Brown rice	732	-8.55 (20.1)	0.7	0.165
Quinoa	249	-18.7 (22.0)	0.4	0.196
Farro	74	-61.4 (54.5)	0.3	0.0118
Buckwheat	46	-76.5 (42.4)	0.08	0.268
Dairy				
Ice Cream-1/2 cup	1787	31.2 (4.76)	<0.001*	0.163
Butter-1 tsp	1781	19.5 (3.91)	<0.001*	0.156
Cheese-1/2 oz.	1787	17.3 (3.96)	<0.001*	0.152
Yogurt-3/4 cup	1457	14.8 (4.42)	<0.001*	0.141
Milk(cows)-1 cup	1785	12.6 (3.47)	<0.001*	0.148
Cream-1/4 cup	1781	8.82 (5.26)	0.09	0.145
Meat & Eggs				
Beef	1791	28.3 (5.31)	<0.001*	0.157
Chicken	1795	18.7 (5.47)	<0.001*	0.149
Pork	1786	18.0 (5.69)	0.002	0.152
Turkey	1274	2.71 (7.88)	0.7	0.121
Fish	1783	-26.5 (5.88)	<0.001*	0.153
Eggs	1788	-4.38 (4.99)	0.4	0.146
Alcohol				
Wine-6 oz	1786	-21.5 (3.87)	<0.001*	0.161
Red wine-6oz	217	-9.21 (11)	0.4	0.126
White wine-6oz	215	2.71 (14.49)	0.9	0.121
Beer-12 ounce	1779	-4.27 (5.4)	0.4	0.143
Liquor-1 oz	1772	5.35 (5.56)	0.3	0.143
Canned (1/2 cup)				
Canned Beans	68	53.9 (30.67)	0.08	0.228
Canned Fruit	1782	43.5 (6.18)	<0.001*	0.168
Canned Vegetables	1788	26.0 (4.95)	<0.001*	0.156
Canned food (general)	1780	14.0 (5.42)	<0.001	0.147
Canned Fish	67	-18.4 (29.4)	0.5	0.191
Beverages				
Diet soda - 12 ounces	1775	30.3 (4.79)	<0.001*	0.163
Non-diet soda - 12 ounces	1778	26.8 (6.11)	<0.001*	0.155
Plastic bottled drinks	1778	19.8 (3.82)	<0.001*	0.157
Juice - 8 oz.	1785	9.01 (4.06)	0.03	0.146
Coffee - 8 oz/1 oz espresso	1785	0.99 (3.54)	0.8	0.144
Black tea - 1 cup	1774	0.29 (3.98)	0.9	0.144
Green tea - 1 cup	1778	-10.6 (3.99)	<0.001	0.146
Canned Coconut milk	68	-57.6 (43.9)	0.2	0.213

PRO Diet Based on Patient-Reported Outcomes in Parkinson's

Points Based on Observational Data: Food Choices & Patient Reported Outcomes (PRO) in PD From Clinical Epidemiology to Therapeutic Tool				
	Serving size	Strength of the Association	Multiply by unit of consumption	
			x 0: never x 1: <1/ month x 2: 1/month x 3: 2-3/month x 4: 1/ week x 5: 2-4x/week x 6: 5-6x/week x 7: 1x/day x 8: 2-4x/day x 9: 4-6x/day	
Avoid	Fruit from a can	½ cup	44	
	Fried food	4 ounces	34	
	Ice cream	1 scoop, ½ cup	31	
	Diet soda	12 oz, 1 can	30	
	Beef	4 oz, 1 medium patty	28	
	Soda, not diet	12 ounces, 1 can	27	
	Vegetables from a can	½ cup	26	
	Butter	1 teaspoon	20	
	Drink from plastic bottles		20	
	Chicken	4 ounces	19	
	Pork	4 oz, 1 medium patty	28	
	Cheese	1 slice, ½ oz, 1 Tablespoon	17	
Eat	Frozen vegetables	½ cup	16	
	Pasta	1 cup	16	
	Yogurt	¾ cup, 6 ounces	15	
	Milk, from mammals	1 cup	13	
	Bread	1 slice	9	
	Juice	8 ounces, 1 glass	9	
	Total insult points			+
	Fresh vegetables	½ cup	-30	
	Fish	4 ounces	-27	
	Nuts and seeds	½ cup, 2 Tablespoon spread	-25	
	Fresh fruit	½ cup	-24	
	Fresh herbs	1 teaspoon	-11	
	Wine (red)	6 ounces, 1 glass	-22	
	Coconut oil	1 teaspoon	-16	
	Beans, legumes	½ cup	-11	
	Green tea	1 cup	-11	
	Olive oil	1 teaspoon	-10	
	Spices	½ teaspoon	-10	
© LK Mischley 20 Oct 2023 Model-1 Baseline data only			Total protective points	
© LK Mischley 20 Oct 2023 Model-1 Baseline data only Version 1			Total PRO Diet Points	



PARKINSON'S SCHOOL
An Online Course for Patients and Providers

www.Parkinson-School.com

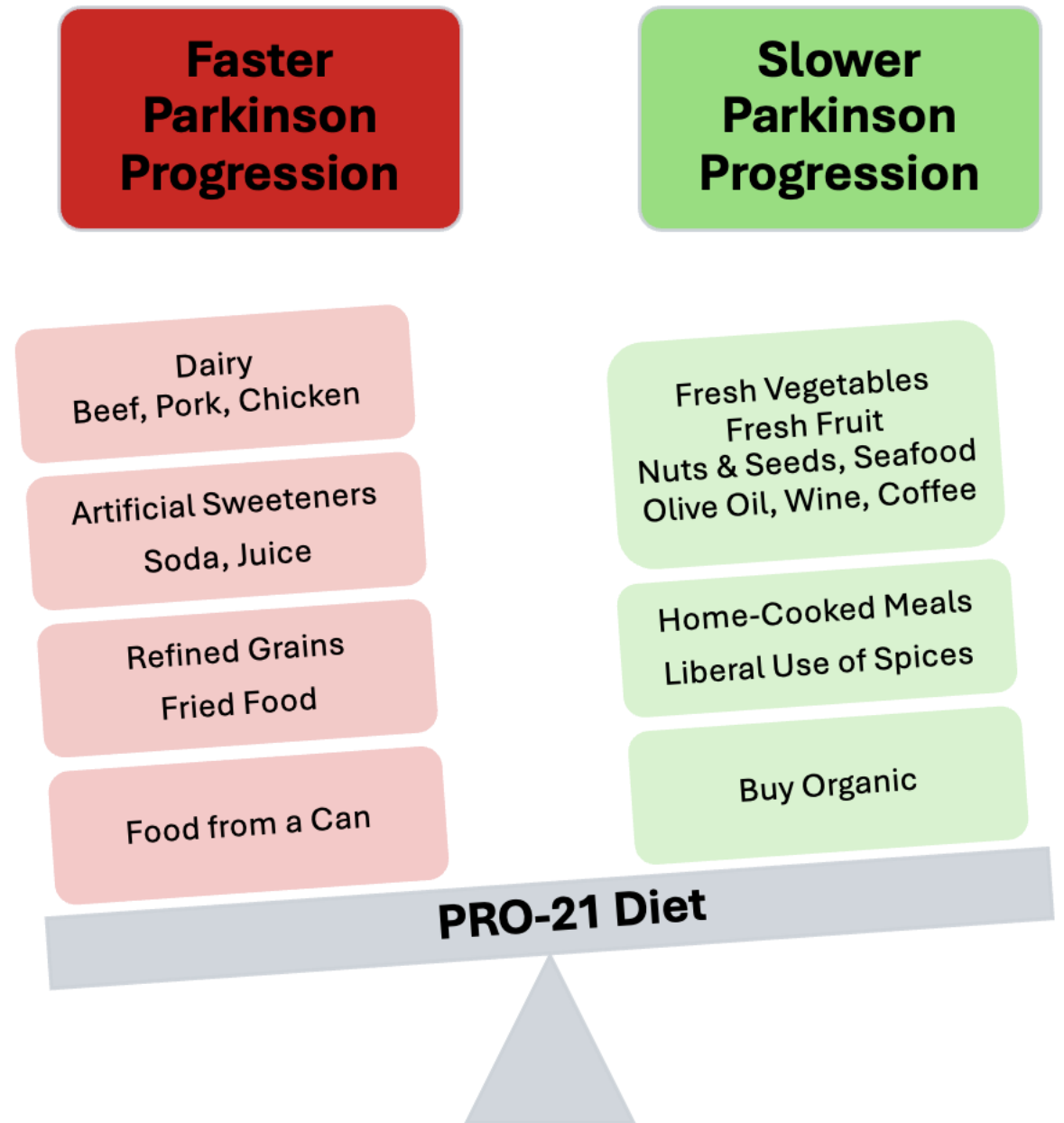
www.PD-Symptoms.com

Cheat Sheet

What I'm here telling you today is not *really* that different than what I've been telling you all along.

The rules are different.
There is nuance.
The devil is in the details.

Your mind cannot be trusted.

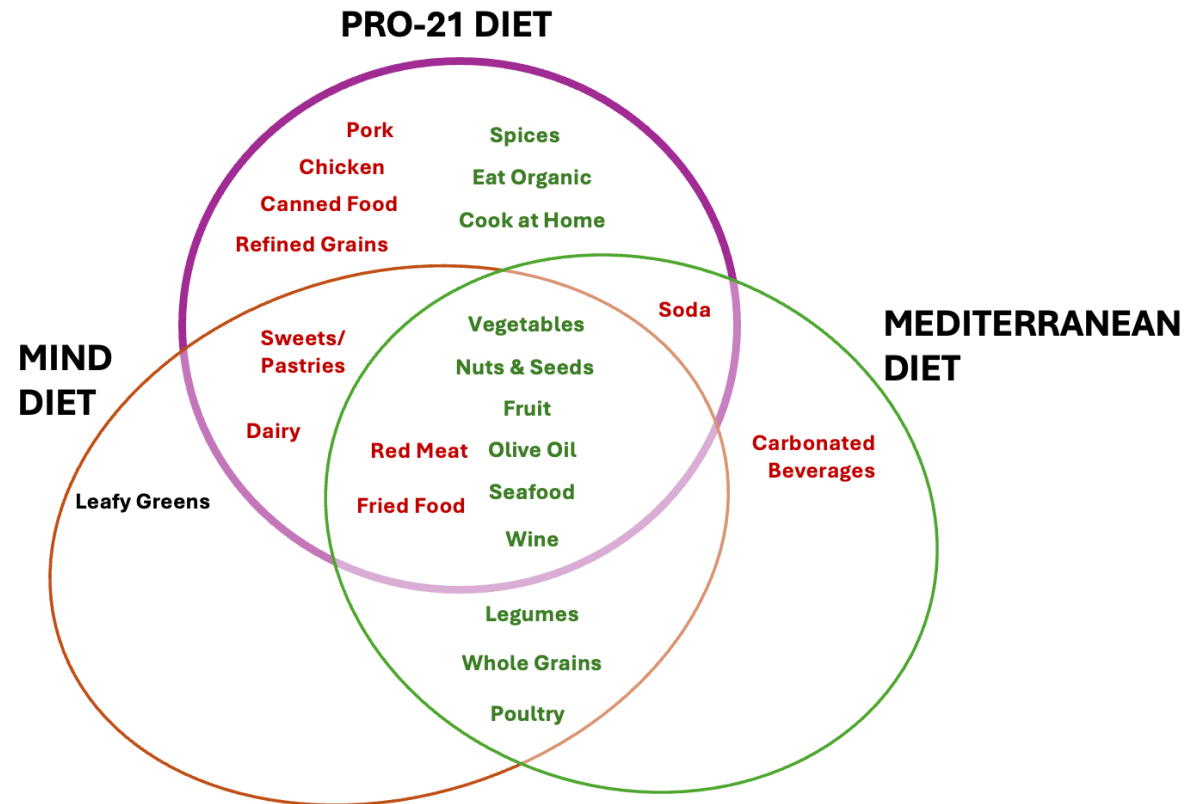


Similar

- Start with the things we all agree on...

How Parkinson's Diets Differ

LK Mischley 2025



Let's get our scores together

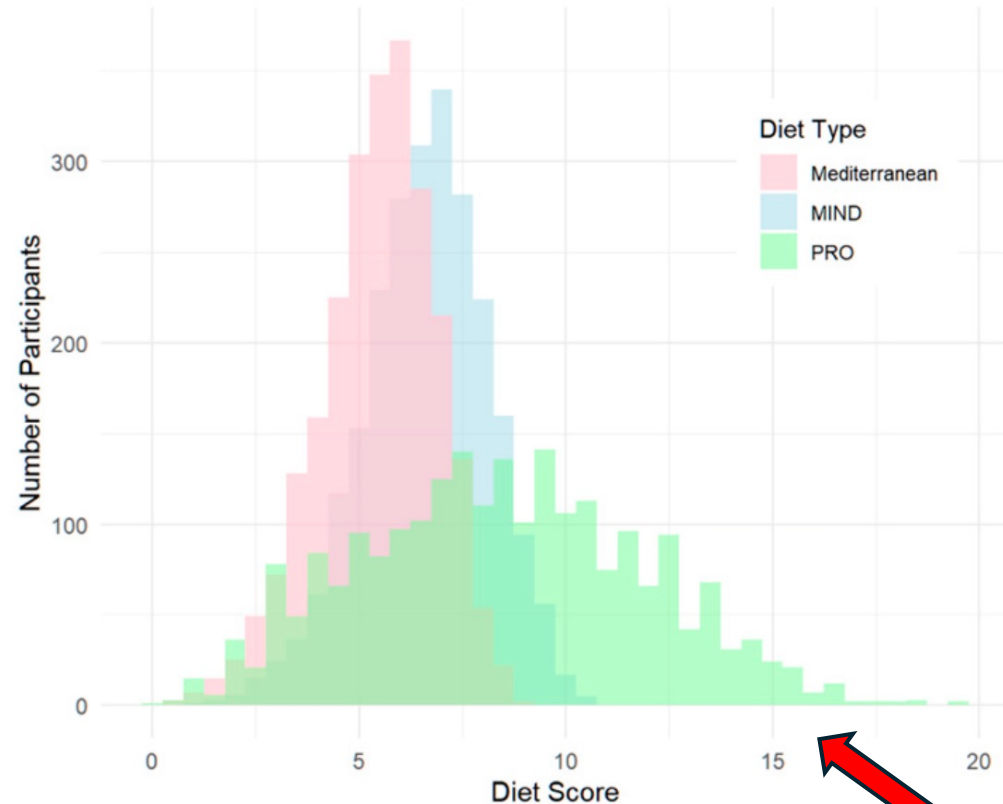
i.e. Get your head out of the sand.
Knowledge is power.

- You need 4 things:
- Know where you are
 - Know where you want to go
 - A map
 - Motivation

PRO-21 Diet		
Encourage	<i>On average, over the past month:</i>	
	I buy organically grown food when possible.	0
	I cook most of my own food.	0
	I use spices liberally.	0
	<i>1 point for each food consumed in sufficient amounts:</i>	
	Nuts & Seeds (1/2 cup nuts or 4 Tbsp spread, daily)	0
	Olive oil (2 Tablespoons, daily)	0
	Fresh Fruit (1 cup or 2 medium fruits, daily)	0
	Fresh Vegetables (1/2 cup, 5+ times per week)	0
	Seafood: Fish, Shellfish (4 oz, 2+ times per week)	0
	Wine (8 oz, 2+ times per week)	0
	Coffee (8 oz, 2+ times per day)	0
Avoid	<i>1 point if you've had none in the past month: (less than 1x/month)</i>	
	Dairy (ice cream, butter, milk, cream, cheese, yogurt from animals)	0
	Artificial sweeteners (aspartame, acesulfame K, saccharin, e.g. gum, diet drinks)	0
	Pork	0
	Beef	0
	Chicken	0
	Fried food (corn chips, potato chips, French fries, donuts, etc.)	0
	Juice (8 oz, 1 glass)	0
	Sugar - If this statement is true: "I avoid sugar."	0
	Soda (diet and/ or regular)	0
	Refined grains (pasta, bread, pastries, crusts, crackers, etc.)	0
	Canned food (tomato sauce, beans, citrus, vegetables, soups, etc.)	0
Total Points		

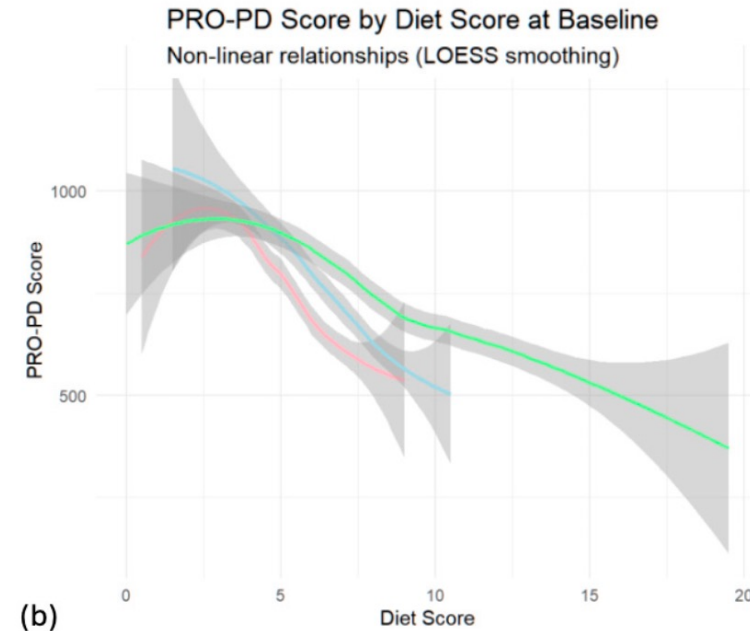
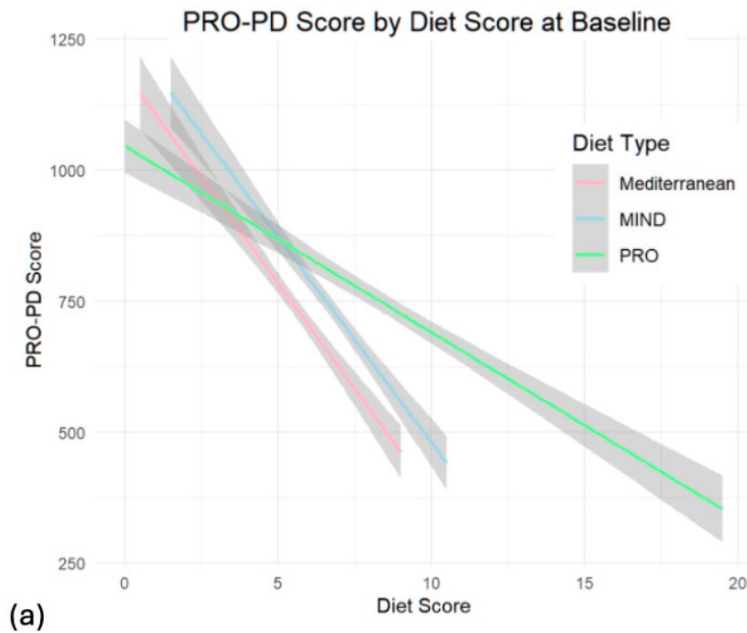
Out of a Possible 21 Points...

- **Most of you are getting 7-9**
 - 6 or less: Below average
 - 10+: Above average
- Less than 5% of you are getting 15+ points on the PRO-21 scale



MIND, MEDI, PRO-21 ... ALL HELP

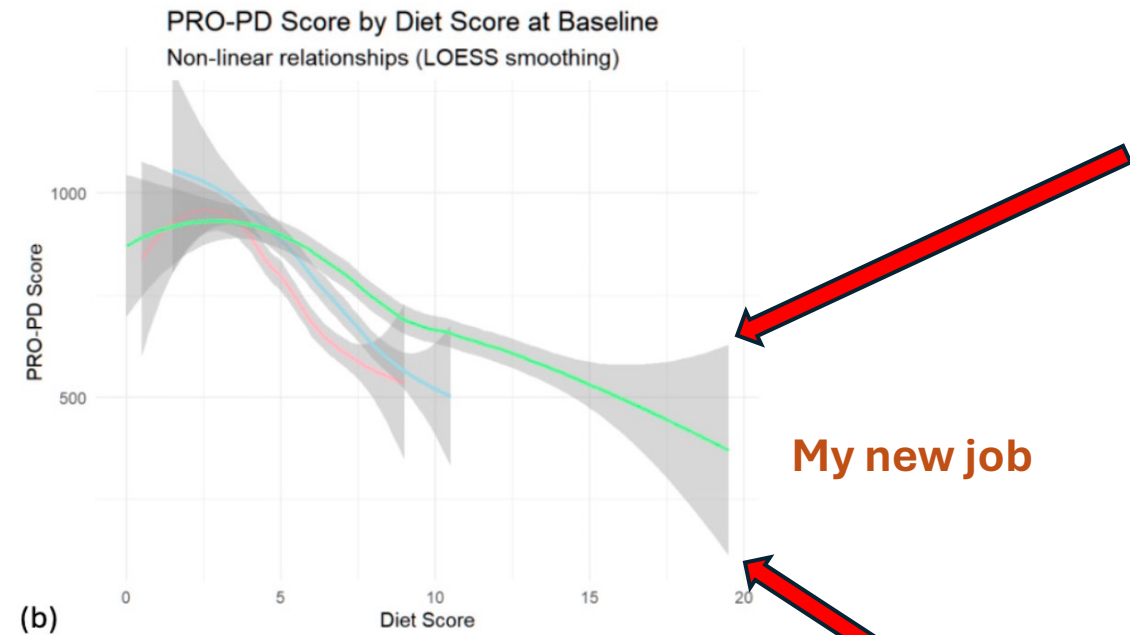
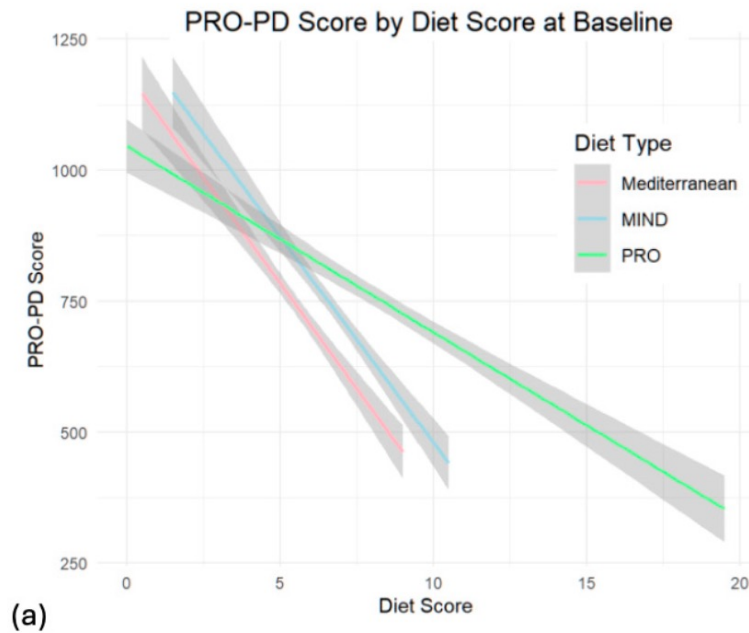
Relationship Between Parkinson Symptom Severity and Adherence to Mediterranean, MIND, and PRO Diets



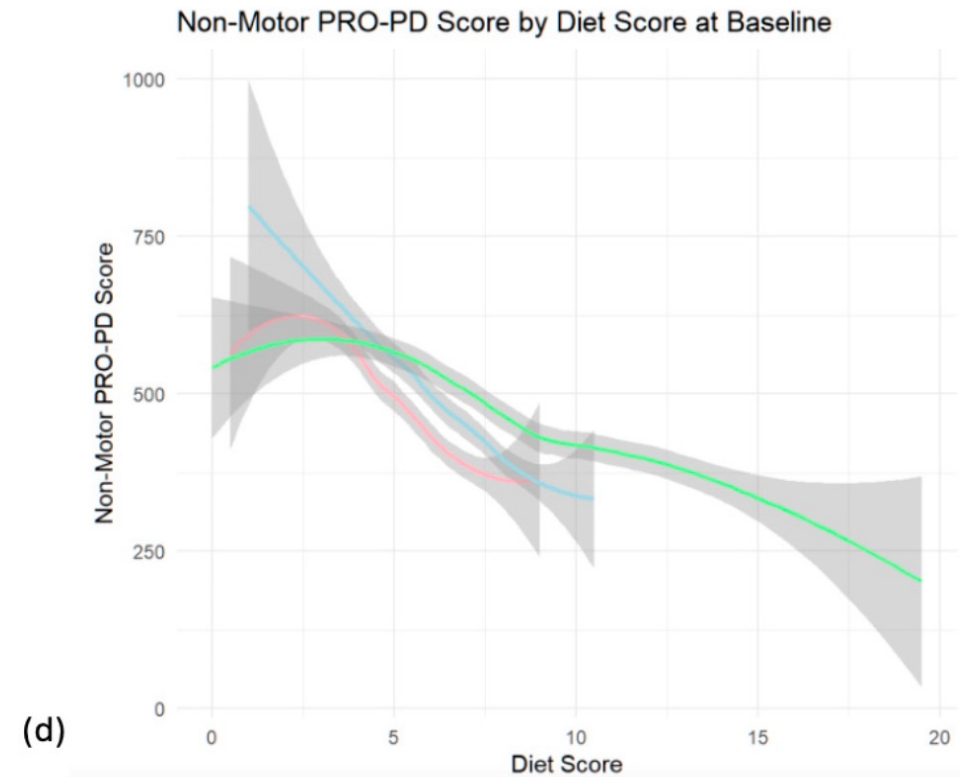
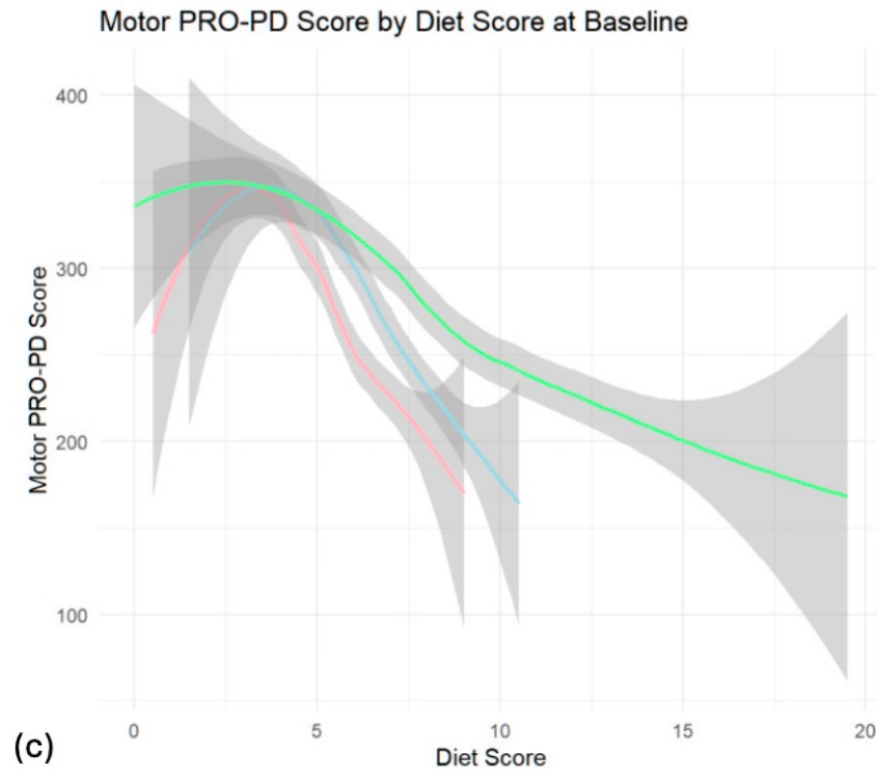
Mischley LK, Murawska M. Beyond MIND and Mediterranean Diets: Designing a Diet to Optimize Parkinson's Disease Outcomes. *Nutrients*. 2025 Jul 16;17(14):2330. PMID: 40732955

MIND, MEDI, PRO-21 ... ALL HELP

Relationship Between Parkinson Symptom Severity and Adherence to Mediterranean, MIND, and PRO Diets



Both Motor & Non-Motor Symptoms Benefit

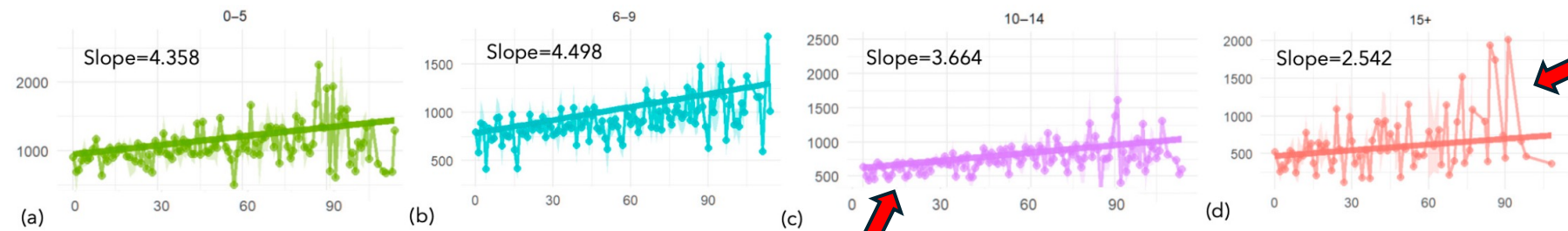


Mischley LK, Murawska M. Beyond MIND and Mediterranean Diets: Designing a Diet to Optimize Parkinson's Disease Outcomes. *Nutrients*. 2025 Jul 16;17(14):2330. PMID: 40732955

Let's Look at Your Own Scores

Linear Unadjusted Mixed Model Results by PRO-21 Group						
PRO-21 Adherence Cohort	Time Slope	Std. Error	t Value	p-Value	Observations	n
0-5 points	4.451	0.23	19.38	0	1795	448
6-9 points	4.48	0.157	28.62	0	3748	879
10-14 points	3.691	0.179	20.63	0	3450	818
15+ points	2.889	0.484	5.96	0	383	109

PRO-PD Evolution Over Time by Baseline PRO-21 Adherence Groups



Data is messy – very few of you getting 15+ points over 10y

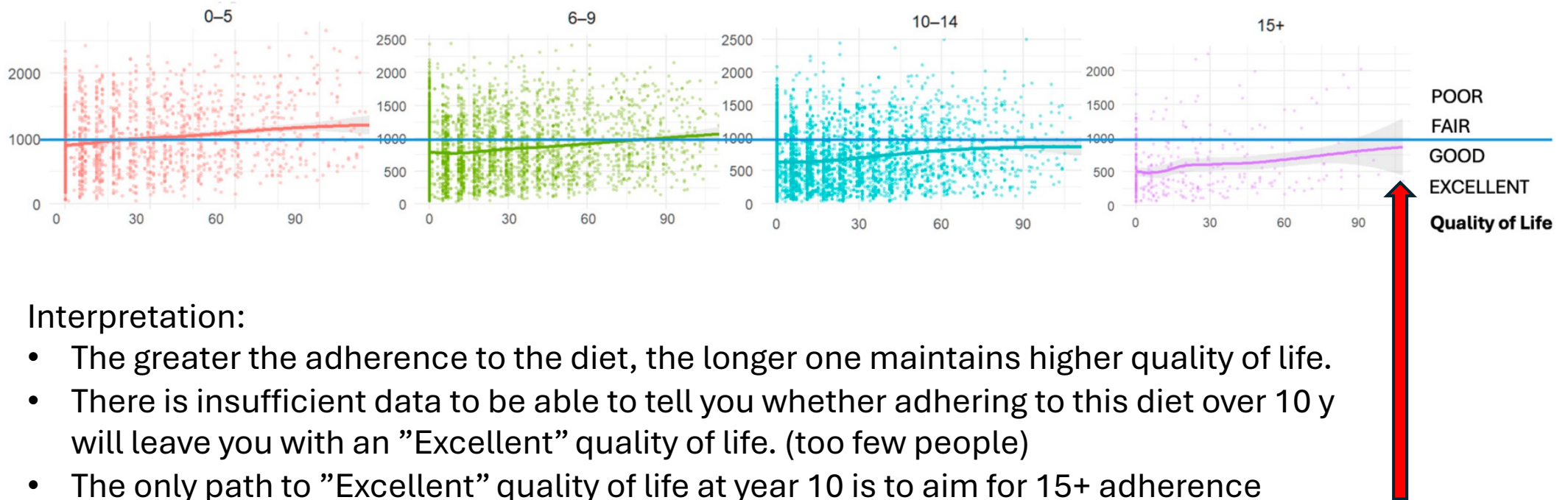
Data is solid – lots of you getting 10-14

How Many Excellent Years Do You Want?

How Many Good Years Do You Want?

Let's work backwards: What score is required to meet your goals?

PRO-21 Adherence at Baseline Associated with More "Good" Years with Parkinson's



Interpretation:

- The greater the adherence to the diet, the longer one maintains higher quality of life.
- There is insufficient data to be able to tell you whether adhering to this diet over 10 y will leave you with an "Excellent" quality of life. (too few people)
- The only path to "Excellent" quality of life at year 10 is to aim for 15+ adherence points on the PRO-21 diet.

Let's Address the Cow on the Table



A close-up, profile view of a black and white cow's head, facing right. The cow has a white blaze on its face and a pink nose. The background is a clear blue sky.

Dairy

What about goat milk?

What about sheep milk?

What about camel milk?

What if it's organic?

What if it's not pasteurized?

What about A2 milk?

What about my bones?!

Dairy & Parkinson's

- We have decades of data from multiple countries that clearly demonstrates dairy consumption in midlife is associated with increased risk of Parkinson's diagnosis later in life.
- People want to know, “**Does dairy consumption after diagnosis impact rate of progression?**”

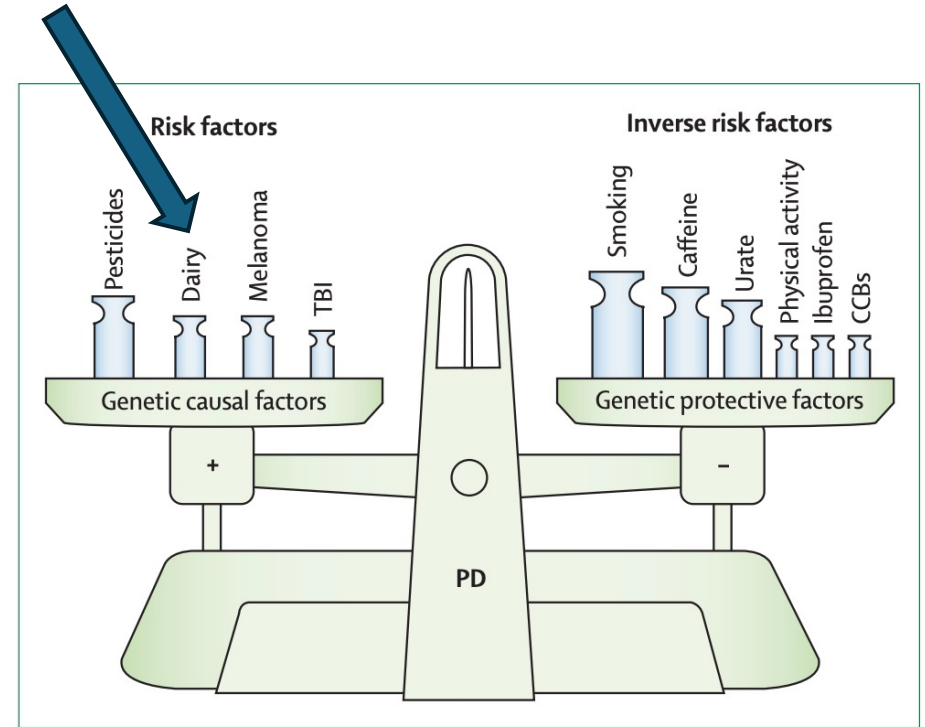
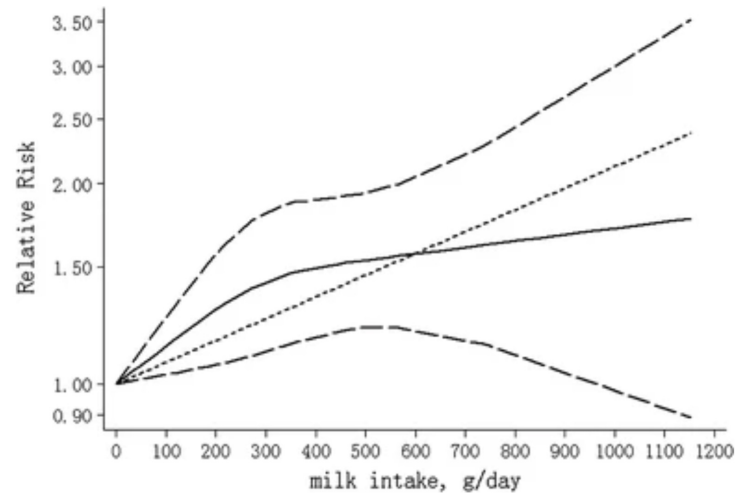


Figure 4: The balance of genetic and environmental factors that underlie Parkinson's disease occurrence

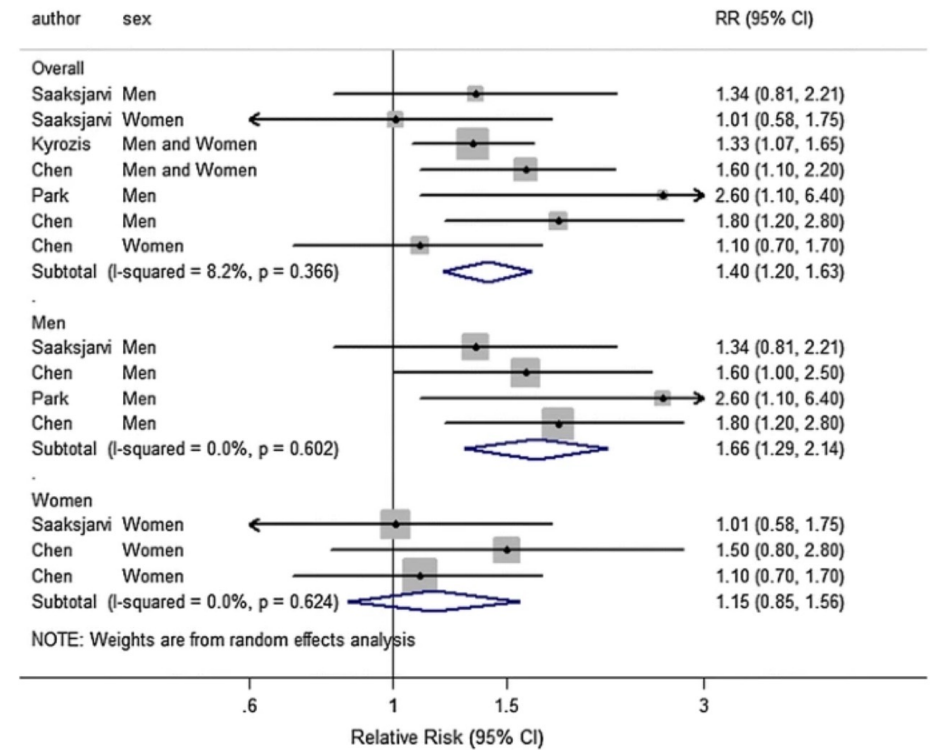
Larger weights have been used for those factors with stronger epidemiological evidence. We have included only factors supported by multiple prospective studies, but the presentation is not exhaustive and it is meant only for illustrative purposes. Factors included might or might not be causal. TBI=traumatic brain injury. PD=Parkinson's disease. CCBs=calcium channel blockers.

Dairy & Parkinson's



The dose-response analysis between milk intake and risk of PD. The *solid line* and the *long dash line* represent the estimated relative risk and its 95 % confidence interval. *Short dash line* represents the linear relationship

Fig. 1



The forest plot for dairy intake (highest vs. lowest category) and risk of Parkinson's disease. The size of gray box is positively proportional to the weight assigned to each study, which is inversely proportional to the standard error of the RR, and horizontal lines represent the 95 % confidence intervals. The results of margarine, butter and total milk and milk product were combined as the result for total dairy foods with a random effect model in the study by Saaksjarvi et al. [7]

Jiang, W., Ju, C., Jiang, H. *et al.* Dairy foods intake and risk of Parkinson's disease: a dose-response meta-analysis of prospective cohort studies. *Eur J Epidemiol* 29, 613–619 (2014).

Dairy & Parkinson's

- We have decades of data from multiple countries that clearly demonstrates dairy consumption in midlife is associated with increased risk of Parkinson's diagnosis later in life.
- People want to know, “**Does dairy consumption after diagnosis impact rate of progression?**”



	Baseline Only (2013-2022)				2022 Data Only			
	n	impact (SE)	p-value	R^2	n	impact (SE)	p-value	R^2
Dairy								
Ice Cream-1/2 cup	1787	31.2 (4.76)	<0.001*	0.163	709	38.1 (8.59)	<0.001*	0.240
Butter-1 tsp	1781	19.5 (3.91)	<0.001*	0.156	707	16.2 (6.80)	0.02	0.225
Cheese-1/2 oz.	1787	17.3 (3.96)	<0.001*	0.152	705	24.5 (7.48)	0.001	0.232
Yogurt-3/4 cup	1457	14.8 (4.42)	<0.001*	0.141	706	18.8 (6.22)	0.003	0.229
Milk(cows)-1 cup	1785	12.6 (3.47)	<0.001*	0.148	705	23.9 (6.46)	<0.001*	0.234
Cream-1/4 cup	1781	8.82 (5.26)	0.09	0.145	705	17.6 (10.3)	0.09	0.220

In the new prospective longitudinal analysis:

Dairy is the single food item that is causing the most harm.

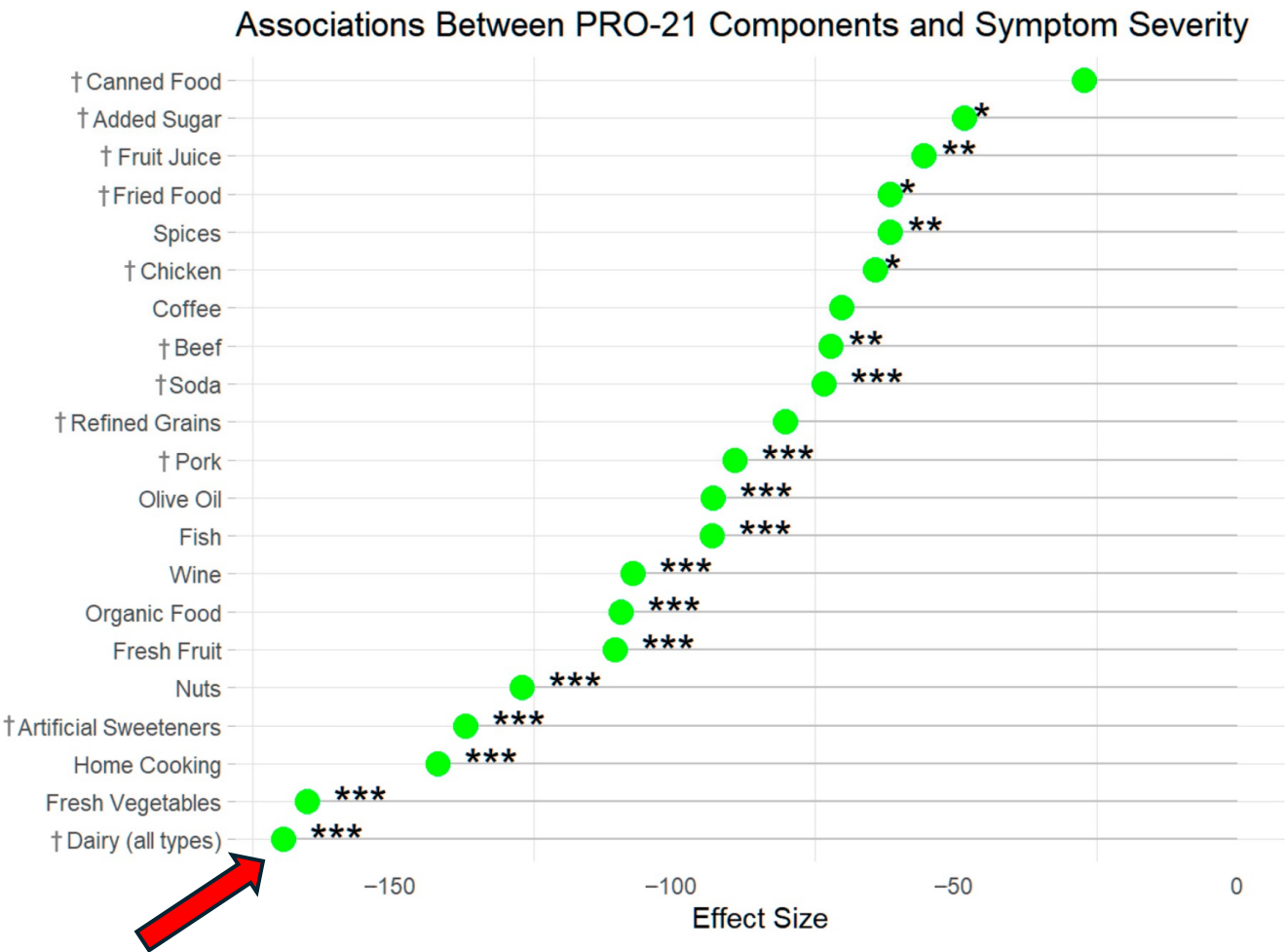


Figure 7. Ranked impact of PRO-21 components by effect size and significance levels. †—points were awarded if these variables were avoided. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.000$.

Mischley LK, Murawska M. Nutrients. 2025 Jul 16;17(14):2330.

Interpretation: Avoiding dairy is MORE IMPORTANT than eating your fruits and vegetables.

In the new prospective longitudinal analysis:

Dairy is the single food item that - when completely avoided – was associated with the fewest overall symptoms

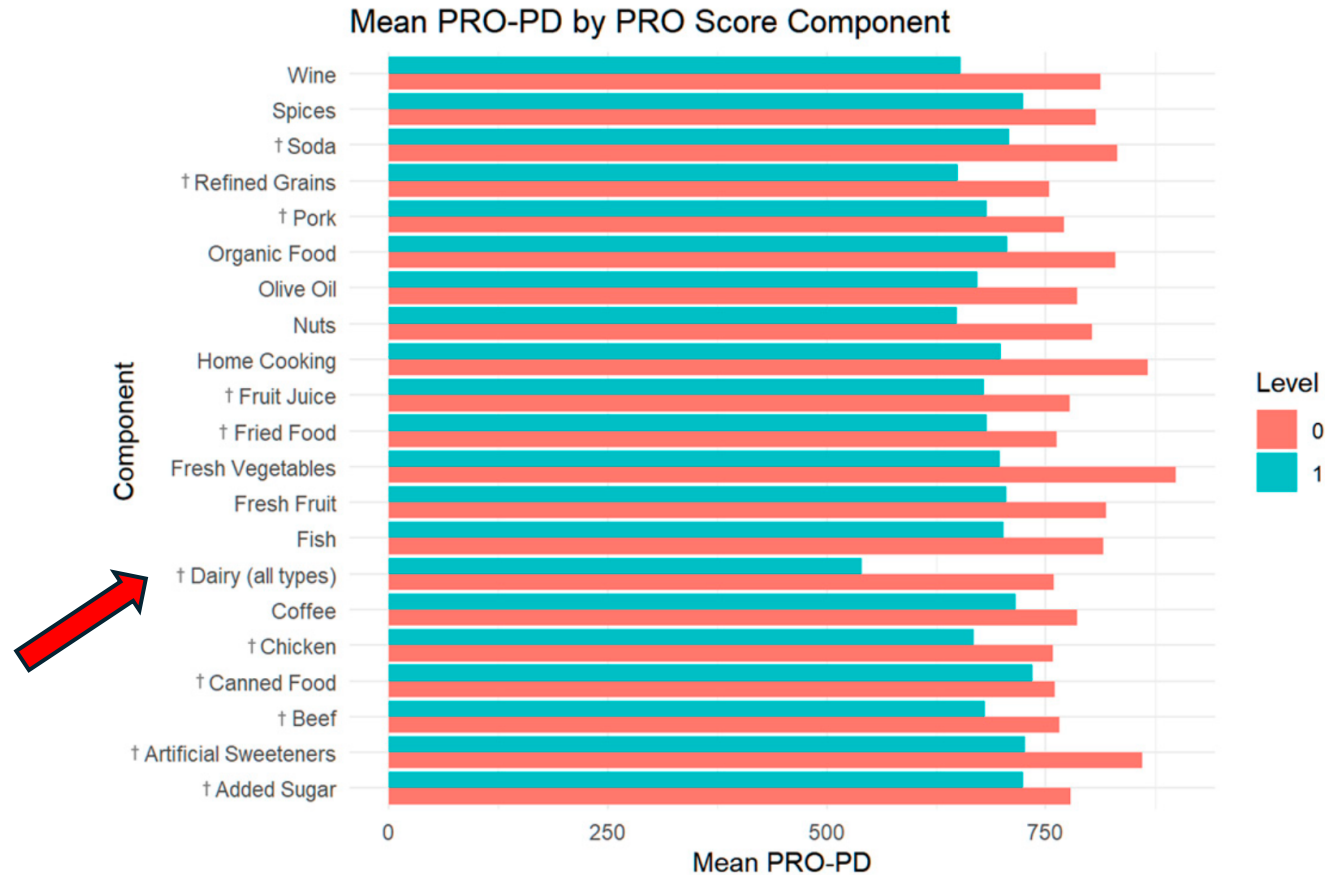


Figure 6. Mean symptom severity stratified by PRO-21 component adherence. PRO-PD scores of individuals that did and did not receive the point for each of the variables comprising the PRO-21 diet. Points were awarded for avoiding variables marked with †.

Mischley LK, Murawska M. Nutrients. 2025 Jul 16;17(14):2330.

Interpretation: From across the room you can all see **the positive deviants.**

They have not had a single serving of dairy in the past 30 days.

In the new prospective longitudinal analysis:

Avoiding dairy is where most of you, until now, have been losing the point

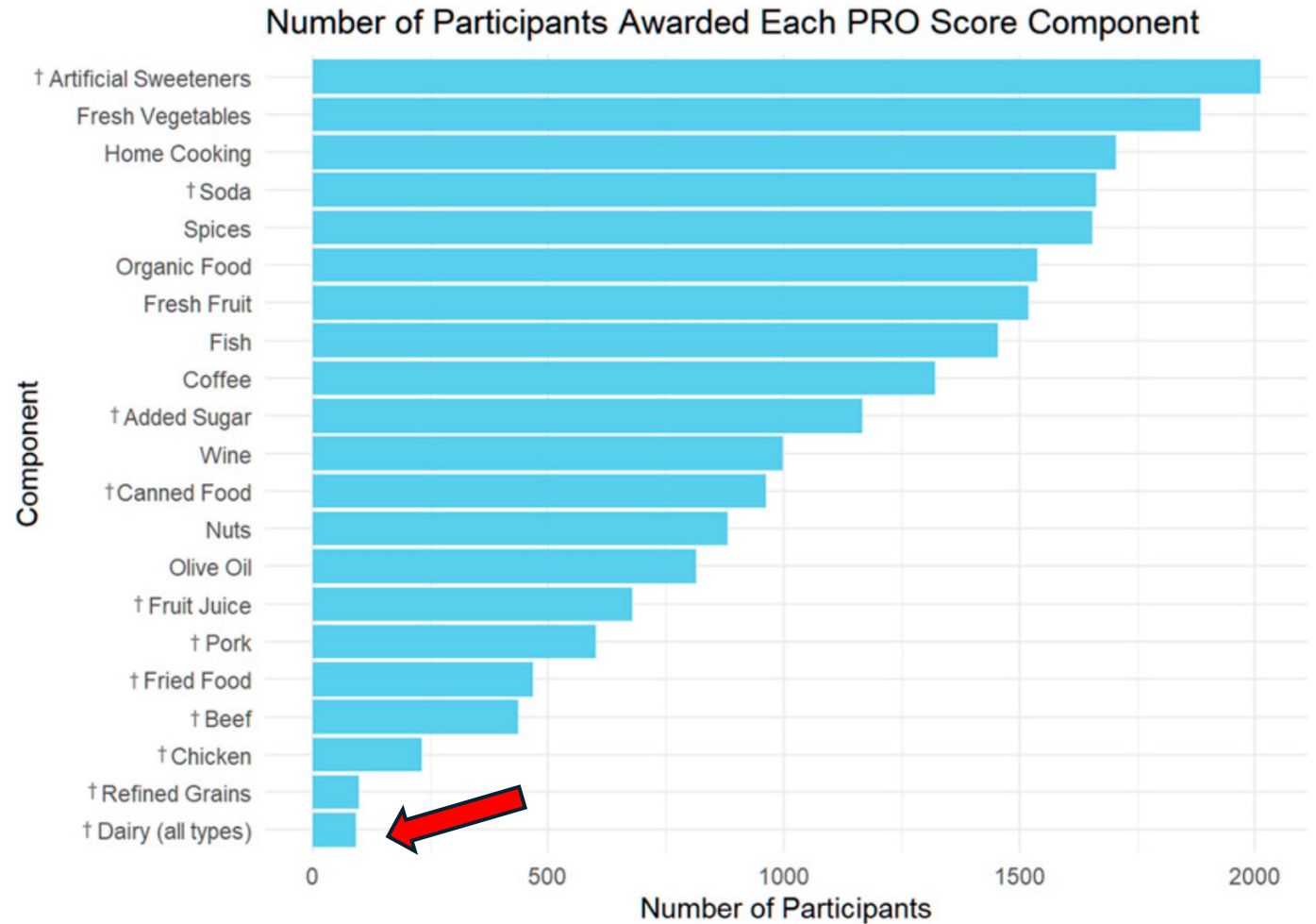
Dairy

Refined grains: bread, pasta, crackers, wheat in soy sauce and the imitation crab in a California roll

Chicken

Interpretation: **Dairy** is the point most of you are failing to get.

I thought I was studying neurology; turns out my next task is **psychology**. Why the resistance?



Mischley LK, Murawska M. Nutrients. 2025 Jul 16;17(14):2330.

Consider the Implications of a Single Slice of Pepperoni Pizza for lunch one day...

You're down 4 points for the next 30 days:

- Crust: refined grain
- Sauce: canned tomatoes
- Cheese: Dairy
- Pepperoni: Pork

PRO-21 Diet		
Encourage	On average, over the past month:	
	I buy organically grown food when possible.	0
	I cook most of my own food.	0
	I use spices liberally.	0
	1 point for each food consumed in sufficient amounts:	
	Nuts & Seeds (1/2 cup nuts or 4 Tbsp spread, daily)	0
	Olive oil (2 Tablespoons, daily)	0
	Fresh Fruit (1 cup or 2 medium fruits, daily)	0
	Fresh Vegetables (1/2 cup, 5+ times per week)	0
	Seafood: Fish, Shellfish (4 oz, 2+ times per week)	0
	Wine (8 oz, 2+ times per week)	0
	Coffee (8 oz, 2+ times per day)	0
Avoid	1 point if you've had none in the past month: (less than 1x/month)	
	Dairy (ice cream, butter, milk, cream, cheese, yogurt from animals)	0
	Artificial sweeteners (aspartame, acesulfame K, saccharin, e.g. gum, diet drinks)	0
	Pork	0
	Beef	0
	Chicken	0
	Fried food (corn chips, potato chips, French fries, donuts, etc.)	0
	Juice (8 oz, 1 glass)	0
	Sugar - If this statement is true: "I avoid sugar."	0
	Soda (diet and/ or regular)	0
	Refined grains (pasta, bread, pastries, crusts, crackers, etc.)	0
	Canned food (tomato sauce, beans, citrus, vegetables, soups, etc.)	0
Total Points		

Where I Was Wrong In the Past

- I taught this was a weighted scale.

- That if you ate enough good stuff, you could get away with a little bad.

- Turns out, it doesn't work like that...

PRO Diet

Attempt at
turning this
into a diet
1.0

LK Mischley Jan 2025

Baseline Only (2013-2022)				
	n	Impact (SE)	p-value	R ²
Herbs & Spices				
Spices-1/4 teaspoon	1789	-5.31 (4.43)	0.2	0.148
Fresh Herbs-1 tsp	1781	-23.5 (4.53)	0.007	0.147
Vegetables & Fruits				
Frozen Vegetables	1789	16.1 (4.58)	<0.001*	0.149
Frozen Fruit	1787	-3.53 (4.26)	0.4	0.146
Fresh Fruit	1785	-23.7 (6.38)	<0.001*	0.151
Fresh Vegetables	1787	-29.9 (6.06)	<0.001*	0.158
Nuts, Seeds, Beans				
Beans	1773	-10.8 (5.32)	0.04	0.146
Soy - 3 ounces	1778	-8.52 (5.41)	0.1	0.142
Nuts/Seeds-1/4 cup	1788	-25.6 (4.90)	<0.001*	0.156
Oils				
Fried food-4 ounces	1774	34.7 (8.01)	<0.001*	0.161
Plant-based oils	1776	5.43 (4.40)	0.2	0.145
Olive oil	1782	-8.3 (4.39)	0.03	0.149
Coconut oil	1789	-16.3 (3.93)	<0.001*	0.155
Grains				
Millet	14	70.1 (84.5)	0.3	0.119
White rice	200	18.8 (22.6)	0.4	0.102
Pasta-1 cup	1788	15.9 (8.24)	0.01	0.147
Bread-1 slice	1768	8.28 (4.52)	0.04	0.145
Oats	166	5.79 (16.2)	0.7	0.138
Oatmeal - 1 cup	1778	-2.77 (4.28)	0.5	0.142
Barley	1807	-2.84 (57.1)	0.9	0.179
Brown rice	732	-8.55 (20.1)	0.7	0.165
Quinoa	249	-18.7 (22.3)	0.4	0.196
Farm	74	-81.4 (64.5)	0.3	0.1018
Ruckelshaus	48	-19.5 (42.4)	0.08	0.208
Dairy				
Ice Cream-1/2 cup	1787	31.2 (4.78)	<0.001*	0.163
Butter-1 tsp	1781	19.5 (3.91)	<0.001*	0.156
Cheese-1/2 oz	1787	17.3 (3.36)	<0.001*	0.152
Yogurt-1/4 cup	1407	14.8 (4.42)	<0.001*	0.141
Milk(cow)-1 cup	1785	12.8 (3.47)	<0.001*	0.148
Cream-1/4 cup	1781	6.82 (5.29)	0.09	0.146
Meat & Eggs				
Beef	1791	28.3 (5.31)	<0.001*	0.157
Chicken	1795	18.7 (5.47)	<0.001*	0.149
Pork	1799	18.8 (5.69)	0.002	0.152
Turkey	1274	2.71 (7.88)	0.7	0.121
Fish	1783	-28.5 (5.88)	<0.001*	0.163
Eggs	1788	-4.38 (4.89)	0.4	0.146
Alcohol				
Wine-6 oz	1786	-21.5 (3.87)	<0.001*	0.161
Red wine-6oz	217	-9.21 (11)	0.4	0.126
White wine-6oz	215	2.71 (14.49)	0.9	0.121
Beer-12 ounces	1779	-4.27 (5.4)	0.4	0.143
Liquor-1 oz	1772	5.35 (5.56)	0.3	0.143
Canned (1/2 cup)				
Canned Beans	68	53.9 (30.87)	0.08	0.228
Canned Fruit	1782	43.5 (5.18)	<0.001*	0.168
Canned Vegetables	1788	28.8 (4.98)	<0.001*	0.156
Canned food (general)	1780	14.8 (5.42)	<0.001*	0.147
Canned Fish	87	-18.4 (29.4)	0.5	0.191
Beverages				
Diet soda - 12 ounces	1775	39.3 (4.79)	<0.001*	0.163
Non-diet soda - 12 ounces	1778	28.8 (5.11)	<0.001*	0.155
Plastic bottled drink	1775	19.8 (3.82)	<0.001*	0.157
Juice - 8 oz	1785	9.01 (4.98)	0.03	0.146
Coffee - 8 oz/1 oz espresso	1785	0.99 (5.54)	0.9	0.144
Black tea - 1 cup	1774	0.29 (3.98)	0.9	0.144
Green tea - 1 cup	1778	-10.6 (3.98)	<0.001*	0.146
Canned Coconut milk	68	-57.6 (43.9)	0.2	0.213

PRO Diet Based on Patient-Reported Outcomes in Parkinson's

Points Based on Observational Data: Food Choices & Patient Reported Outcomes (PRO) in PD From Clinical Epidemiology to Therapeutic Tool				
Patient Reported Parkinson's Disease Progression & Quality of Life	Serving size	Strength of the Association	Multiply by unit of consumption x 1: never x 2: 1-2 month x 3: 3-6 month x 4: 1 week x 5: 2-4 week x 6: 5-6 week x 7: 1 day x 8: 2-4 day x 9: 4-6 day	
Avoid	Fruit from a can	1/2 cup	44	
	Fried food	4 ounces	34	
	Ice cream	1 scoop, 1/2 cup	31	
	Diet soda	12 oz, 1 can	30	
	Beef	4 oz, 1 medium patty	28	
	Soda, not diet	12 ounces, 1 can	27	
	Vegetables from a can	1/2 cup	26	
	Butter	1 teaspoon	20	
	Drink from plastic bottles		20	
	Chicken	4 ounces	19	
Eat	Pork	4 oz, 1 medium patty	28	
	Cheese	1 slice, 1/2 oz, 1 Tablespoon	17	
	Frozen vegetables	1/2 cup	16	
	Pasta	1 cup	16	
	Yogurt	1/2 cup, 6 ounces	15	
	Milk, from mammals	1 cup	13	
	Bread	1 slice	9	
	Juice	8 ounces, 1 glass	9	
	Total insult points			+
Eat	Fresh vegetables	1/2 cup	-30	
	Fish	4 ounces	-27	
	Nuts and seeds	1/2 cup, 2 Tablespoon spread	-25	
	Fresh fruit	1/2 cup	-24	
	Fresh herbs	1 teaspoon	-22	
	Wine (red)	6 ounces, 1 glass	-11	
	Coconut oil	1 teaspoon	-16	
	Beans, legumes	1/2 cup	-11	
	Green tea	1 cup	-11	
	Olive oil	1 teaspoon	-10	
	Spices	1/2 teaspoon	-10	
© LK Mischley 20 Oct 2023, Model-1, Baseline data only				Total protective points
© LK Mischley 20 Oct 2023, Model-1, Baseline data only Version 1				Total PRO Diet Points



www.Parkinson-School.com

www.PD-Symptoms.com

AA is A Brilliant Model

Consider alcoholism as
an analogy:

**What happens if an
alcoholic cuts back on
their drinking?**



AA is A Brilliant Model

Alcoholism as an analogy:

- What happens if an alcoholic cuts back on their drinking?
 - **They are still drinking.**
 - **They are not sober.**
- **There is a big difference between cutting back and stopping.**



Cutting Back Doesn't Cut It

- That model works better here:
 - **You're either still eating dairy or you're not.**
 - **Cutting back doesn't cut it.**

Statistically, the abstinence model is a better predictor of progression.





Discipline. Commitment.

Intellectual – Steep learning curve: what will I eat?

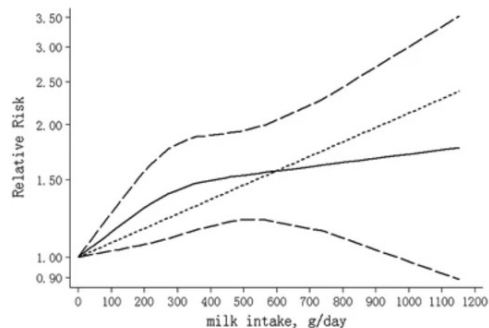
Emotional – Shared meals become more complicated.

Psychological – My community doesn't eat like this.

Financial - I can barely afford groceries,
and you want me to start buying everything organic?

[Currently Undiagnosed] Friends & Family Members:

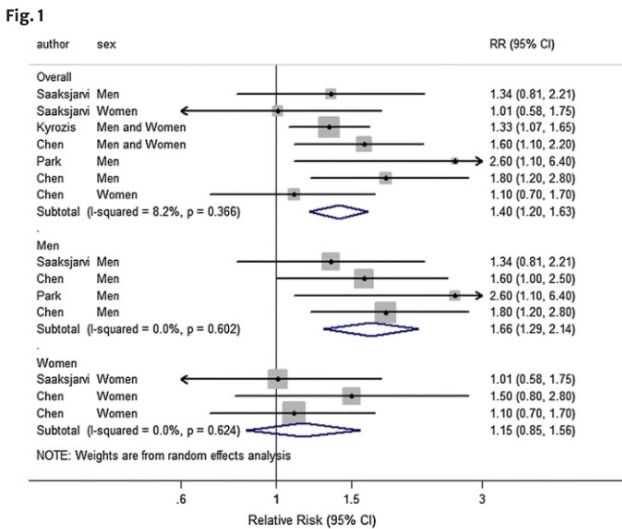
Dairy & Parkinson's



The dose-response analysis between milk intake and risk of PD. The solid line and the long dash line represent the estimated relative risk and its 95 % confidence interval. Short dash line represents the linear relationship

I cannot say this any more clearly:

The foods you are eating and feeding your children are contributing to, if not causing, **Parkin-Syndrome**. You will find out over the next 10-20 years whether you've given it to yourself and your kids.



The forest plot for dairy intake (highest vs. lowest category) and risk of Parkinson's disease. size of gray box is positively proportional to the weight assigned to each study, which is inverse proportional to the standard error of the RR, and horizontal lines represent the 95 % confidence intervals. The results of margarine, butter and total milk and milk product were combined a the result for total dairy foods with a random effect model in the study by Sa "a "ksja" rvi et al

Jiang, W., Ju, C., Jiang, H. et al. Dairy foods intake and risk of Parkinson disease: a dose-response meta-analysis of prospective coh studies. *Eur J Epidemiol* 29, 613–619 (2014)

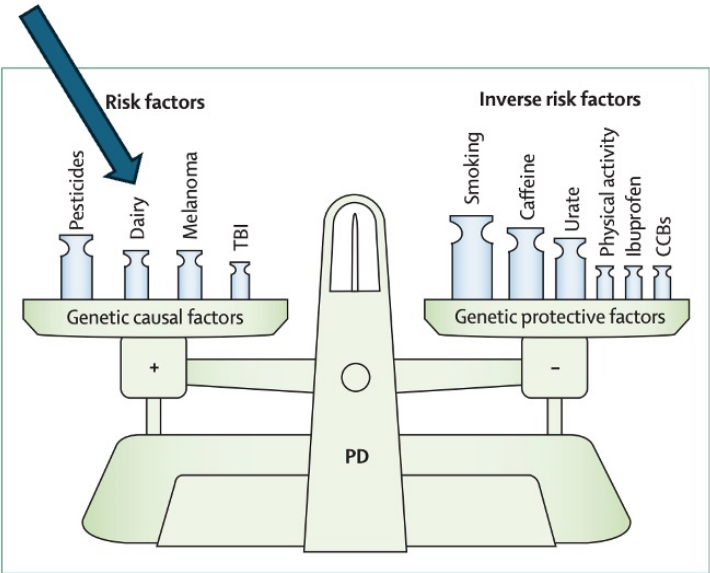
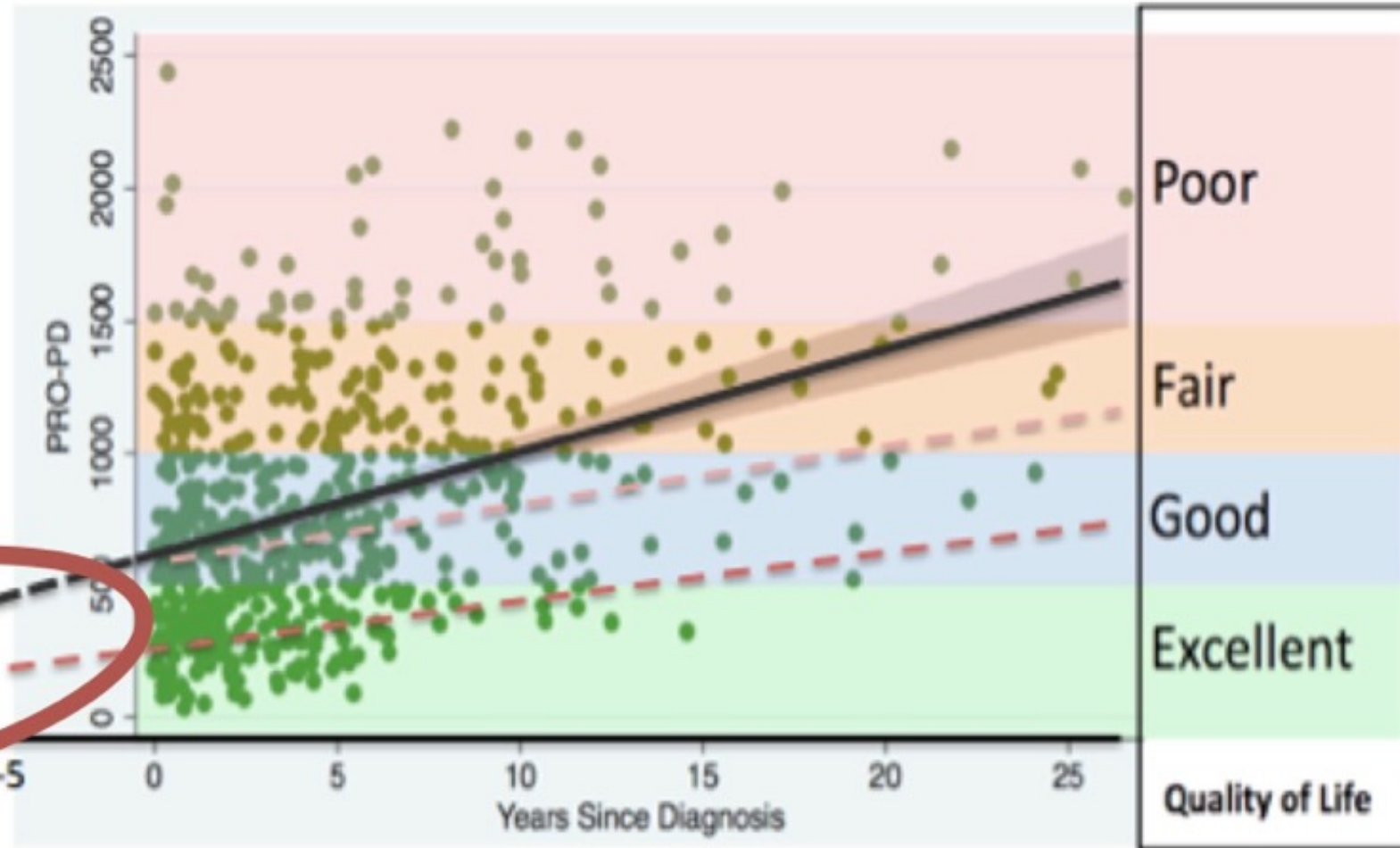


Figure 4: The balance of genetic and environmental factors that underlie Parkinson's disease occurrence

Larger weights have been used for those factors with stronger epidemiological evidence. We have included only factors supported by multiple prospective studies, but the presentation is not exhaustive and it is meant only for illustrative purposes. Factors included might or might not be causal. TBI=traumatic brain injury. PD=Parkinson's disease. CCBs=calcium channel blockers.

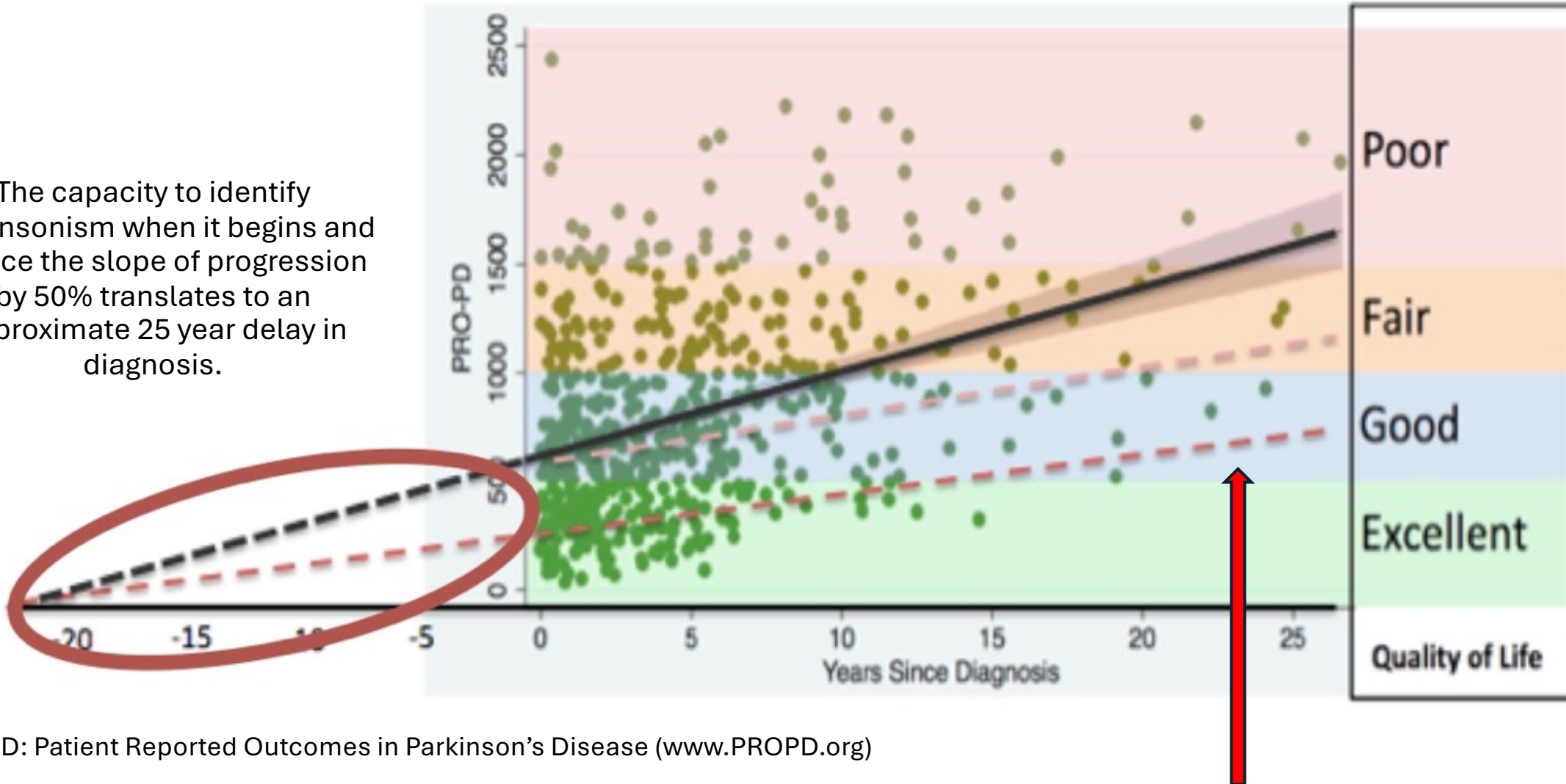
Early Detection Increases the Impact of Parkinson's Disease-Modification Strategies

The capacity to identify Parkinsonism when it begins and reduce the slope of progression by 50% translates to an approximate 25 year delay in diagnosis.



Early Detection Increases the Impact of Parkinson's Disease-Modification Strategies

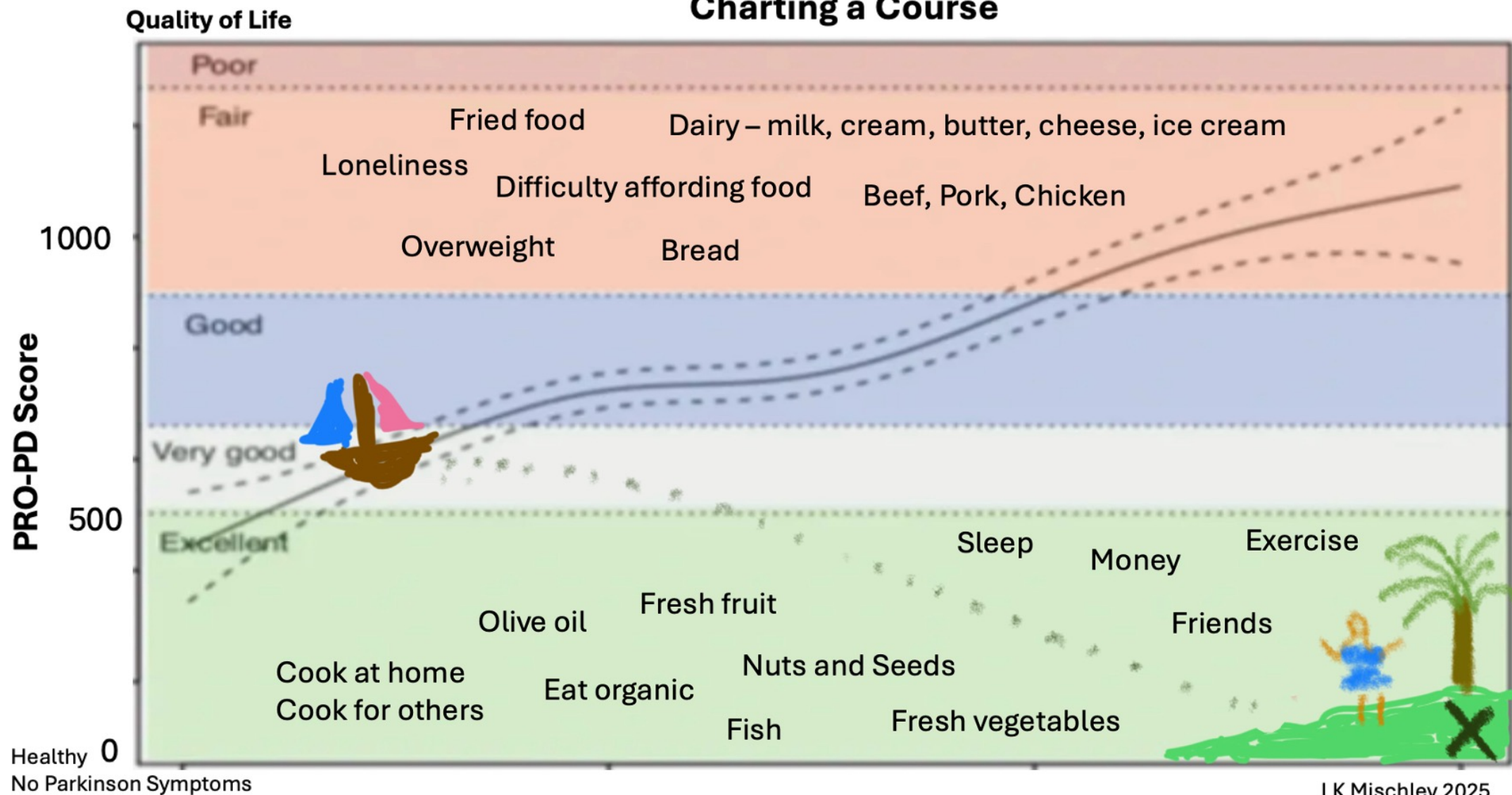
The capacity to identify Parkinsonism when it begins and reduce the slope of progression by 50% translates to an approximate 25 year delay in diagnosis.



PRO-PD: Patient Reported Outcomes in Parkinson's Disease (www.PROPD.org)

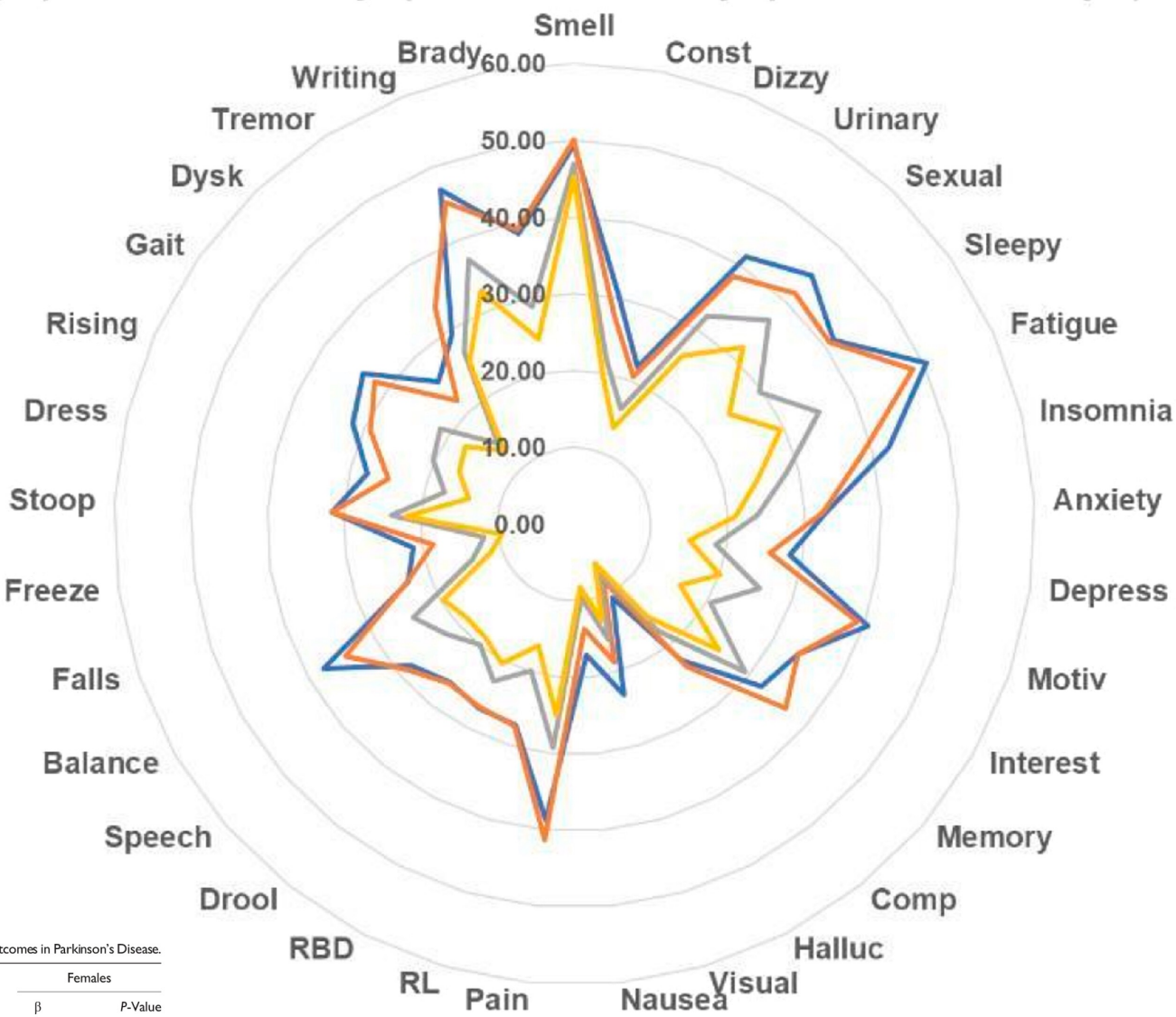
Also tremendously empowering. The power to prevent is here...

Lifestyle Modification as a Disease-Modifying Strategy in Parkinson's: Charting a Course



EXERCISE

0 days per week 1-2 days per week 3-5 days per week 6-7 days per week



Journal of Geriatric Psychiatry and Neurology
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<https://doi.org/10.1177/08919887251346495>

Sage Journals

Original Research Article



Physical Activity, Patient-Reported Outcomes, and Quality of Life in Parkinson's Disease

James F. Morley, MD, PhD^{1,2}, Indu Subramanian, MD^{3,4}, Joshua Farahnik, ND, MPH^{5,6}, Leah Grout, PhD, MPH⁷, Crista Salcido, ND, MACP⁵, Josi Kurtzer, BS⁵, and Laurie K. Mischley, ND, PhD, MPH^{5,8}

Table 3. Sex-specific Differences in the Associations Between Physical Activity and Patient Reported Outcomes in Parkinson's Disease.

Outcome Measures	Total Cohort		Males		Females	
	β	P-Value	β	P-Value	β	P-Value
PRO-PD total	-57.2	<0.001	-27.0	0.15	-69.2	<0.001
Motor	-25.0	<0.001	-14.4	0.08	-32.0	<0.001
Non-motor	-23.8	<0.001	-12.3	0.26	-39.2	<0.001
PROMIS	0.85	<0.001	0.29	0.29	1.26	<0.001

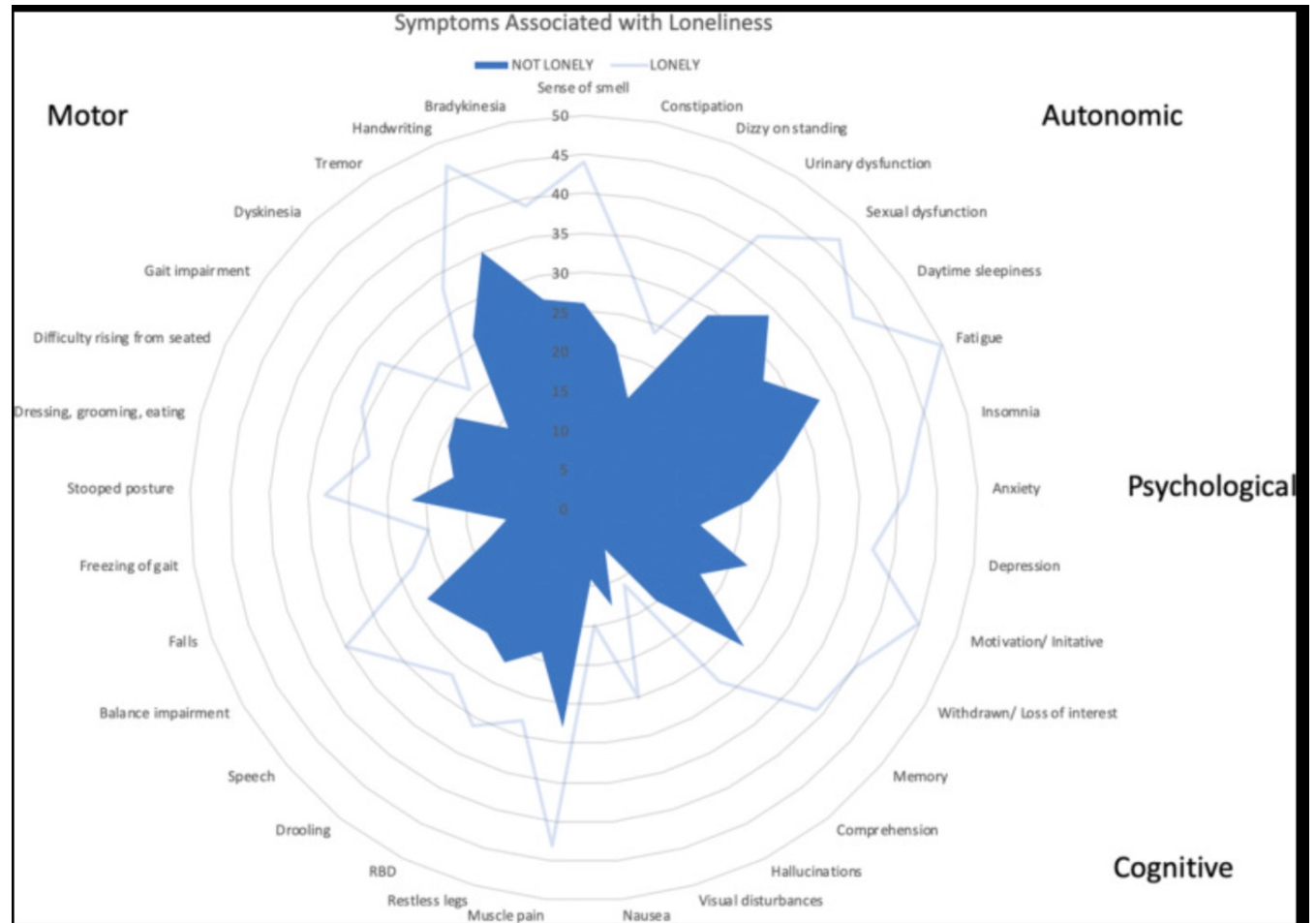
Data shown are beta coefficients (for physical activity level) and P-values derived from multiple linear regression models with the PRO indicated as the dependent variable and physical activity, age, sex, and PD duration as independent variables. Analogous models were run using data from the entire cohort, males only, and females only, as indicated. PRO-PD, Patient-Reported Outcomes in Parkinson's Disease; PROMIS, Patient-Reported Outcomes Measurement Information System.

FRIENDS

ARTICLE OPEN

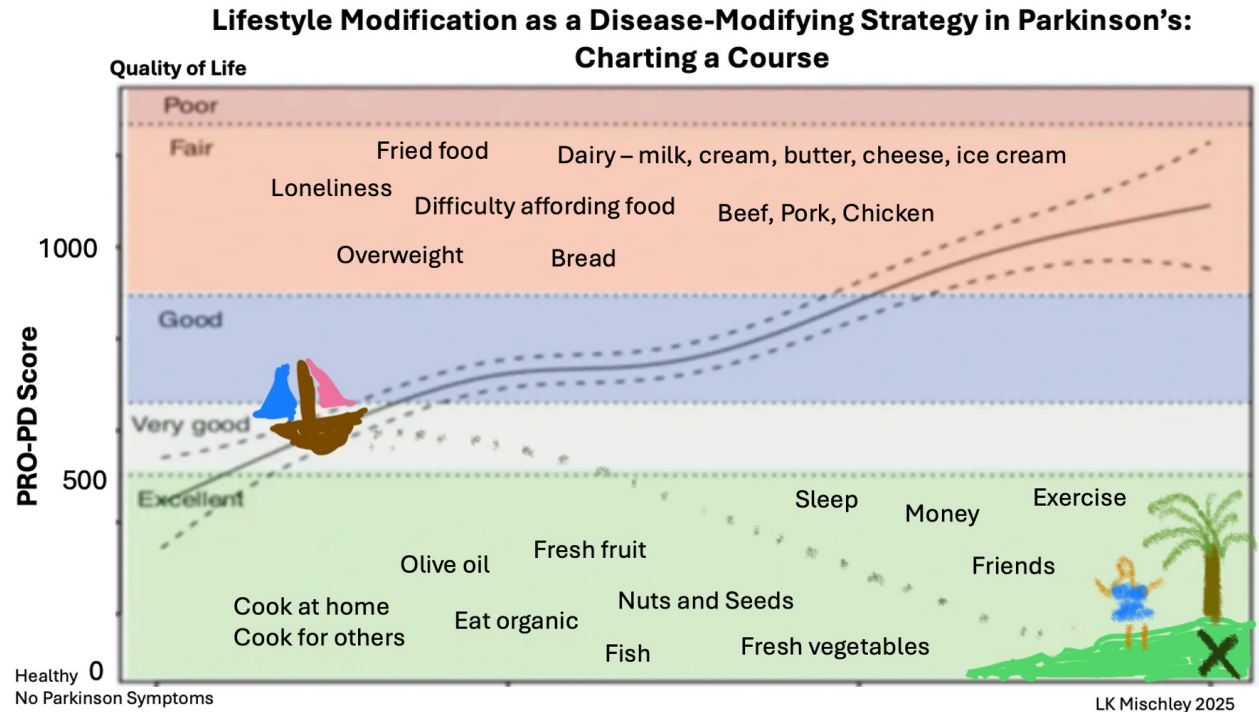


Synergy of pandemics-social isolation is associated with worsened Parkinson severity and quality of life

Indu Subramanian^{1,2,3}, Joshua Farahnik³ and Laurie K. Mischley^{3,4}

Set Goals

- What do you want your life to look like 10, 20, 50 years from now?
- For the rest of your life, when choosing the food to place inside your temple, spend some time asking yourself, **“How bad do I want it?”**
 - How long do you plan to live?
 - What will the ripple effect be on my family of dietary modification?
 - What will the ripple effect be on my family if I don't modify my diet?



Modifiable Variables in Parkinsonism

www.MVP-Study.com

The Purpose of the Study

There is a tremendous amount of diversity among people with Parkinsonism (PwP); some people seem to progress quickly and others barely at all. Our goal is to collect information that will make it possible to identify relationships between your daily choices and therapies associated with different rates of progression.

mvp-study.com

Formerly known as Complementary and Alternative Medicine in Parkinson's Disease

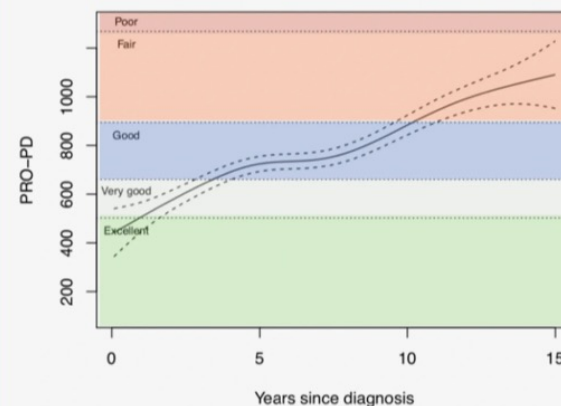
[HOME](#) [WHAT IS MVP?](#) [CONTACT US](#) [10 YEAR SUMMARY REPORT](#)

Modifiable Variables in Parkinsonism (MVP) Study

Do Your Decisions Impact Rate of Progression?

[JOIN THE STUDY HERE](#)

Patient-Reported Parkinson's Disease Progression & Quality of Life



There is a LOT to unpack...

- Personal responsibility -- empowerment – stress
- What to eat?
- What else can I do?
- Where can I get more information?
- What will I feed my kids?
- How will I feel full on “rabbit food”?
- What will I have for breakfast?
- Where do I get those foods?

ChatGPT



PRO Diet Coach

By Laurie K Mischley 

Helps users follow the PRO Diet to reduce Parkinson symptoms and track PRO-21 scores.

What is the PRO-21 Diet and how do I get started?

How many PRO points do I get for today's meals?

Give me easy meals that earn PRO points.

How can I go from 9 to 15 PRO points?



ChatGPT 4o 



New chat



Search chats



K



Library



Codex



Sora



GPTs



PRO Diet Coach



DALL·E



LOGO

ChatGPT: PRO Diet Coach

When people tell you that French fries are the only thing that brings them joy... what will you tell them?

I'd tell them this, with warmth and honesty:

"Joy matters. But so does feeling good."

French fries *are* delicious—and food is tied to memories, comfort, and pleasure. That's real.

But here's the tradeoff:

In the largest Parkinson's study of its kind, people who ate fried foods like French fries regularly had *worse symptoms and faster progression*. The link was strong enough to make it one of the few things the PRO-21 Diet says to **avoid entirely**—less than once a month.

So, if French fries are the one bright spot in your day, we're not going to rip that away. But can we **make that joy work for you**, not against you?

Maybe:

- You find **one amazing fry experience a month**—make it an event, not a habit.
- You explore a **joy-swap**: roasted sweet potato wedges with olive oil and spices (which actually *earn you points* on the PRO-21 scale).
- You focus on **adding more joyful foods** that *also* help you feel better—like a favorite fruit, a special nut butter, or a coffee ritual.





"Empowerment Check-In" (Post-Scoring Reflection Prompt)

Timing: Right after users tally their PRO-21 score or receive feedback on their current habits.

Prompt (gentle, nonjudgmental):

"Now that you've seen your score and the foods that make a difference, how are you feeling about it all?"


Response Options (with branching logic):

1.  **"Motivated! I'm ready to make changes."**
→ Offer next-step strategies: meal ideas, kitchen hacks, recipes, or community challenges.
2.  **"Curious, but unsure where to start."**
→ Provide 1-2 *simple wins* (e.g., "Add 1 tbsp olive oil daily," or "Swap fruit for dessert tonight").
3.  **"Overwhelmed. This feels hard."**
→ Normalize the feeling, reassure them, and shift to "support mode":
"You don't have to do everything at once. Let's find **just one** doable thing today."
4.  **"Hopeless or resistant. This isn't realistic for me."**
→ Gently validate, explore underlying obstacles (e.g., access, fatigue, trauma), and invite micro-steps or connection:
"You're not alone. Let's find one win that fits *your reality*."

PMD-2025

www.Parkinson-School.com

- \$10/month → Enroll Here →
- Coupon: PMD-2025
- Free 1-month pass
 - 5 years of recordings
 - Live monthly:
 - Nutrition classes
 - Men/ Women/ Partner
 - Social
 - Speaker Series
 - Mischley Seminar



Parkinson School










Monthly Membership Includes Access to All Live & Recorded Sessions

Parkinson School was created to be a scientifically-sound, comprehensive, integrative, affordable resource for helping patients and their support team navigate Parkinson's.

Over 3000 students from 55 different countries are currently enrolled in Parkinson School. We invite you to watch recorded sessions, participate in live classes, teach us what you know, and learn from us what you can!

Program Contents

The Library covers the basics.
The seminars, discussions, chats, and community meet-ups are how we maintain momentum & dive deeper.

 <p>Parkinson School Library The Basics</p> <p>Dr. Laurie K. Mis...</p>	 <p>Mischley Seminar Series Monthly updates designed to keep patients in the know. Live: 28th @ 12pm PT</p> <p>Dr. Laurie K. Mis...</p>	 <p>Dietary Implementation Ideas Diet, Nutrition, and Eating with Kelly Morrow - 4th Monday of every month at...</p> <p>Kelly Morrow, M...</p>
 <p>Partner Program If you love someone with Parkinson's, join us on the 2nd Monday of every month at...</p> <p>Dr. Karin Dunca...</p>	 <p>Men's Circle Men in Parkinson's with Joshua Farahnik - 3rd Wednesday of every month at 12pm...</p> <p>Dr. Joshua Farah...</p>	 <p>Women's Group This group is dedicated to fostering connection, sharing resources, and guidin...</p> <p>Dr. Samantha Ev...</p>
 <p>Simply Social - Every Tuesday 1 pm PT Camaraderie is Key</p> <p>Dr. Laurie K. Mis...</p>	 <p>How to Use the PRO-PD App</p> <p>Dr. Laurie K. Mis...</p>	 <p>Speaker Series People with Parkinsonism Tell Their Story - 14th of every month</p> <p>Dr. Laurie K. Mis...</p>

[View All Products](#)

Choose a Pricing Option

Both the Monthly and Annual membership options grant you access to the ENTIRE Parkinson's School Library AND the monthly live discussions that are hosted.

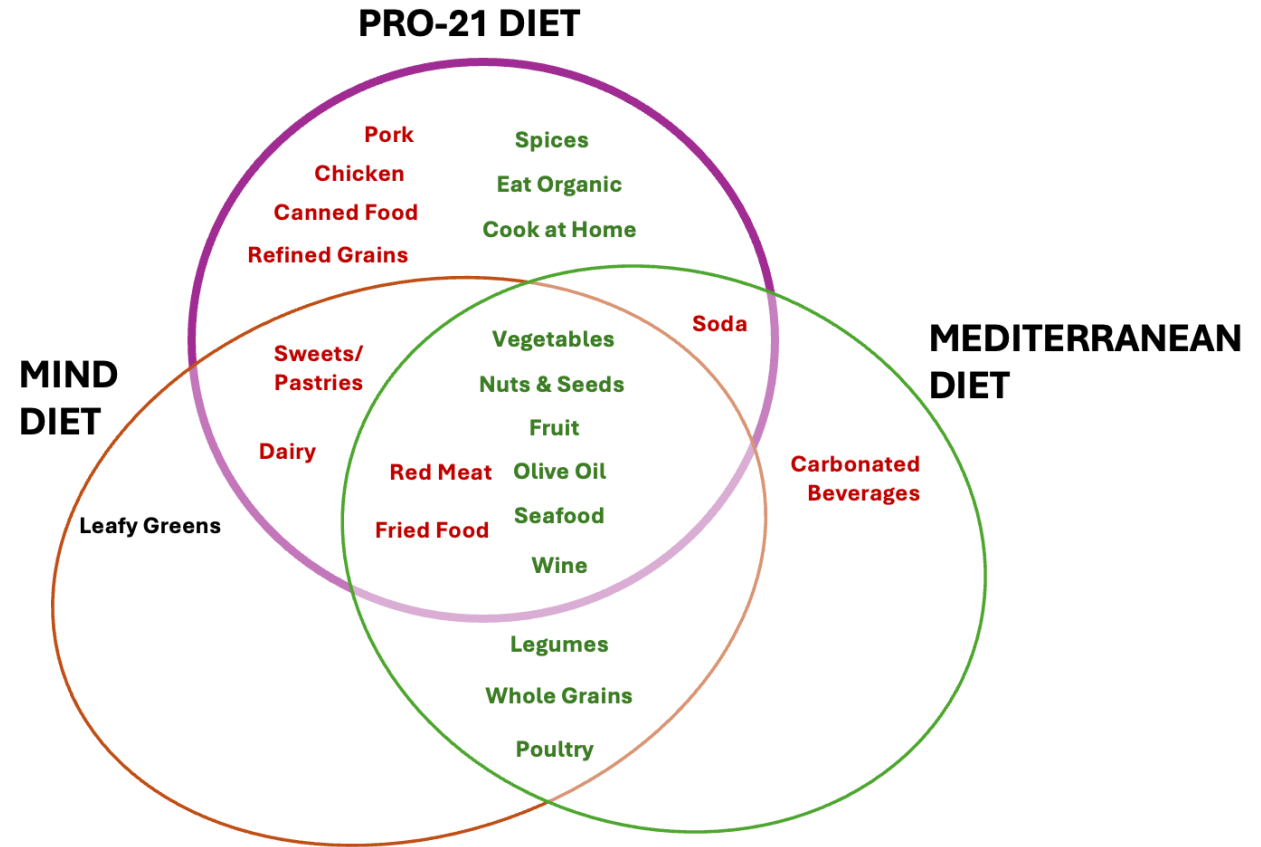
☒ **\$10/month**
Monthly Membership

Thursday,
Aug 28, 2025

- Deep dive into all 21 variables

How Parkinson's Diets Differ

LK Mischley 2025





THANK YOU

info@educationismedicine.com