

Team 110



Dynadance

Theme: Fun solution for Parkinson's patients to consistently get effective exercise.

Team members

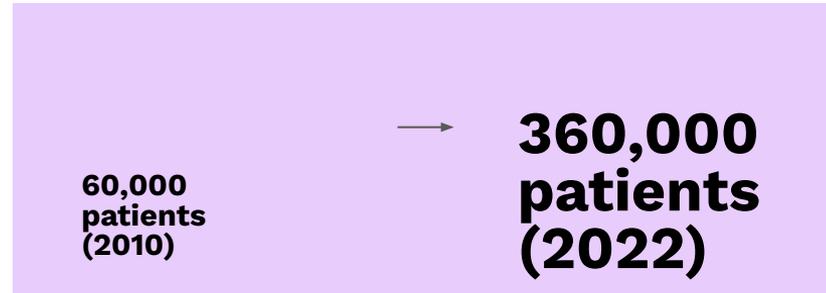
Thirathada Chinchapo - Physiotherapist . Kornrat Euchukanonchai - Designer . Kiartnarin Udomlapsakul - AI Engineer
Wannanong Ponpalanamai - Medical . Panwa Thammaraks - Research and Innovation .

 **Participate in Optional Prize**

Why is Parkinson's an issue? (General)

- Parkinson's disease (PD) is the second-most common neurodegenerative disorder
- Increasing rates of Parkinson's - globally and Thailand because of increased aging society and Parkinson's disease itself increases with age
- Impact on lives of caregivers
 - Stress
 - Specialty & Skill
-
-

Parkinson's Disease



Limited physical activity leads to cardiovascular disease, a major cause of premature death



Sudden unexpected death in Parkinson's disease: Insights from clinical practice

reach significant figures. Available studies have shown that compared with healthy controls, patients with PD are accompanied by high rates of premature death. This is usually caused by factors such as pneumonia and cerebrovascular and cardiovascular diseases. Recently, it

Scorza FA, Guimarães-Marques M, Nejm M, de Almeida ACG, Scorza CA, Fiorini AC, Finsterer J. Sudden unexpected death in Parkinson's disease: Insights from clinical practice. Clinics (Sao Paulo). 2022 Feb 10;77:100001. doi: 10.1016/j.clinsp.2021.100001. PMID: 35152167; PMCID: PMC8900653.

EXISTING TREATMENTS

Dance Therapy

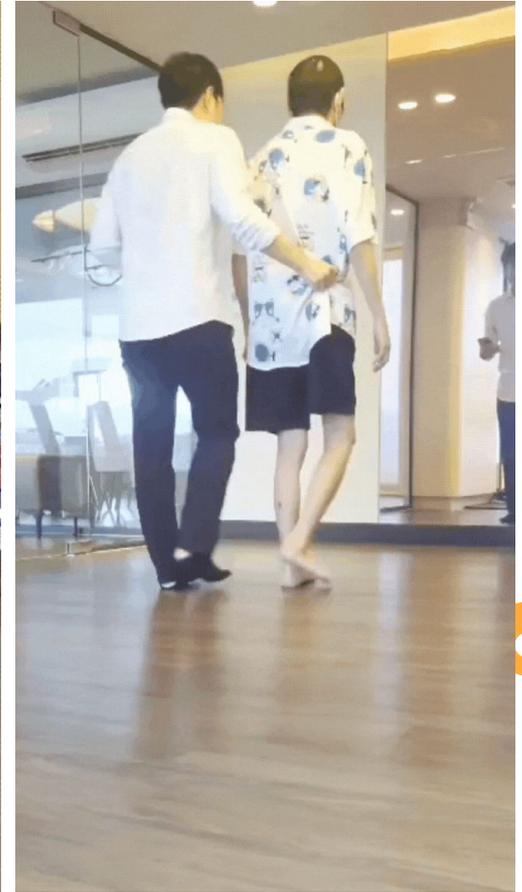
by medical professionals

Evidence-based practice
And many publications in this field

**Music provides cue to facilitate
movement and task specific
training**



Normal walking



Dance therapy

EXISTING TREATMENTS

Dance Therapy with a Physiotherapist

Requires feedback

From physiotherapists specializing
in Parkinson's and dance

Requires engagement

Fun for Parkinson's patients

Requires consistency but is expensive

**3 sessions x
2 hours per week x
1000B/hour** = **Up to 32,000 Baht per month**



DynaDance

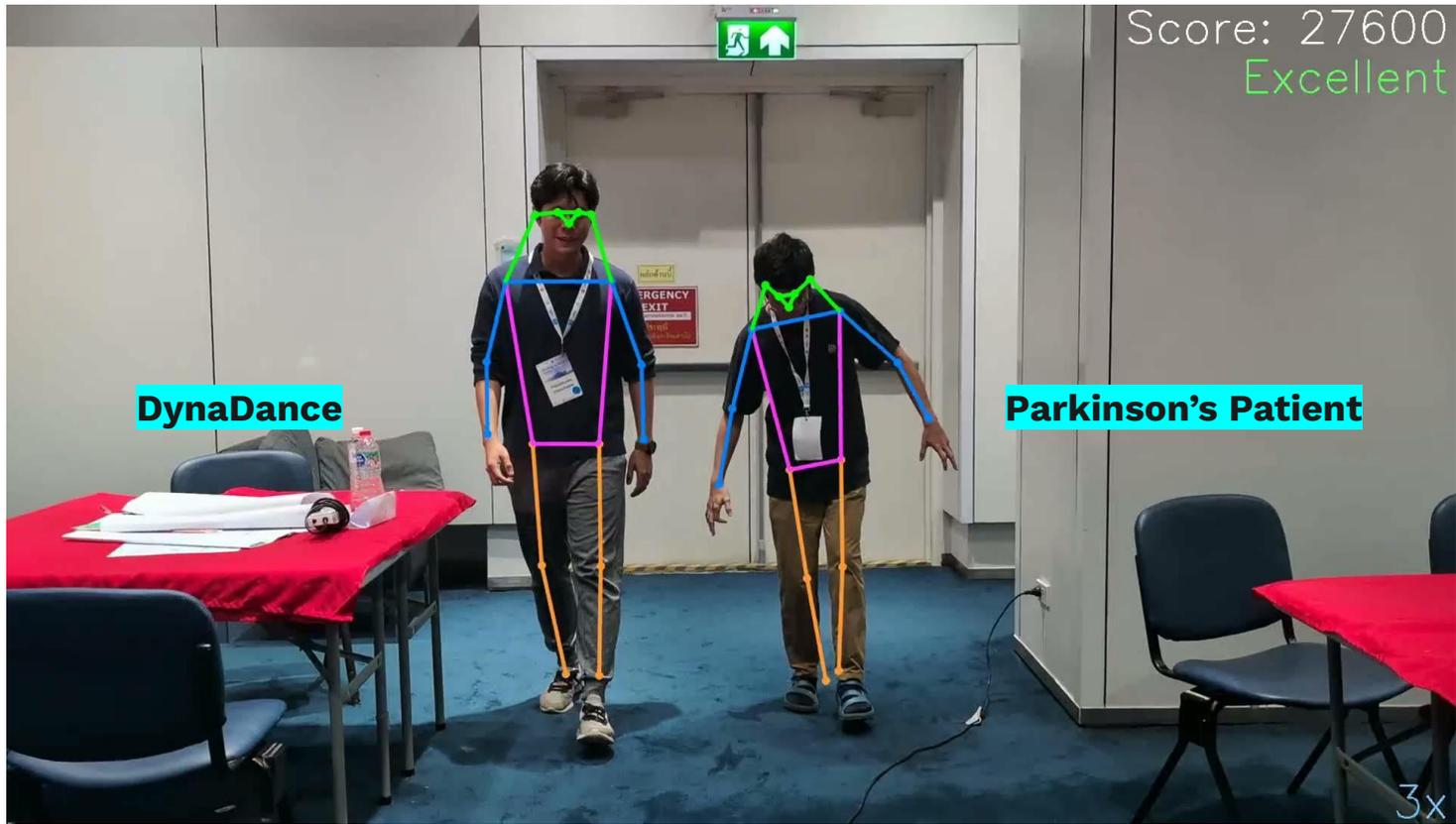


Full body video



**Targeted Exercise +
Real-time feedback**





Score: 27600
Excellent

DynaDance

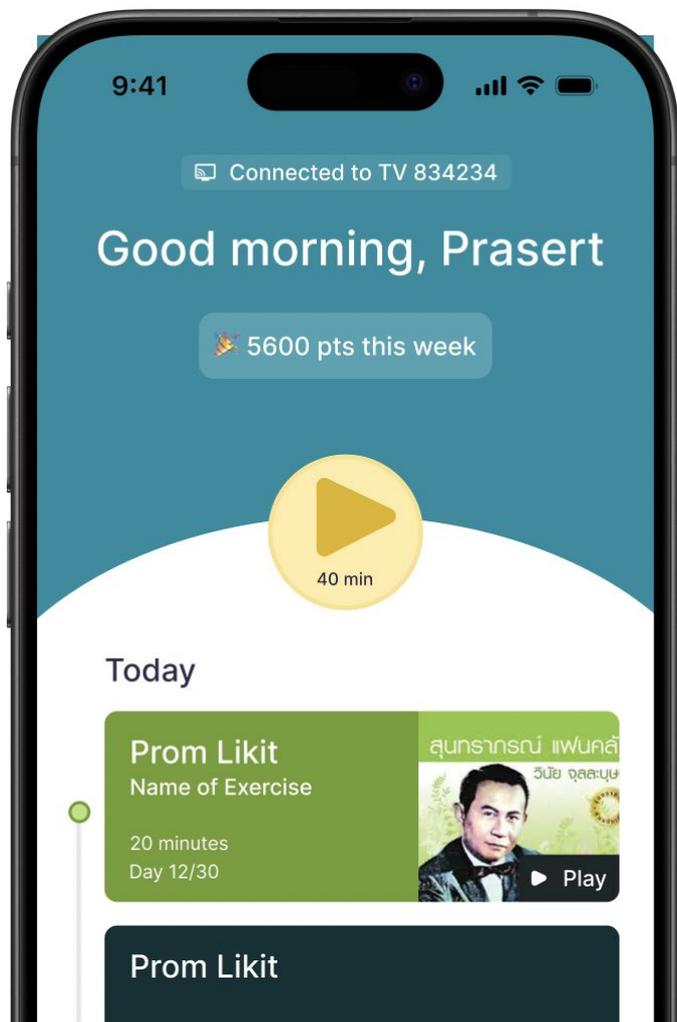
Parkinson's Patient

Real-time feedback

Targeted exercises



3x



Adaptive, local music

Training with different tempo (BPM), progressive movement, task-specific though various song

Simple to operate for family member

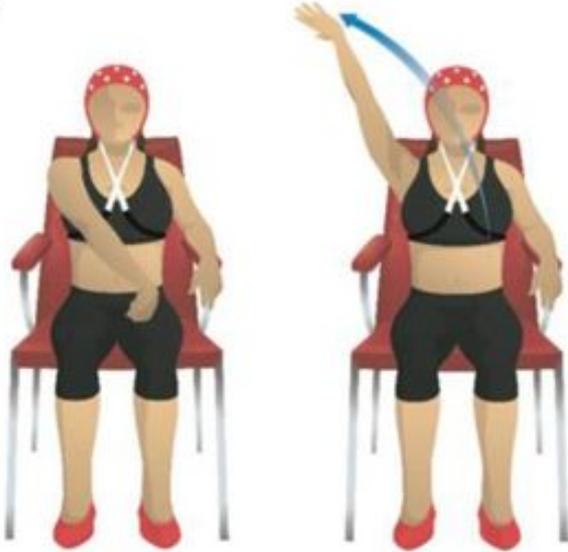
Low digital literacy for caregivers

Tracks progress

Tracking progress for improvement and collect data for medical staffs



A



Randomized Controlled Trial > J Pak Med Assoc. 2023 Jun;73(6):1280-1283.

doi: 10.47391/JPMA.6710.

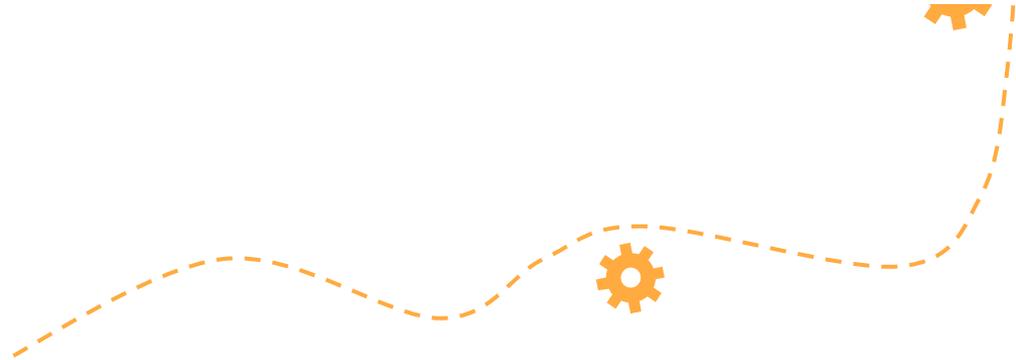
Effects of conventional physical therapy with and without proprioceptive neuromuscular facilitation on balance, gait, and function in patients with Parkinson's disease

Tahzeeb Mazhar ¹, Ayesha Jameel ², Faiza Sharif ², Momna Asghar ²

Affiliations + expand

PMID: 37427630 DOI: [10.47391/JPMA.6710](https://doi.org/10.47391/JPMA.6710)

Free article



Parkinson Awareness Month

Typical appearance of Parkinson's disease



Classic Findings of Parkinson's Disease

TRAP –
TREMORS
RIGIDITY
AKINESIA
POSTURE AND
BALANCE



EXISTING TREATMENTS

Competitor Landscape

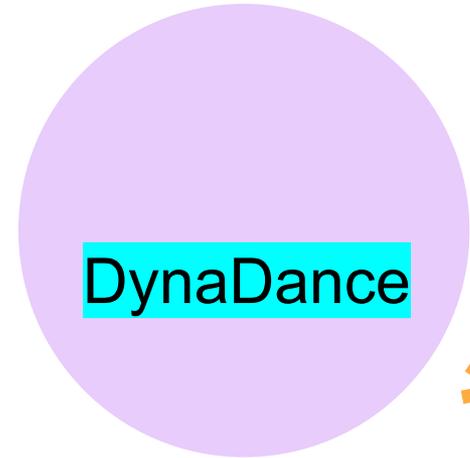
Effectiveness: Targeted for Parkinson's, Clear instruction, Real time feedback



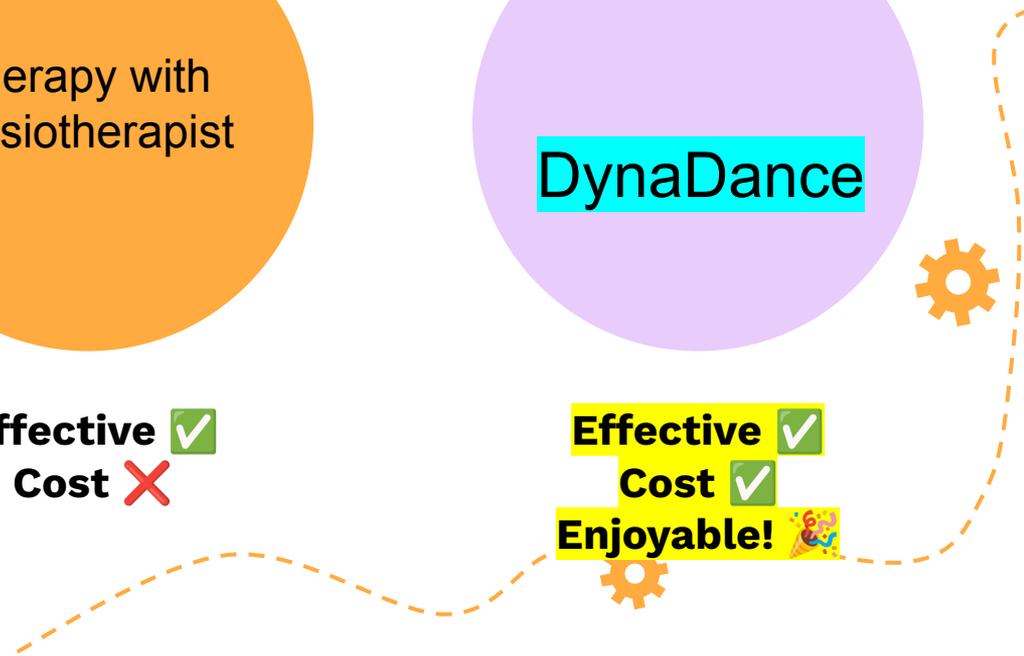
Effective ✗
Cost ✓



Effective ✓
Cost ✗



Effective ✓
Cost ✓
Enjoyable! 🎉



End-users



Parkinson's Patients

Customer



Families

Members that closely take care of patients



Customer



Product



to



Families



EXISTING TREATMENTS

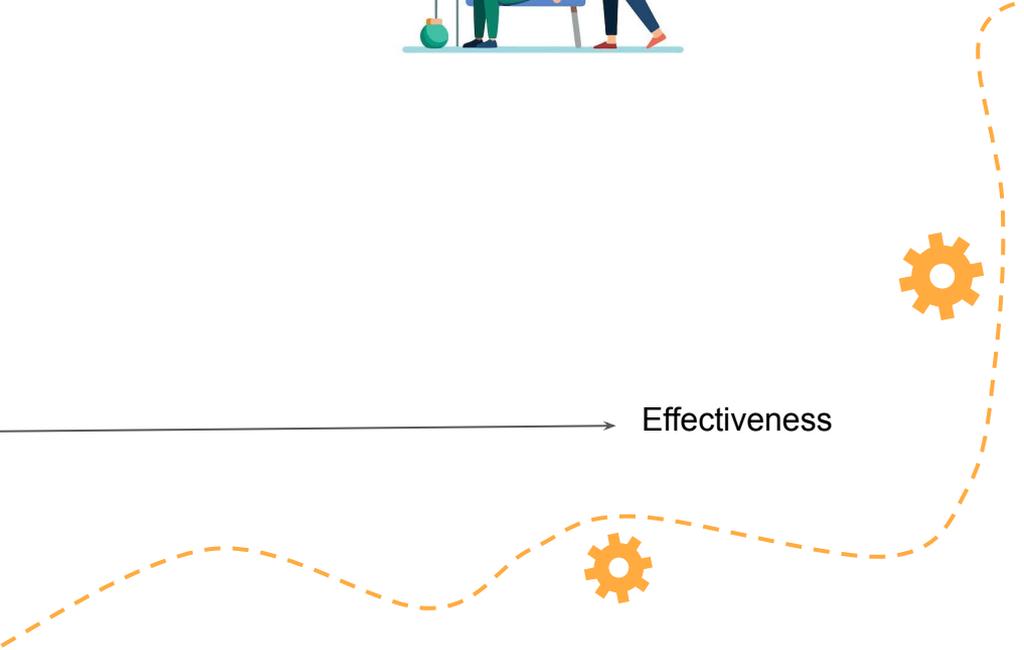
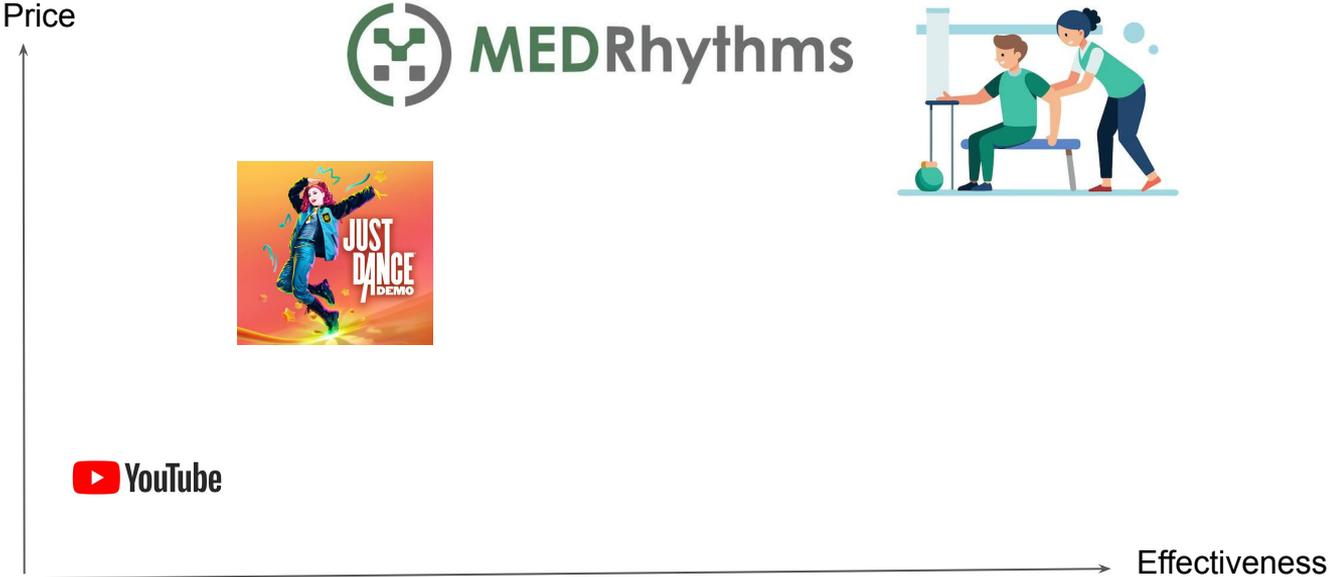
Competitor Landscape

	Real time feedback	Price/month (THB)	Engagement	Music Coverage	Parkinson's-targeted
Therapy with Physiotherapist	Yes	10,000-32,000	Yes	Low	Yes
Traditional Physical Therapy (Weight Training)	Yes	7,500-27,000	No	Low	Yes
Youtube Videos	No	Free	Yes	Low	Yes
MEDRhythms	Yes	24,000-72,000	No	High	No
“Us”	Yes	500	Yes	High	Yes

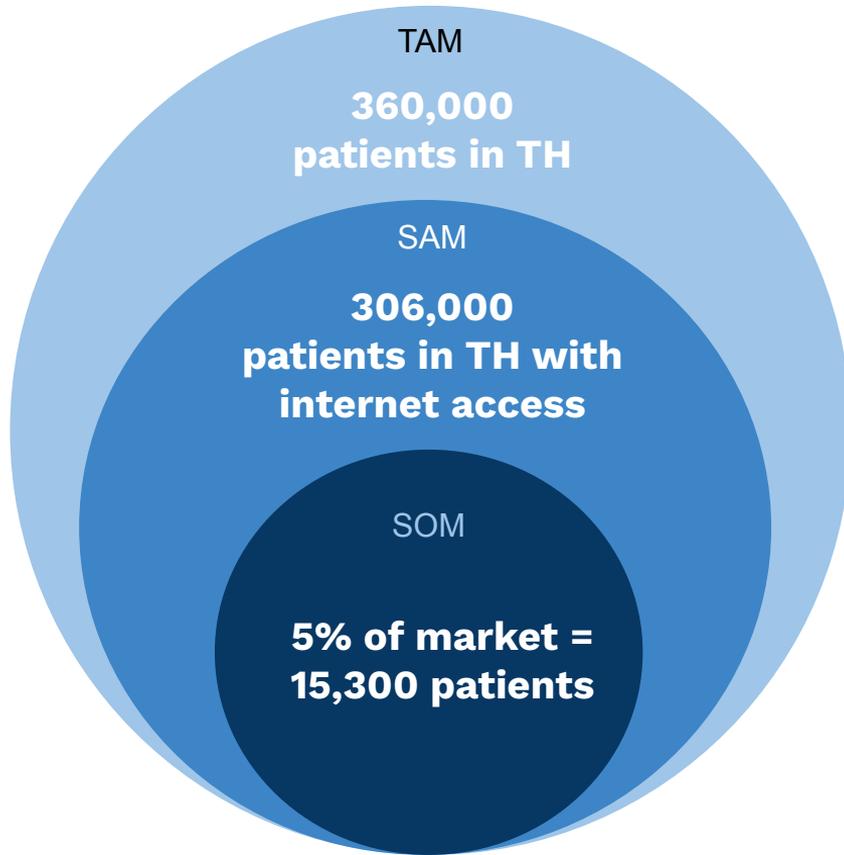


EXISTING TREATMENTS

Competitive analysis



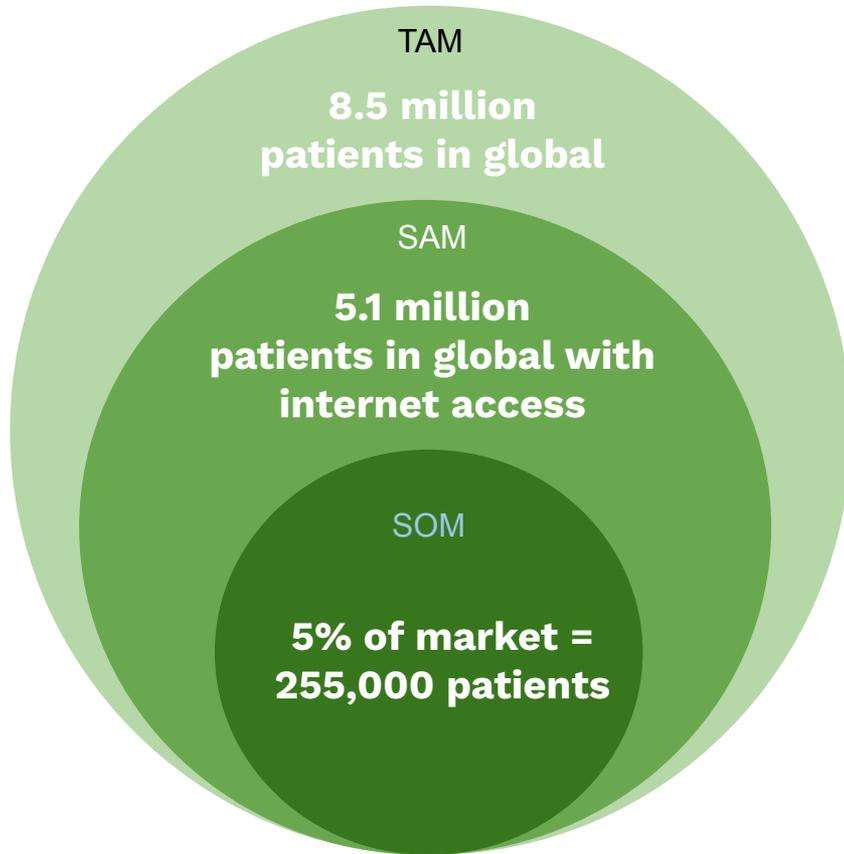
Thailand Market



500 THB / Month
x 15,300 patients
=

7,650,000 THB / Month

Global Market



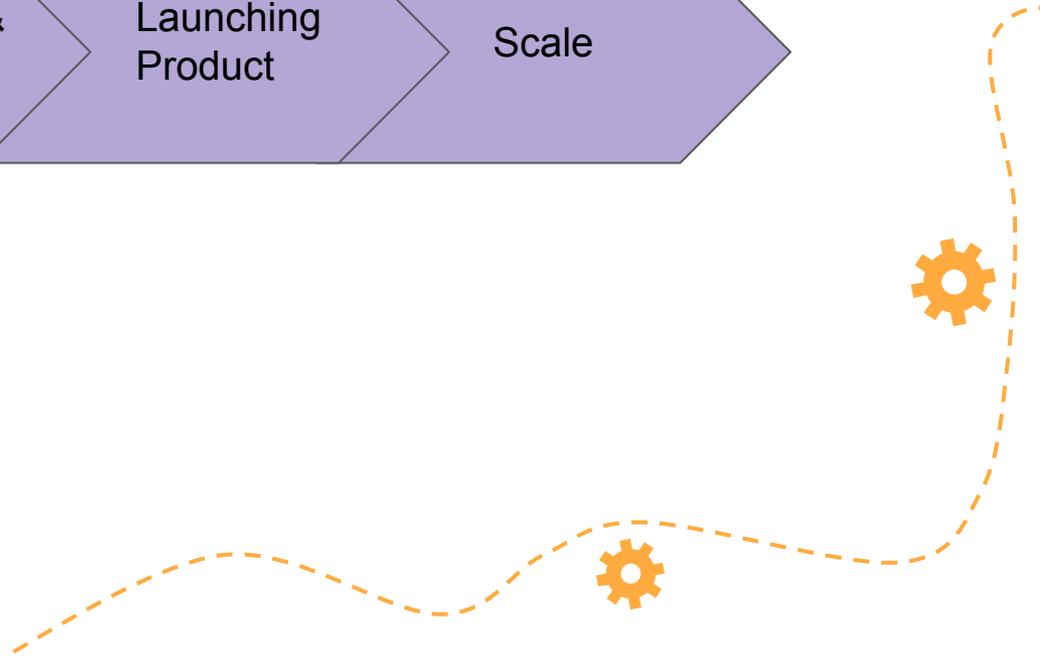
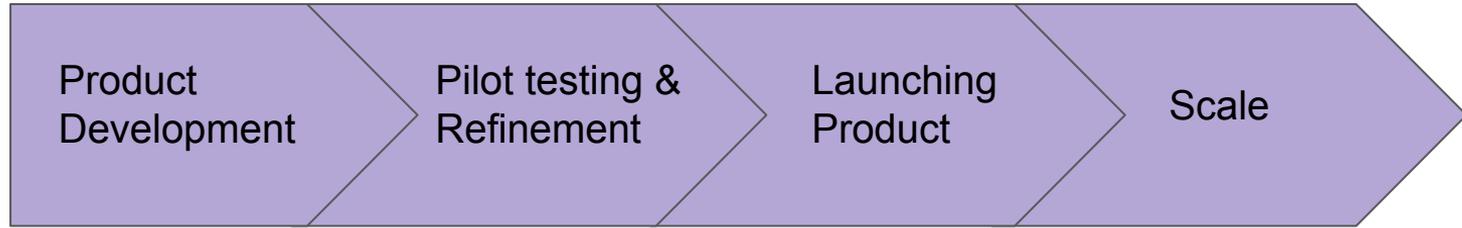
With a global reach, we can expand to generate over 100M THB in revenue.

1. Disease burden of Parkinson's disease in China and its provinces from 1990 to 2021: findings from the global burden of disease study 2021
Xu, Tingling et al.
The Lancet Regional Health – Western Pacific, Volume 46, 101078

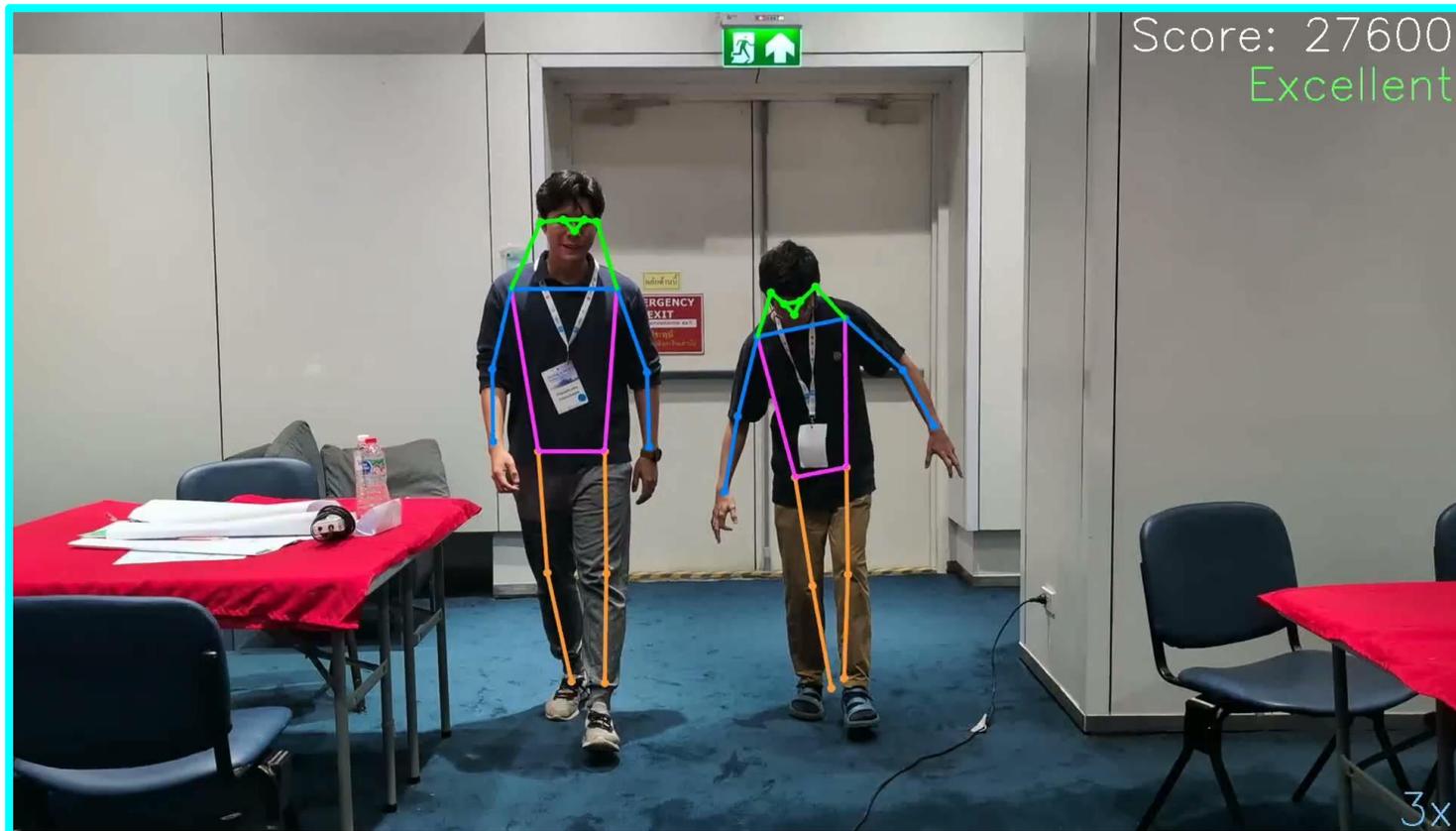
Scalability



Implementation Roadmap



Happy DynaDancing!



3x

Scalability

- 1.Expanding Reach internationally**
- 2.Partnerships and Collaborations with medical institution**
- 3.Diversifying Revenue Streams: New Services and Subscription Tiers"**
- 4.Enhancing User Experience: Implementing Feedback for Program Optimization, new song released, personal consultant"**



Business Finance

From SOM (Serviceable Obtainable Market)

15,300 potential clients

500 THB / Month x 15,300 patients

Parkinson's patient in who can access to internet in Thailand

7,650,000 THB / Month



Feedback is essential to the progression of the patient as well as preventing further damage from incorrect exercise movement

1. Dance-specific for these symptoms of the patients

T - Tremor

R - Rigidity

A - Akinesia and Bradykinesia

P - Postural instability

2. Using Neuromovement techniques for PD such as thinkbig theory and proprioceptive neuromuscular facilitation techniques



โรคพาร์กินสัน (Parkinson's Disease) คืออะไร?

พาร์กินสัน (Parkinson's Disease) เป็นโรคความเสื่อมของระบบประสาทที่พบได้บ่อยในผู้สูงอายุ 60 ปีขึ้นไป สถิติปี 2553 ระบุว่าประเทศไทยมีผู้ป่วยโรคพาร์กินสันราว 60,000 คน ซึ่งในช่วง 10 ปีที่ผ่านมา ตัวเลขนี้ดูจะสูงขึ้นตามจำนวนประชากรสูงวัยในสังคมที่เพิ่มขึ้น โดยสถิติล่าสุดเผยว่า 3 % ของประชากรสูงวัยในประเทศมีอาการของโรคพาร์กินสัน (ราว 360,000 คน จากจำนวนประชากรสูงวัยราว 12 ล้านคนในปัจจุบัน)

<https://www.chula.ac.th/highlight/62989/>

There were **61.21 million** internet users in Thailand in January 2023. Thailand's internet penetration rate stood at 85.3 percent of the total population at the start of 2023. Kepios analysis indicates that internet users in Thailand increased by 97 thousand (+0.2 percent) between 2022 and 2023. Feb 13, 2566 BE



DataReportal – Global Digital Insights

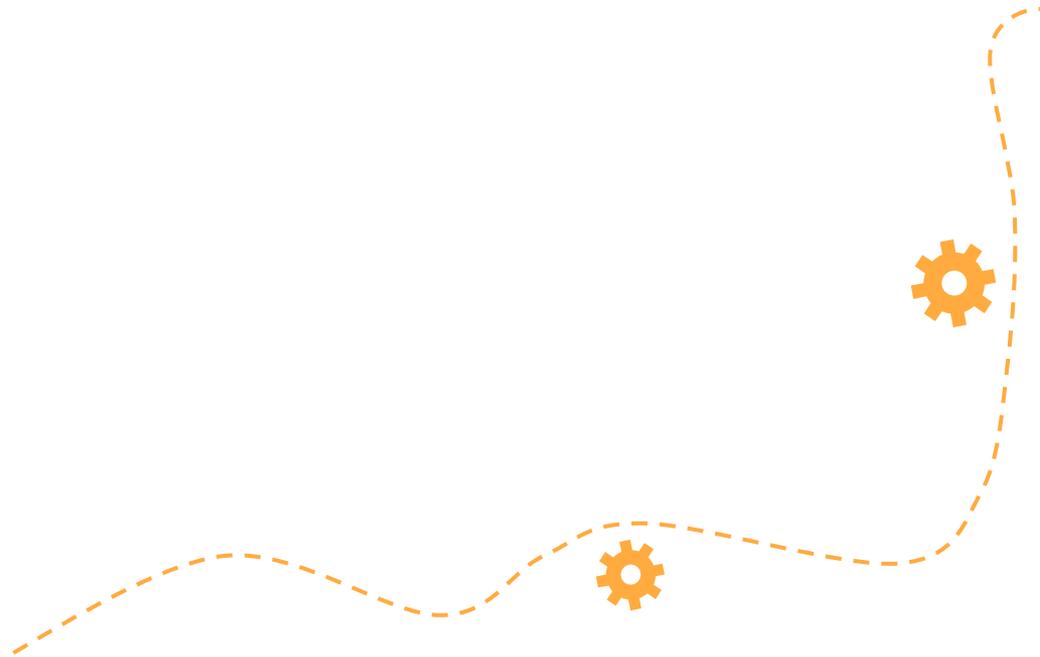
<https://datareportal.com>



[Digital 2023: Thailand — DataReportal – Global Digital Insights](#)



Partnership



Existing Treatments - Do they work?

- Medication
 - L-DOPA (Long-term side-effect to motor functions after 5-10 years)
<https://www.ncbi.nlm.nih.gov/books/NBK482140/>
- Deep Brain Stimulation
 - It is effective in improving movement in suitable patients, but it carries significant risks and high costs.
- Physical Therapy
- Alternative Treatments (like Music therapy or yoga)

Alternative Treatments

- Dance therapy + video

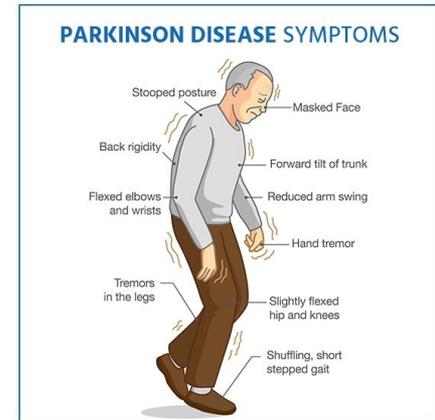
Our solution

- For example

Our solution

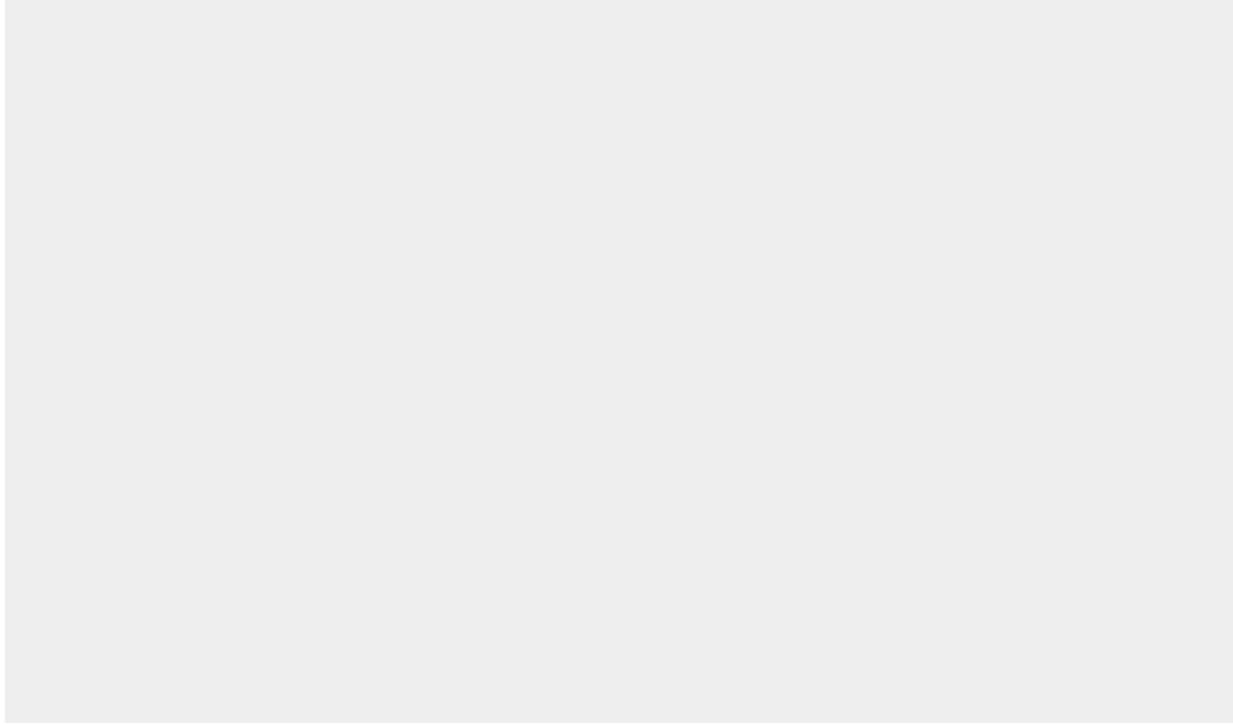
Example of specific issue that PT fixes

- Pick one of these to talk about
 - Most common is resting tremor (Shaking while resting)
 - One of the critical symptom is Difficulty with initiating movement
 - This cause a big burden for them to move
 - And lead to sedentary lifestyle and other complications



“Demo”/Design of app UI

- Going into flow/exercise that addresses one that issue

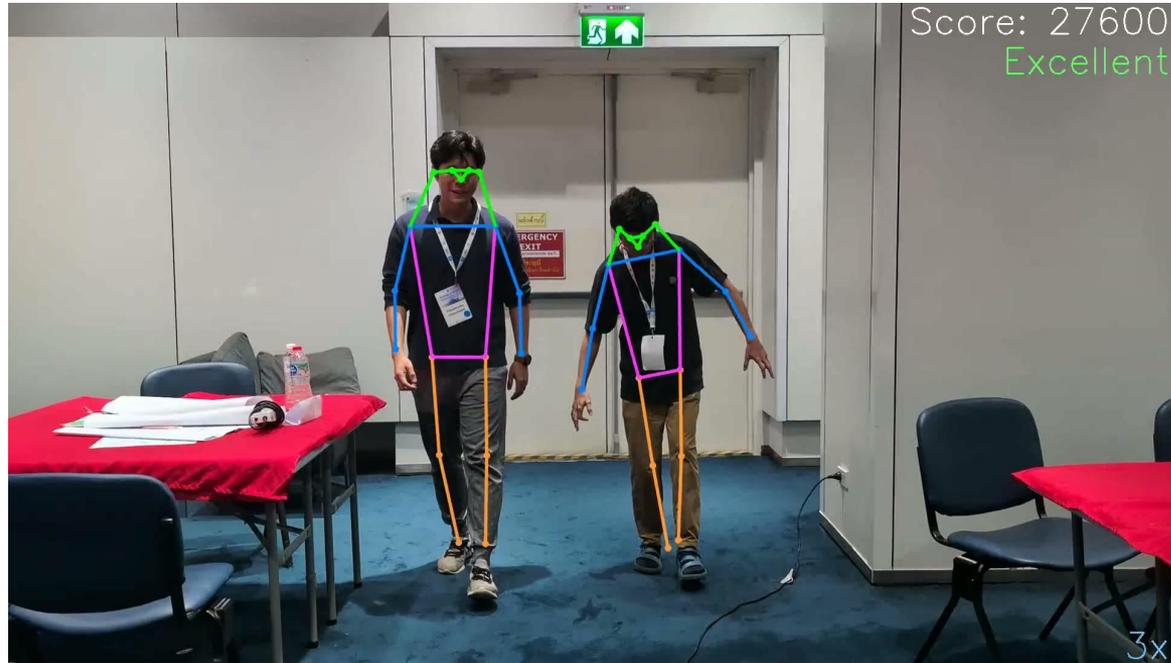


Example of exercise video

- Video (marc) dance
- Overlaid with motion capture video (*Wish*)

Show real-time feedback, data collection

- Visual: Real time feedback (Wish?)
-



- Data collection for physiotherapists to continue treatment

How does this fit in the healthcare system?

- Use in conjunction with physiotherapist visits

Business model

Ending slide

Beautiful image

Dance and parkinson



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[Review](#) > [J Geriatr Psychiatry Neurol.](#) 2019 Jan;32(1):49-56. doi: 10.1177/0891988718819858.

Epub 2018 Dec 17.

Music Therapy and Dance as Gait Rehabilitation in Patients With Parkinson Disease: A Review of Evidence

> [Eur J Phys Rehabil Med.](#) 2020 Oct;56(5):563-574. doi: 10.23736/S1973-9087.20.06069-4.

Epub 2020 May 8.

Dance improves symptoms, functional mobility and fine manual dexterity in people with Parkinson disease: a quasi-experimental controlled efficacy study

Hewa H Kalyani^{1 2 3}, Karen A Sullivan^{4 5}, Gene M Moyle⁶, Sandra G Brauer⁷, Erica R Jeffrey^{8 9}, Graham K Kerr^{10 11}



Mitochondrial damage:

- Toxins
- Ageing
- Parkinson's disease gene mutations (eg, in *PRKN*, *PINK1*, or *DJ1*)

Synaptic dysfunction

Neuronal loss

Reduced ATP
Increased ROS
Ca²⁺ increase

Lysosomal damage
Parkinson's disease gene mutations
(eg, in *GBA* or *ATP13A2*)

Time

Autophagy

Aggregated
 α -synuclein

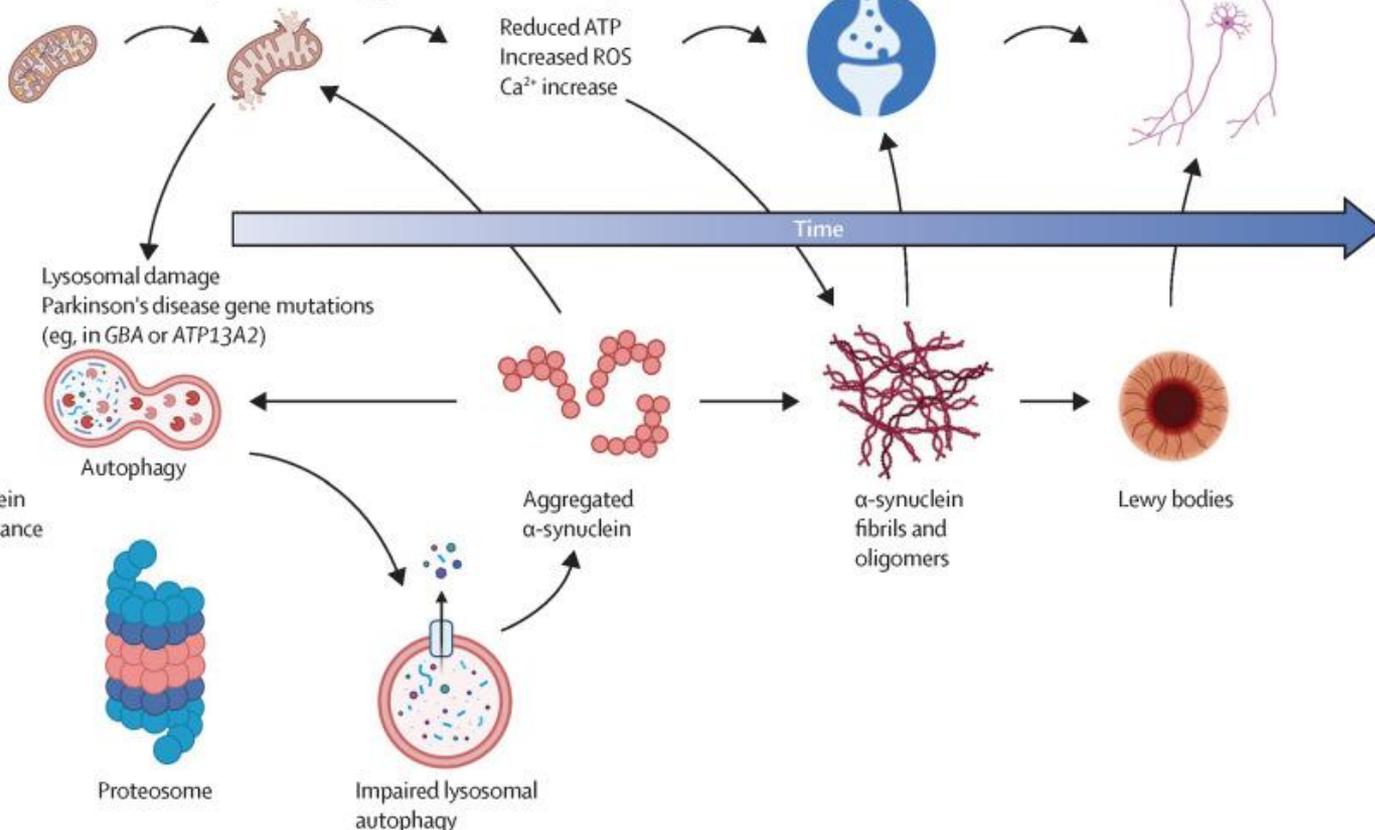
α -synuclein
fibrils and
oligomers

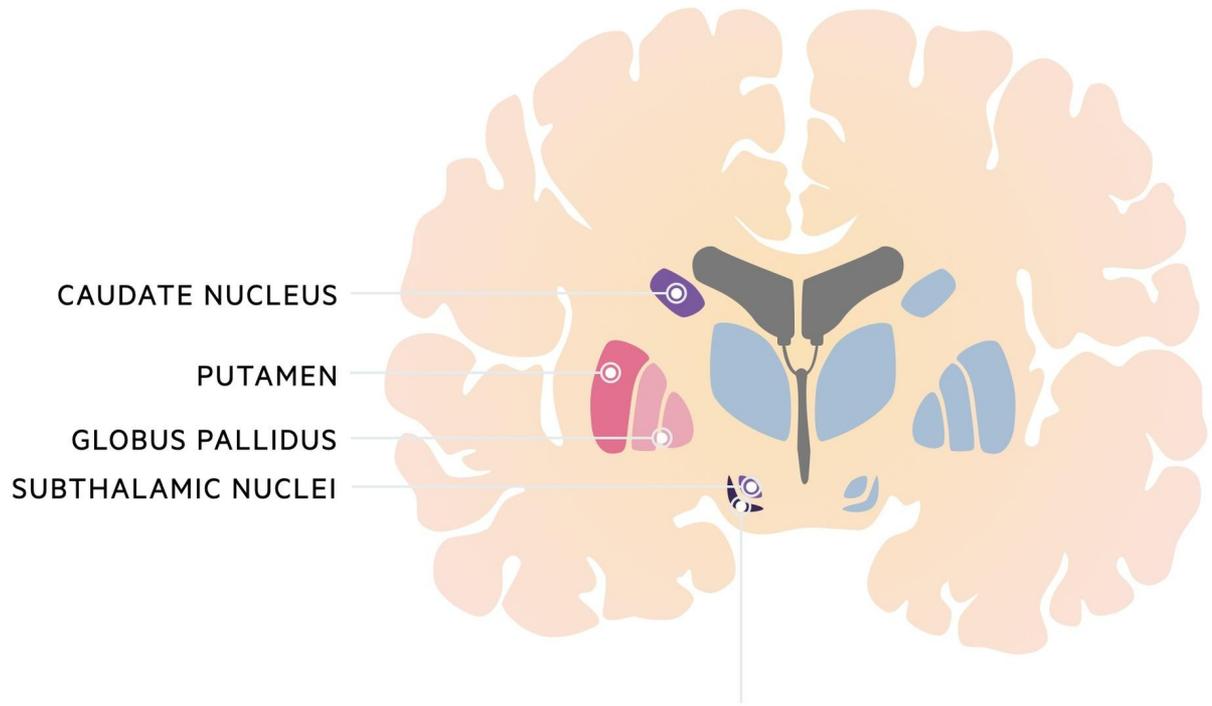
Lewy bodies

Protein
clearance

Proteasome

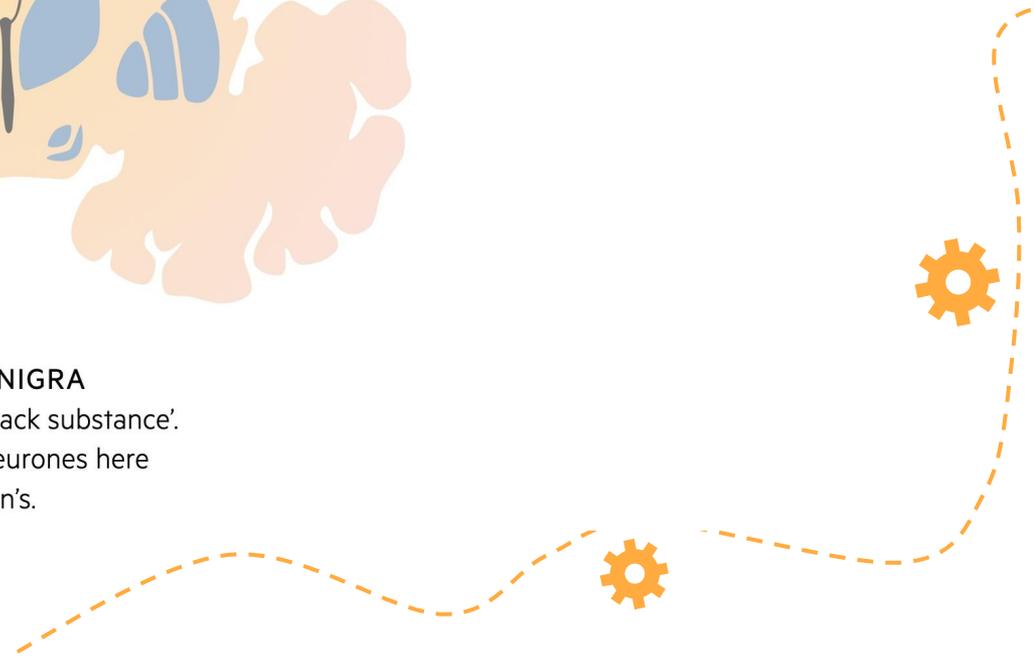
Impaired lysosomal
autophagy

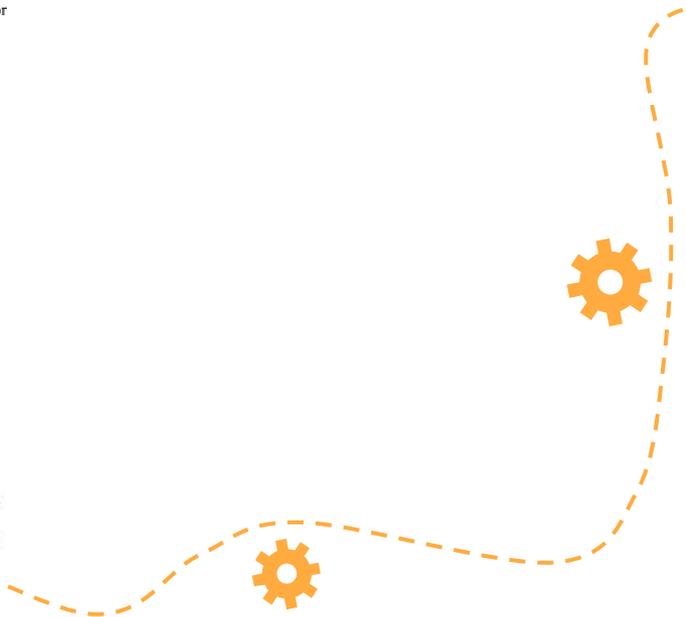
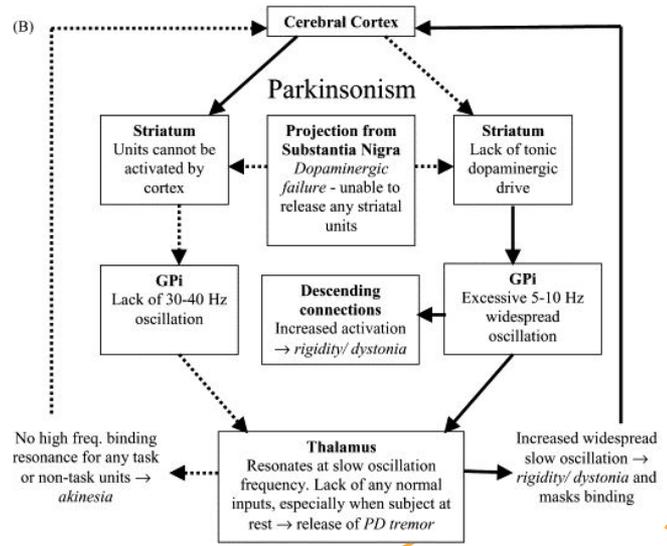
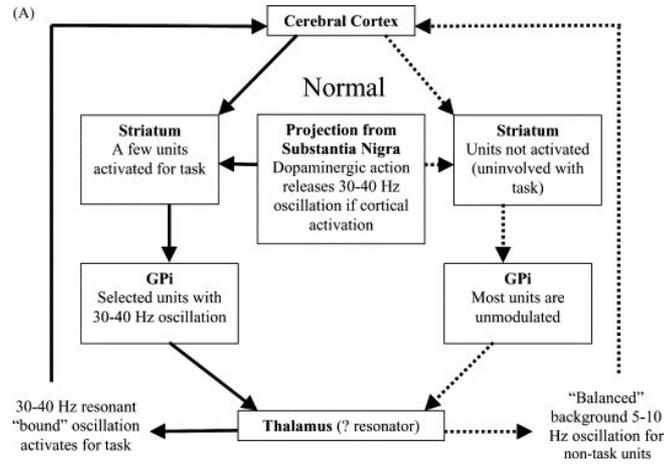




SUBSTANTIA NIGRA

Translated literally as 'black substance'.
Loss of dopaminergic neurones here
responsible for Parkinson's.





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- Please rename the filename to include your Team # and Team name
- Your presentations first slide should be a team info slide that includes your
 - Team number & Team name
 - Team members Name - Title / Role
 - Theme - describes your problem/solution in 1-2 sentence(s)
- All the rest of your slides can be added to remainder of this slide-deck. Use any format, style or theme you would like. This is your presentation!
- If you have reference data slides, you can hide them during the main presentation and show them if needed during the Q&A