

# LIVER-BRAIN UNIT «RITA MORETTI»



FONDAZIONE ITALIANA FEGATO  
**LIVER BRAIN UNIT**  
"RITA MORETTI"



- Parkinson's disease
- Early mechanisms
- Prevention – life stile
  
- Kernicterus
- Autism spectrum disorder
- Schizophrenia
- Attention deficit hyperactivity disorder



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# Neurological disorders



Affect all life-ages

Ranked (2016) as the leading cause of disability-adjusted life-years (276 million) and the second leading cause of death (9.0 million, comprising of 16.5% of global deaths).

Neurological disorders burden has increased substantially in the past two to three decades.

Mostly due to the ageing of the world-wide population, the lack of cures, and, at least in part, the limited efficacy of prophylactic measures.

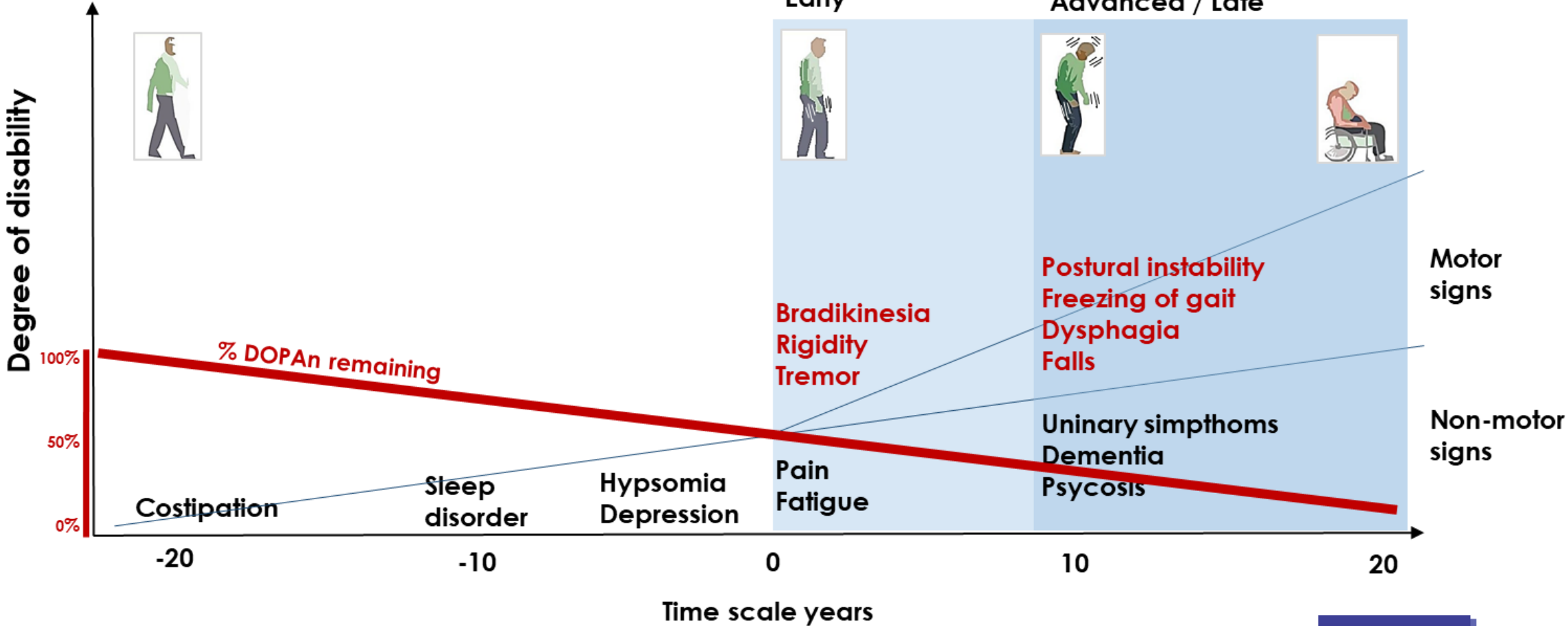
Strong association exists between neurocognitive disorders at all ages and early-life adversity.



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Pre-motor / pre-diagnostic period

Motor signs: Diagnosis and progression

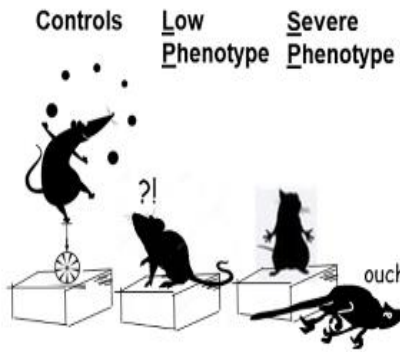
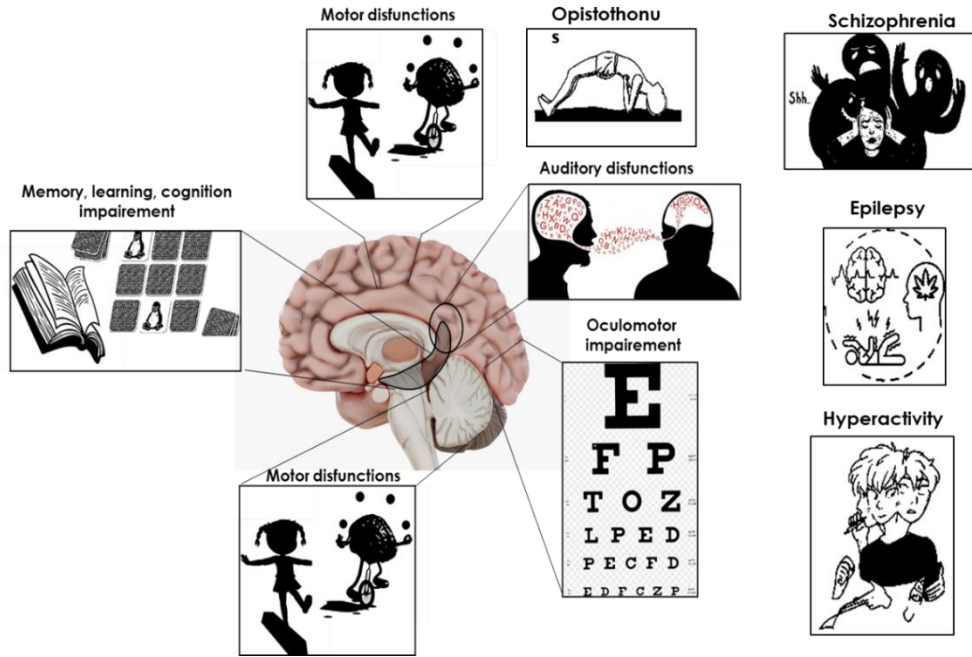


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# Neonatal hyperbilirubinemia

## NEONATAL PERIOD

## ADULT LIFE



# Parkinson disease (PD)



The 2<sup>nd</sup> most common neurodegenerative disorder; estimated to be a noninfectious pandemic in 2040



Bradykinesia, rest tremor, and rigidity are still remained as the core of Parkinson's disease diagnosis, that is actually reached late (40-50%)



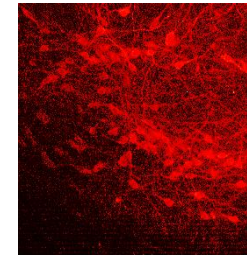
Still relies on symptomatic treatments (after diagnosis); no disease-modifying therapy available



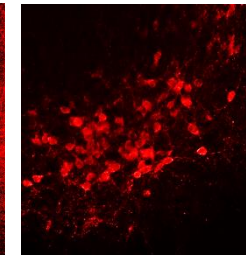
Prophylactic approach

Stop-delaying approach

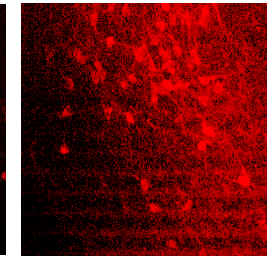
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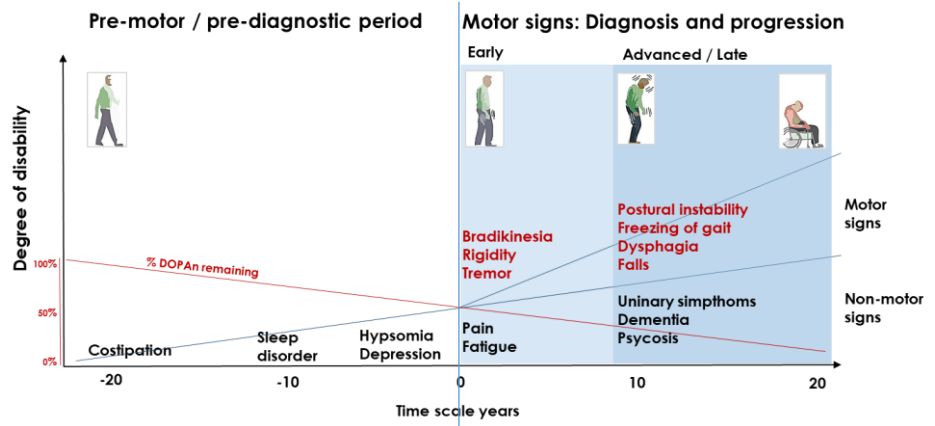
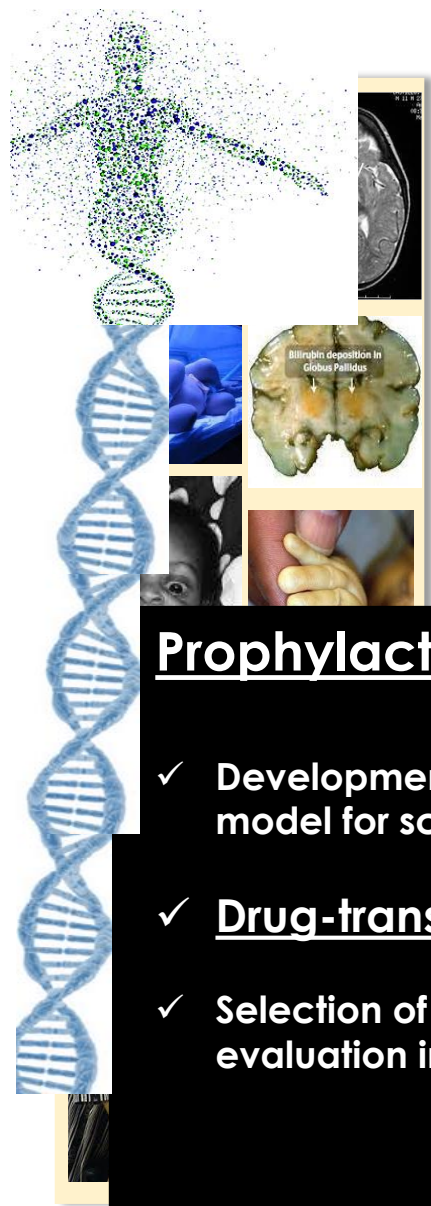
PD



PD + UCB



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## Prophylactic approach:

- ✓ Development of a slow progressing in vitro PD model for screening large # of drugs
- ✓ Drug-transcriptomics (target validation)
- ✓ Selection of candidates for safety/efficacy evaluation in complex models

Stop delaying progression therapy:

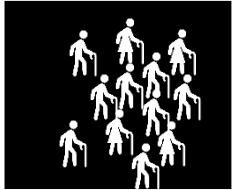


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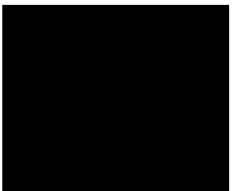
# To date about Parkinson's disease



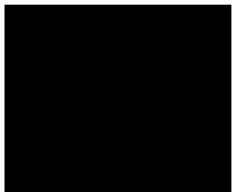
The 2<sup>nd</sup> most common neurodegenerative disorder  
Estimated to be a noninfectious pandemic in 2040



Bradykinesia, rest tremor, and rigidity are still remained as the core of PD diagnosis, that is actually reached late



No specific biomarker available



Still relies on symptomatic treatments  
No disease-modifying therapy

