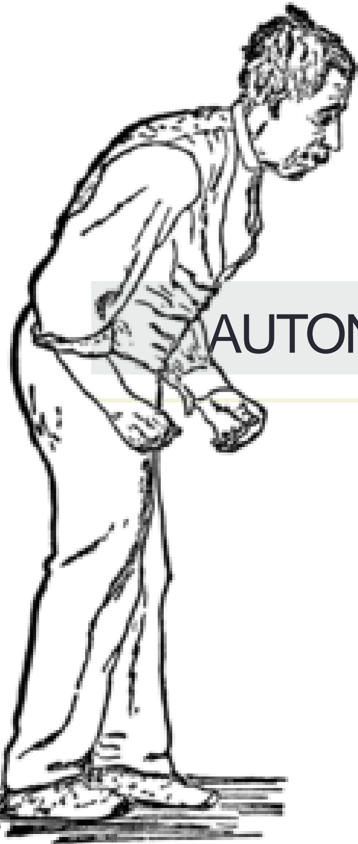
“BEDSIDE TEACHING”

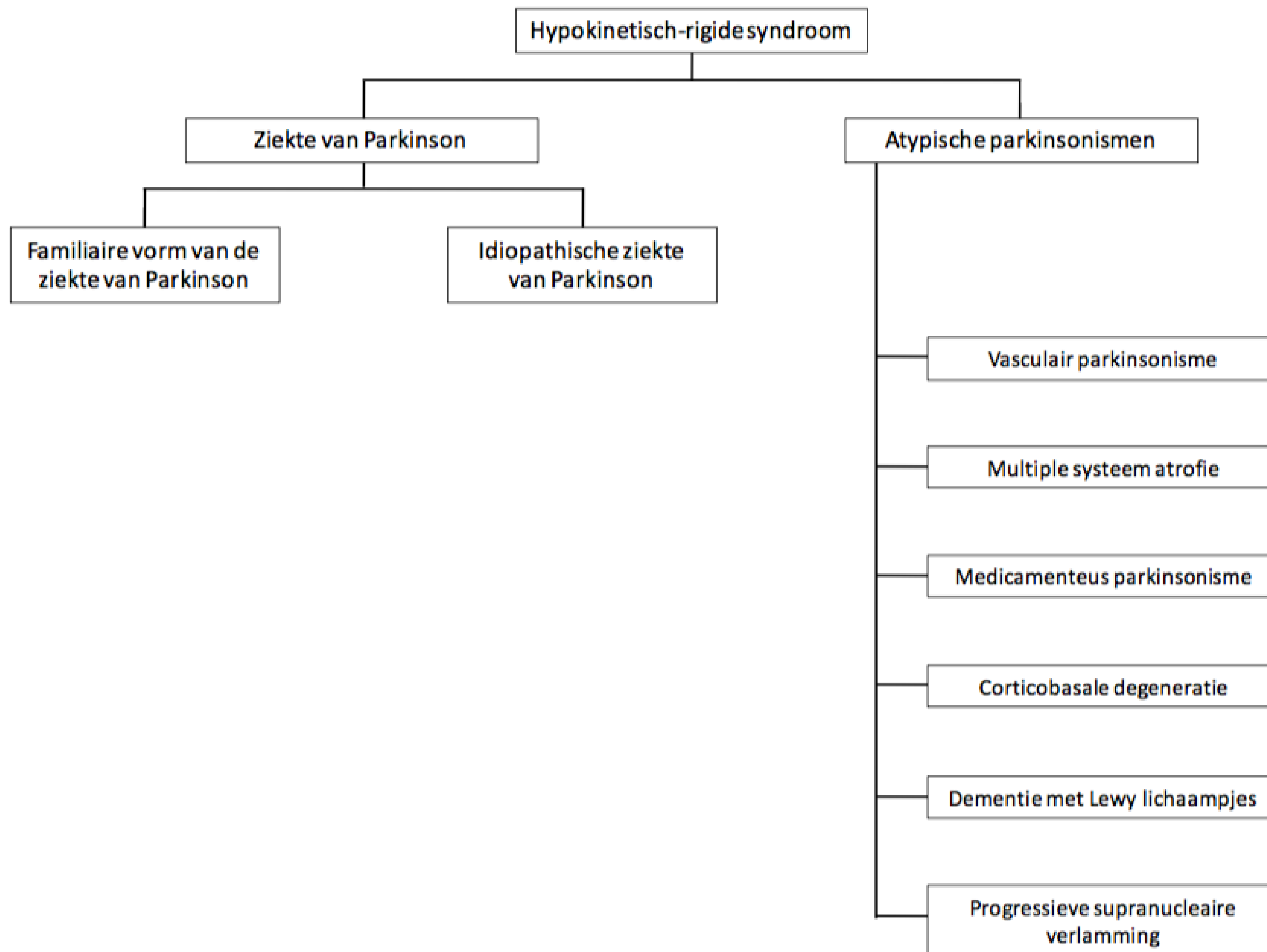
WEGRAKINGEN EN AUTONOME DYSFUNCTIE



AUTONOME DYSFUNCTIE BIJ BEWEGINGSSTOORNISSEN

BML STELTEN

Autonome dysfunctie in bewegingsstoornissen



Autonome dysfunctie in bewegingsstoornissen: PD

Table 1. The United Kingdom Parkinson's Disease Society Brain Bank clinical diagnostic criteria.

Step 1. Diagnosis of Parkinsonism	Step 2. Exclusion criteria for PD	Step 3. Supportive criteria for PD (≥3 required for definite diagnosis)
Bradykinesia[a] and ≥1 of the following:	Repeated strokes with stepwise progression	Unilateral onset
Muscular rigidity;	Repeated head injury	Rest tremor
4–6 Hz rest tremor;	Definite encephalitis	Progressive disorder
Postural instability[b].	Oculogyric crises	Persistent asymmetry affecting side of onset most
	Use of neuroleptic or dopamine-depleting agents at onset of symptoms	Excellent response (70–100%) to levodopa
	>1 affected relative	Severe levodopa-induced chorea
	Sustained remission	Levodopa response for ≥5 y
	Strictly unilateral features after 3 y	Clinical course of ≥10 y
	Supranuclear gaze palsy	
	Cerebellar signs	
	→ Early severe disautonomy	
	Early severe dementia with disturbances of memory, language or praxis	
	Babinski sign	
	Cerebral tumor or communicating hydrocephalus on neuroimaging	
	Negative response to large doses of levodopa (malabsortion excluded)	
	Exposure to known neurotoxin (e.g. MPTP)	

PD = klinische diagnose, op basis van motore symptomen.

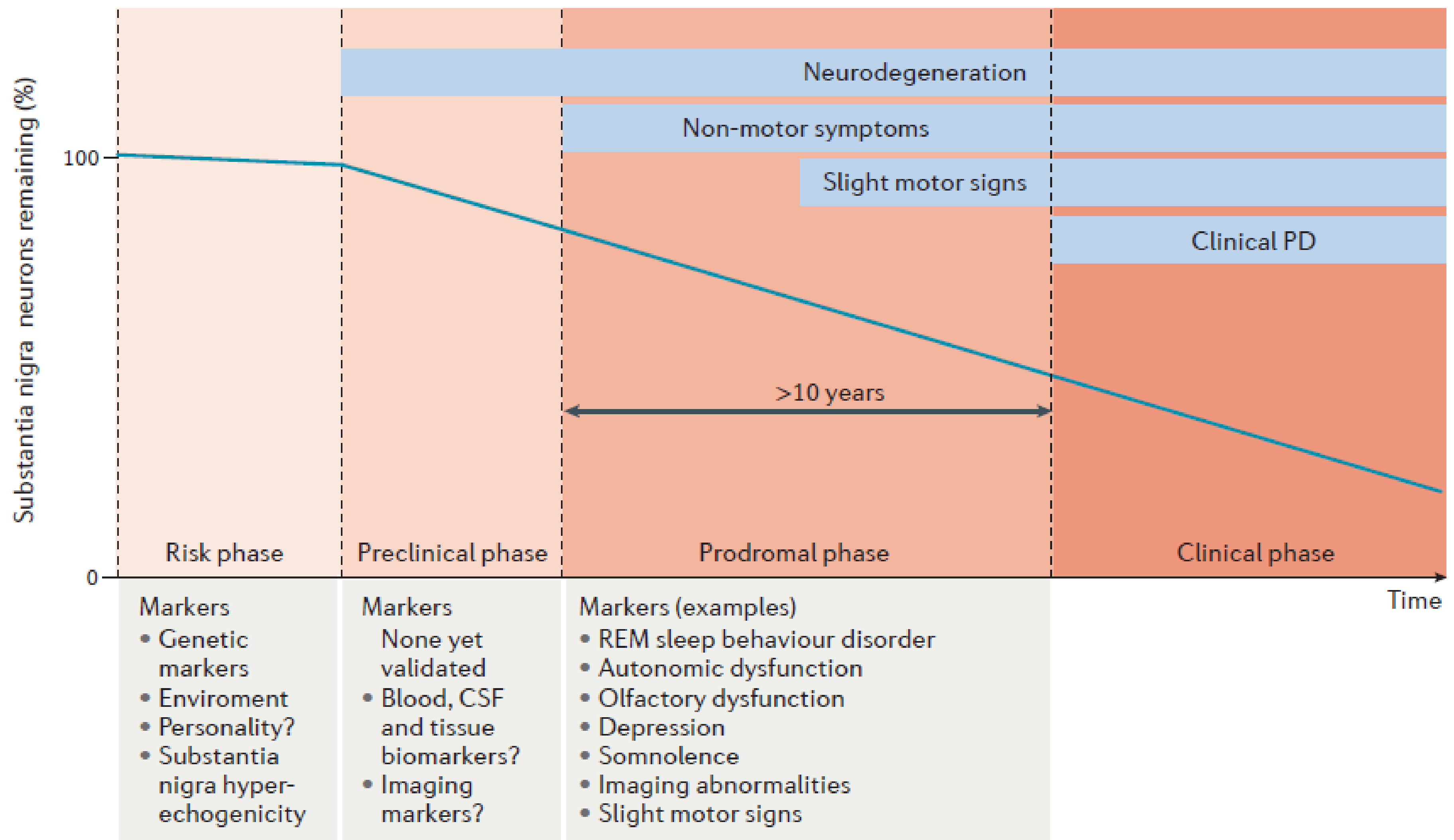
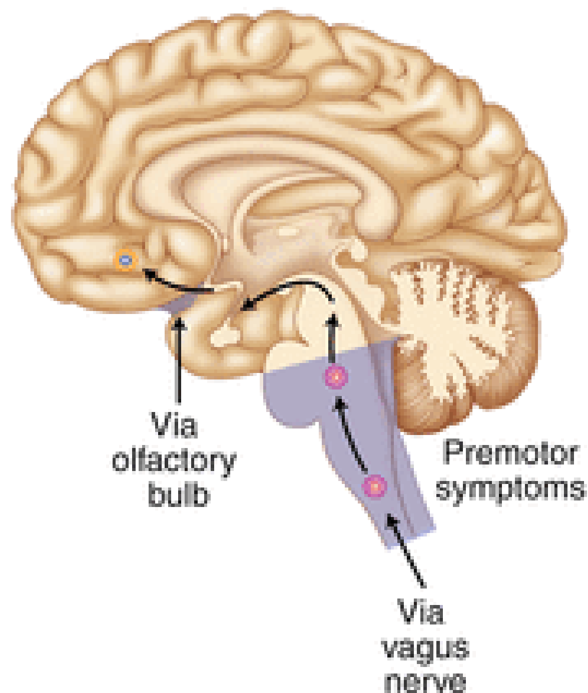


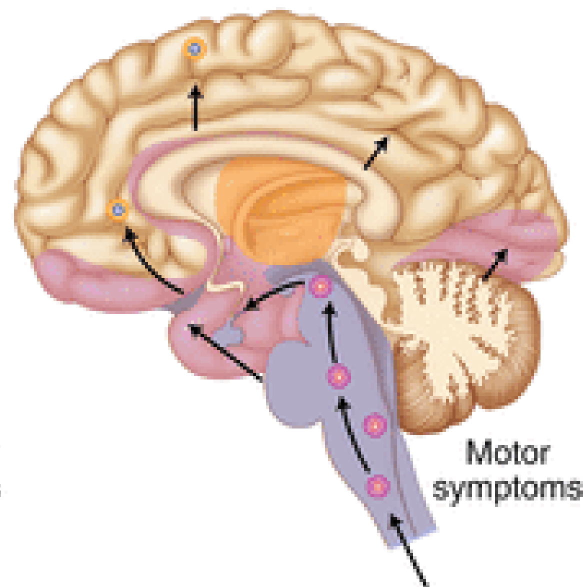
Figure 1 | **Phases and markers in Parkinson disease (PD).** People at risk of PD progress to a preclinical stage before the prodromal stage, in which nonmotor symptoms and slight motor signs can occur, and finally the clinical stage. Proposed markers of each stage are shown.

BRAAK STADIËRING - alfa-synucleïne deposities

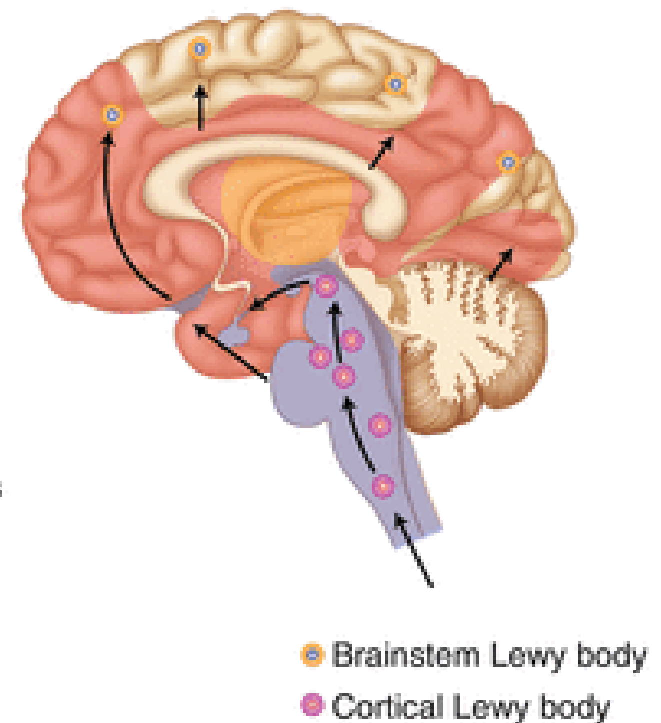
BRAAK STAGES 1 AND 2
AUTONOMIC AND OLFACTORY DISTURBANCES



BRAAK STAGES 3 AND 4
SLEEP AND MOTOR DISTURBANCES



BRAAK STAGES 5 AND 6
EMOTIONAL AND COGNITIVE DISTURBANCES



Prodromale fase PD

- RBD
  - 80-90% met PSG bewezen RBD ontwikkelt PD, LBD of MSA
- Verlies van reuk
  - 80% van PD patiënten heeft hyposmie
- Somnolentie
- Depressie/angststoornissen
- **Autonome dysfunctie: constipatie, orthostatische hypotensie, blaasstoornissen, erectiele dysfunctie.**

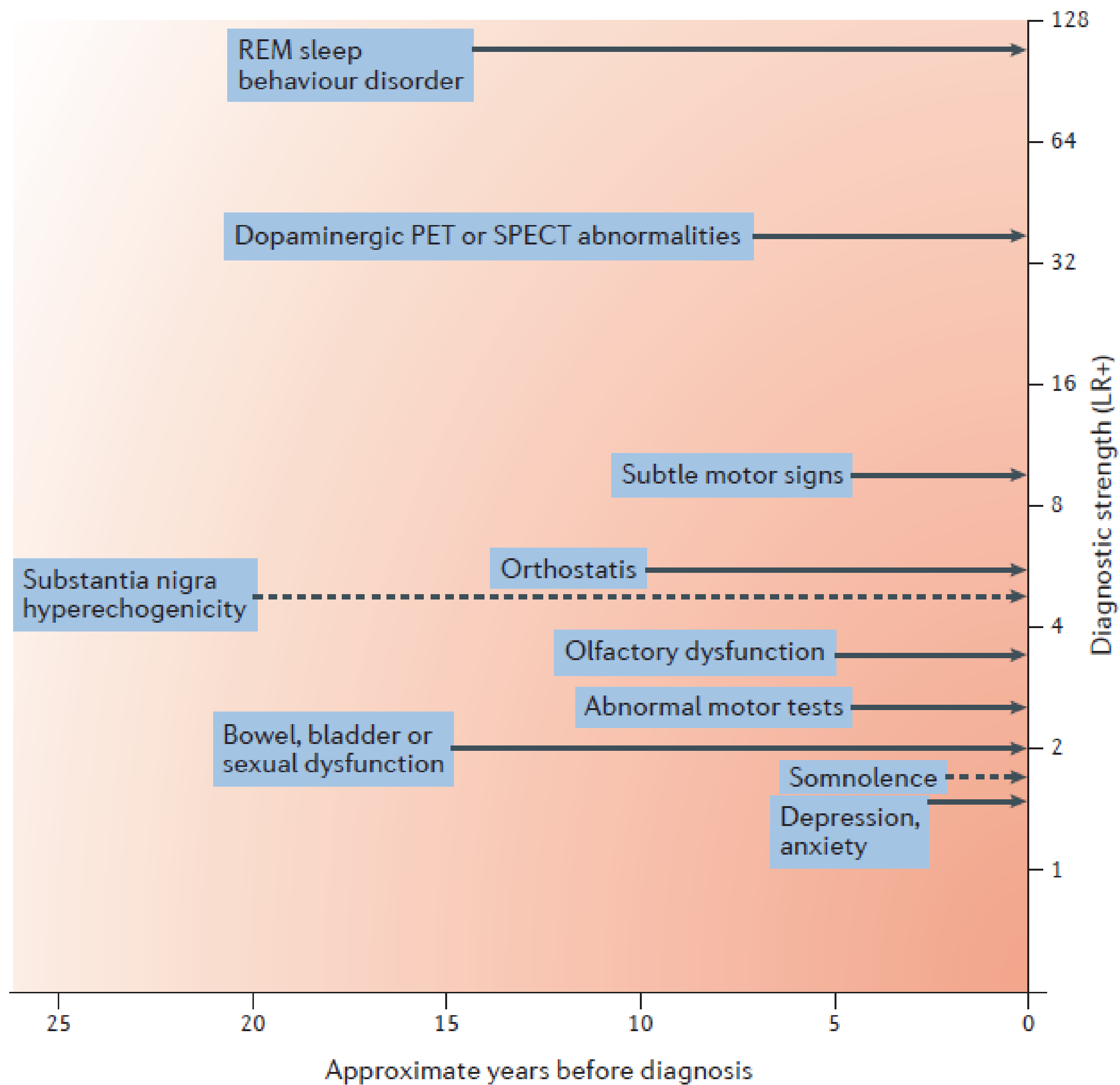


Figure 2 | **Estimated lead times and diagnostic strengths of prodromal PD markers.** The prodromal and risk markers included in the International Parkinson and Movement Disorders Society task force criteria for prodromal PD are shown. Lead

Autonome dysfunctie in bewegingsstoornissen

- Meest voorkomende symptoom is OH, leidend tot syncope of presyncope
- Autonome dysfunctie komt voornamelijk voor bij PD en MSA
- OH in 30% PD patiënten
- Neurogene OH is geassocieerd met “supine hypertension”
- Supine hypertension: systolische BP $\geq$ 140 mmHg, diastolische BP $\geq$ 90mmHg

(Neurogene) Orthostatische hypotensie (OH)

- Verval systolische BP > 20 mmHg of diastolische BP > 10mmHg, 3 min na verticaliseren

- Symptomen:

  Licht gevoel in het hoofd, duizeligheid, vermoeidheid, visuele klachten, onstabiel

- Ten gevolge van onderliggende neurologische aandoening of andere factoren

Niet-neurologische oorzaken van OH

- Volume depletie
- Dehydratie
- Vasodilatatie
- Cardiaal pompfalen
- Bijwerkingen medicatie

Neurogene oorzaken van OH (nOH)

- Primair autonoom falen (alpha-synucleinopathieën)
  - Ziekte van Parkinson (PD)
  - Multiple Systeem Atrofie (MSA)
  - Puur Autonoom Falen (PAF)

- Autonome neuropathieën
  - DM
  - Autoimmuun
  - Hereditair

- Ruggenmerglaesies

“Supine hypertension” is geassocieerd met nOH

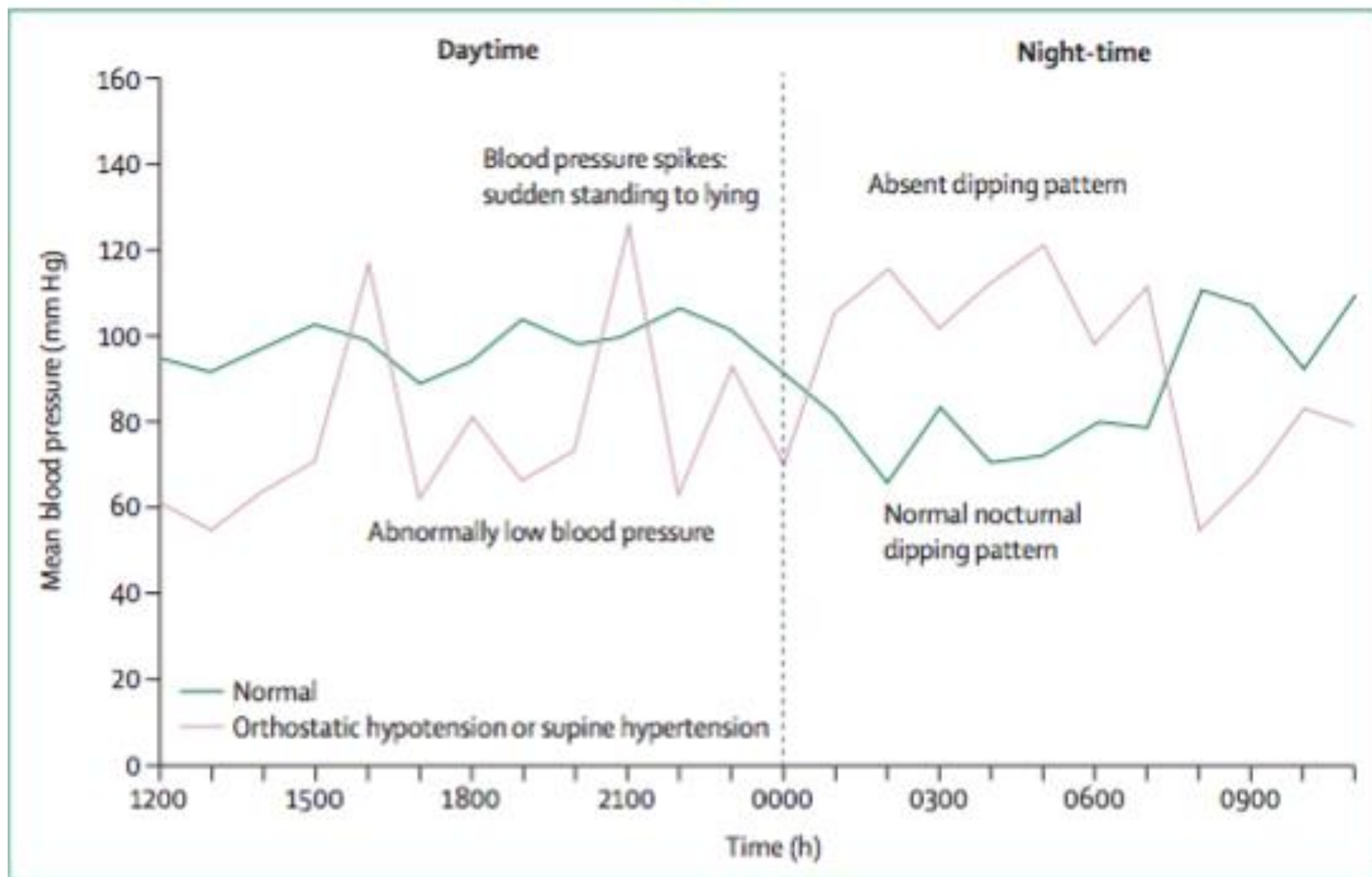


Figure 1: **Syndrome of neurogenic orthostatic hypotension with supine hypertension**

“Neurogene OH - Supine hypertension”

- **Dilemma:**

vallen en cognitieve beperkingen – risico op cardiovasculaire events

- nOH verhoogd valrisico zeker in combinatie met reeds bestaande loopstoornis bij PD (freezing, verminderde posturele reflexen), ziekenhuisopnames en complicaties.

- nOH lijkt geassocieerd te zijn met cognitieve achteruitgang in PD

- In PD, over het algemeen iets lager risico op cardiovasculaire events, prevalentie van roken is lager.

Behandeling neurogene OH – “supine hypertension”

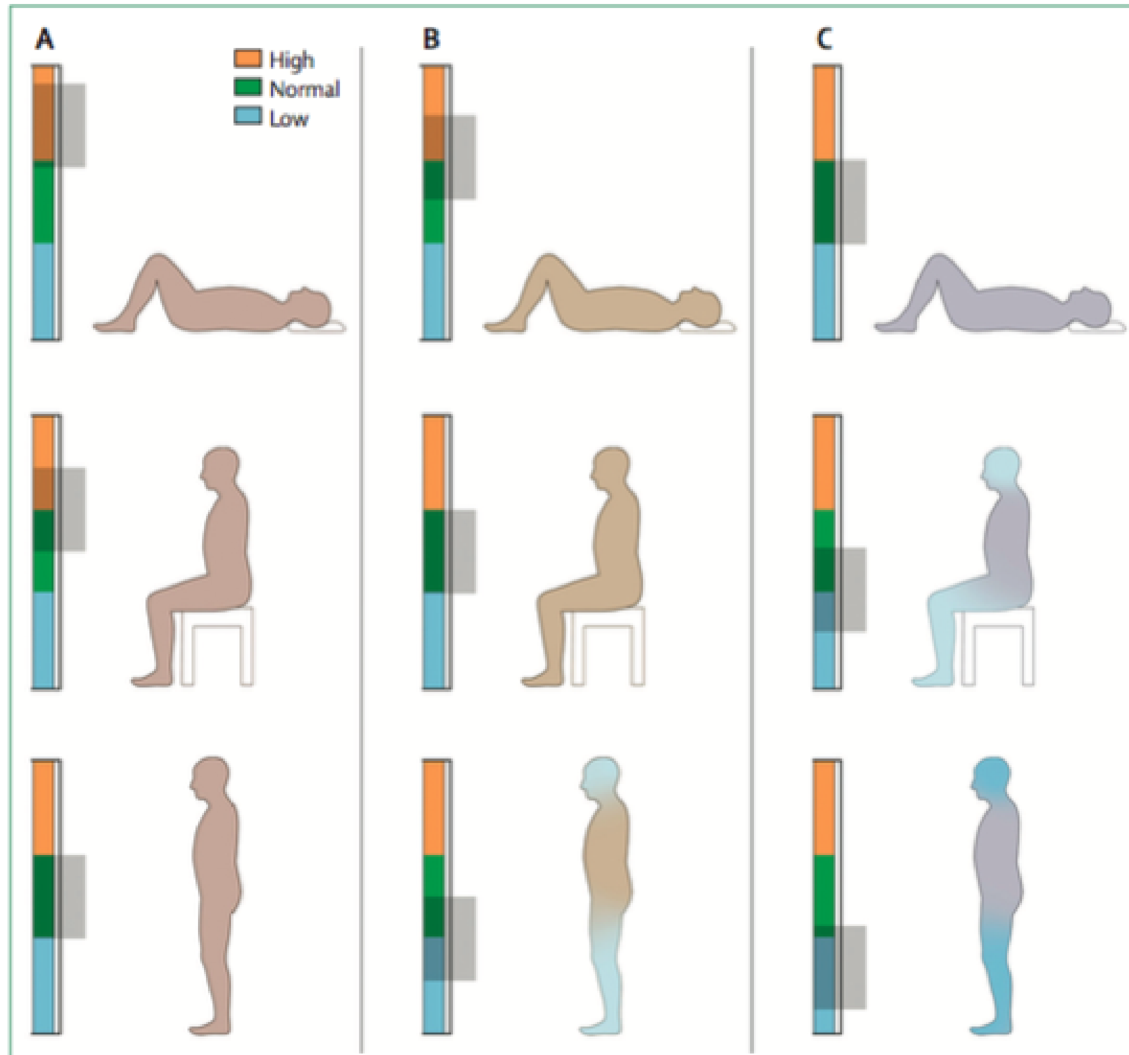


Figure 2: Blood pressure management challenges in three clinical presentations

Behandeling neurogene OH – "supine hypertension"

Neurogenic orthostatic hypotension

Lifestyle

- Increase water and salt intake
- Stand up slowly
- If possible, perform exercises (eg, leg crossing, squatting) to reduce lower body blood pooling
- Avoid alcohol
- Avoid autonomic stressors (eg, long exposure to hot water)
- Consider thigh-high compression stockings with or without abdominal binder
- Sleep with head of the bed elevated by 15–23 cm

Supine hypertension

Lifestyle

- Avoid the supine position during the day, especially after taking a pressor agent
- Have a snack before bedtime (to induce postprandial hypotension)
- Sleep with head of the bed elevated by 15–23 cm

Behandeling neurogene OH – “supine hypertension”

Pharmacologic Treatment Options

- Fludrocortisone: mineralocorticoid
  - Volume expansion; increases BP
  - Adverse effects: supine hypertension, edema, congestive heart failure, cardiotoxicity, hypokalemia, and myocardial and renal fibrosis
- Midodrine: direct α_1-agonist (direct vasodilator)
  - Approved on a surrogate end point (BP)
  - Adverse effects: supine hypertension, paresthesia, pruritus, urinary retention, piloerection, and chills
- Droxidopa: precursor of norepinephrine
  - Recently approved based on improvement of symptoms
  - Precursor of norepinephrine
  - Adverse effects include-severe high blood pressure while lying down, headache, dizziness, nausea, and fatigue

Behandeling neurogene OH – “supine hypertension”

- Dopaminerge medicatie → hypotensief effect, verlaagd BP
- Acetylcholinesterase remmers → verhoogd risico op syncope, bradycardie

Autonome dysfunctie in PD

- Orthostatische hypotensie, CAVE medicatie
- Gastro-intestinale dysfunctie: gewichtsverlies
- Dysfagie
- Constipatie: onvoorspelbare opname medicatie, responsfluctuaties, CAVE immobilisatie, gebrekkige vochtinname, medicatie.
- Blaasproblemen: nycturie, urge, incontinentie. CAVE anticholinergica bij cognitieve stoornissen
- Seksuele dysfunctie, CAVE dopamine dysregulation syndrome

VRAGEN ?