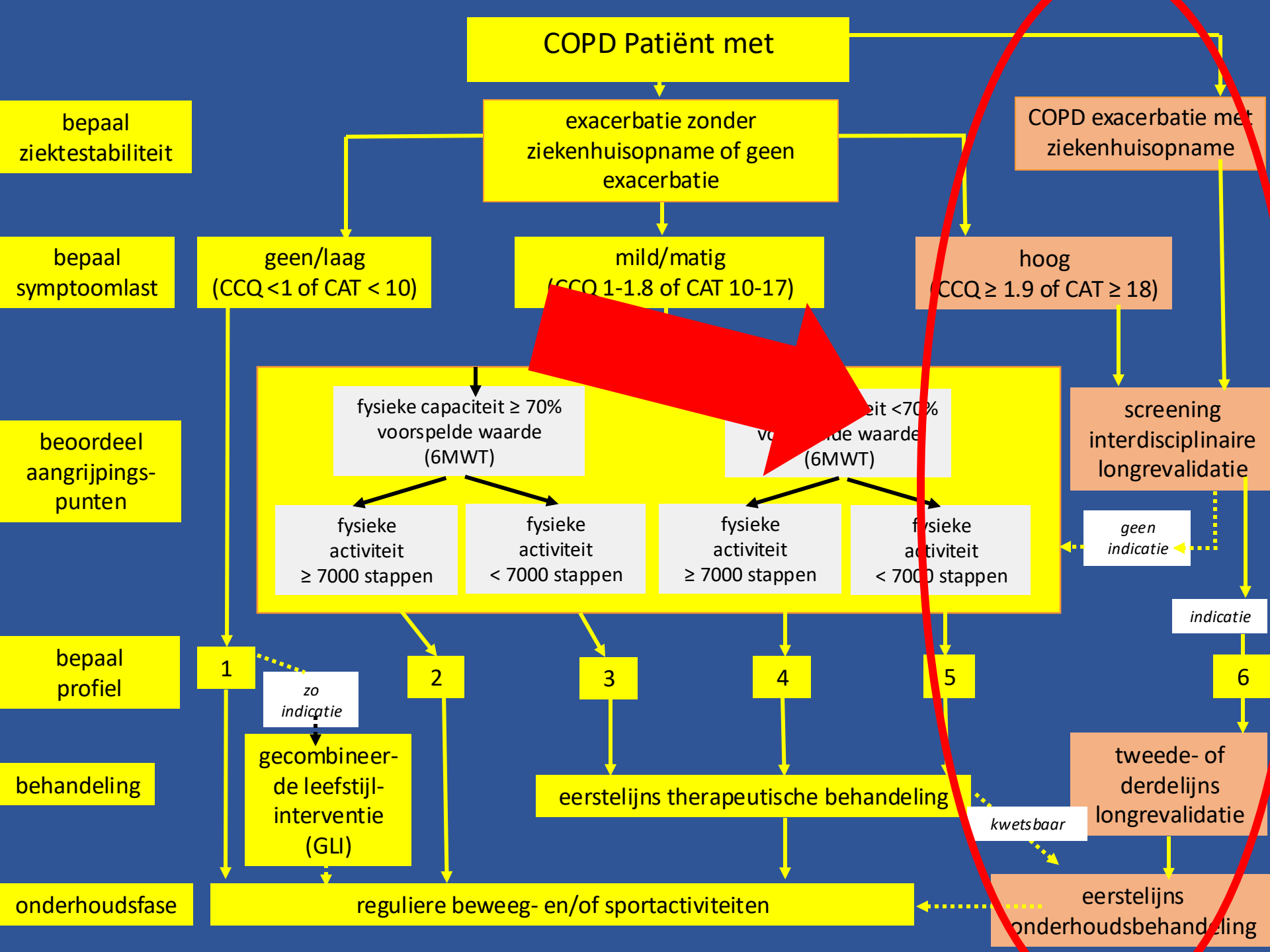


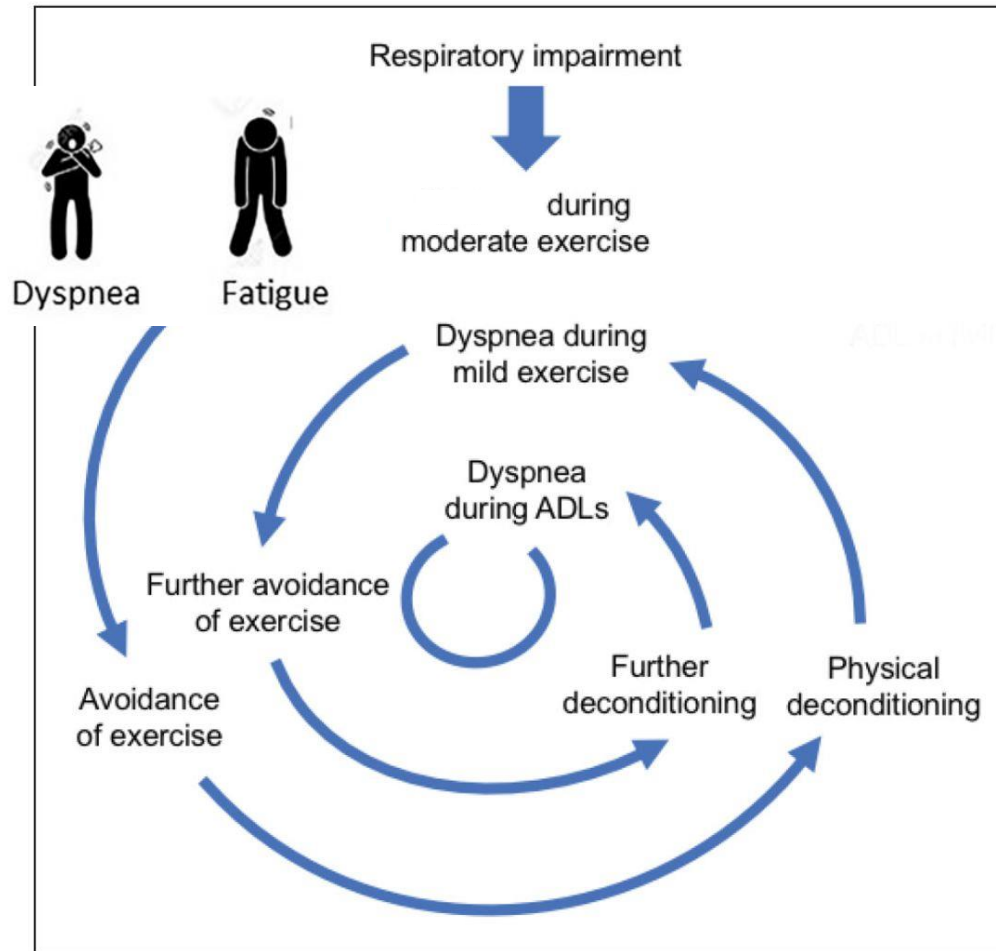


WHAT ABOUT THE PULMONARY REHABILITATION PROCES

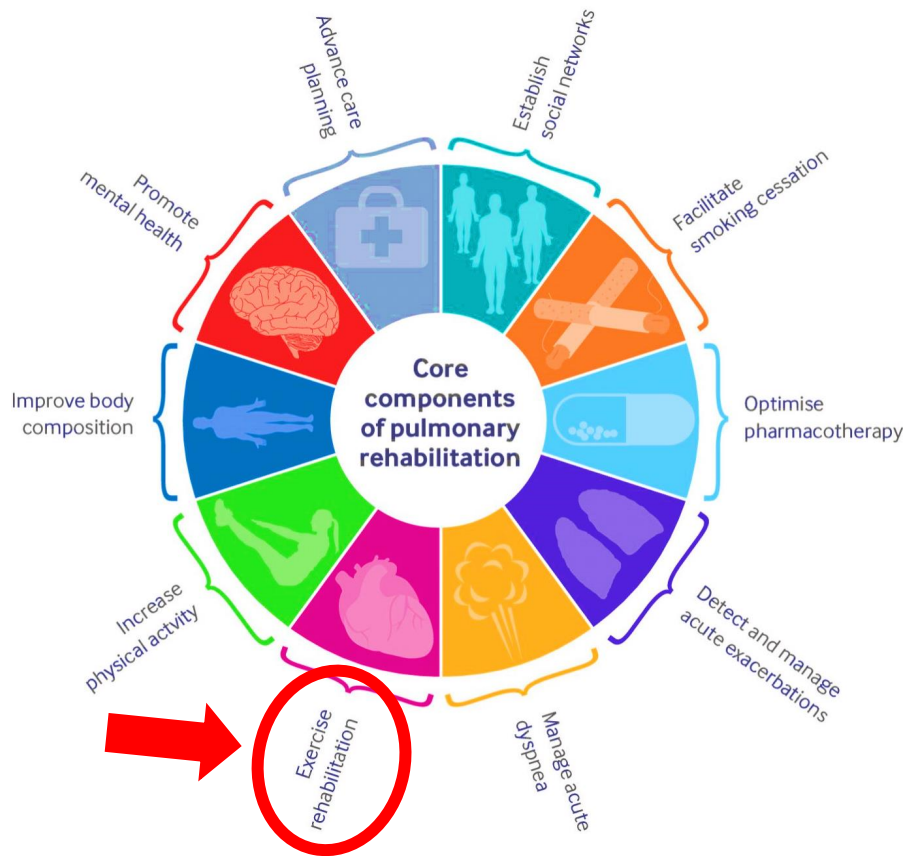
12 DECEMBER 2025
B. SALHI, PT, PHD
BIHIYGA. SALHI@UZGENT.BE



WHY EXERCISE?



MULTIDISCIPLINARY REHABILITATION PROCES



Grondige evaluatie



Gepersonaliseerd revalidatieprogramma



Opvolgtraject



Onderhoudsprogramma

- Verbeteren van de **fysieke en psychologische conditie**
- Stimuleren van **langdurige naleving** van gezond gedrag

MULTIDISCIPLINARY REHABILITATION PROCES



Grondige evaluatie

Gepersonaliseerd revalidatieprogramma

Opvolgtraject

Onderhoudsprogramma

EXERCISE CAPACITY

- **CPET**

- Diagnosis
- **Safety**
- Limitation of exercise
- Exercise training modalities
- Need of Adjuncts?



- **6MWT**

- Functional exercise capacity
- Need of adjuncts?



PERIPHERAL MUSCLE STRENGTH

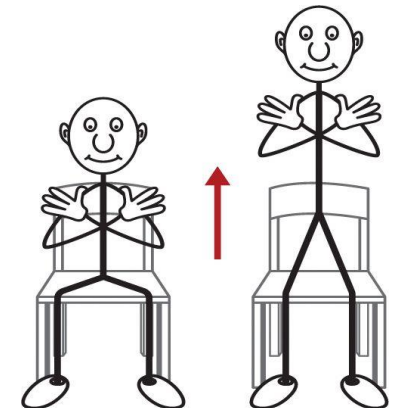
- LOWER BODY: QUADRICEPS FORCE
- UPPER BODY: HANDGRIP FORCE
- SIT TO STAND TEST: 1 MIN TEST AND 5 TIMES

Why?

Peripheral muscle weakness

Training modalities

Functionality, Fall risk and prevention



RESPIRATORY MUSCLE STRENGTH

- PIMax
- PEMax

Why?

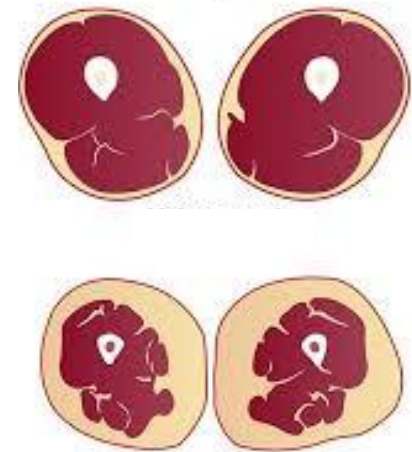
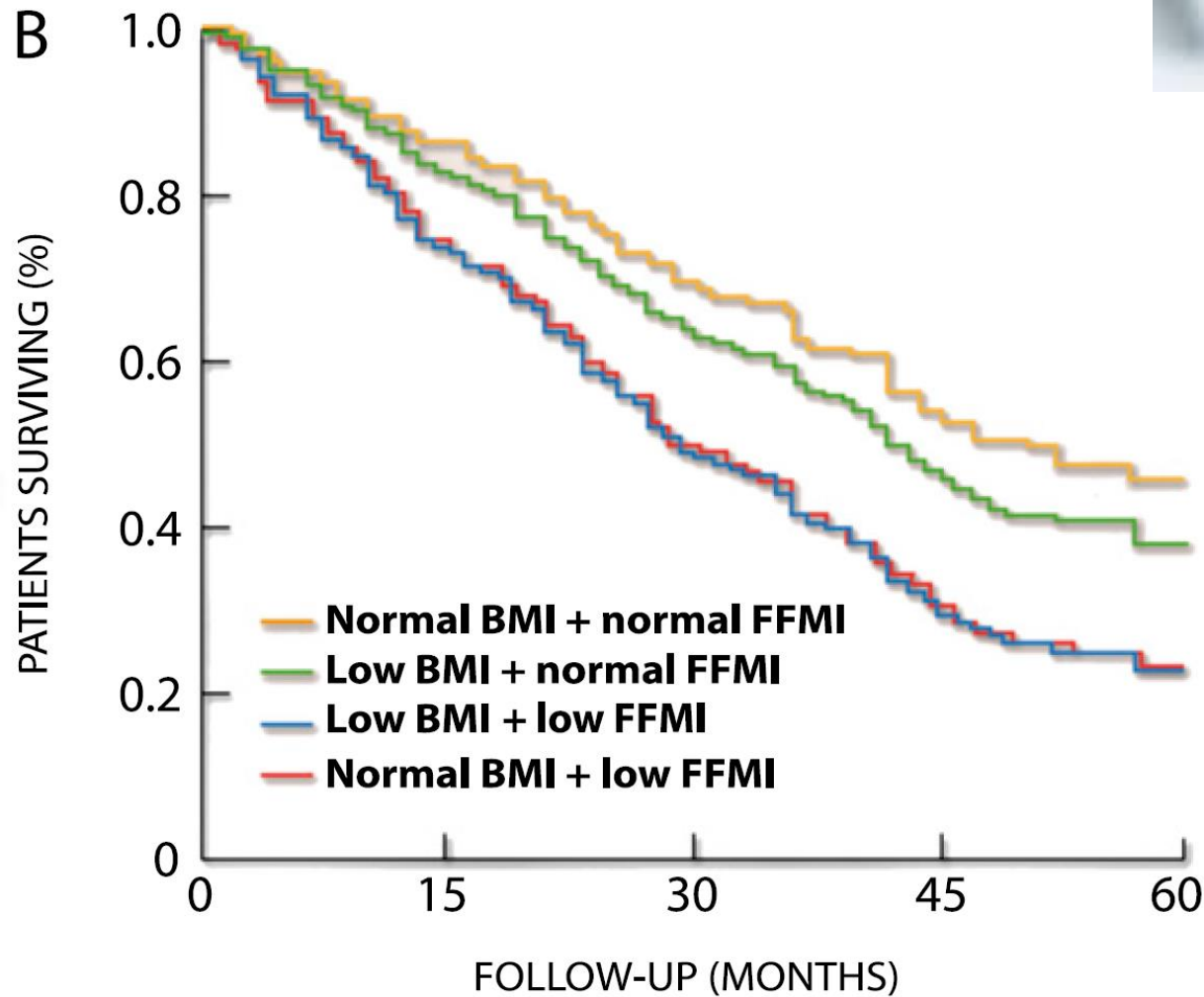
Dyspnea

6MWD

QoL

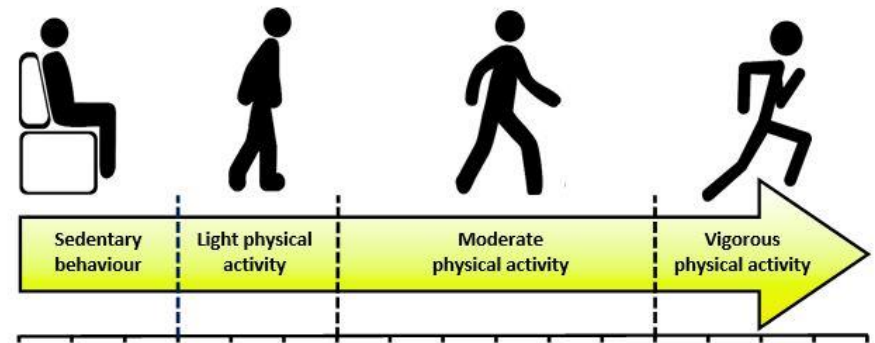


MUSCLE MASS



PHYSICAL ACTIVITY

Questionnaires
Accelerometers
Pedometers



Why?

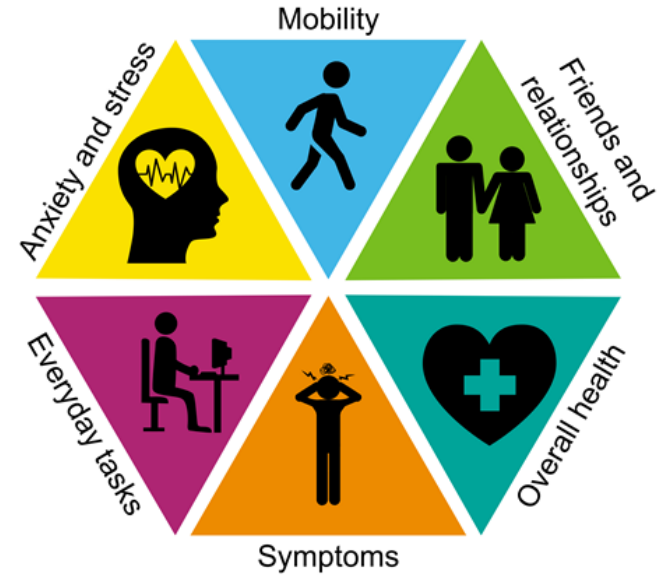
Prognostic value: survival
Qol, comorbidities, dyspnea and fatigue



QUALITY OF LIFE

CRDQ, MRC, HADS, SGRQ

Why?



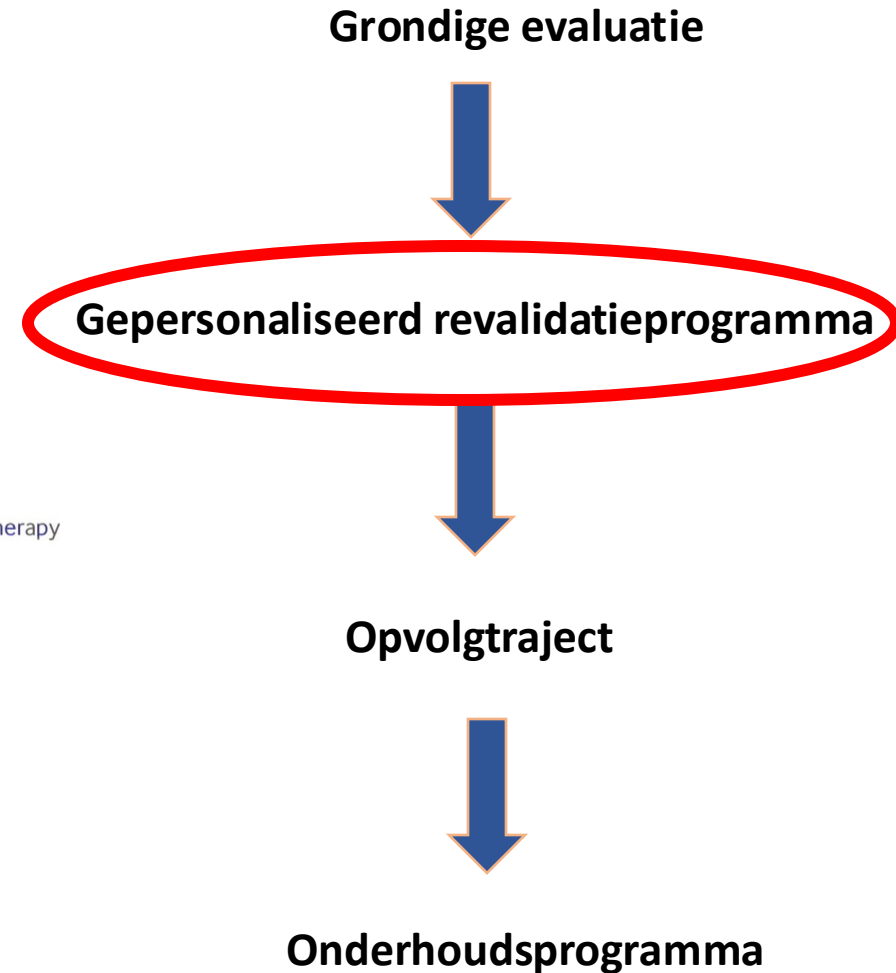
Impact of disease on symptoms

→ dyspnea, fatigue, emotions, mastery, anxiety, depression,....

Treatment modality

Prognostic value: acute exacerbation and mortality

MULTIDISCIPLINARY REHABILITATION PROCES



EXERCISE REHABILITATION = CORE COMPONENT

- Aerobic Exercise Training
- Resistance Training

- Physical activity

Dyspnoea ↘

Exercise capacity ↗

QoL ↗

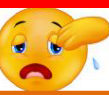
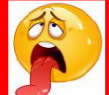
- Add on:

- Whole body vibration
- Inspiratory Muscle training
- Eccentric muscle training
- Balance
- NIV
- Oxygen therapy
- Nasal high-flow systems
- Anabolic steroids
- Neuromuscular electrical stimulation
- Single leg training

Min 8 a 12w
6 months



Trainings component	Frequentie	Intensiteit	Duur	Opmerkingen
Aerobe training	3–5 d/w	60–80% van VO ₂ max of Wmax BORG 4-6	20–60 min per sessie	Continue of Intervaltraining

Borgscore Dyspneu			Borgscore Zwaarte
helemaal geen kortademigheid		0	helemaal niet zwaar
heel heel licht kortademig		0,5	een heel heel klein beetje zwaar
heel licht kortademig		1	een heel klein beetje zwaar
licht kortademig		2	een klein beetje zwaar
matig kortademig		3	matig zwaar
eerder erg kortademig		4	eerder erg zwaar
erg kortademig		5	erg zwaar
		6	
heel erg kortademig		7	heel erg zwaar
		8	
enorm erg kortademig		9	enorm erg zwaar
maximaal kortademig		10	maximaal zwaar

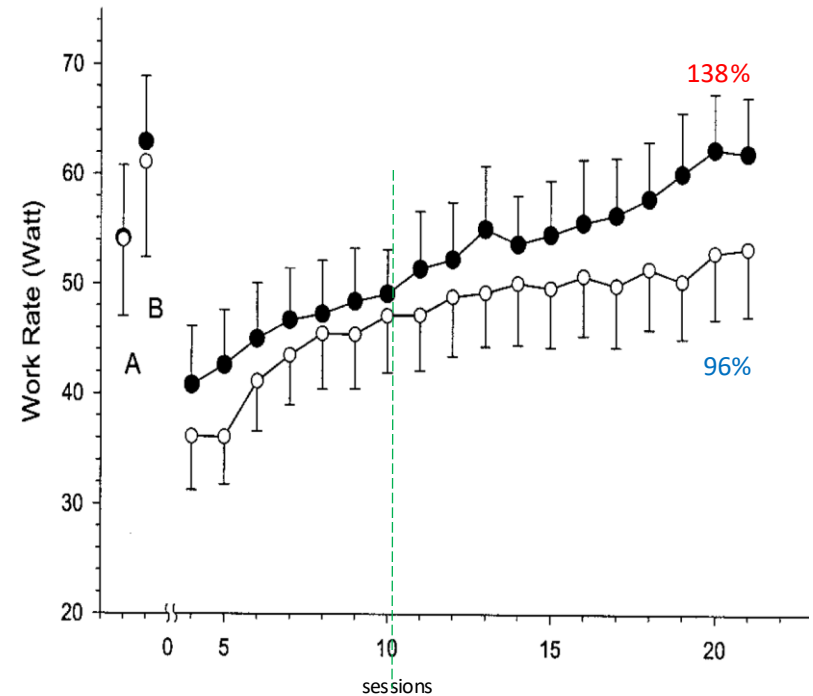
SUPPLEMENTAL O₂

Indication

- Medicolegal reasons
- Patients who **desaturate below SpO₂ 88%** during exercise training, despite interval training
- **Patients receiving LTOT**

Physiological effects

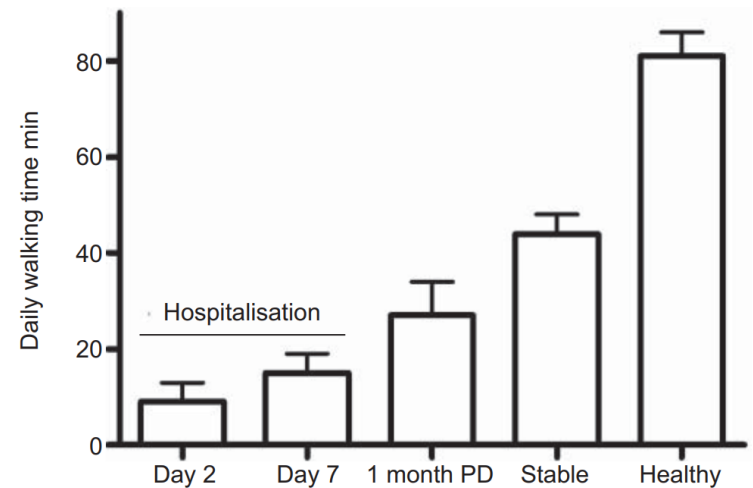
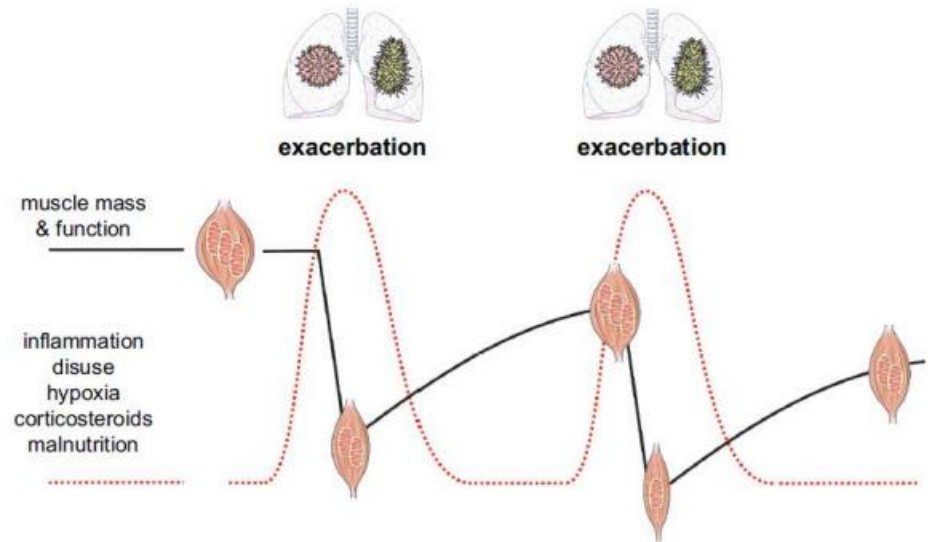
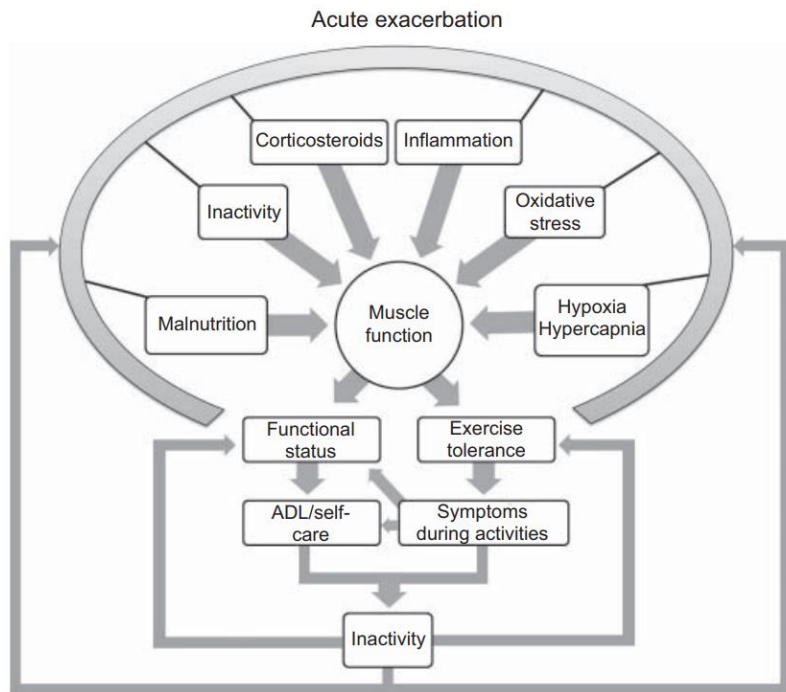
- Decreased **dynamic hyperinflation** due to a slower breathing pattern
- Decreased **pulmonary artery pressures**
- Delayed **lactic acidosis**
- Improved **SpO₂** and **peripheral tissue oxygenation**



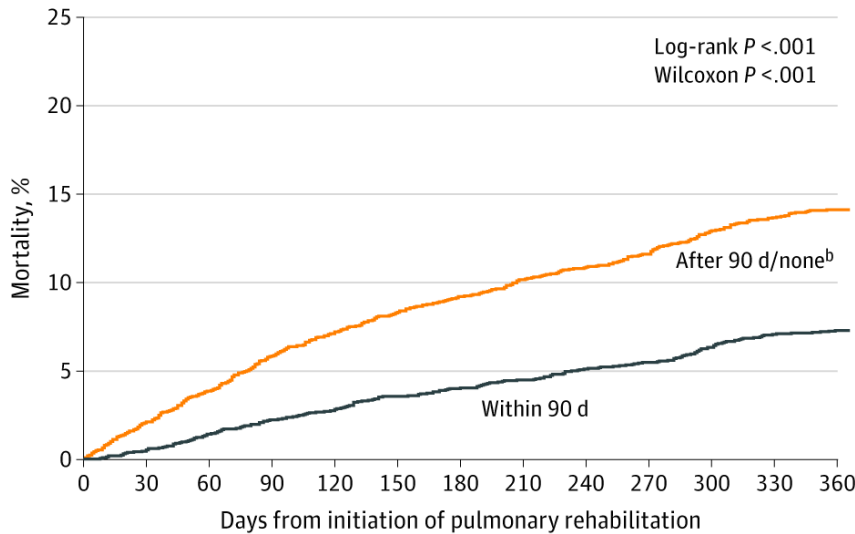


Trainings component	Frequentie	Intensiteit	Duur	Opmerkingen
Krachttraining	2–3 d/w	60 –70% van 1RM BORG 4-6	3 sets van 8–10 herh.	Grote spiergroepen fitnesstoestellen, teraband, losse gewichten, lichaamsgewicht

ACUTE EXACERBATION



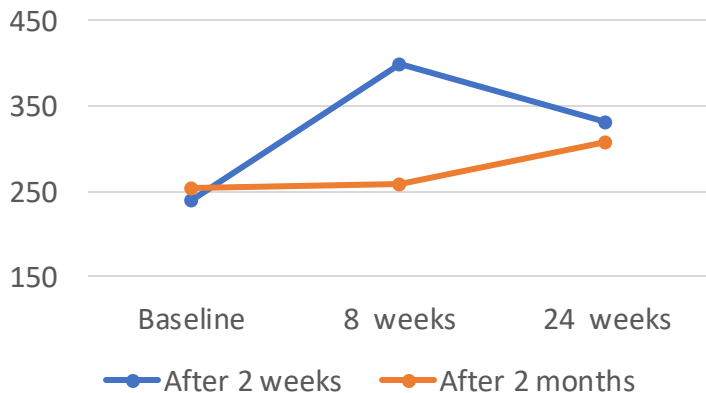
ACUTE EXACERBATION



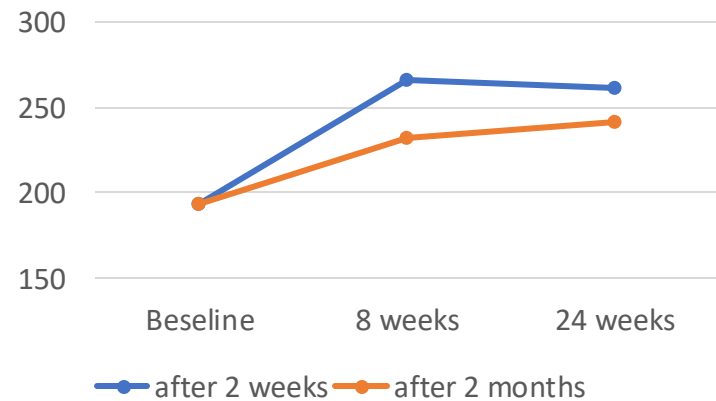
No. at risk				
After 90 d/none ^b	2710	2538	2449	2361
Within 90 d	2709	2645	2591	2538

- vroege revalidatie is veilig
- kan achteruitgang stoppen of zelfs omkeren
- Voorkomen van spier- en functionele achteruitgang

Endurance Shuttle walk test



Incremental shuttle walk test



MULTIDISCIPLINARY REHABILITATION PROCES



Grondige evaluatie



Gepersonaliseerd revalidatieprogramma

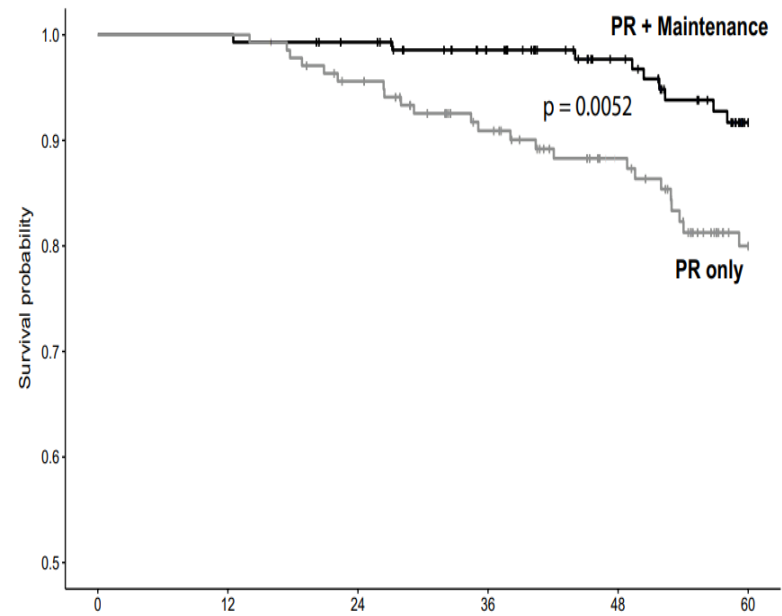
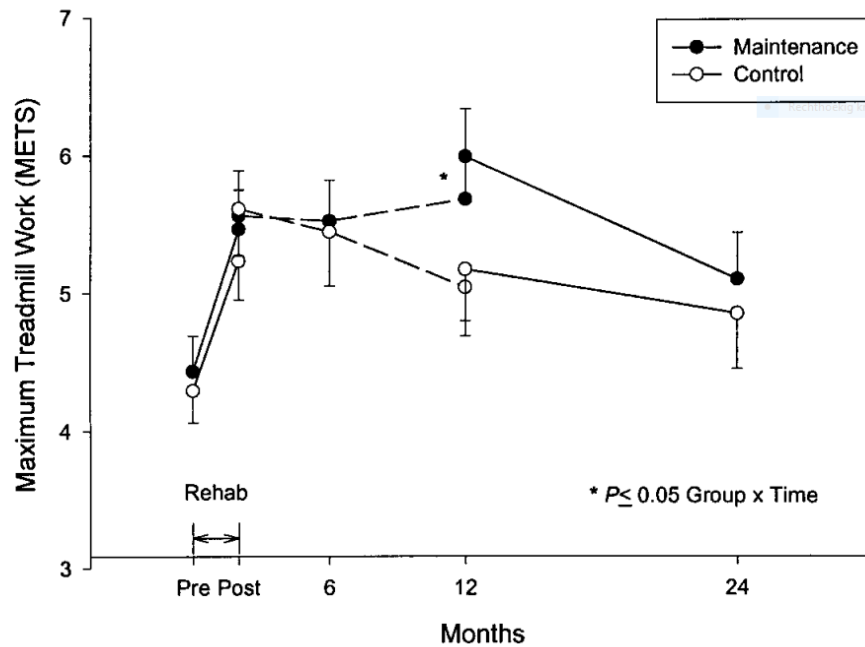


Opvolgtraject



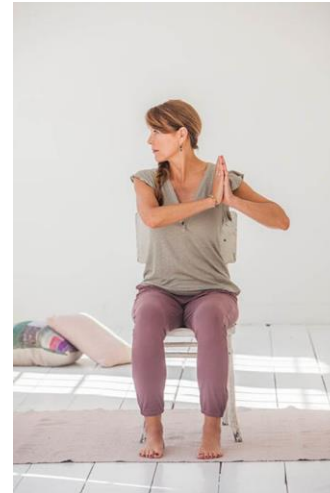
Onderhoudsprogramma

WAT NA REVALIDATIE?



WAT NA REVALIDATIE?

- Privé kine
- Ziekenhuis ambulant navolgprogramma
- Sport (G-sport)
- Fitness



LONGREVALIDATIE

- **Een uitgebreide interventie** na een grondige patiëntenevaluatie
- **Een intensief, gestructureerd programma op maat** bestaande uit oefentherapie en educatie
- **Stimuleren van duurzame gedragsverandering** om de winsten zolang als mogelijk te behouden

AEROBE TRAINING

