CLINICAL GUIDELINE COPD IN MULTIDISCIPLINARY PERSPECTIVE

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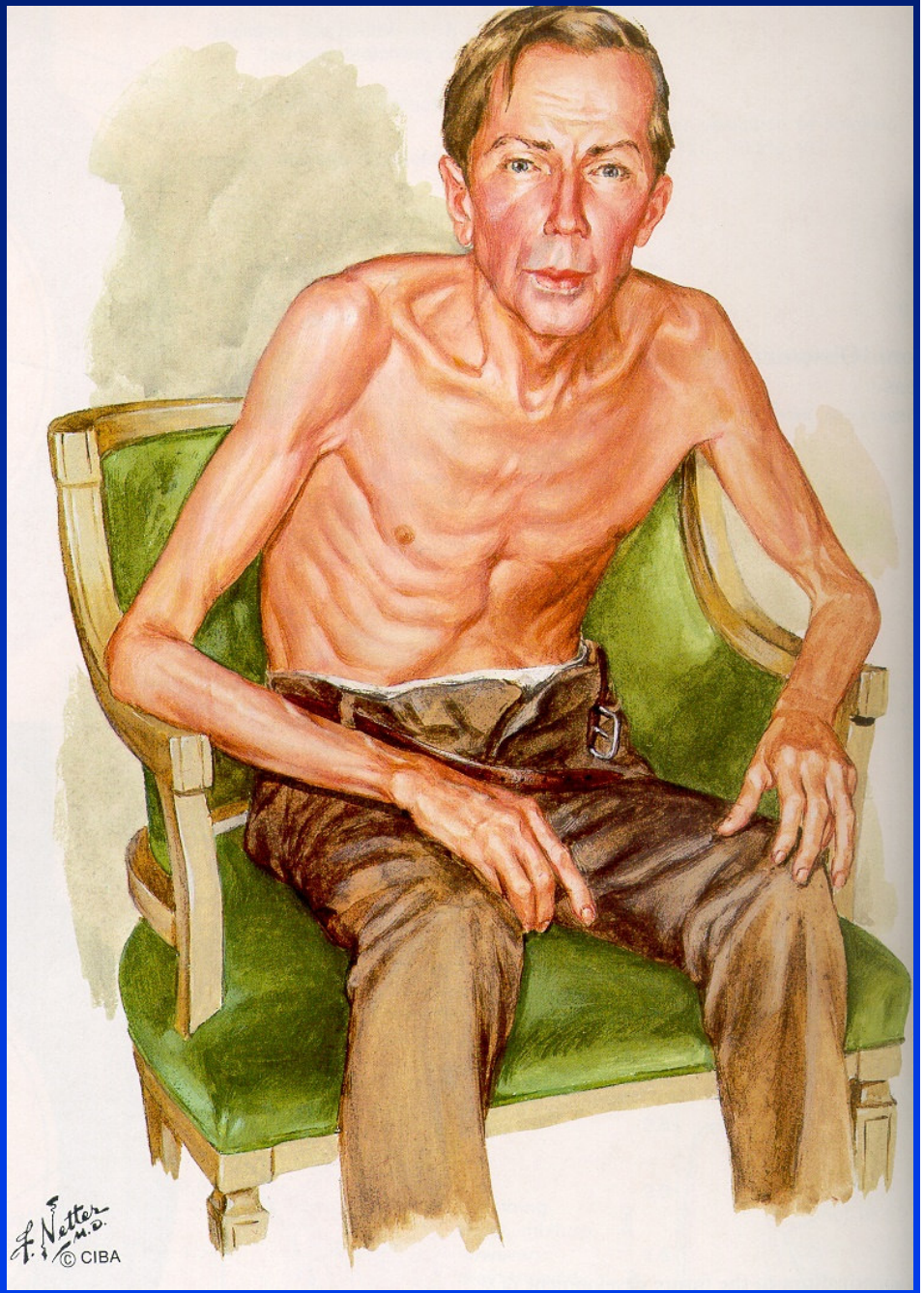
Definition COPD

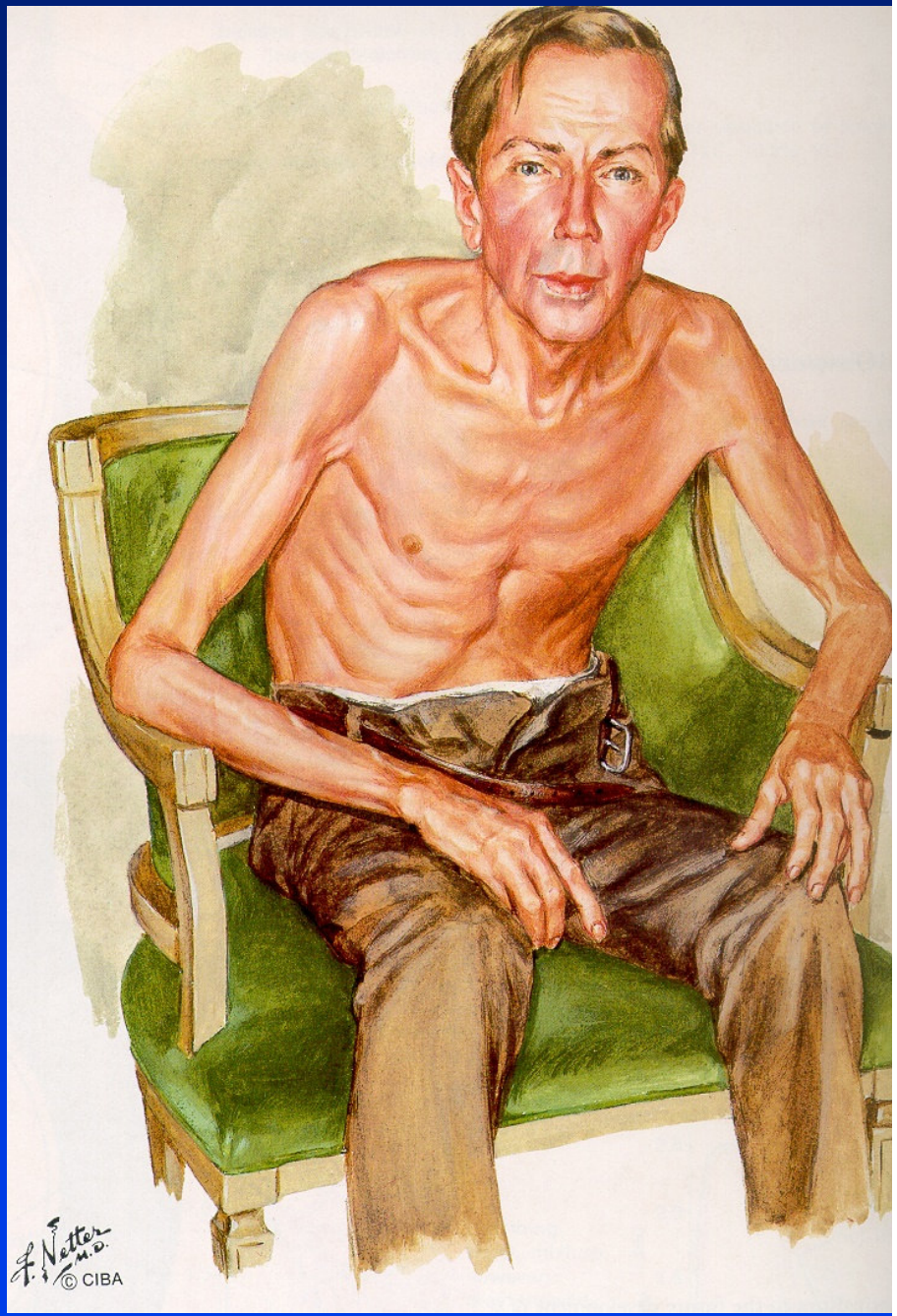
NHLBI/WHO Global Initiative for Chronic Obstructive Lung Disease (GOLD):

*Chronic obstructive pulmonary disease is a preventable and treatable disease with **some significant extrapulmonary effects that may contribute to the severity in individual patients.** Its pulmonary component is characterized by airflow limitation that is not fully reversible. The airflow limitation is usually both progressive and associated with abnormal inflammatory response of the lungs to noxious particles or gases.*

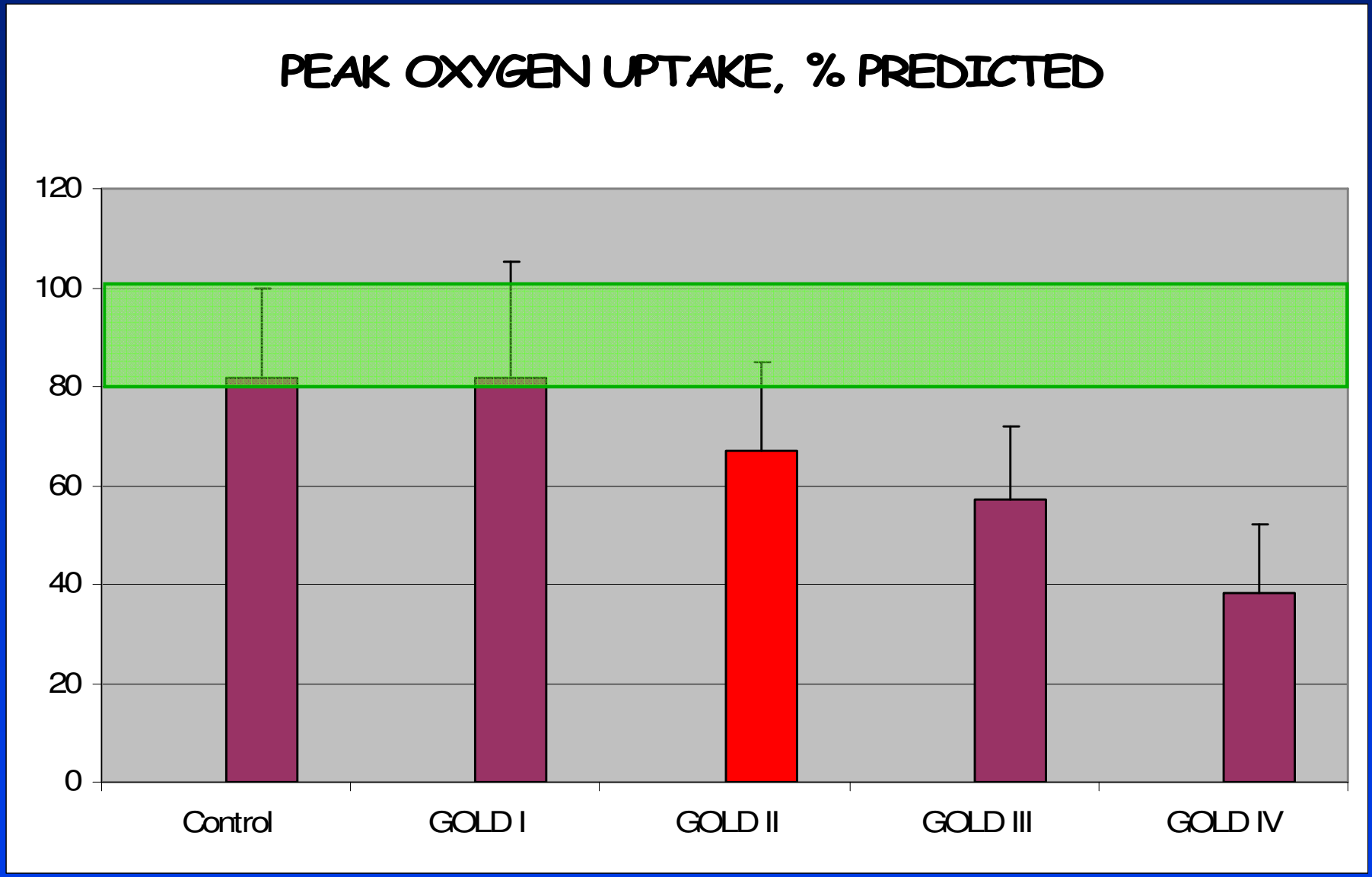
EXTRA PULMONARY EFFECTS OF COPD



Poor physical fitness
Poor physical activity
Muscle weakness
Malnutrition
Depression
Anxiety
Poor quality of life

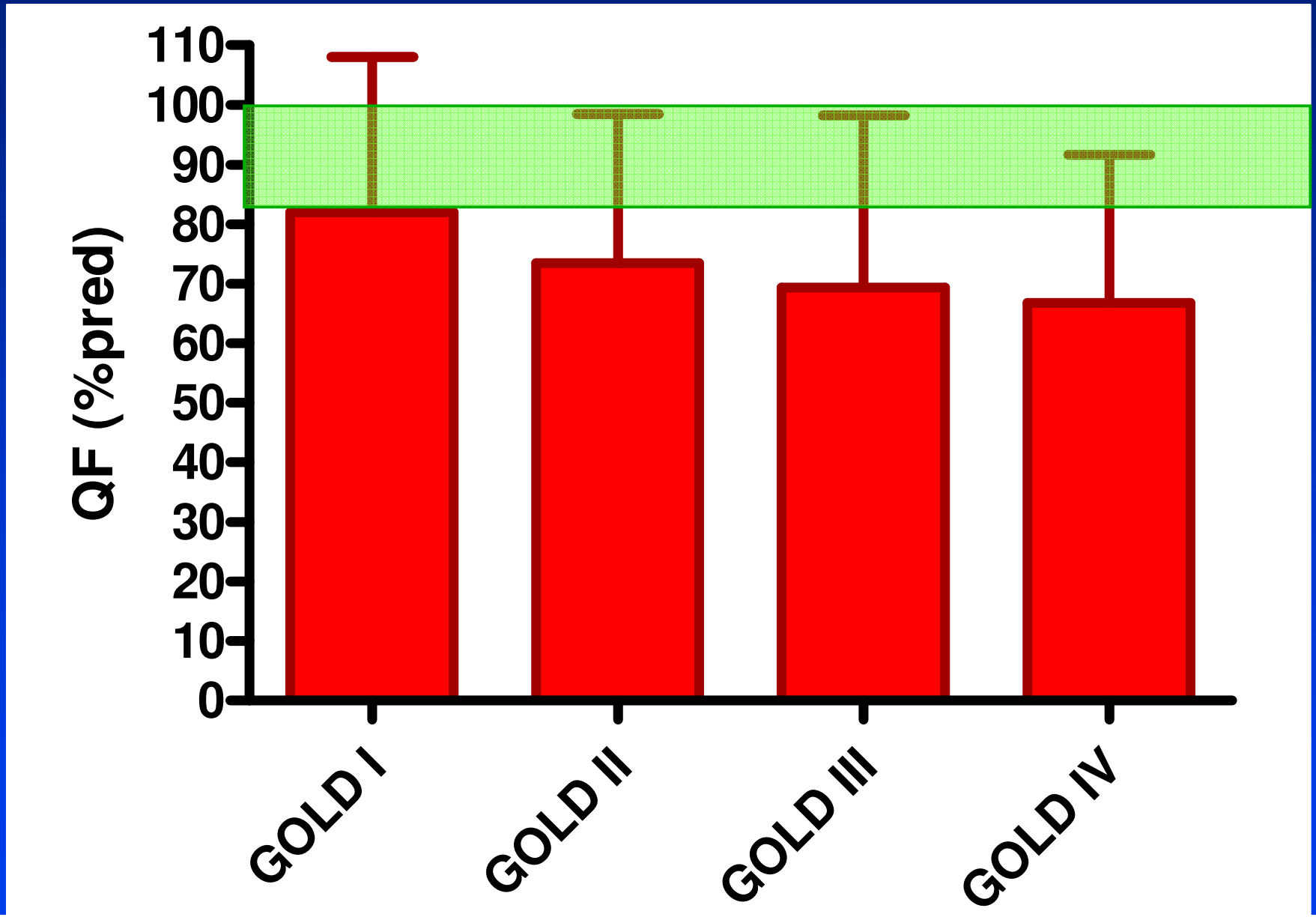


Physical Fitness

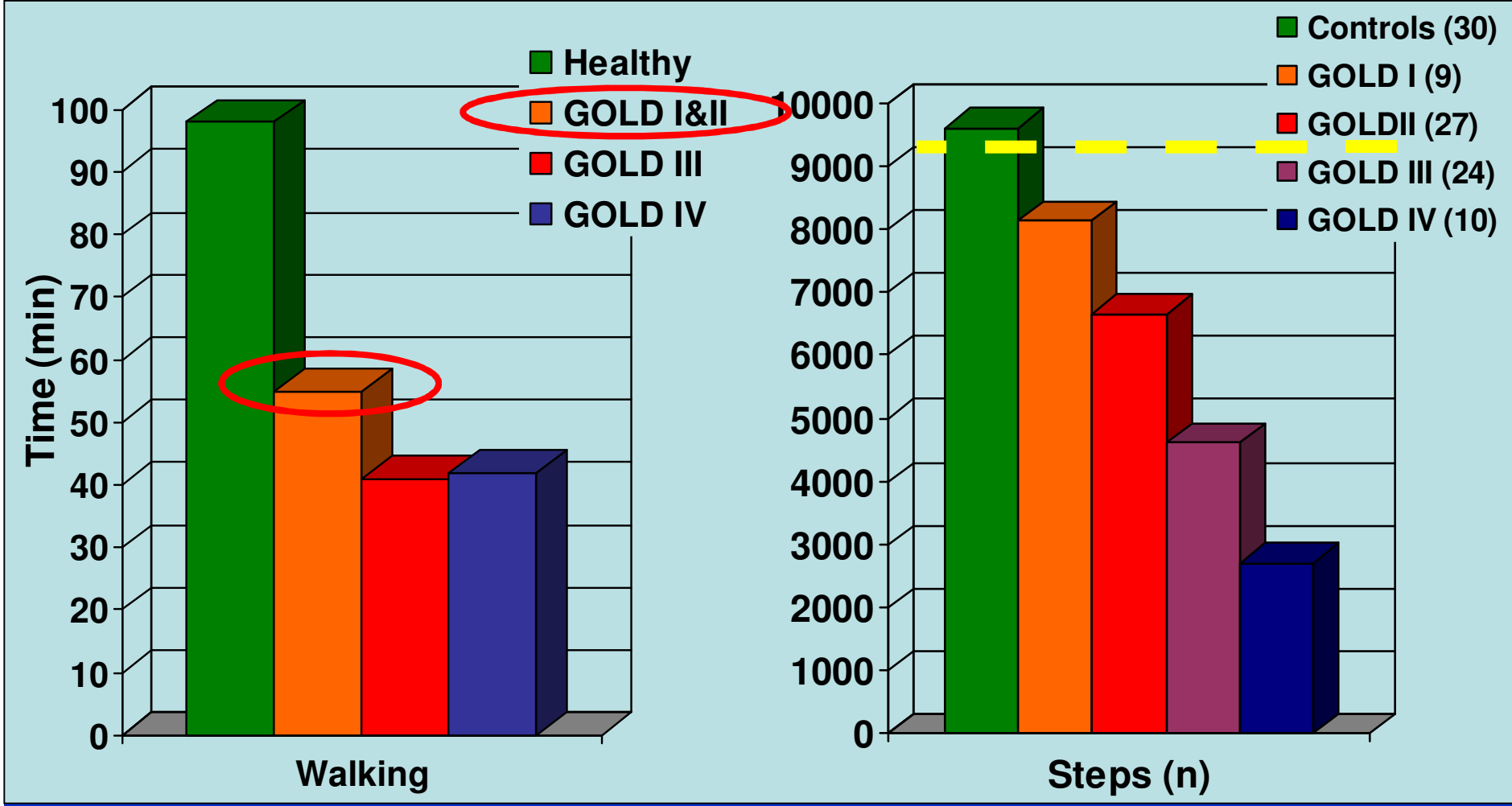


Pinto-Plato et al. Chest 132:1204, 2007

Muscle Strength



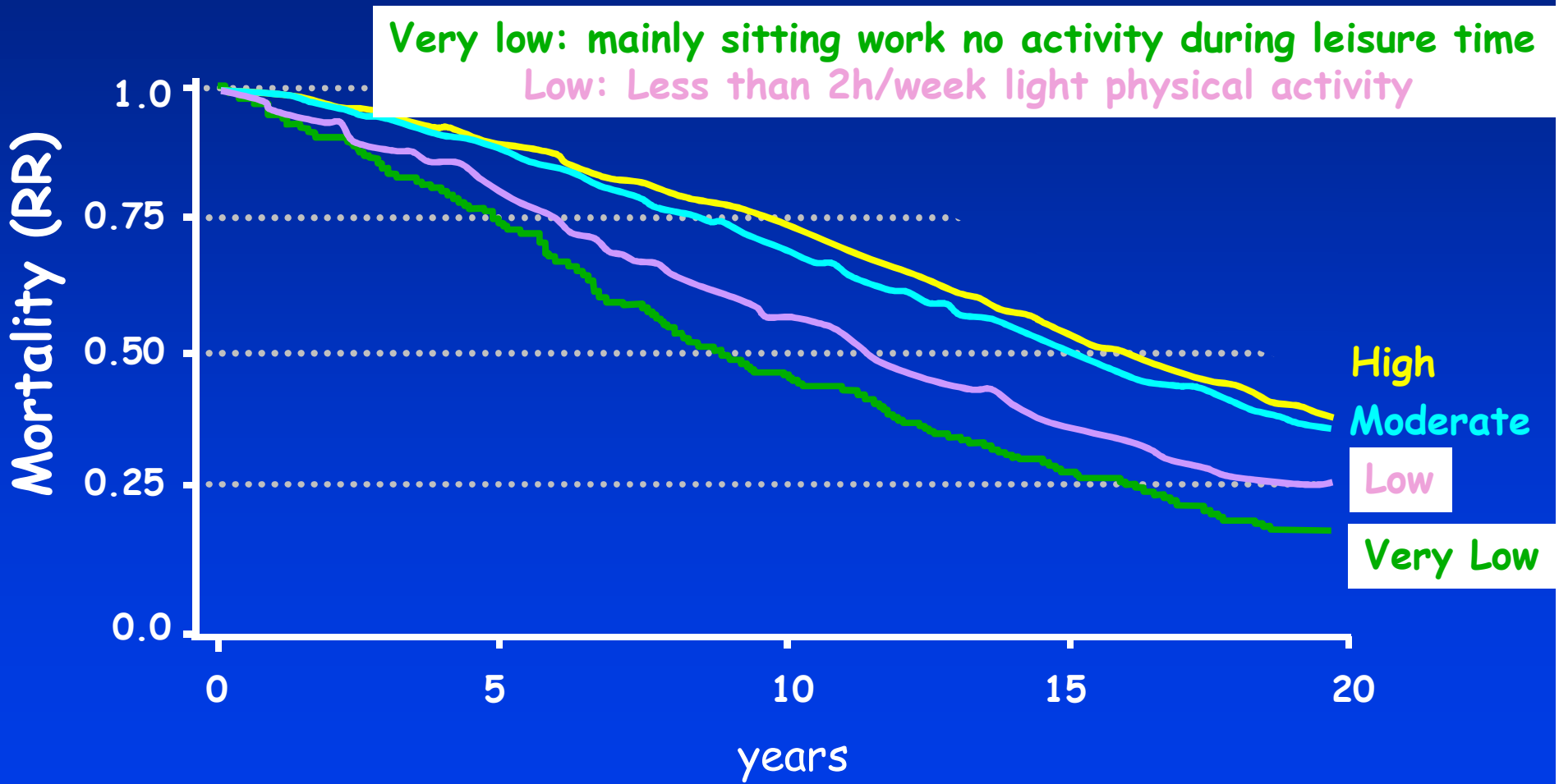
Physical Activity



Pitta F, *AJRCCM* 2005

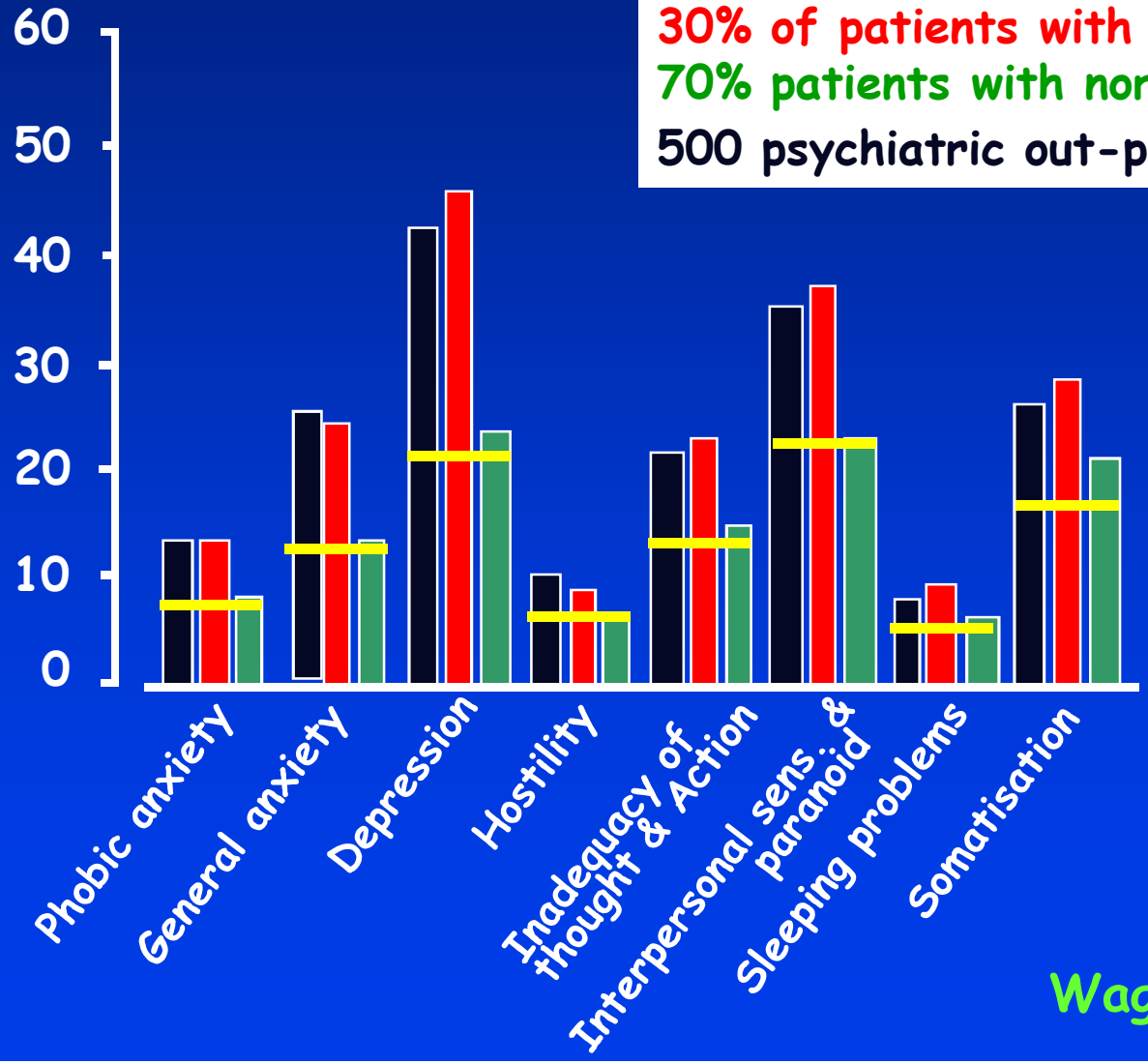
Troosters ERS 2007

Physical activity and survival in COPD



Garcia-Aymerich Thorax 2006

COPD and psychological conditions



30% of patients with clinical depression

70% patients with normal BECK-score

500 psychiatric out-patients

Wagena ERJ 2005

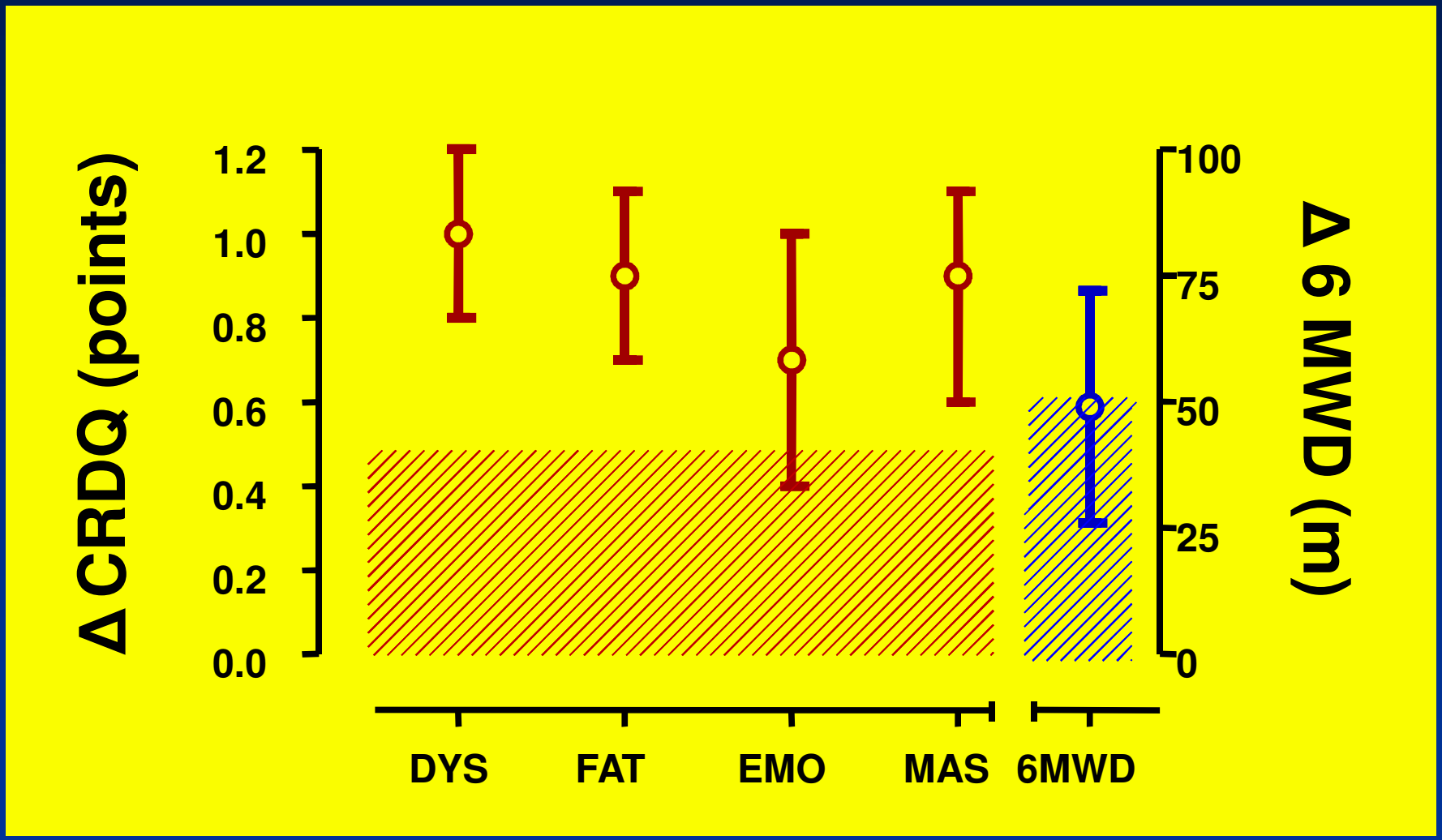
Poor physical fitness
Poor physical activity
Muscle weakness
Malnutrition
Depression
Anxiety
Poor quality of life

Starting already in the **early** phase of disease

Pulmonary rehabilitation: definition

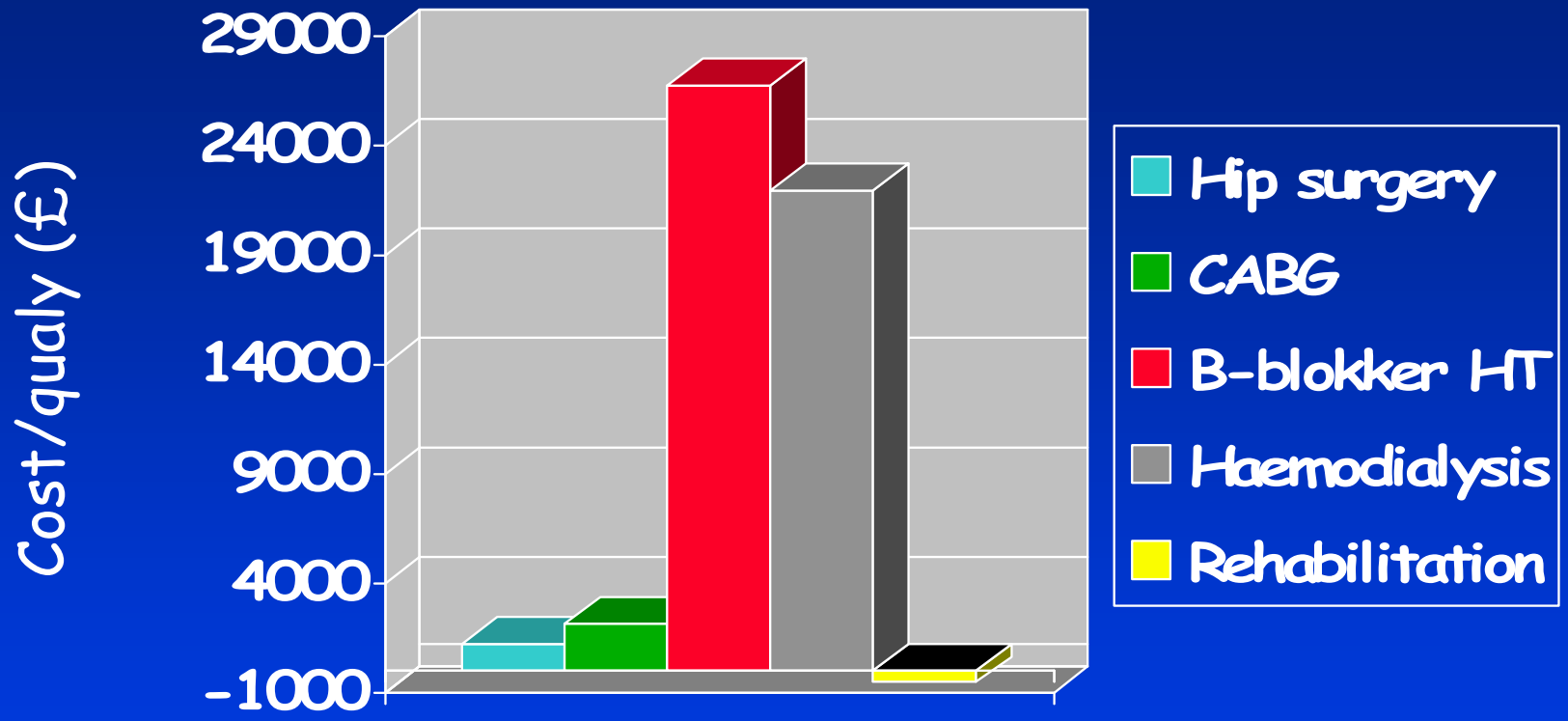
"Pulmonary rehabilitation is an *evidence-based*, *multidisciplinary*, and comprehensive intervention for *patients with chronic respiratory diseases* who are symptomatic and often have decreased daily life activities. Integrated into the *individualized* treatment of the patient, pulmonary rehabilitation is designed to reduce symptoms, optimize functional status, increase participation, and reduce health care costs *through* stabilizing or reversing *systemic manifestations* of the disease."

Meta-analysis n=277 TR, n=242 CO



Lacasse et al., Cochrane database, 2002

Cost/benefit of pulmonary rehabilitation



QALY: quality adjusted life year, added number of life years (life expectancy) multiplied by adjusted quality of life for these remaining life years: 0 (= death) / 1 (=perfect health)

Cost-utility analysis: the additional costs required to generate one year of perfect health

Griffiths et al Thorax 2001

The NEW ENGLAND JOURNAL of MEDICINE

CLINICAL THERAPEUTICS

Pulmonary Rehabilitation for Management of Chronic Obstructive Pulmonary Disease

Richard Casaburi, Ph.D., M.D., and Richard ZuWallack, M.D.

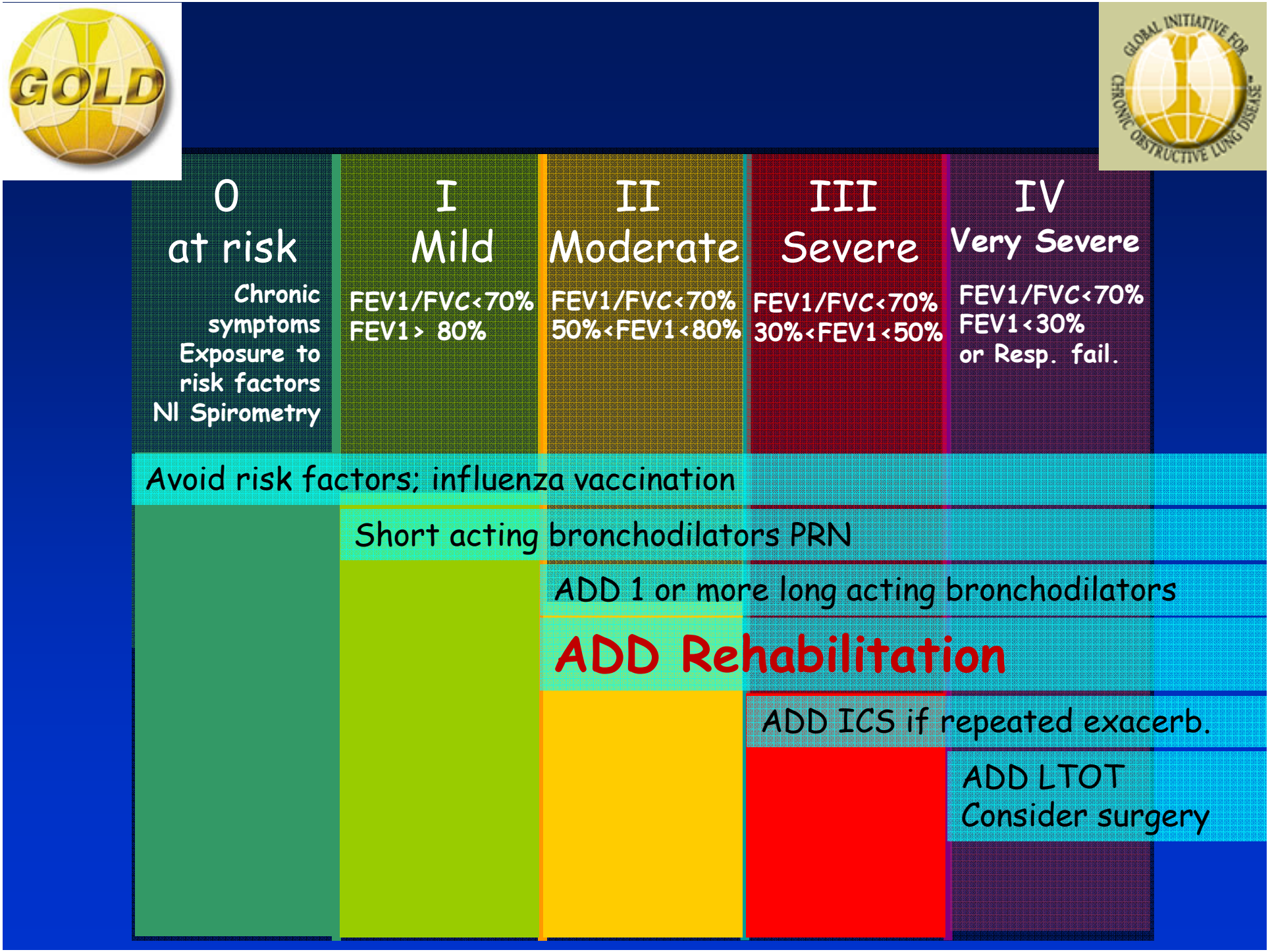
N ENGL J MED 360;13 NEJM.ORG MARCH 26, 2009

American Thoracic Society Documents

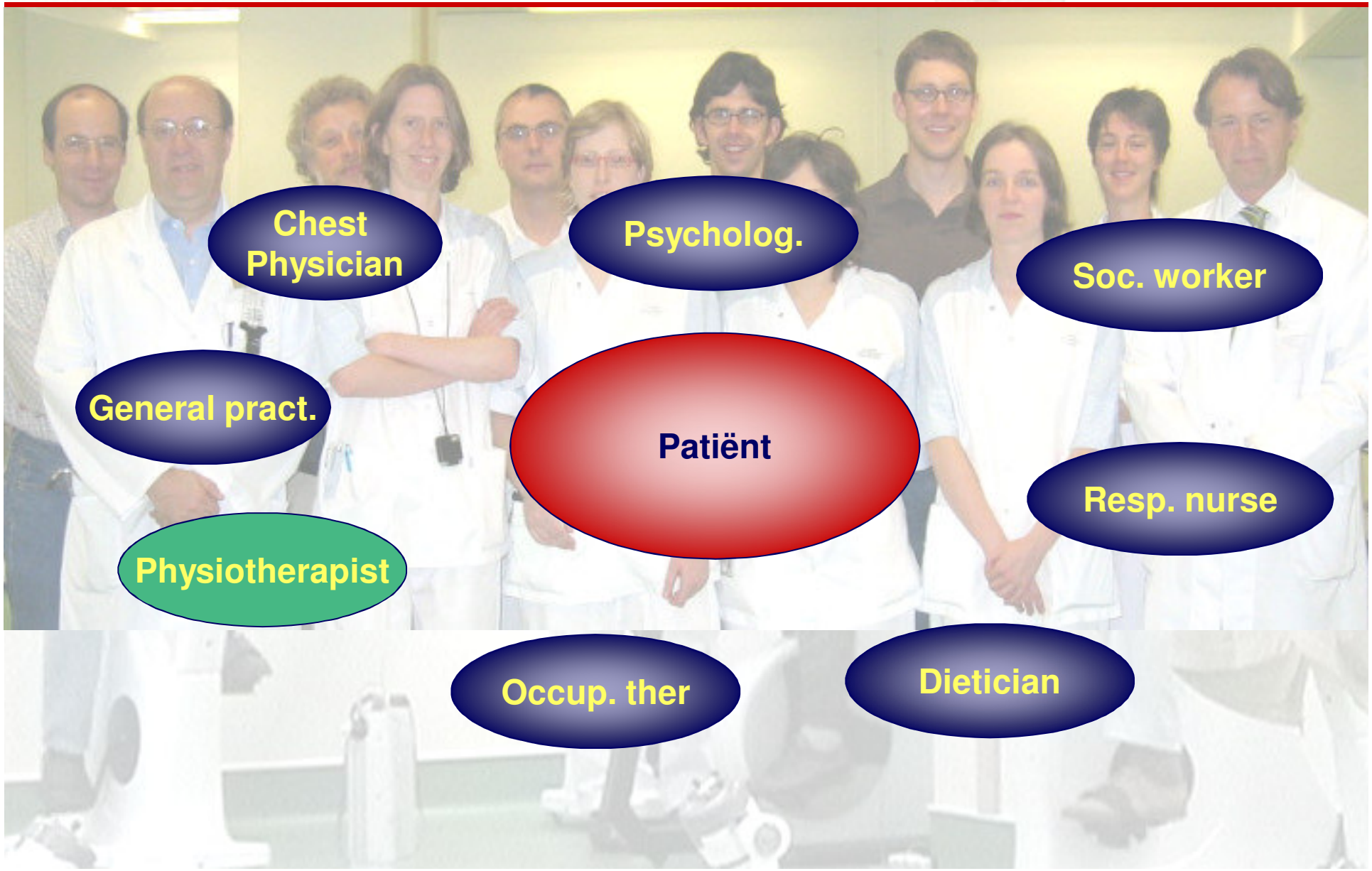
American Thoracic Society/European Respiratory Society Statement on Pulmonary Rehabilitation

Linda Nici, Claudio Donner, Emiel Wouters, Richard Zuwallack, Nicolino Ambrosino, Jean Bourbeau, Mauro Carone, Bartolome Celli, Marielle Engelen, Bonnie Fahy, Chris Garvey, Roger Goldstein, Rik Gosselink, Suzanne Lareau, Neil MacIntyre, Francois Maltais, Mike Morgan, Denis O'Donnell, Christian Prefault, Jane Reardon, Carolyn Rochester, Annemie Schols, Sally Singh, and Thierry Troosters, on behalf of the ATS/ERS Pulmonary Rehabilitation Writing Committee

This Joint Statement of the American Thoracic Society (ATS) and the European Respiratory Society (ERS) was adopted by the ATS Board of Directors, December 2005, and by the ERS Executive Committee, November 2005


0
at risk
Chronic symptoms
Exposure to risk factors
Nl Spirometry
I
Mild
FEV1/FVC<70%
FEV1 > 80%
II
Moderate
FEV1/FVC<70%
50%<FEV1<80%
III
Severe
FEV1/FVC<70%
30%<FEV1<50%
IV
Very Severe
FEV1/FVC<70%
FEV1<30%
or Resp. fail.
Avoid risk factors; influenza vaccination
Short acting bronchodilators PRN
ADD 1 or more long acting bronchodilators
ADD Rehabilitation
ADD ICS if repeated exacerb.
ADD LTOT
Consider surgery

Pulmonary rehabilitation program

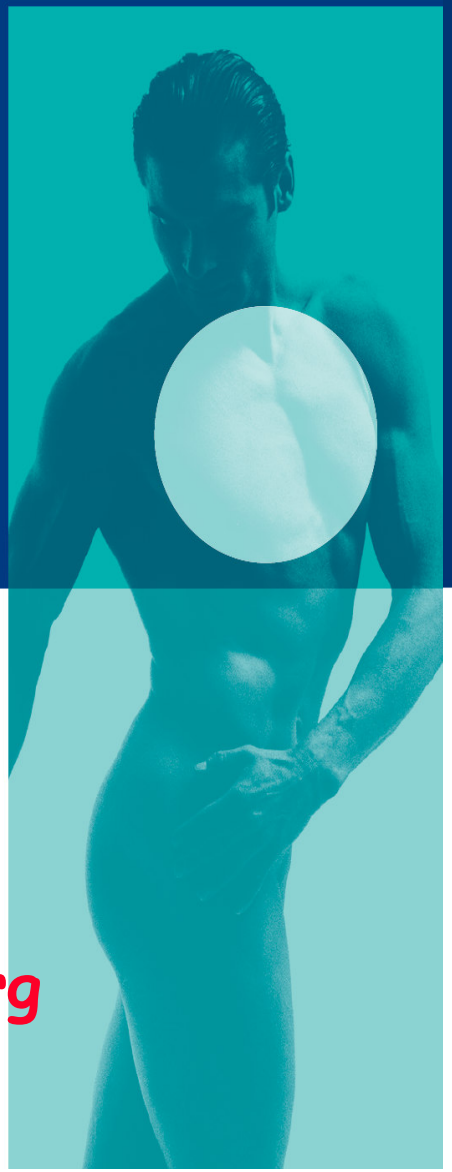


Supplement to the Dutch Journal of Physical Therapy
Volume 118 / Issue 4 / 2008

KNGF-Guideline

for physical therapy in patients with chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease
Practice guidelines



www.fysionet.nl

www.cebp.nl

www.bvp-sbp.org

KNGF

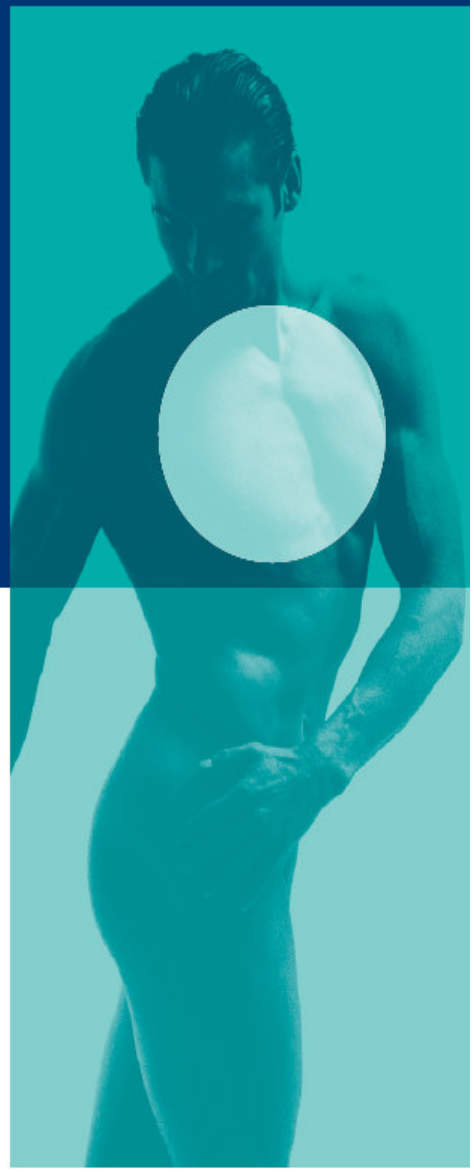
Royal Dutch Society for Physical Therapy

Supplement bij het Nederlands Tijdschrift voor Fysiotherapie
Volume 118 / Issue 4 / 2008

KNGF-richtlijn

Chronisch obstructieve longziekten

Chronisch obstructieve longziekten
Verantwoording en toelichting



Dutch

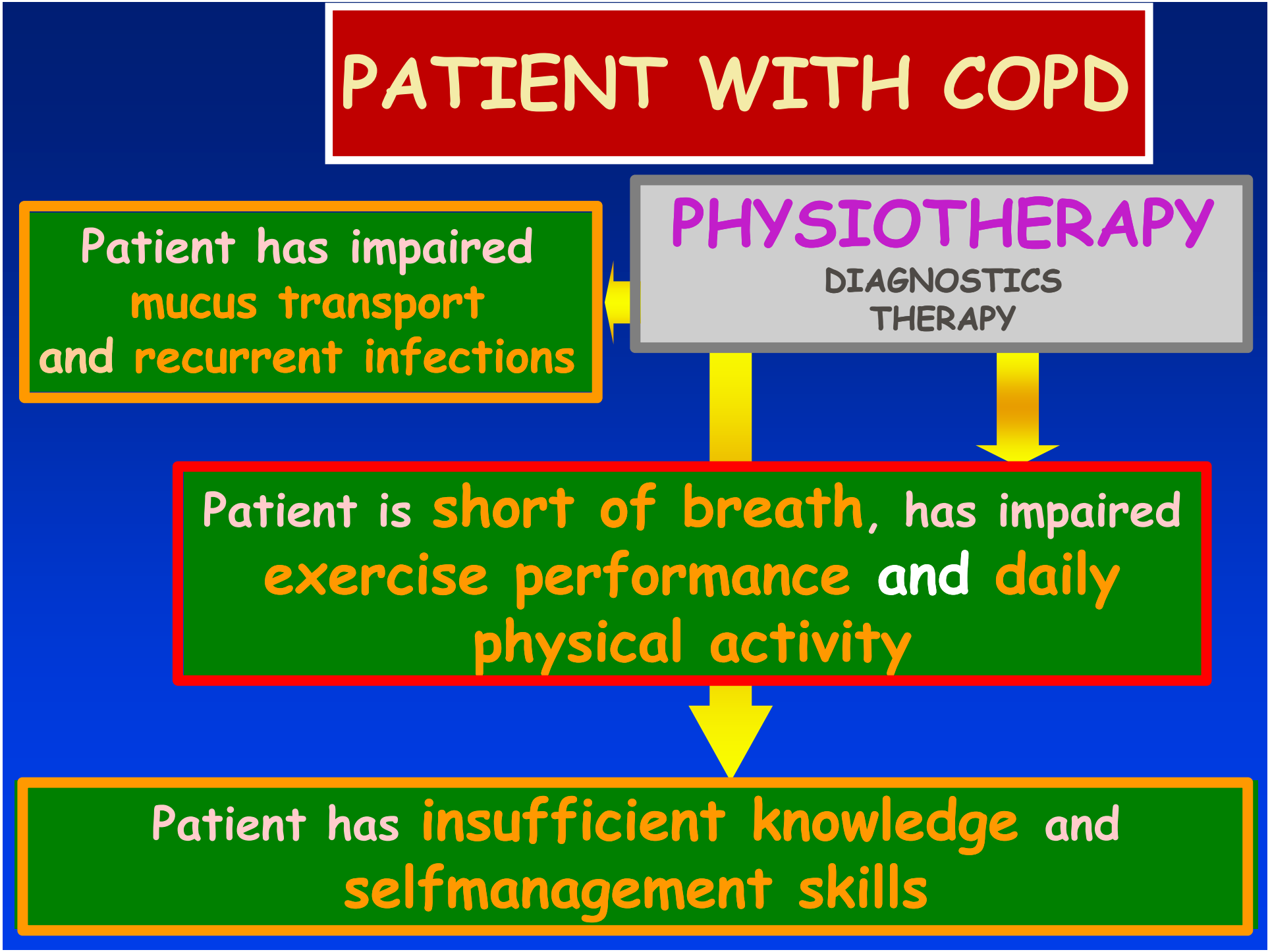
English

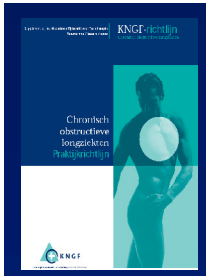
French

Portugese

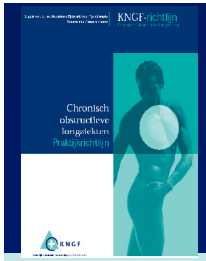
KNGF

Koninklijk Nederlands Genootschap voor Fysiotherapie


PATIENT WITH COPD
PHYSIOTHERAPY
DIAGNOSTICS
THERAPY
Patient has impaired mucus transport and recurrent infections
Patient is short of breath, has impaired exercise performance and daily physical activity
Patient has insufficient knowledge and selfmanagement skills



Screening / Referral	• Impaired mucus clearance • Infections	• Dysnea • Impaired exercise performance • PA
	• Pulmonary function tests	• Pulmonary function tests • and exercise test
Case history	• Recurrent respiratory infections • exacerbations with hypersecretion • Adherence to treatment	• Exertional dyspnea • Poor physical activity in daily life (MRC ≥ 2), < 30 min/day • Comorbid conditions (cardiovascular disease)
Physical assessment	• Mucus quality and quantity • Impaired cough: - airway collapse, - muscleweakness	• Exercise performance and physical activity • Respiratory and peripheral muscle function • Quality of life
Analysis	• Causes of exercise limitation / inactivity • Causes of impaired cough • Motivation / self-management	
	• Optimal medical treatment • Sufficient referral data	no → • Referral physician
Treatment	• Health education • Self-management	
	• Forced expiration • Cough • Adjuncts (PEP, PD)	• Excercise training • Muscle training • Breathing exercises
Outcome	• Number of respiratory infections with mucus retention - Symptoms	• Exercise performance, physical activity, Muscle strength, Quality of life



Problem solving

Screening

Referral

Case history

- Impaired mucus clearance
- Infections

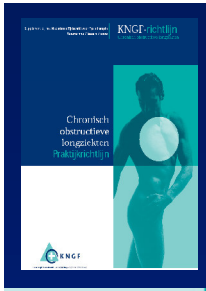
- Pulmonary function tests

- Recurrent respiratory infections
- exacerbations with hypersecretion
- Adherence to treatment

- Dysnea
- Impaired exercise performance
- PA

- Pulmonary function tests
- and exercise test

- Exertional dyspnea
- Poor physical activity in daily life (MRC ≥ 2), < 30 min/day
- Comorbid conditions (cardiovascular disease)



Physical assessment

- Mucus quality and quantity
- Impaired cough:
  - airway collapse,
  - muscleweakness

- Exercise performance and physical activity
- Respiratory and peripheral muscle function
- Quality of life

Analysis

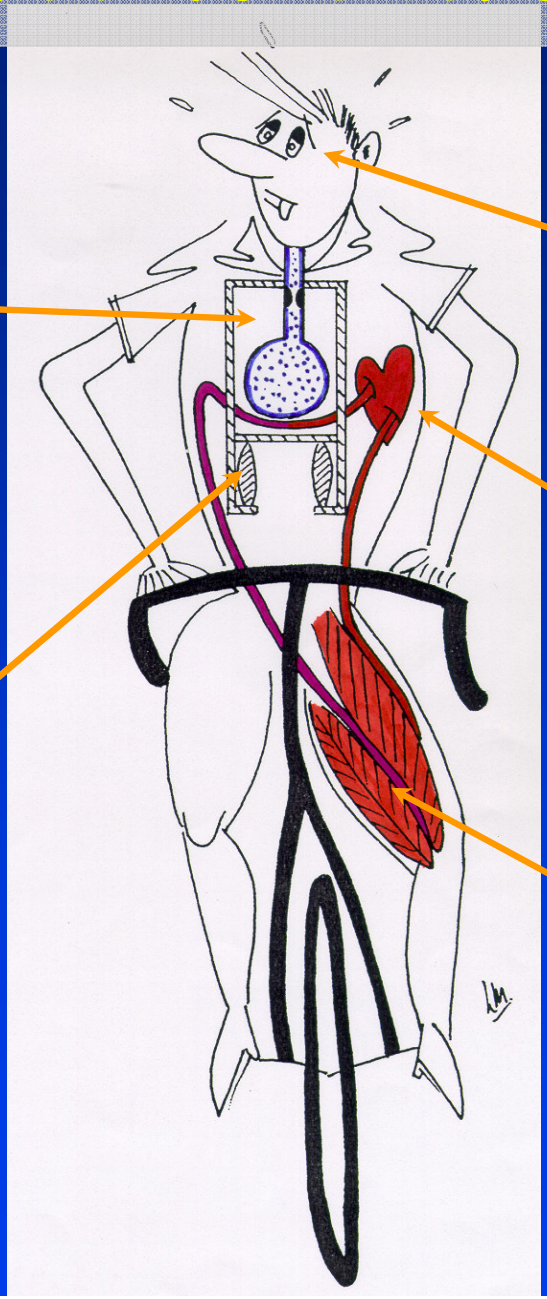
- Causes of exercise limitation / inactivity
- Causes of impaired cough
- Motivation / self-management

- Optimal medical treatment
- Sufficient referral data

no →

- Referral physician

Factors related to exercise limitation



LUNGS AND AIRWAYS

DYSPNEA FEAR ANXIETY MOTIVATION

HEART AND CIRCULATION

RESPIRATORY MUSCLES

PERIPHERAL MUSCLES

Impaired exercise performance/dyspnea

- Cardio-circulatory
- Ventilatory
- Oxygen transport in the lungs
- Peripheral muscle strength
- Anxiety
- Motivation
- Self-esteem

- Respiratory muscle weakness
- Hyperinflation

- Hypoxemia/Hypercapnia during exercise?

- Endurance training
- Interval training ev. suppl. O_2
- IMT
- Body positioning
- Rollator
- NIV
- Active expiration
- PLB
- Muscle training
- EMS
- Nutrition
- Counseling
- Relaxation
- Education

Availability of guidelines

≠

Using guidelines in clinical practice

Process indicators for compliance	Benchmark	Observed
Diagnostic process		
Percentage of patients that had	>90%	
Exercise test (walk test / **max cycle test**)		80 / 20%
Respiratory muscle strength (PImax)		20%
Peripheral muscle strength Q-ceps		32%
Handgrip strength		13%
Symptoms (Borg score) with exercise test		58% (begin) 83% (max)
Therapeutic process	>90%	
Percentage of patients that had		
Education/advice		99%
Huffing and coughing		84%
Exercise training		96%
Respiratory muscle training		44%
Peripheral muscle training		79%
After care		77%

Appreciation of the recent COPD Guideline

- Clear and understandable (72%)
- Allow individual decision making (83%)
- Measurement instruments support diagnostic process (92%) and decision making (91%)
- Barriers for implementation:
  - Time investment (44%)
  - Use of measurement instruments (32%): 3 out of 18 recommended instruments were used by > 80% of the participants

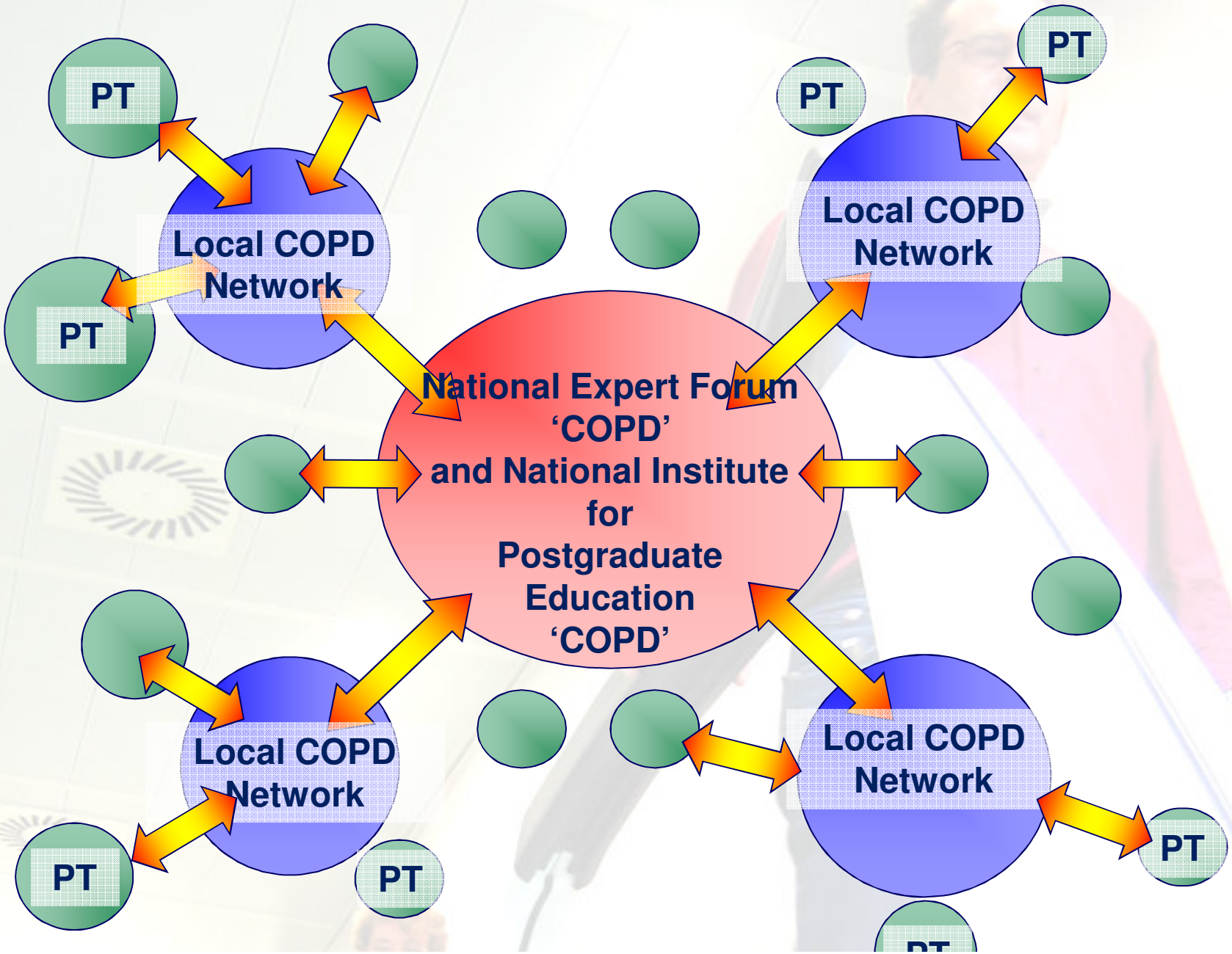
By courtesy of Ph van der Wees and C Zagers

Availability of guidelines ≠ Using guidelines in clinical practice

- Knowledge
- Competences

} Postgraduate education 80 contact hours

Implementation Guideline




COPD
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Frits van Trigt
Annemarie de Vey
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Paul Weltevreden
Arnhem
Jos Pilzecker
Harm Askes
Philip van der Wees
Frans Lanting
Rotterdam
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Magda Erkelens
Joan van Adrichem
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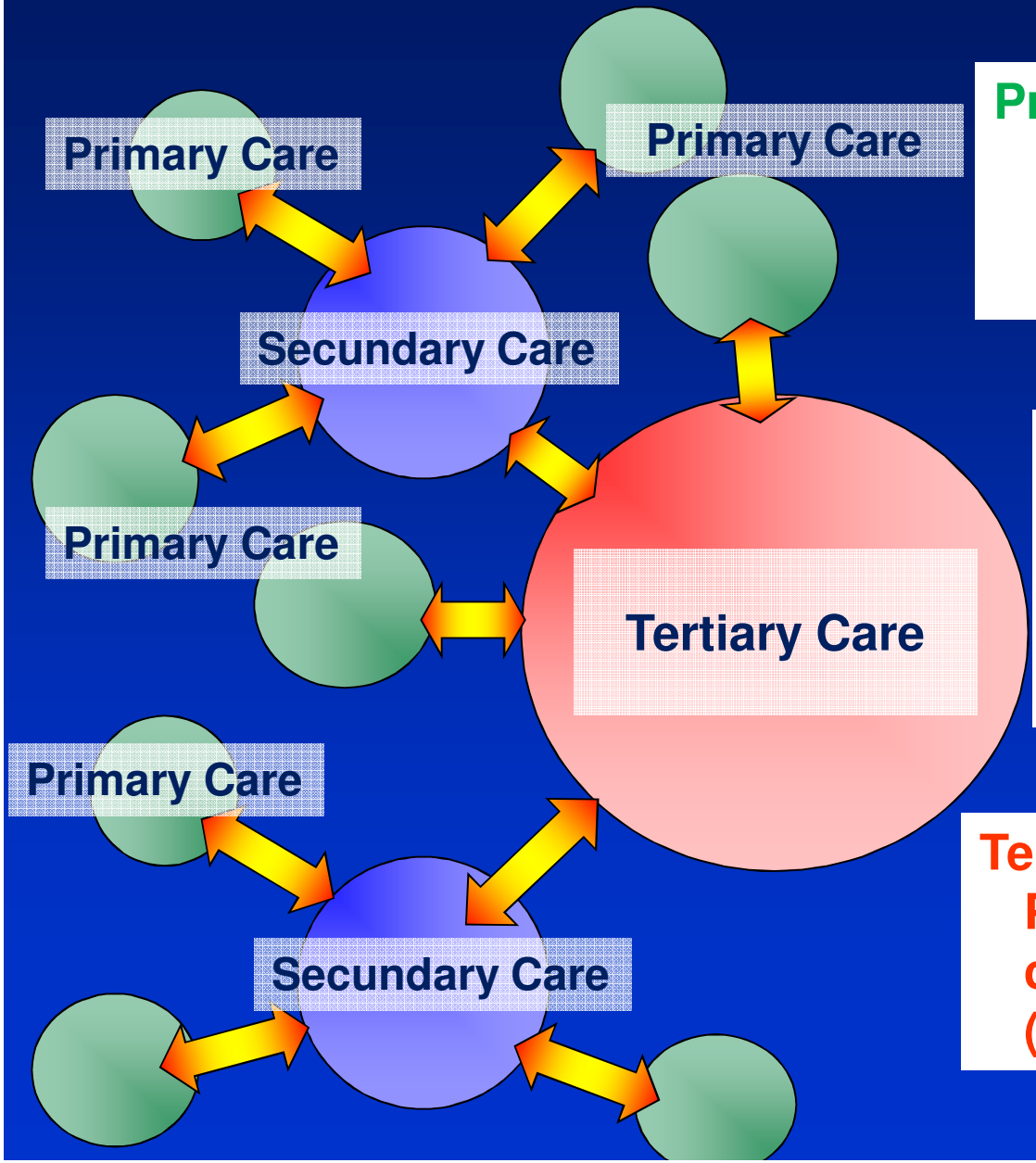
Martijn Spruit
Maurice Sillen
Annemieke Fastenau
Emmylou Beekman
Eindhoven/Tilburg
Machteld Jongmans
Carel Van Wetering

Availability of guidelines ≠ Using guidelines in clinical practice

- Knowledge
- Competences
- Equipment
- Time
- *Organization and collaboration*
- *'Agree with content'*

Multidisciplinary Treatment



Primary Care

Patient with mild - non complicated COPD (GOLD I-II) (General Physician)

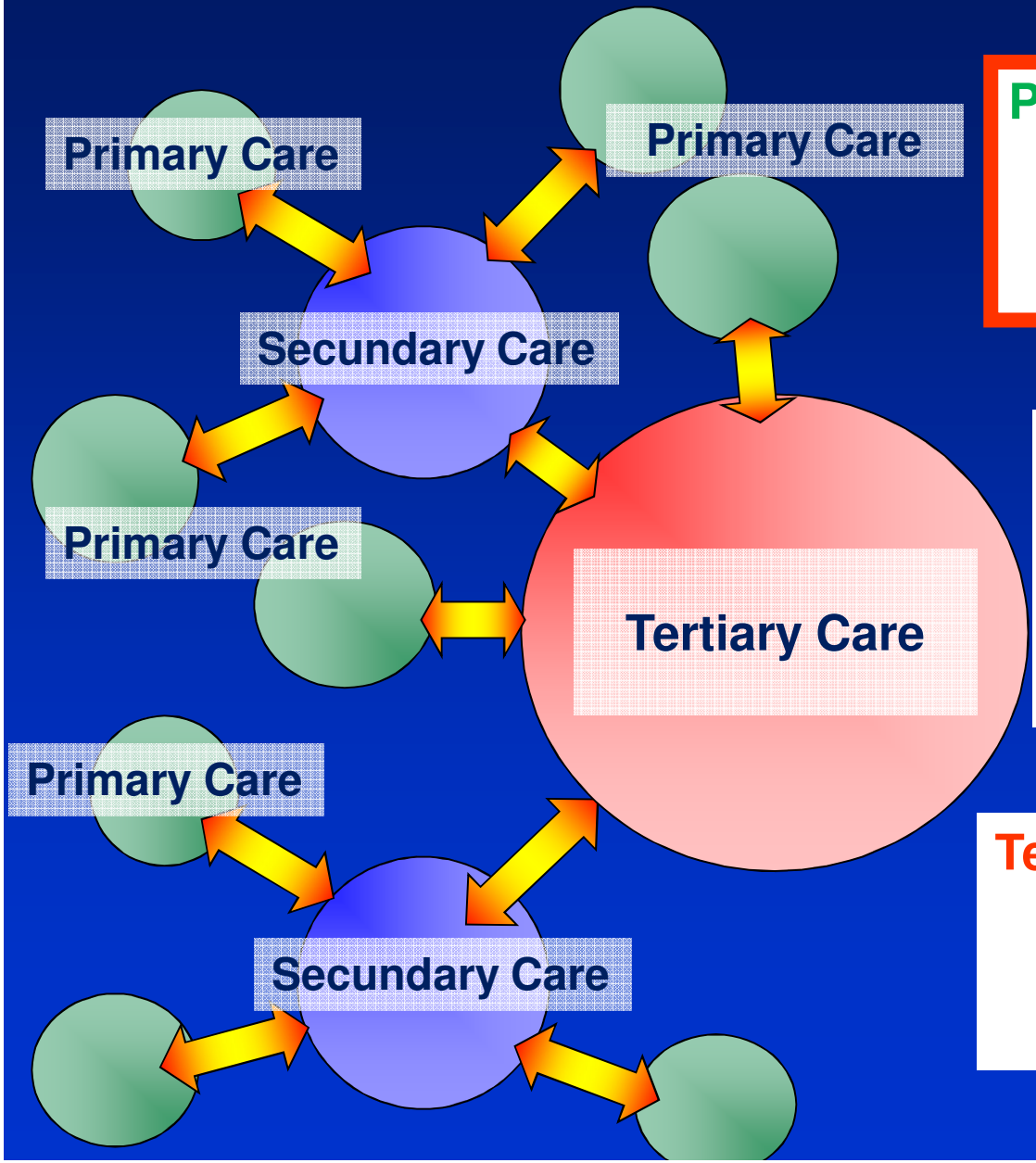
Secundary Care

Patient with more advanced – more complicated COPD (GOLD III-IV) (Pulmonary Physician)

Tertiary Care

Patient with severe and complicated COPD (Rehabilitation Center)

Multidisciplinary Treatment



Primary Care
Patient with mild - non complicated COPD (GOLD I-II) (General Physician)

Secundary Care
Patient with more advanced – more complicated COPD (GOLD III-IV) (Pulmonary Physician)

Tertiary Care
Patient with severe and complicated COPD (Rehabilitation Center)

Table 2. Minimally required information that should be included in a letter of referral to a physical therapist.

- Medical diagnosis
- Medication
- Comorbidities (specifically related to exercise)
- Report on laboratory tests: pulmonary function test, exercise test with ECG and oxygen saturation data

Maximal exercise testing for:

Assessment of physical fitness

Risk stratification

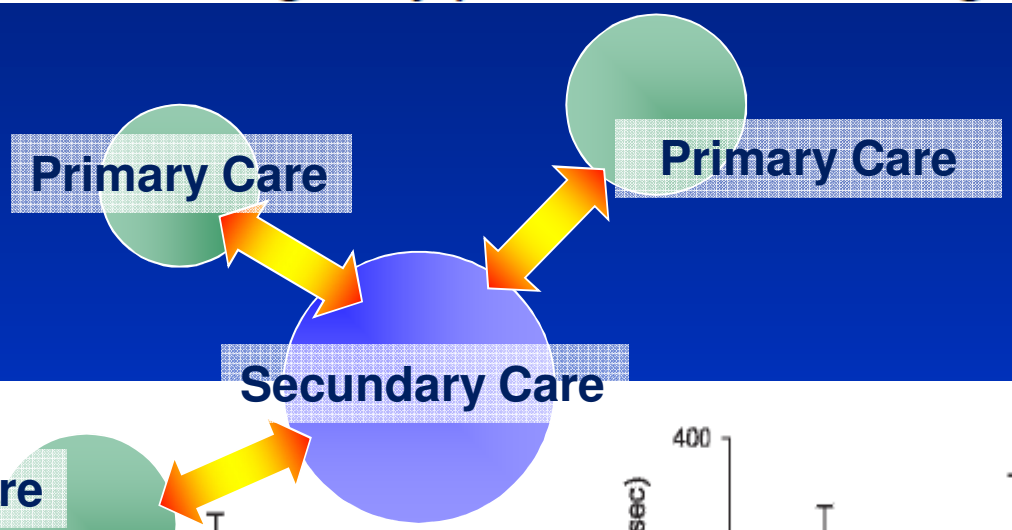
Causes for exercise limitation

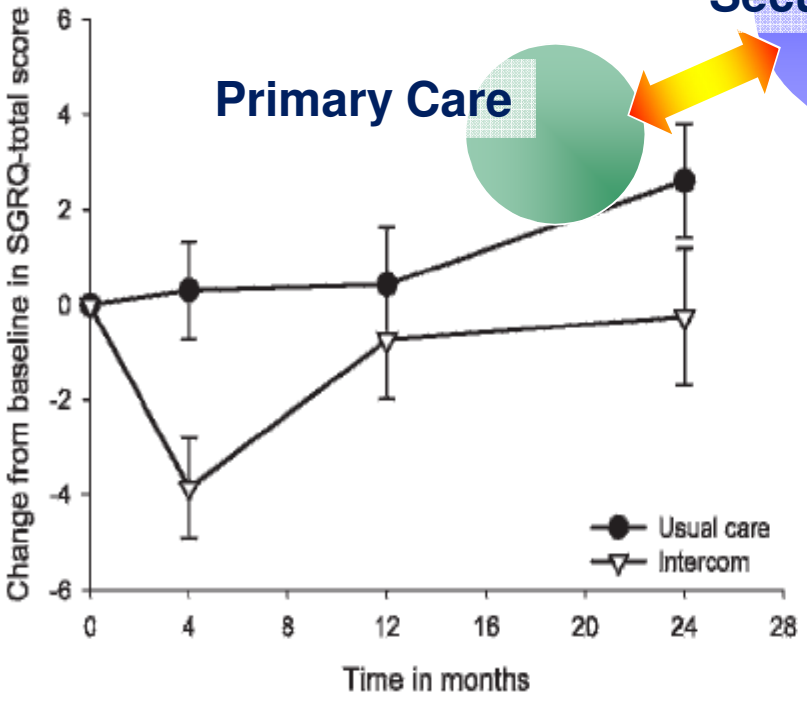
Available in only 20% of referrals

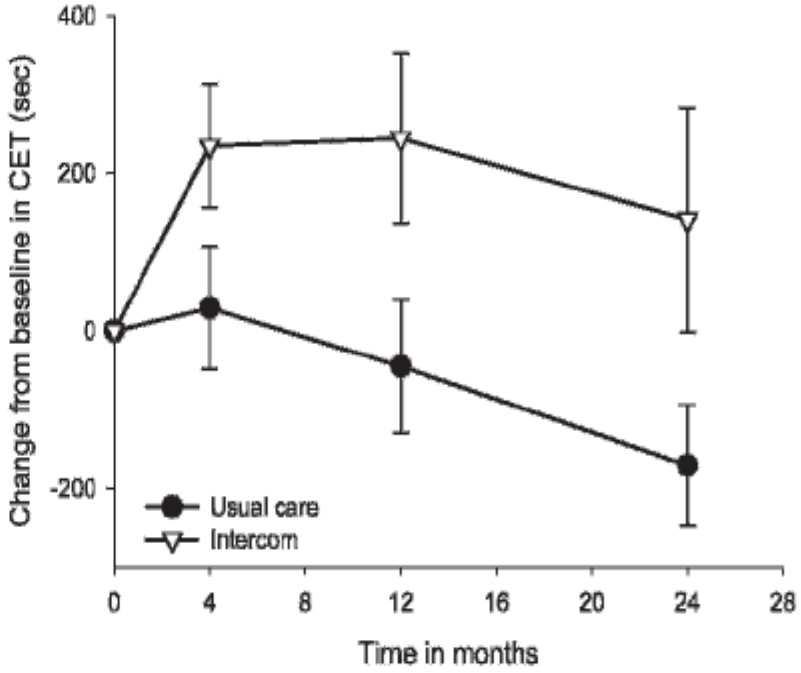
Short- and long-term efficacy of a community-based COPD management programme in less advanced COPD: a randomised controlled trial

C R van Wetering, M Hoogendoorn, S J M Mol, et al.

Thorax 2010 65: 7-13 originally published online August 23, 2009







Conclusions

- COPD is more than a lung disease and needs multidisciplinary assessment and treatment
- Physiotherapy is an EB treatment and is summarized in a Guideline 'COPD'
- The Guideline 'COPD' and measurement instruments are considered helpful, but time consuming, in clinical decision making
- PT needs special expertise in COPD and specialized training should be provided
- Development of local (interdisciplinary) networks 'COPD' is required

Working committee

R.Gosselink, D.Langer, C.Burtin, E.Hendriks, V.Probst, C.van der Schans, B.Paterson, M.Verhoef-de Wijk, R.Straver, M.Klaassen, F.Pitta, P.Delguste, T.Troosters, V.Ninane, M.Decramer, J.Muris, J.Wempe, Ph. van der Wees, C.Zagers, R. de Bie, F.Lanting, H.Askes.