

Fatigue and Dyspnea

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2. FATIGUE

Fatigue is normal when the result of a particularly full day of work or physical activity, or after prolonged stress or mental strain.

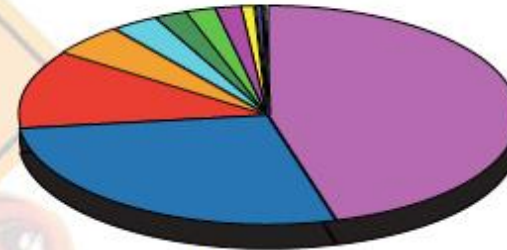
Chronic fatigue, however, is not a normal state.

A pearl that sometimes proves useful in clinical practice is that fatigue from organic disease is constant, and only relieved by sleep and decreased activity. Fatigue from anxiety or depression however, may improve with exercise and is often not relieved by rest.

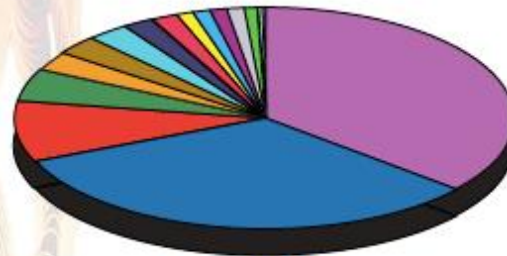
Only about 15% of patients in this primary care setting had an organic cause found for their fatigue, thus ruling out the common organic etiologies without over-investigating is usually sufficient, unless history and physical exam suggest otherwise. These are the principal organic etiologies to consider:

- infectious causes;
- anemia;
- endocrinopathies including diabetes and hypothyroidism;
- sleep disturbances including sleep apnea;
- medication side-effects;
- adrenal insufficiency (rare without other signs or symptoms); and
- malignancies (rare presentation).

Chronic fatigue syndrome is a specific clinical diagnosis that may include symptoms of sore throat, myalgia, arthralgia and lymphadenopathy, and is at least characterized by 6 weeks of fatigue limiting activities by 50% or more.



Under 45



45 and Older

	AGE	
	Under 45	45 and Older
Fatigue NYD	45.80%	36.60%
Viral Illness	11.80	8.00
Depression	2.10	4.70
Anemia	3.30	2.80
Anxiety/Stress	4.50	2.80
Sinusitis	1.90	1.00
CHF	0.00	2.80
Medication Side Effect	0.40	2.10
Influenza	1.00	1.30
Diabetes Mellitus	0.10	1.60
Mononucleosis	1.60	0.04
COPD	0.02	1.10
Ischemic Heart Disease	0.02	1.10
GI Malignancy	0.08	1.00
Lymphoma/Leukemia	0.01	0.30
Other	27.40	32.80

Selected Differential Diagnosis of Chronic Fatigue

Cardiopulmonary: congestive heart failure, chronic obstructive pulmonary disease, peripheral vascular disease, atypical angina

Disturbed sleep: sleep apnea, gastroesophageal reflux disease, allergic or vasomotor rhinitis

Endocrine: diabetes mellitus, hypothyroidism, pituitary insufficiency, hypercalcemia, adrenal insufficiency, chronic kidney disease, hepatic failure

Infectious: endocarditis, tuberculosis, mononucleosis, hepatitis, parasitic disease, human immunodeficiency virus, cytomegalovirus

Inflammatory: rheumatoid arthritis, systemic lupus erythematosus

Medication use (e.g., sedative-hypnotics, analgesics, antihypertensives, antidepressants, muscle relaxants, opioids, antibiotics) or substance abuse

Diagnostic Criteria for Chronic Fatigue Syndrome

Major criteria:

At least six months' duration; does not resolve with bed rest; reduces daily activity to less than 50 percent; other conditions have been excluded

Physical criteria:

Low-grade fever; nonexudative pharyngitis; lymphadenopathy

Minor criteria:

Sore throat; mild fever or chills; lymph node pain; generalized muscle weakness; myalgia; prolonged fatigue after exercise; new-onset headaches; migratory noninflammatory arthralgia; sleep disturbance; neuropsychological symptoms (e.g., photophobia, scotomata, forgetfulness, irritability, confusion, inability to concentrate, depression, difficulty thinking); description of initial onset as acute or subacute

African sleeping sickness

- [African Sleeping sickness](#)
- <https://www.youtube.com/watch?v=nVmF3NKtbqs>

5. DYSPNEA

The best way to approach dyspnea, is of course to first divide it into acute and chronic forms.

ACUTE DYSPNEA

If the patient is in obvious respiratory distress, then the generalist's role in the community should be limited to stabilizing the airway, providing oxygen and transferring to an acute facility for definitive diagnosis. There, the practitioner needs to consider these most common causes:

- Pneumonia;
- Congestive heart failure;
- Acute asthma or COPD exacerbation;
- PE;
- Pneumothorax (especially in suddenly worsening dyspnea in an asthmatic);
- Foreign body aspiration (especially in children, the debilitated, or the intoxicated);
- Hyperventilation (especially when accompanied by dysesthesias); and
- DKA or another metabolic process.

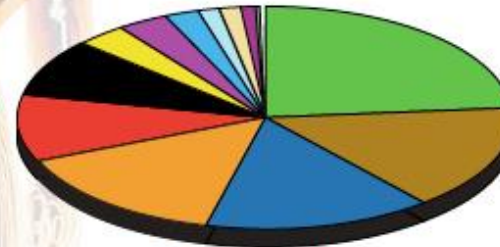


Under 45

CHRONIC DYSPNEA

The more common presentation in the community setting. In addition the usual cardio-respiratory etiologies, and if standard work-up looking for these is not fruitful, one must consider:

- anemia;
- hyperthyroidism;
- obesity or deconditioning;
- chest wall pathology; and
- neuromuscular disease.



45 and Older

	AGE	
	Under 45	45 and Older
Asthma	31.80 %	9.90 %
Acute Bronchitis	21.50	14.70
COPD	1.50	23.70
CHF	0.07	15.30
Dyspnea NYD	7.00	8.20
Anxiety	7.80	3.30
URI	6.70	1.50
Pneumonia	2.50	3.30
Acute Laryngitis/Tracheitis	4.70	1.00
Ischemic Heart Disease	0.20	2.30
Lung Malignancy	0.00	1.30
PE	0.30	0.50
Other	16.00	15.00

Clues to the Diagnosis of Dyspnea

SYMPTOMS OR FEATURES IN THE HISTORY

POSSIBLE DIAGNOSIS

Cough

Asthma, pneumonia

Severe sore throat

Epiglottitis

Pleuritic chest pain

Pericarditis, pulmonary embolism, pneumothorax, pneumonia

Orthopnea, nocturnal paroxysmal dyspnea, edema

Congestive heart failure

Tobacco use

Chronic obstructive pulmonary disease, congestive heart failure, pulmonary embolism

Indigestion, dysphagia

Gastroesophageal reflux disease, aspiration

Diagnosis of Asthma: Pulmonary Function Criteria

Pulmonary Function Measurement	Children (6 years of age and over)	Adults
PREFERRED: Spirometry showing reversible airway obstruction		
Reduced FEV ₁ /FVC	Less than lower limit of normal based on age, sex, height and ethnicity (<0.8-0.9)*	Less than lower limit of normal based on age, sex, height and ethnicity (<0.75-0.8)*
AND	AND	AND
Increase in FEV ₁ after a bronchodilator or after course of controller therapy	≥ 12%	≥ 12% (and a minimum ≥ 200mL)

Asthma Control

Characteristic	Frequency or Value
Daytime symptoms	< 4 days/week
Night-time symptoms	<1 night/week
Physical activity	Normal
Exacerbations	Mild, infrequent
Absence from work or school due to asthma	None
Need for a fast-acting beta ₂ -agonist	<4 doses/week
FEV ₁ or PEF	≥90% personal best
PEF diurnal variation*	<10-15%
Sputum eosinophils †	<2-3%

FEV₁ = forced expiratory volume in 1s; PEF = peak expiratory flow.

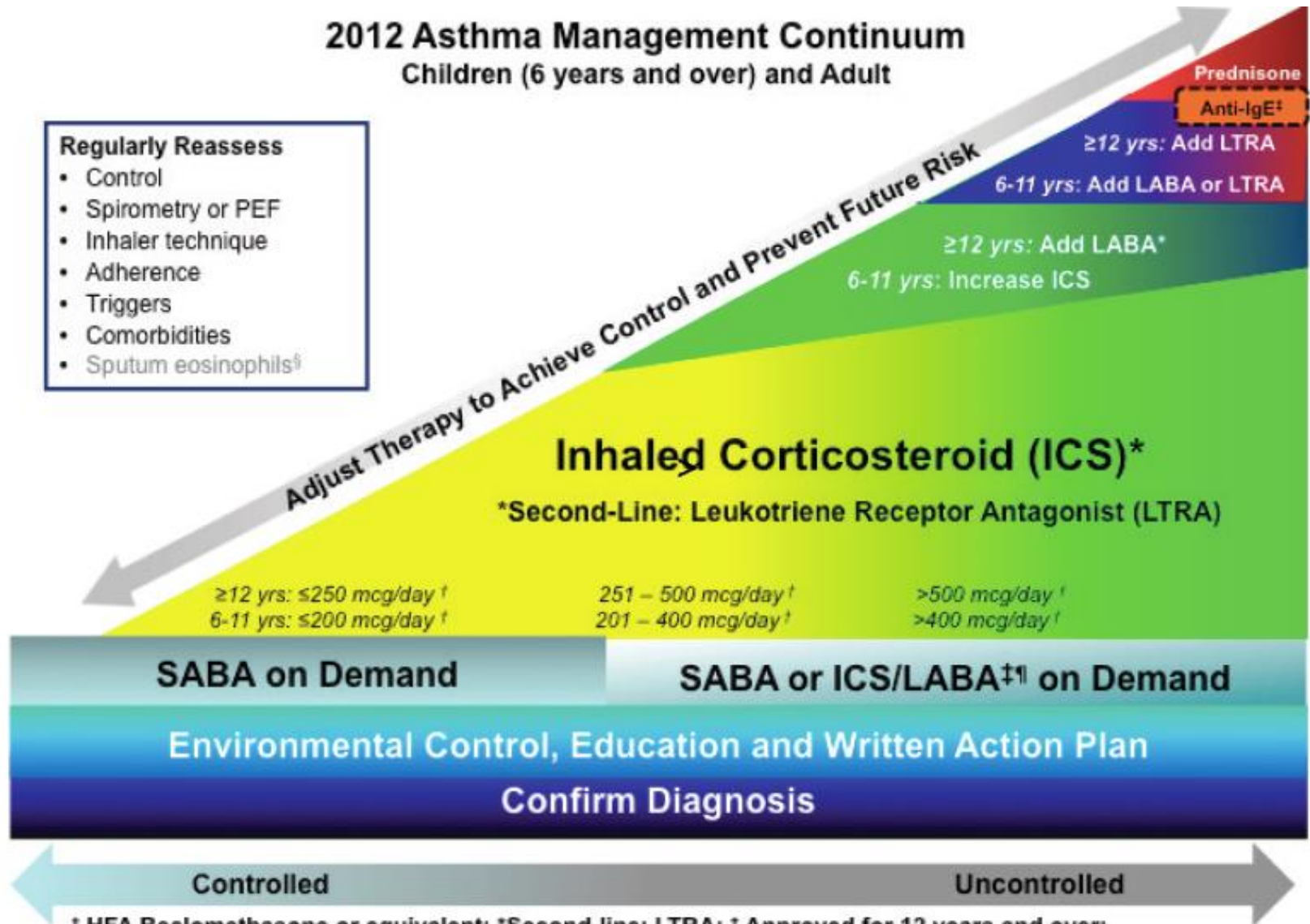
* Diurnal variation is calculated as the highest PEF minus the lowest divided by the highest PEF multiplied by 100 for morning and night (determined over a 1 - 2 week period).

† Consider in individuals 18 years and over with moderate to severe asthma who are assessed in specialized centres.

2012 Asthma Management Continuum

Children (6 years and over) and Adult

- Regularly Reassess**
- Control
 - Spirometry or PEF
 - Inhaler technique
 - Adherence
 - Triggers
 - Comorbidities
 - Sputum eosinophils[§]



† HFA Beclomethasone or equivalent; *Second-line: LTRA; ‡ Approved for 12 years and over;
 ¶ Using a formulation approved for use as a reliever;
 § In adults 18 years and over with moderate to severe asthma.

YELLOW LEVEL My asthma is getting worse.

SYMPTOMS

- I have symptoms, like wheezing or coughing, with activity or at night. They go away when I use my reliever.
- I'm using my reliever more than ___ times a week/day.
- I can't do many of my usual activities.

PEAK FLOW

_____ to _____ (60% to 80% of your personal best)

WHAT SHOULD I DO?

A problem is beginning. I should increase my medication as specified below until I am in the green level for _____ days or more. **If my symptoms do not improve within 4 days, I will call my doctor.**

Medication	Dose	Take it when?

RED LEVEL I am having an asthma emergency.

SYMPTOMS

- My breathing is difficult.
- I'm wheezing often when resting.
- I'm having difficulty walking and/or talking.
- My lips and/or fingernails are blue or grey.
- My reliever does not help in 10 minutes OR is needed every 4 hours or more.

PEAK FLOW

_____ to _____ (less than 60% of your personal best)

WHAT SHOULD I DO?

**I NEED TO GO TO THE HOSPITAL
EMERGENCY RIGHT AWAY.**

**I SHOULD USE MY RELIEVER AS
MUCH AS I NEED TO ON THE
WAY THERE.**

TABLE 3**Clinical differences between asthma and chronic obstructive pulmonary disease (COPD)**

	Asthma	COPD
Age of onset	Usually <40 years	Usually >40 years
Smoking history	Not causal	Usually > 10 pack-years
Sputum production	Infrequent	Often
Allergies	Often	Infrequent
Disease course	Stable (with exacerbations)	Progressive worsening (with exacerbations)
Spirometry	Often normalizes	May improve but never normalizes
Clinical symptoms	Intermittent and variable	Persistent

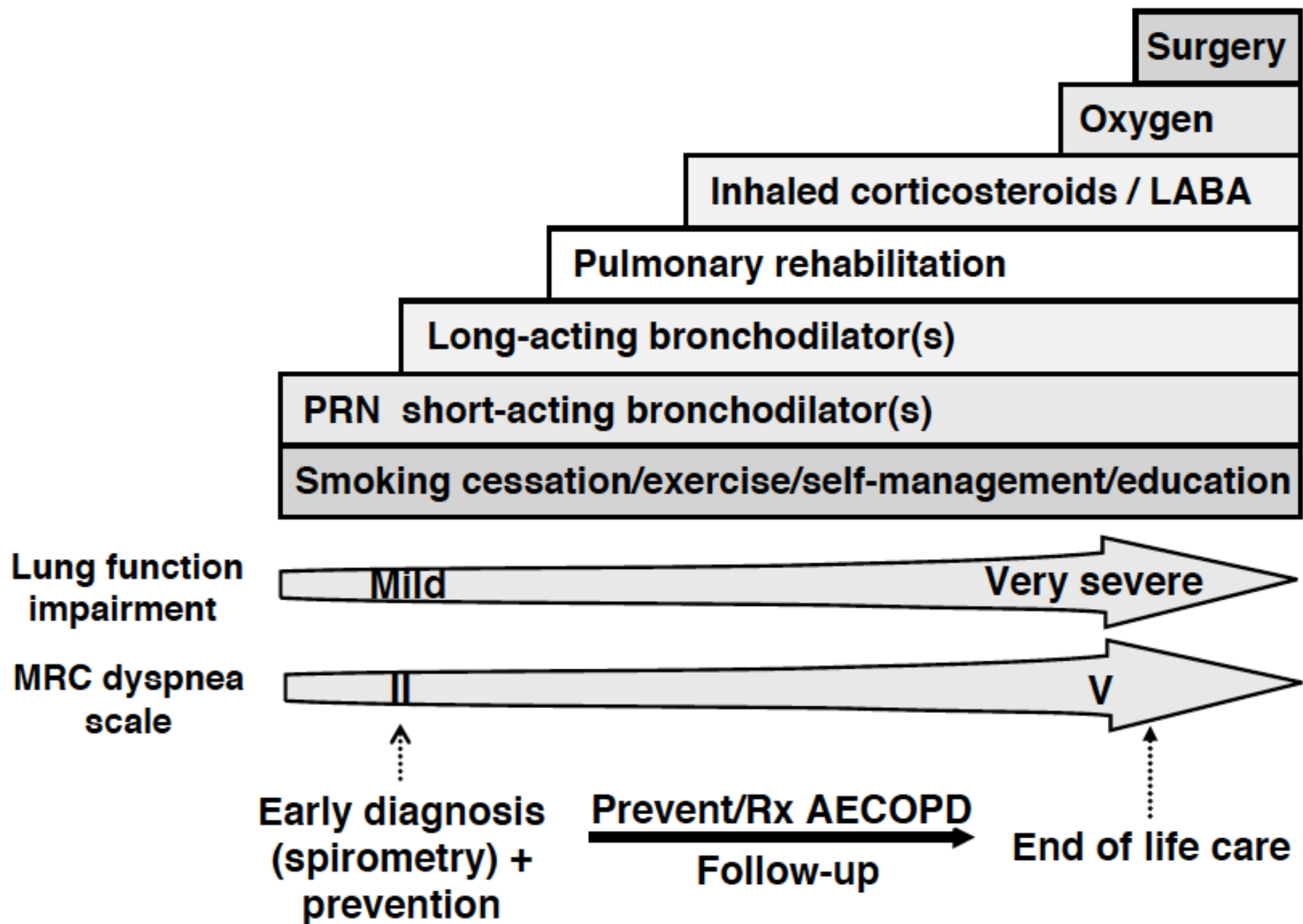


Figure 1) A comprehensive approach to the management of chronic obstructive pulmonary disease (COPD). AECOPD Acute exacerbation of

Increasing Disability and Lung Function Impairment

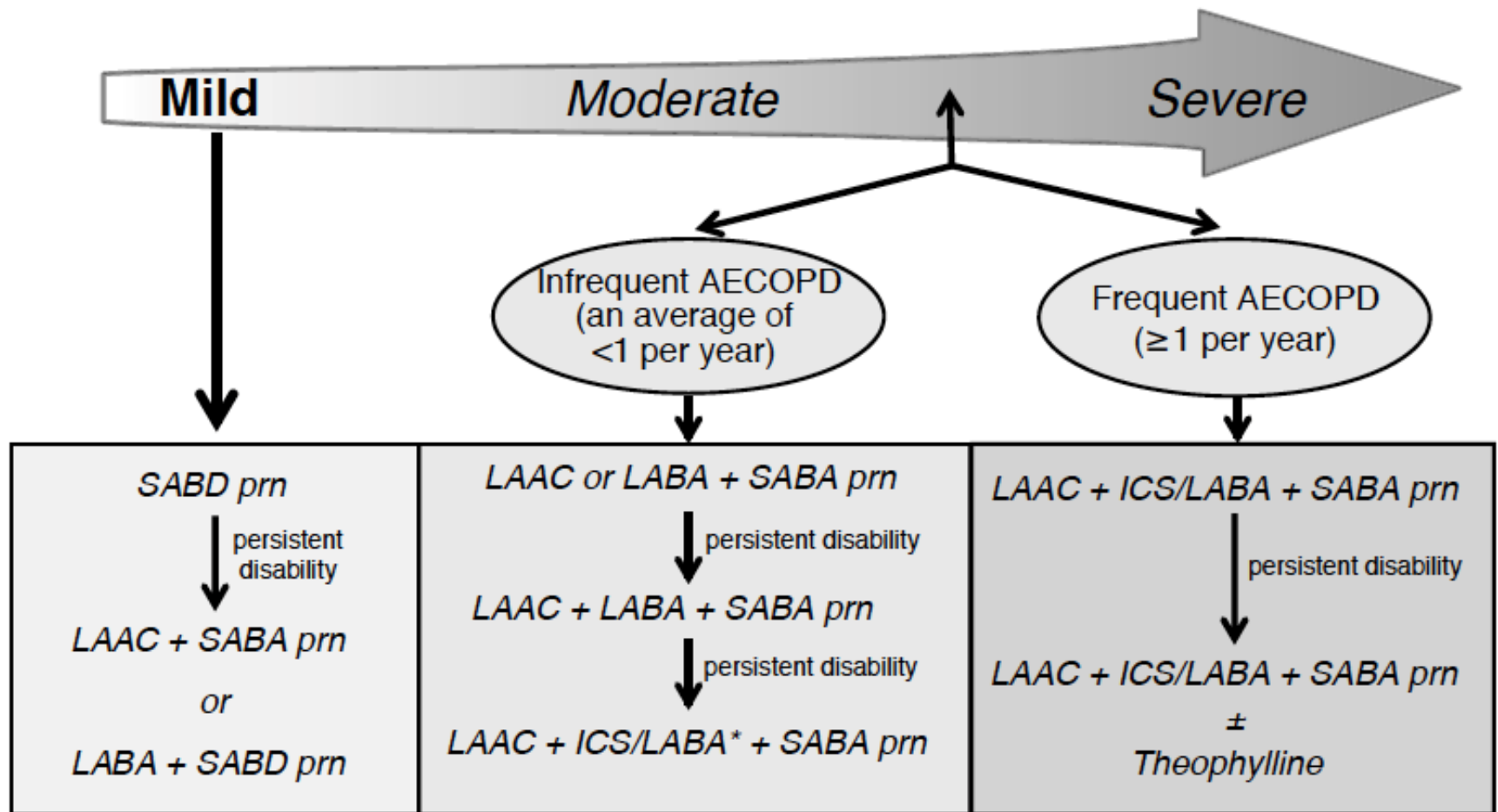
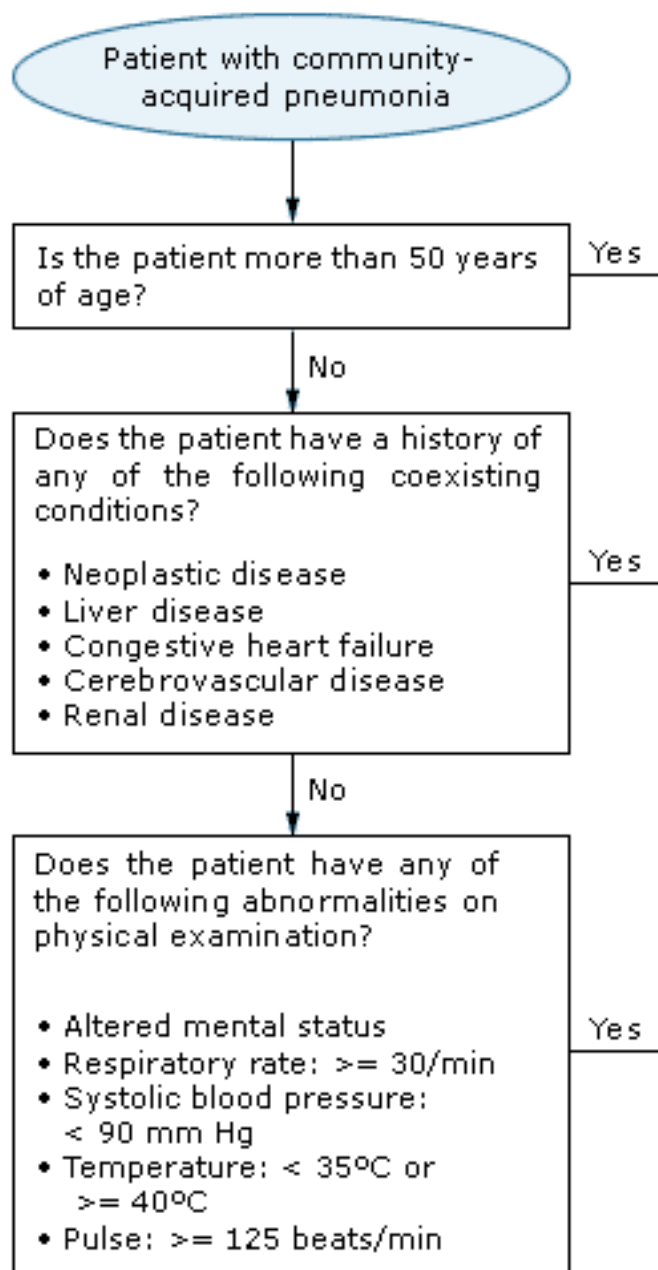


Figure 2) Recommendations for optimal pharmacotherapy in chronic obstructive pulmonary disease (COPD). *Refers to the lower dose inhaled corticosteroid/long-acting beta₂-agonist (ICS/LABA). AECOPD Acute exacerbation of COPD; LAAC Long-acting anticholinergic; prn As needed; SABA Short-acting beta₂-agonist; SABD Short-acting bronchodilator



Demographic factors

Age (in years)

Men

Women

-10

Nursing home resident

+10

Coexisting illnesses

Neoplastic disease

+30

Liver disease

+20

Congestive heart failure

+10

Cerebrovascular disease

+10

Renal disease

+10

Findings on physical examination

Altered mental status

+20

Respiratory rate $\geq 30/\text{min}$

+20

Systolic blood pressure $< 90 \text{ mm Hg}$

+20

Temperature $< 35^\circ\text{C}$ or $\geq 40^\circ\text{C}$

+15

Pulse $\geq 125 \text{ beats/min}$

+10

Laboratory and radiographic findings

Arterial pH < 7.35

+30

Blood urea nitrogen $\geq 30/\text{mg/dl}$
(11 mmol/liter)

+20

Sodium $< 130 \text{ mmol/liter}$

+20

Glucose $\geq 250 \text{ mg/dl}$ (14
mmol/liter)

+10

Hematocrit $< 30\%$

+10

Partial pressure of arterial oxygen $< 60 \text{ mm Hg}$ or oxygen saturation $< 90\%$

+10

Pleural effusion

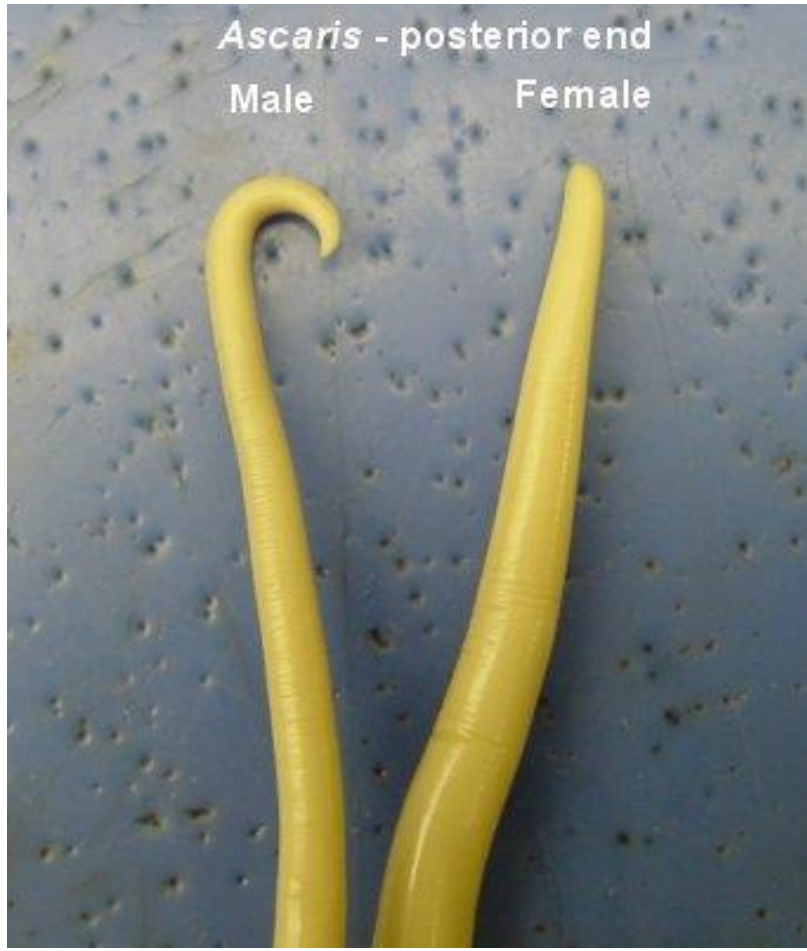
+10



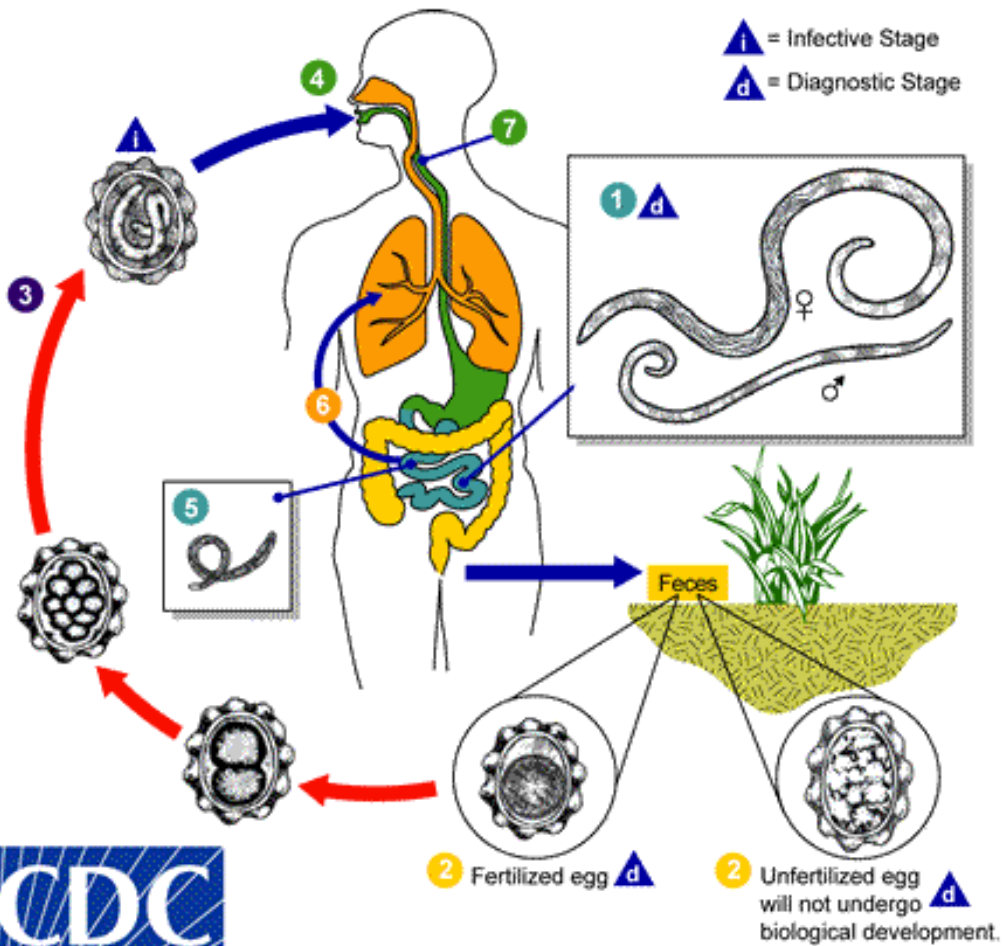
Ascaris - posterior end

Male

Female



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