

Risma Karlina Prabawati

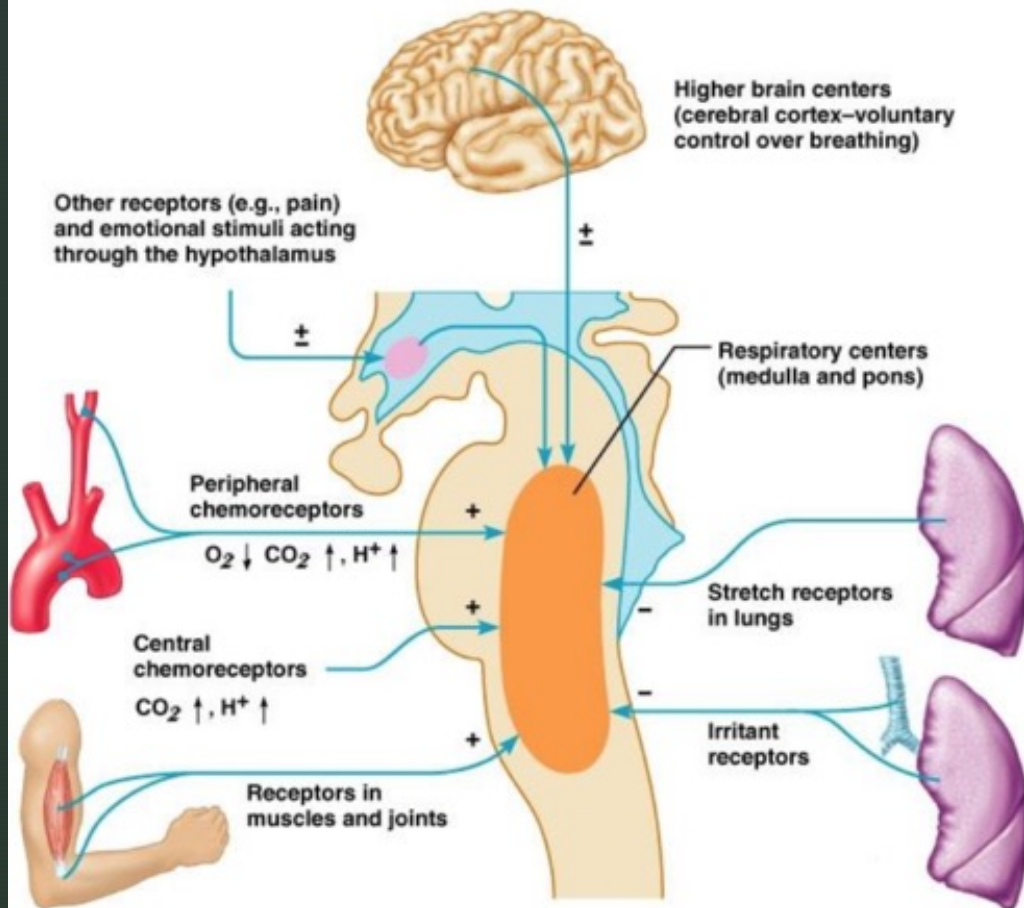
Rehabilitasi Respirasi

Pendahuluan

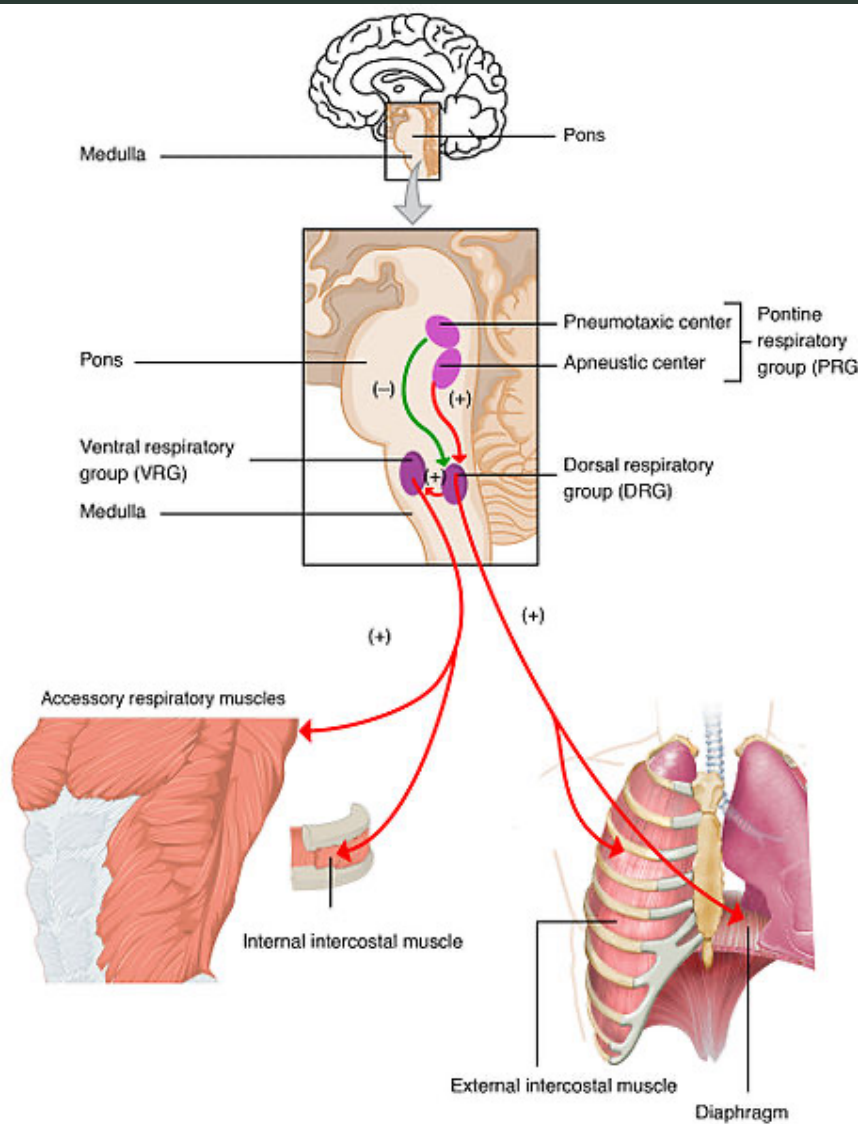
- *Pulmonary rehabilitation is a comprehensive intervention based on a thorough patient assessment followed by patient-tailored therapies which include, but are not limited to, exercise training, education and behavior change, designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote the long-term adherence to health-enhancing behaviors. (ATS/ERS 2013)*
- Rehabilitasi Respirasi → rehabilitasi untuk optimalisasi gangguan fungsi respirasi

Sistem Respirasi

Neural control of breathing

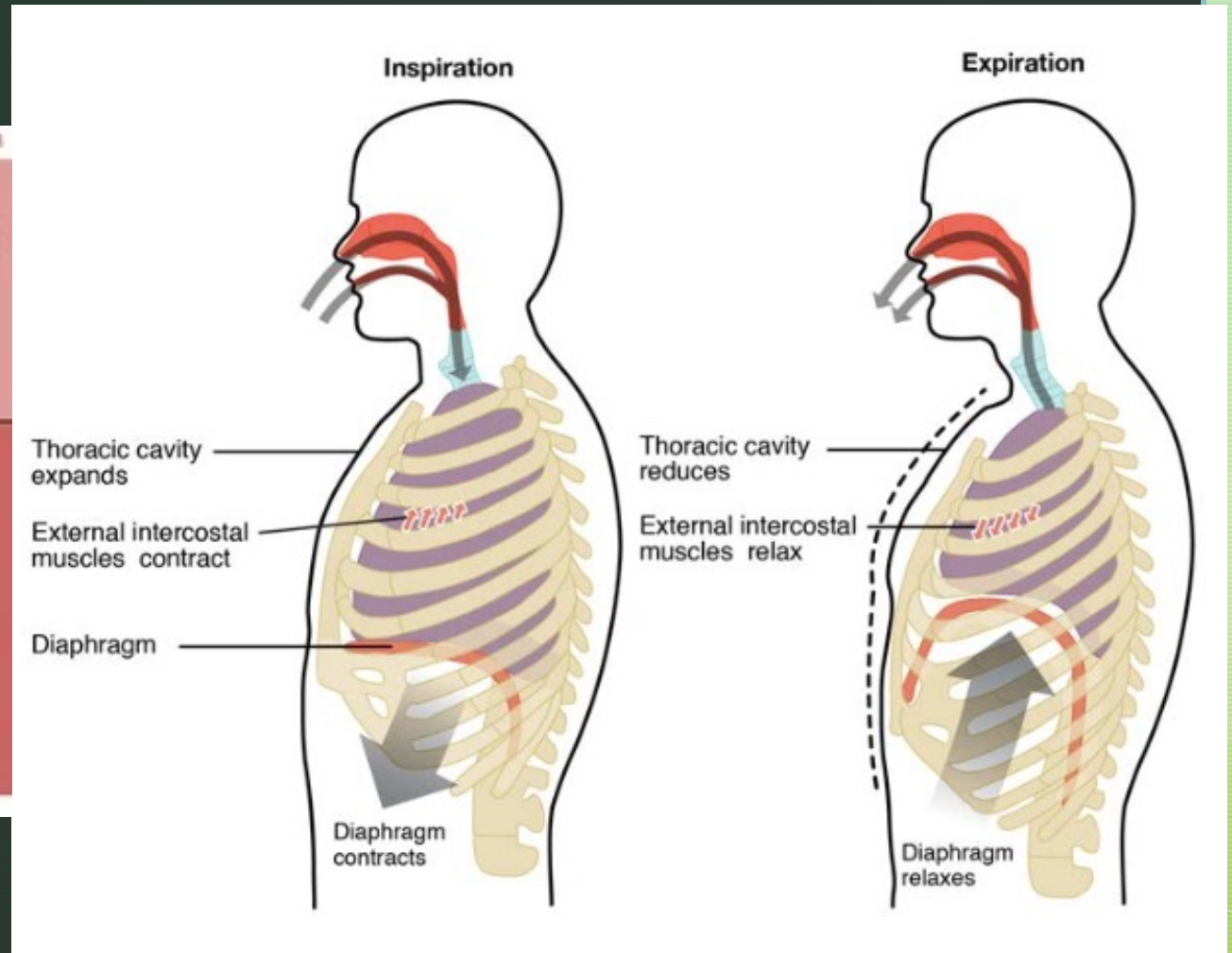
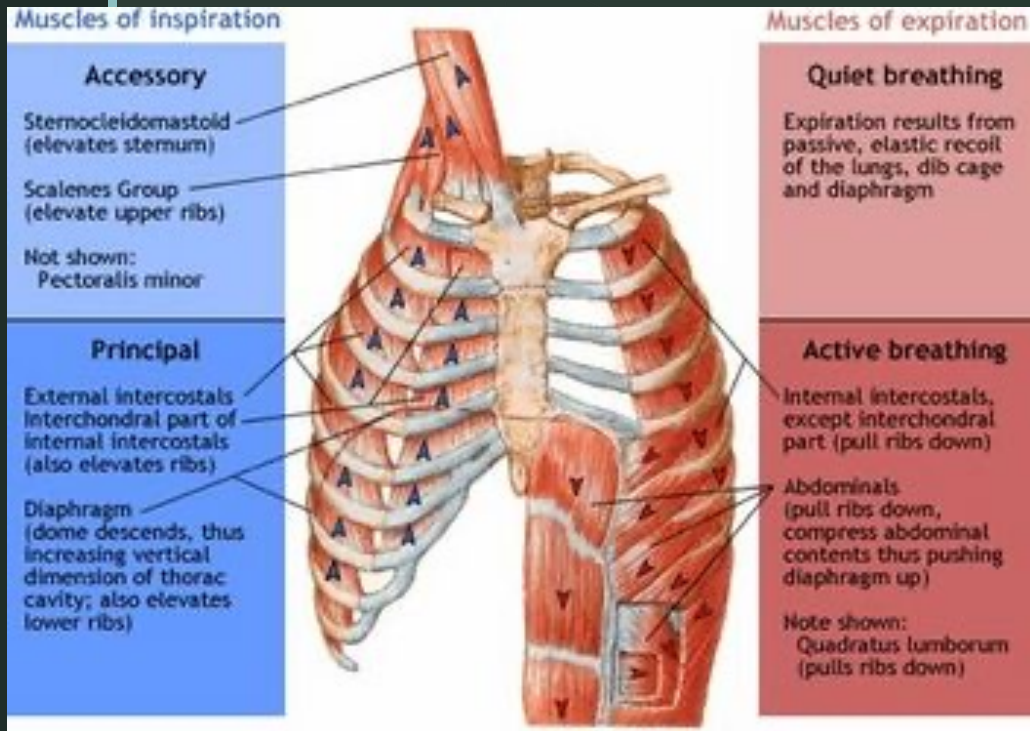


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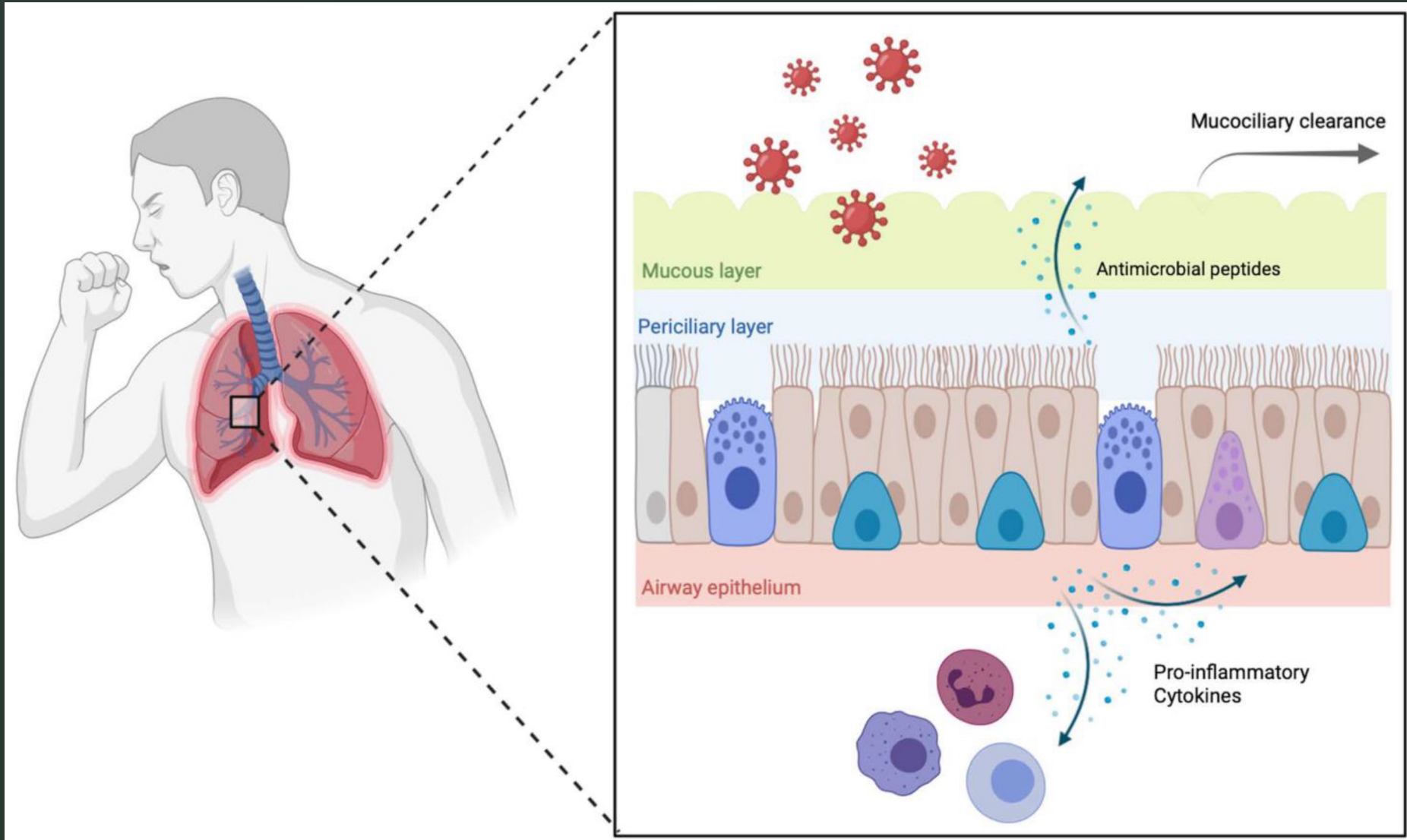


External intercostal muscle
Diaphragm

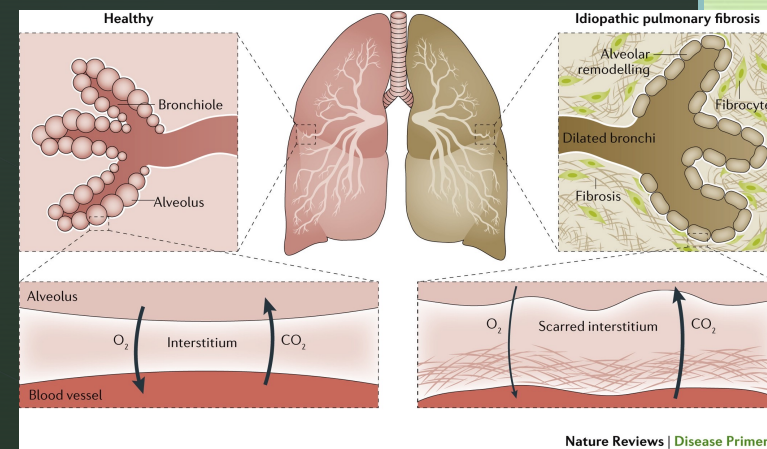
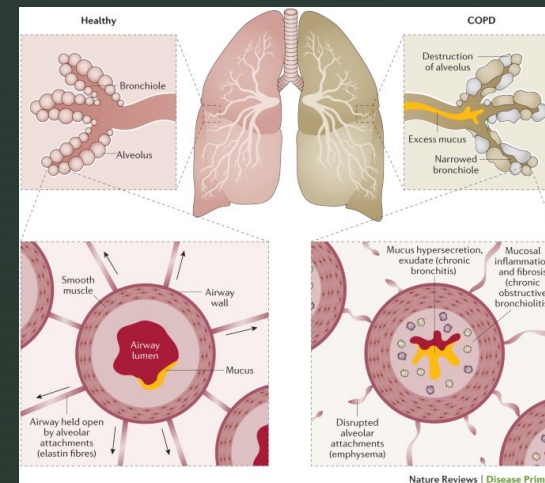
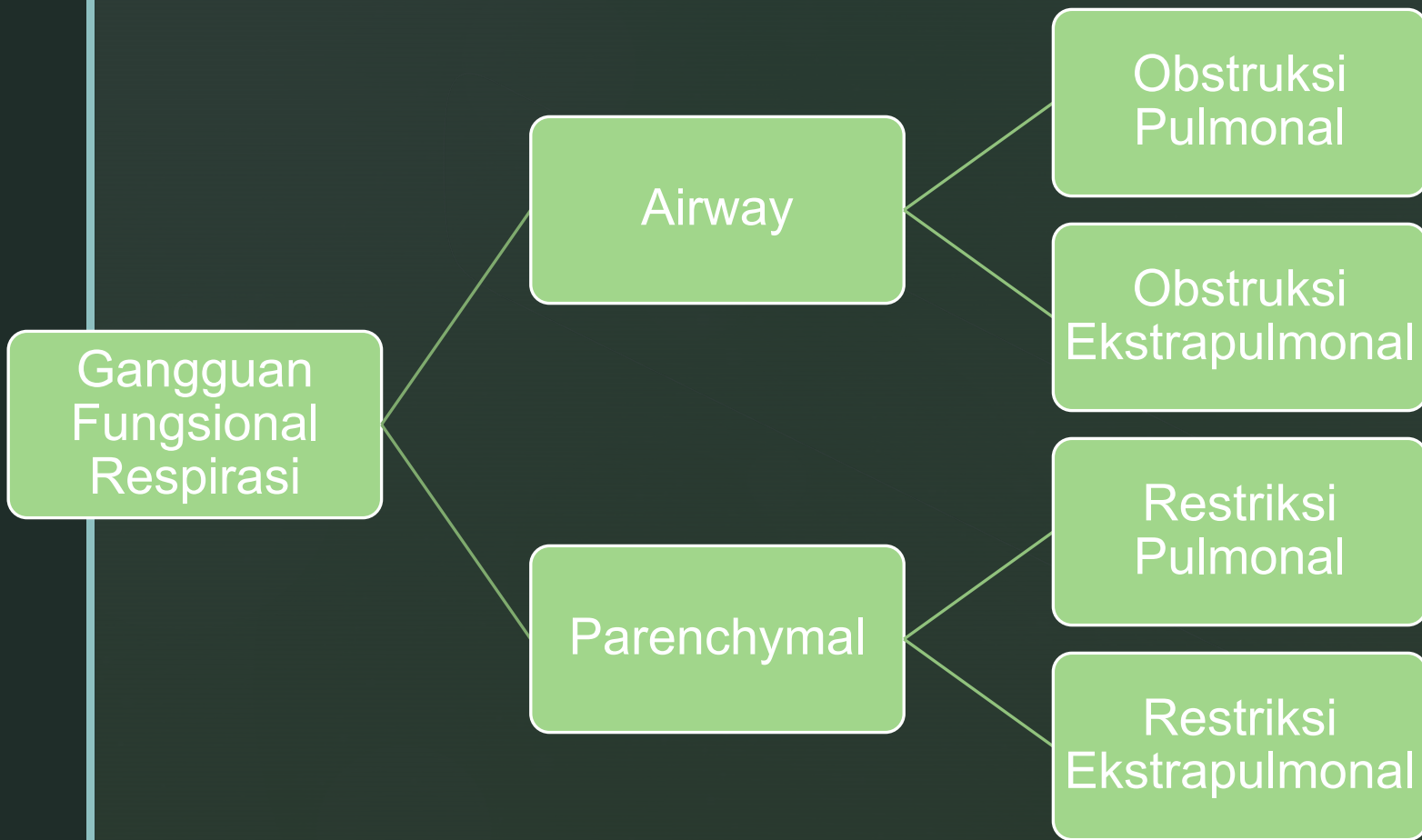
Mekanisme Respirasi



Mucociliary Clearance

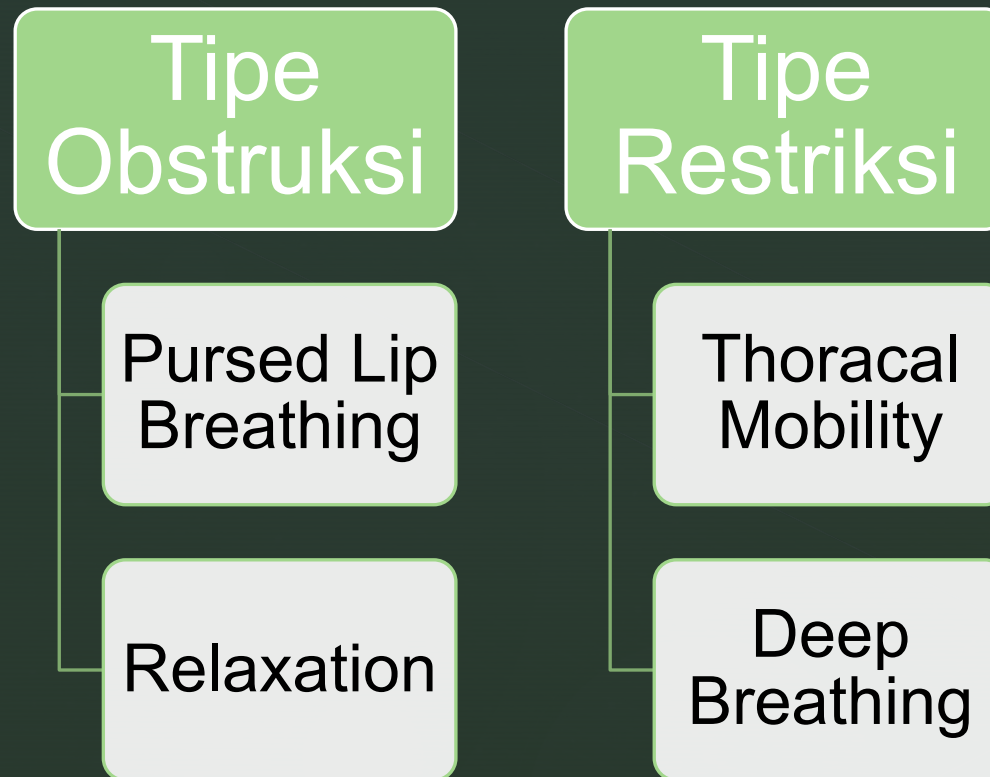


Gangguan Fungsional Respirasi



Terapi Latihan Gangguan Fungsional Respirasi

Intervensi yang diberikan dalam bidang rehabilitasi paru/ respirasi untuk mengatasi gangguan fungsi



Terapi Latihan Tipe Obstruksi

PURSED LIP BREATHING



1. Breathe in slowly through the nostrils to the count of 1-2.
2. Purse your lips and breathe out slowly through your pursed lips to the count of 1-2-3-4.

Table 2. Guidelines for Exercise Training in Patients with COPD

<i>Recommendation</i>	<i>Strength of evidence</i>
Lower-extremity exercise training should be a mandatory component of pulmonary rehabilitation.	Strong evidence; strong recommendation
Low- and high-intensity exercise training produces clinical benefits for patients with COPD.	Strong evidence; strong recommendation
Lower-extremity exercise training performed at a high level of intensity produces greater physiologic benefits than lower-intensity training.	Moderate evidence; strong recommendation
Unsupported upper-extremity endurance training should be included in pulmonary rehabilitation exercise programs.	Strong evidence; strong recommendation
Including a strength training component in a pulmonary rehabilitation exercise program increases muscle strength and muscle mass.	Strong evidence; strong recommendation
There is no evidence to support the routine use of inspiratory muscle training as an essential component of pulmonary rehabilitation.	Moderate evidence; strong recommendation

COPD = chronic obstructive pulmonary disease.

Information from reference 4.

Terapi Latihan Tipe Obstruksi

III. Relaxation Technique

1. Breathing Control Relaxation

a. One breathing technique

- Diaphragm breathing w/ saying "one" every exhalation

b. Eye-movement breathing technique

- Diaphragm breathing w/ looking up eyebrows while inhalation, hold 2', looking down while exhalation.

Lean forward position correlate with length tension of diaphragm & make viscera drop forward so diaphragm move easily

2. Relaxation Position (supine is uncomfourt for dyspnea px)

- High-side lying
- Sitting lean-forward on a pillow
- Sitting lean-forward w/ elbow on knee
- Standing lean-forward support hand on table
- Standing on wall and lean-foward



3. Progressive muscle relaxation exc

- Systematically learning to tense muscle groups for 10' followed by active relaxation for 10-15'

4. Cognitive Relaxation

Terapi Latihan Tipe Restriksi

Exercise Type	Modality	Frequency, duration and intensity	Exercises
Warm-up	Global range of motion exercises; breathing control.	Daily, 5 minutes 4 exercises: 1 set of 8 to 15 repetitions	
Aerobic training	Walking; cycling; stepping.	Daily, 30 minutes continuous or 3 bouts of 10 minutes 4-6 in the modified Borg scale	
Resistance training	Free weights (major muscle groups of upper and lower limbs and trunk).	Daily, 15 minutes 4 exercises: 2 set of 10 to 12 repetitions 4-6 in the modified Borg scale	
Balance training	Upright positions; adjustments of the centre of gravity in static and dynamic postures; dual cognitive and motor task.	Daily, 5 - 10 minutes Progression with eyes closed	
Cool-down	Breathing control; stretching exercises.	5 minutes 4 exercises: 2 to 4 repetitions maintaining 20 seconds each	

- Mengembalikan fungsi mekanik gerak dada pada disfungsi inspirasi
- Mempertahankan compliance paru

Terapi Latihan Tipe Restriksi

1. Sit or stand with your elbows slightly back.



2. Inhale a deep breath & Hold your breath



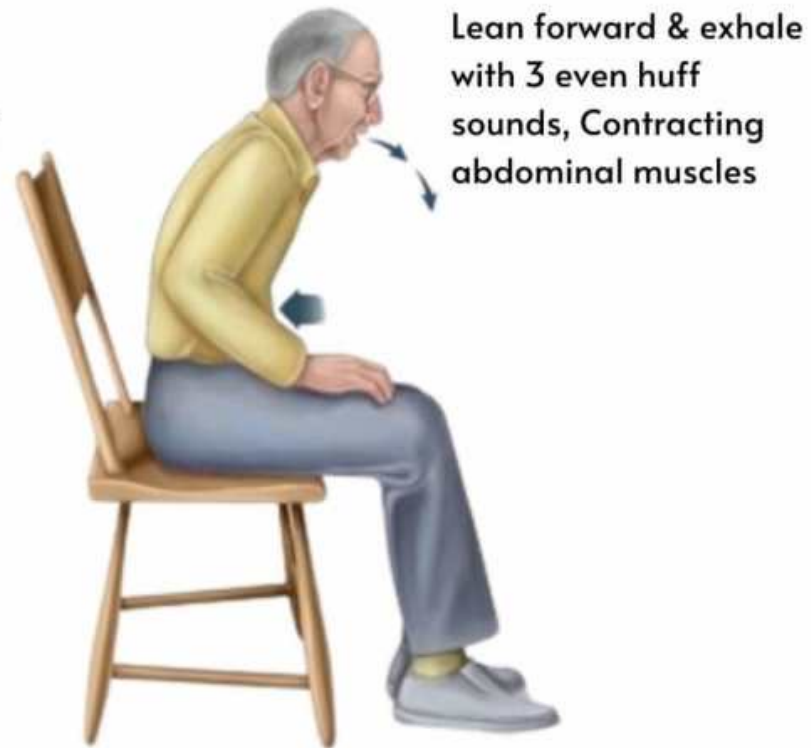
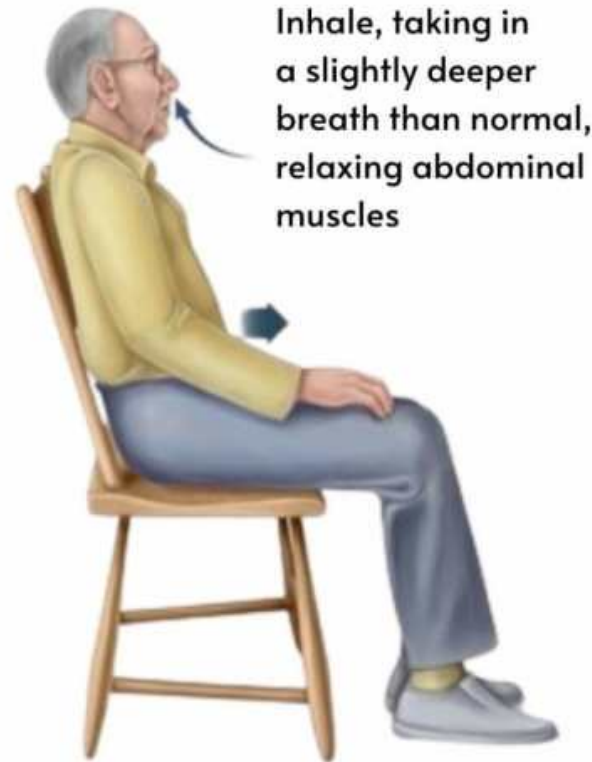
3. Exhale



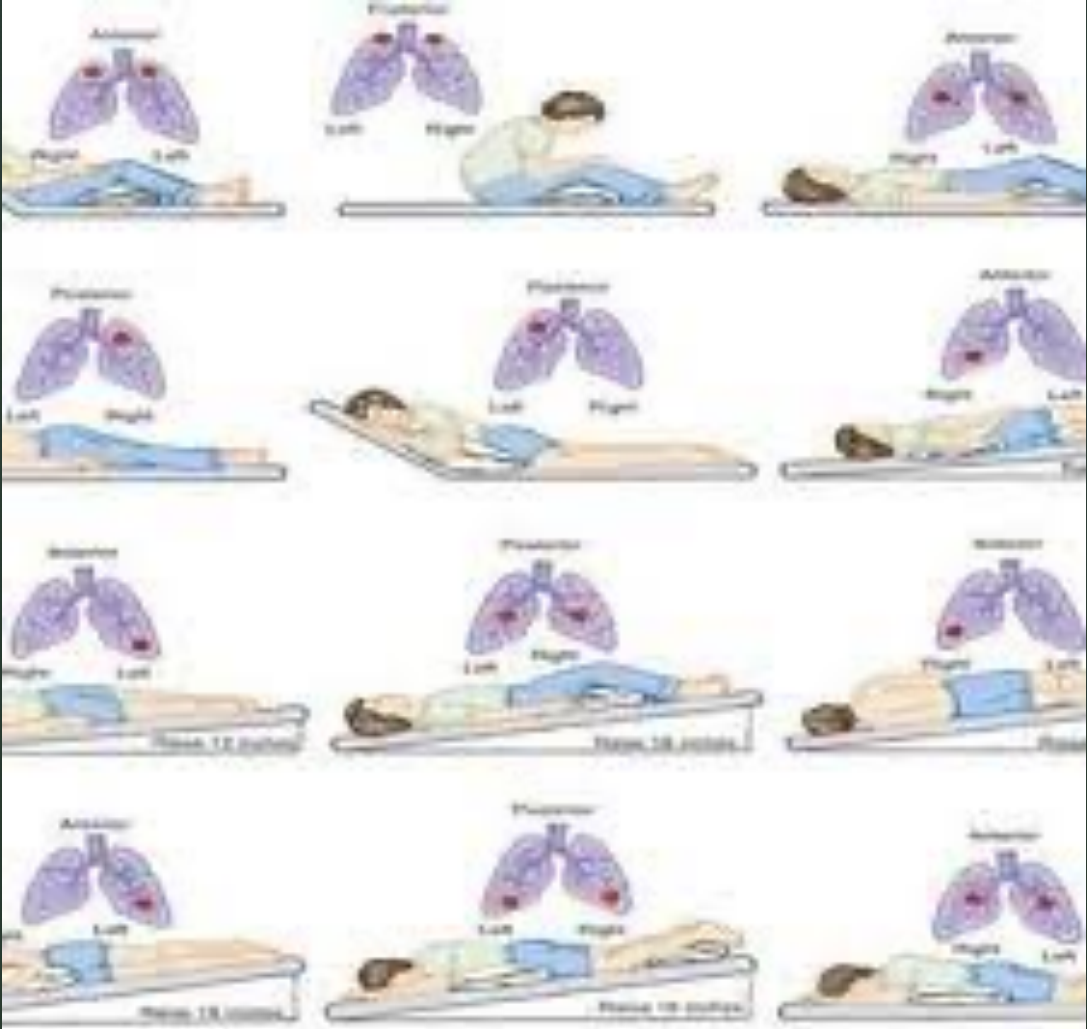
DEEP BREATHING

Huff Cough

HUFF COUGH



Postural Drainage



Evaluasi Terapi

- Pulse Oxymetry
- Borg scale
- MRC scale
- CAT
- Functional Respiratory Muscle Indicator: Incentive Spirometry, Peak Cough

1 - 10 Borg Rating of Perceived Exertion Scale

0	Rest
1	Really Easy
2	Easy
3	Moderate
4	Sort of Hard
5	Hard
6	
7	Really Hard
8	
9	Really, Really, Hard
10	Maximal: Just like my hardest race

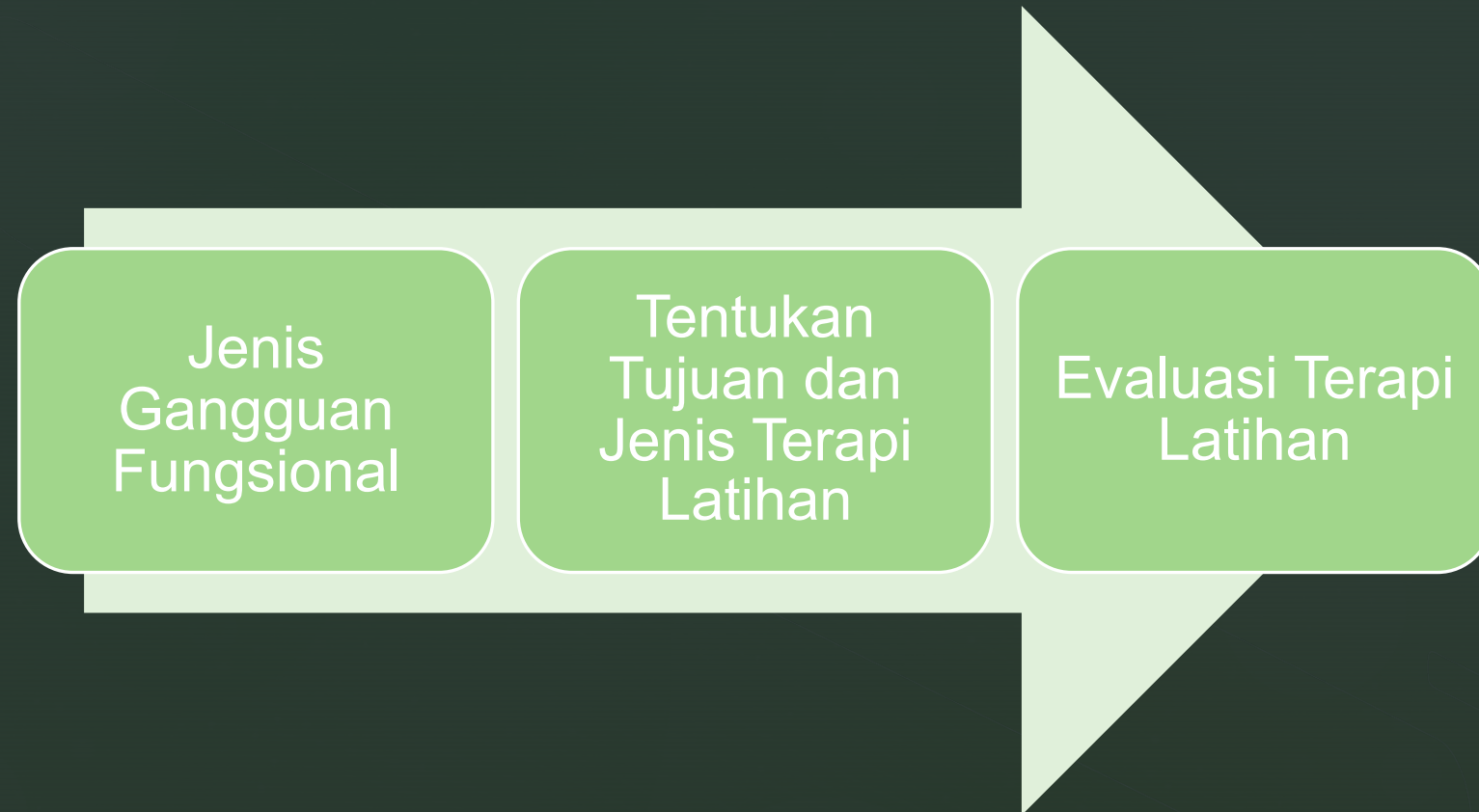
MODIFIED MRC DYSPNEA SCALE^a

PLEASE TICK IN THE BOX THAT APPLIES TO YOU | ONE BOX ONLY | Grades 0 - 4

mMRC Grade 0.	I only get breathless with strenuous exercise.	<input type="checkbox"/>
mMRC Grade 1.	I get short of breath when hurrying on the level or walking up a slight hill.	<input type="checkbox"/>
mMRC Grade 2.	I walk slower than people of the same age on the level because of breathlessness, or I have to stop for breath when walking on my own pace on the level.	<input type="checkbox"/>
mMRC Grade 3.	I stop for breath after walking about 100 meters or after a few minutes on the level.	<input type="checkbox"/>
mMRC Grade 4.	I am too breathless to leave the house or I am breathless when dressing or undressing.	<input type="checkbox"/>

^a Fletcher CM. BMJ 1960; 2: 1662.

Penutup





Terima Kasih

