

호흡곤란 Dyspnea

911-1

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Abstract

Dyspnea is one of the most common respiratory symptoms and is a term to indicate a subjective experience of breathing discomfort. Most patients with dyspnea can be categorized into two groups: respiratory system dyspnea and cardiovascular system dyspnea. The underlying mechanisms encompass variable interactions of physiological, psychological, social, and environmental factors. Among these physiologic mechanisms are most important. Respiratory system dyspnea derives from stimulation of central or peripheral chemoreceptor, stimulation of mechanoreceptor, motor commands of cerebral cortex, afferent mismatch and/or neuromechanical dissociation due to derangements in the central controller, the ventilatory pump, and gas exchanger. Cardiovascular system dyspnea derives from impaired oxygen delivery and oxygen utilization due to cardiac disease, anemia, and deconditioning. The objective scales and standardized measurements for the subjective expression of dyspnea have been commonly used. The proper evaluation and treatment of dyspnea have to be planned taking underlying diseases and accompanying physiologic mechanisms into consideration.

Keywords : **Dyspnea; Respiratory; Cardiovascular; Physiological; Chemoreceptor**

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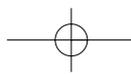
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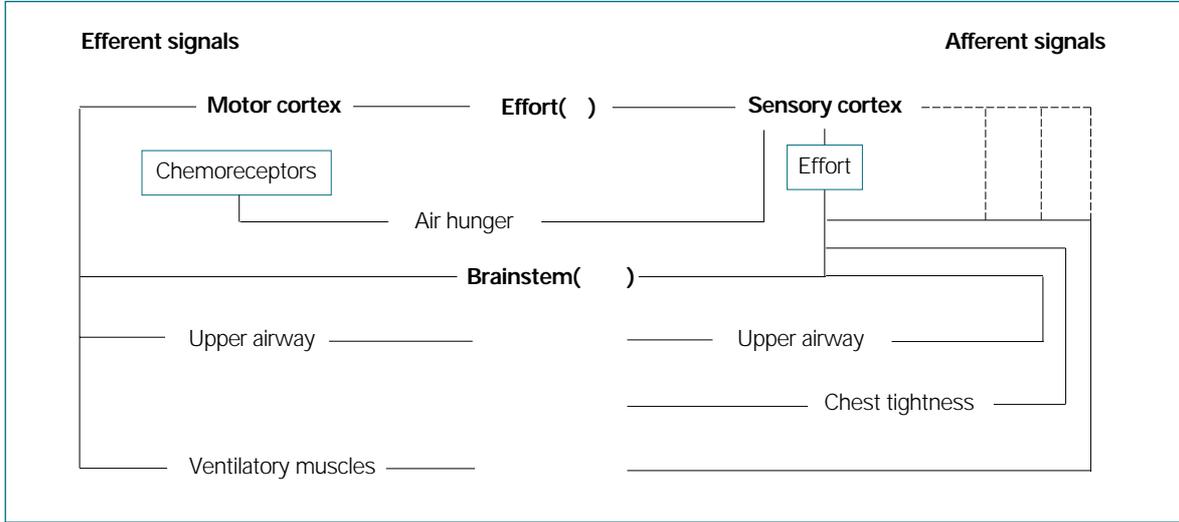
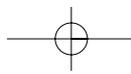
1. 가

가 , 가, ,

(chemoreceptor)

(mechanoreceptor)





1. (9)

(1). 3) (Pulmonary Vagal Receptor)
(1).

1) (carotid body), slowly adapting receptor, rapid adapting
(aortic arch) receptor, c - fiber

(medulla) (1).
pH, PCO2

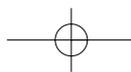
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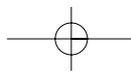
, ,
, ,

(corollary signal)

가

(3).





() Continuing Education Column

3. (Afferent Mismatch)
(Neuromechanical Dissociation)

, ,

가 (4).

1)

, ,
가 (5).

2)

(Abnormal Ventilatory Impedance)

4.

가가

가 6~7g/dl

가 (6).

5.

가

(7).

1.

가

가

가

가

가

brain natriuretic peptide(BNP) . 1,586

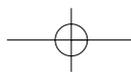
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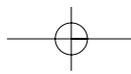
가 675pg/ml

110pg/ml

가 (8).

2.





, , , (psycho-
genic dyspnea), , .

1.

(,)
(,)

(central controller),
(ventilatory pump), 가 (gas exchan-
ger)

가 (amyotrophic lateral sclerosis),
(myasthenia gravis), Guillain Barré

2가 가
(brainstem)

(10).

(voluntary signal)

가

(kyphoscoliosis)

(9).

가

가

1.

(11).

가 .

3) 가

1)

(effe-
rent signals)

가

가

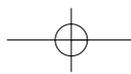
(air hunger)

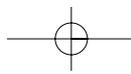
가

2.

2)

가





() Continuing Education Column

2.



가

가

가

가

(9).

가

3.

J-

1)

40~50%

가

20~32

30~50%

가

4cm

가

가

20%

가

c - fiber

가

2)

60~70%

(9).

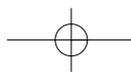
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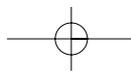
가

1.

(12).

가





3)

4) Effort

(orthopnea) 가

(corollary discharge)

' platypnea '

* (9)

2.

(13).

가

(tightness)

가

가

(effort to breathe)

가

가

가

(heavy breathing)

1) Breathlessness

' dyspnea '

가

가

3.

가

가 (14).

2)

가 가

1)

1970

Borg

6 20

' urge to breathe ', ' cannot breathe

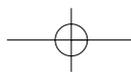
enough air ', ' need to breathe '

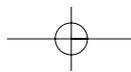
(14).

가

10

(4). Visual





() **Continuing Education Column**

3. Borg

Rating	Intensity of sensation
0	Nothing at all
0.5	Very, very slight (just noticeable)
1	Very slight
2	Slight
3	Moderate
4	Somewhat severe
5	Severe
6	
7	Very severe
8	
9	Very, very severe (almost maximal)
10	Maximal

4. Medical Research Council

Grade 1	Breathless with strenuous exercise
Grade 2	Short of breath when hurrying on the level or walking up a slight hill
Grade 3	Walk slower than people of the same age on the level or stop for breath while walking at own pace on the level
Grade 4	Stop for breath after walking about 100 yards or after a few minutes on the level
Grade 5	Too breathless to leave the house or breathless when dressing or undressing

(18).

Analogue Scale(VAS) 100mm
가 (15).

4.

가

2)

(maximal voluntary ventilation)

Medical Research Council(MRC) scale

가

가

5

가

가

(16).

Oxygen cost diagram(OCD)

30~40%

가 13가

가

가

13가

50%

(6).

100mm

(vertical visual scale)

(17). Baseline dyspnea index(BDI)

가

(0)

200m

(10)

가

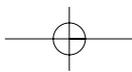
가

. Transitional dyspnea

가

index(TDI)





5.

Descriptions	Grade	Degree
Not troubled by shortness of breath when hurrying on the level or walking up a slight hill	0	None
Troubled by shortness of breath when hurrying on the level or walking up a slight hill	1	Mild
Walks more slowly than people of the same age on the level because of breathlessness or has to stop for breath when walking at own pace on the level	2	Moderate
Stops for breath after walking about 100 yard or after a few minutes on the level	3	Severe
Too breathless to leave the house; breathless on dressing or undressing	4	Very severe

2) 가

(1) :

(pursed lip breathing)

(21).

(motor command output)
(neuromechanical)

(2)

가- (auto-positive end expiratory pressure) 가

1.

가

(3)

(4)

1)

(1)

가

3)

(1)

. COPD

(22).

(2)

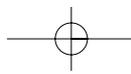
(19).

(2)

가

(20).





() **Continuing Education Column**

(23). ,

가 .

4)

(1) :

(24).

(2) : , bupivacaine

가

(25).

(3) : 가 가

(26).

, 가



5)

(1) :

(2) : , 가

(27)

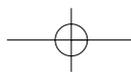
6) (Altered Central Perception)

(relaxation),

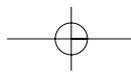
(distraction), (guided imagery)

(28).

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