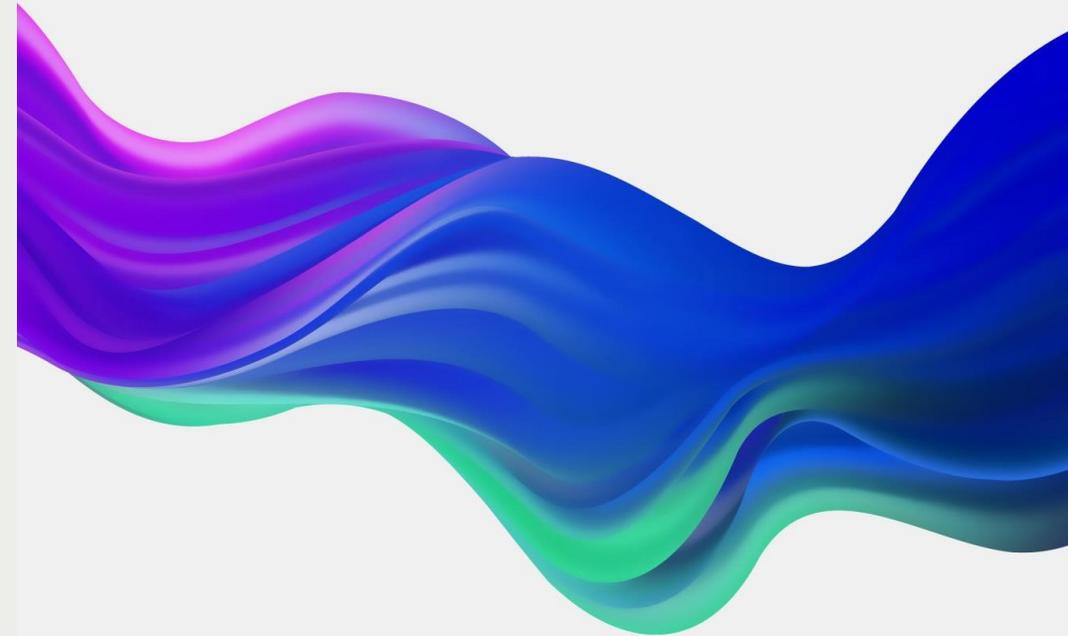


Shenfield Case Studies In Pulmonary Function Part 2

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Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders

Question 1

Peak Flow Rate

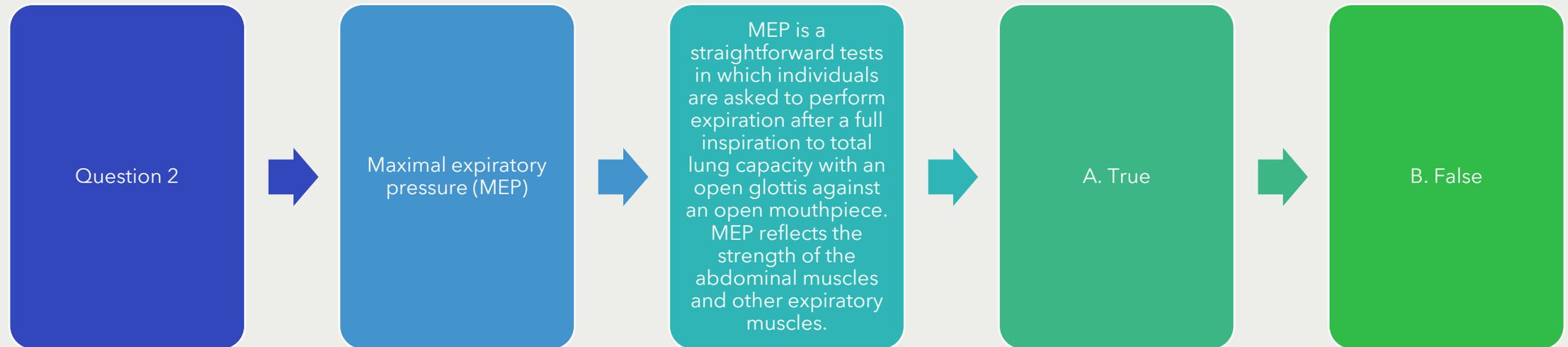
Typically , muscle weakness in neuromuscular diseased patients, does not demonstrate significant changes in peak flow measurements

A. True

B. False



Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders



Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders

Question 3

Which one is correct

It is the most common acquired disorder of neuromuscular transmission, production of pathogenic autoantibodies that bind to components of the acetylcholinesterase receptor (AChR).

The incidence is estimated at 0.3 to 2.8 per 100,000 and the worldwide prevalence at 700,000.

In 1934, cholinesterase inhibition was demonstrated as the first effective treatment

A. Amyotrophic lateral sclerosis (ALS)

B. Muscular dystrophy

C. Myasthenia gravis

D. Guillain-Barré



Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders

Question 4

Maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP) are direct measures of respiratory muscle strength and may be more sensitive in detecting late stages of respiratory muscle dysfunction compared with spirometry

A. True

B. False



Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders

- Question 5
- This disorder refers to a group of genetic disorders that are characterized by degeneration of the anterior horn cells resulting in muscular weakness and 95% of the cases, it is an autosomal mode recessive disorder as a results of genetic mutation
- A. Myasthenia gravis
- B. Spinal muscular atrophy
- C. Gillian Barre syndrome
- D. ALS



**Pulmonary
Function
Testing In
Neuromuscular
And Chest Wall
Disorders**

Question 6

In neuromuscular weakness, the TLC is low, FRC is normal, and RV is high.

A. True

B. False



Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders

Question 7

It occurs due to the production of pathogenic autoantibodies that bind to components of the neuromuscular junction, the most common being the acetylcholinesterase receptor

A. Gillian Barre syndrome

B. ALS

C. Myasthenia gravis



**Pulmonary
Function
Testing In
Neuromuscular
And Chest Wall
Disorders**

Question 8

The FRC and RV may be normal or low in chest wall deformities.

A. True

B. False



Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders

Question 9

Peak cough flow values lower than $160 \text{ L}\cdot\text{min}^{-1}$ have been shown to be a good predictor of an ineffective cough and indicate those at risk of developing acute respiratory complications with NMD.

A. True

B. False



Pulmonary Function Testing In Neuromuscular And Chest Wall Disorders

Question 10

Maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP) are direct measures of respiratory muscle strength and may be less sensitive in detecting early respiratory muscle dysfunction compared with spirometry

A. True

B. False



Lung Function Assessment by Impulse Oscillometry In Adults

Question 1

Sound waves are superimposed on normal tidal breathing, and the disturbances in flow and pressure caused by the external waves are used to calculate parameters describing the resistance to airflow and allow measurement of lung mechanics and requires minimal patient cooperation

A. Ultrasound of lower lung fields

B. Impulse oscillometry

C. Lung audiometry

D. Infrasonic Waves (Infrasound)



Lung Function Assessment by Impulse Oscillometry In Adults

Question 2

One of the major disadvantages of this test is that it does not measure resistance and reactance at different frequencies and it's difficult to interpret

A. True

B. False



Lung Function Assessment by Impulse Oscillometry In Adults

Question 3

The frequencies of the waves delivered in IOS ranges from 15 to 40 Hz and frequencies greater than 40 cause discomfort.

A. True

B. False



Lung Function Assessment by Impulse Oscillometry In Adults

Question 4

It is the sum of all forces which oppose the generated impulse, and it is measured at any frequency and is the ratio of the difference in pressure and changes in the flow at that frequency

A. Impedance

B. Resistance

C. Reactance

D. Resonant frequency



Lung Function Assessment by Impulse Oscillometry In Adults

Question 5

It includes two components, the inertia of the air column to move (inertance) and the capacitance of the lung and capacitance can be interpreted as a property which reflects elasticity of the lung. The capacitance component of the reactance is defined to be negative in sign and inertance is defined as positive.

- Resistance
- Resonant frequency
- Reactance
- Coherence



Lung Function Assessment by Impulse Oscillometry In Adults

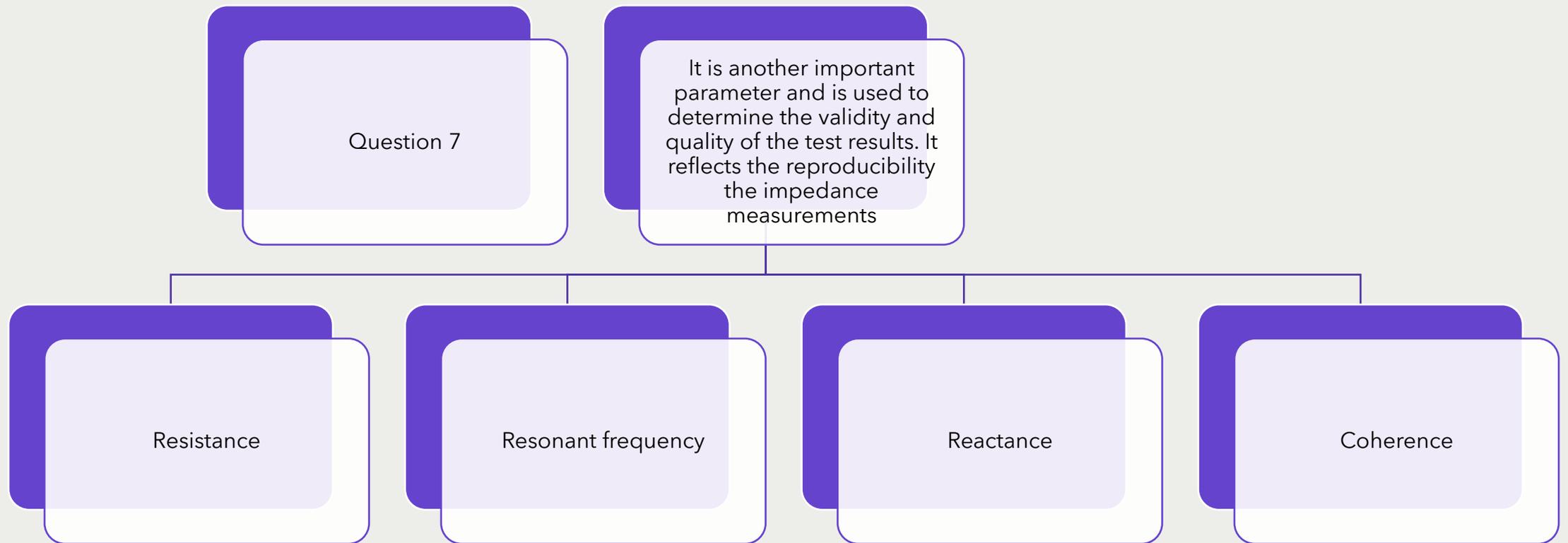
Question 6

It is defined as the frequency at which the inertial properties of airway and the capacitance of lung periphery are equal, i.e., the frequency at which total reactance is zero.

- Resistance
- Resonant frequency
- Reactance
- Coherence



Lung Function Assessment by Impulse Oscillometry In Adults



**Lung
Function
Assessment
by Impulse
Oscillometry
In Adults**

Question 8

The clinical application of this technique can be used on all of the following except :

A. Response to Broncho-Dilatators

B. Broncho-Provocation Testing

C. Asthma and COPD

D. Cancer

E. Interstitial Lung Disease (ILD)



Lung Function Assessment by Impulse Oscillometry In Adults

Question 9

A study published by Naji et al. concluded that using oscillometry as an alternative method for measuring resistance and obstruction may be useful when patients cannot perform body-plethysmography or spirometry exercise testing.

- Asthma and COPD
- Broncho-provocation Testing
- ILD
- Cystic Fibrosis



Lung Function Assessment by Impulse Oscillometry In Adults

Question 10

A very recent study, conducted by Reham et al studied correlations between oscillometry and spirometry on patients diagnosed with rheumatoid arthritis associated ILD, and concluded that IOS can be used as an early screening technique to identify proximal and distal pulmonary tissue affection even before spirometry changes appear. Which conditions benefit from this study?

- Interstitial lung disease
- Late-stage COPD
- Reactive lung disease
- Cystic fibrosis

