Spriggs Polysomnography Practice Test (Sample)

Study Guide

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Questions

1. How can oxygen desaturation levels affect sleep quality?

- **A. They can improve overall sleep experience**
- **B. They can lead to disrupted sleep and promote fragmented sleep patterns**
- **C. They have no significant impact**
- **D. They solely affect REM sleep duration**

2. Which of the following is NOT commonly used to treat obstructive sleep apnea (OSA)?

- **A. Hypoglossal nerve stimulation**
- **B. Nasal surgery**
- **C. Adentonsillectomy**
- **D. Cardiovascular surgery**

3. What is a critical feature of bi-level PAP devices?

- **A. They provide a single pressure setting**
- **B. They deliver varying pressures during inhalation and exhalation**
- **C. They are designed for short-term use**
- **D. They are less expensive than CPAP**

4. What aspect should a scheduler discuss with the patient?

- **A. The study locations available**
- **B. The purpose of the sleep study**
- **C. How to interpret the results**
- **D. Potential dietary restrictions**

5. Stage N2 of sleep is primarily dominated by which brain wave activity?

- **A. Delta waves**
- **B. Theta waves**
- **C. Alpha waves**
- **D. Beta waves**

6. What type of counseling can polysomnography technicians provide?

A. Advice on insurance claims

B. Guidance on sleep hygiene

C. Recommendations for sleep medications

D. Counseling on financial management

7. Which of the following features is characteristic of Advanced Sleep-Wake Phase Disorder?

A. Delayed onset of sleep

B. Quickly falling asleep

C. Consistent nighttime awakenings

D. Difficulty waking up in the morning

8. Why is the EEG sensitivity setting different in pediatric studies?

A. Children have lower brain activity

B. Adolescents produce inconsistent results

C. Pediatric patients have higher amplitude EEG wave forms

D. Adults show more rapid eye movement

9. What condition might be indicated by leg movements during sleep?

A. Restless Leg Syndrome (RLS)

B. Sleep-related Eating Disorder

C. Narcolepsy

D. Delayed Sleep Phase Disorder

10. What advantage does using an oral appliance offer for patients with mild to moderate sleep apnea?

A. It is a permanent solution

B. It provides a comfortable alternative to CPAP

C. It eliminates the need for any other treatments

D. It is only used in serious cases of OSA

Answers

1. B
2. D
3. B
4. B
5. B
6. B
7. B
8. C
9. A
10. B

Explanations

1. How can oxygen desaturation levels affect sleep quality?

A. They can improve overall sleep experience

B. They can lead to disrupted sleep and promote fragmented sleep patterns

C. They have no significant impact

D. They solely affect REM sleep duration

Oxygen desaturation levels can significantly affect sleep quality, primarily by leading to disrupted sleep and promoting fragmented sleep patterns. When oxygen levels drop during sleep, such as in conditions like sleep apnea, the body may trigger arousals or awakenings in an attempt to restore normal oxygen levels. These interruptions can prevent individuals from reaching deeper stages of sleep, which are crucial for restorative rest, and as a result, overall sleep quality diminishes. Fragmented sleep can manifest as frequent awakenings throughout the night, making individuals feel less rested and more fatigued during the day. Additionally, the stress and discomfort associated with low oxygen levels can contribute to increased heart rate and blood pressure, further disrupting sleep cycles. Therefore, the presence of oxygen desaturation can create a negative feedback loop, where poor sleep quality leads to further sleep disturbances, highlighting the importance of maintaining adequate oxygen saturation for healthy sleep.

2. Which of the following is NOT commonly used to treat obstructive sleep apnea (OSA)?

A. Hypoglossal nerve stimulation

B. Nasal surgery

C. Adentonsillectomy

D. Cardiovascular surgery

In the context of treating obstructive sleep apnea (OSA), cardiovascular surgery is not a common treatment modality. OSA is primarily addressed through methods that focus on the airway, such as improving airflow and reducing the obstruction caused by anatomical factors. Hypoglossal nerve stimulation involves implanting a device that stimulates the hypoglossal nerve to prevent airway collapse during sleep. Nasal surgery can address structural abnormalities that contribute to airway obstruction, while adeno-tonsillectomy, particularly in children, removes the tonsils and adenoids that can obstruct breathing during sleep. In contrast, cardiovascular surgery is intended to address conditions of the heart and blood vessels rather than the airway issues associated with OSA. Therefore, it does not have a role in the typical management of this sleep disorder, making it the correct answer to the question.

3. What is a critical feature of bi-level PAP devices?

A. They provide a single pressure setting

B. They deliver varying pressures during inhalation and exhalation

C. They are designed for short-term use

D. They are less expensive than CPAP

Bi-level PAP (Biphasic Positive Airway Pressure) devices are specifically designed to deliver different pressure settings for inhalation and exhalation. This feature allows for greater comfort for the patient, as inhalation usually requires higher pressure to keep the airways open, while a lower pressure is sufficient during exhalation. This variation in pressure can lead to improved compliance and better patient outcomes, especially in individuals with chronic conditions such as obstructive sleep apnea or certain neuromuscular diseases. The ability to provide two distinct pressure levels makes bi-level PAP devices especially beneficial for patients who may struggle with the constant pressure of a standard continuous positive airway pressure (CPAP) device. This adaptability can reduce the work of breathing and improve overall sleep quality for users.

4. What aspect should a scheduler discuss with the patient?

A. The study locations available

B. The purpose of the sleep study

C. How to interpret the results

D. Potential dietary restrictions

Discussing the purpose of the sleep study with the patient is crucial because it helps to clarify why the study is being conducted and what the patient can expect. Understanding the purpose can alleviate any anxiety a patient might have and encourages collaboration in the process. Patients are more likely to adhere to preparation guidelines and express concerns if they know the reasons behind the tests being performed. While it's also important to address logistical details like study locations, dietary restrictions, and result interpretation, the primary focus during the scheduling stage should be on establishing an understanding of the study's intent. This foundational knowledge is key to preparing the patient and ensuring they feel informed and involved in their care.

5. Stage N2 of sleep is primarily dominated by which brain wave activity?

A. Delta waves

B. Theta waves

C. Alpha waves

D. Beta waves

Stage N2 of sleep is characterized primarily by the presence of theta waves. These waves have a frequency of about 4 to 7 Hz and are indicative of a lighter stage of sleep compared to the deeper sleep stages. During N2 sleep, the brain begins to display sleep spindles and K-complexes, which are also associated with theta activity. Theta waves generally reflect a transition from alert wakefulness to deeper sleep and indicate a state where the body is preparing for restorative processes. This includes both physical repair and memory consolidation. Recognizing the dominance of theta waves in stage N2 helps in understanding sleep cycles and the investigations involved in polysomnography, as identifying the correct sleep stage is crucial in evaluating sleep disorders.

6. What type of counseling can polysomnography technicians provide?

A. Advice on insurance claims

B. Guidance on sleep hygiene

C. Recommendations for sleep medications

D. Counseling on financial management

Polysomnography technicians are specialized professionals trained primarily in conducting sleep studies and interpreting sleep-related data. One key aspect of their role involves educating patients on sleep hygiene, which encompasses a variety of practices and habits that are vital for maintaining good sleep quality. This guidance may include suggestions on creating an optimal sleep environment, establishing consistent sleep schedules, and adopting pre-sleep routines that promote relaxation and restfulness. By focusing on sleep hygiene, technicians can empower individuals to make behavioral changes that improve their overall sleep health. This kind of counseling is integral to their role, as it directly relates to enhancing the effectiveness of any sleep studies or treatments that may follow. While there may be elements of truth to the other choices, they typically fall outside the core responsibilities of polysomnography technicians. For example, advising on insurance claims or financial management is generally beyond their scope of practice and expertise, while recommendations for sleep medications usually fall within the purview of medical doctors or certified sleep specialists, who are qualified to evaluate and prescribe such treatments.

7. Which of the following features is characteristic of Advanced Sleep-Wake Phase Disorder?

A. Delayed onset of sleep

B. Quickly falling asleep

C. Consistent nighttime awakenings

D. Difficulty waking up in the morning

Advanced Sleep-Wake Phase Disorder is characterized by a distinct pattern of sleep timing, where individuals experience a significant advance in their sleep-wake cycle. Those affected typically have an earlier sleep onset and wake time compared to the conventional sleep schedule. The correct response indicates that individuals with this disorder often fall asleep quickly due to their biological clock being set to an earlier time. Consequently, they may find it easier to fall asleep at night, aligning with their advanced circadian rhythm. While sleeping difficulties can present in various forms, the specific characteristic of Advanced Sleep-Wake Phase Disorder is this tendency to fall asleep rapidly in the earlier evening hours, resulting from the individual's advanced internal clock. This pinpoints the disorder's nature more accurately than the other options, which are not representative of the disorder's symptoms.

8. Why is the EEG sensitivity setting different in pediatric studies?

A. Children have lower brain activity

B. Adolescents produce inconsistent results

C. Pediatric patients have higher amplitude EEG wave forms

D. Adults show more rapid eye movement

In pediatric studies, the sensitivity setting for EEG is adjusted because pediatric patients typically exhibit higher amplitude EEG waveforms compared to adults. The increased amplitude can be attributed to several factors, including the different anatomical and physiological properties of developing brains, which can produce more pronounced electrical activity patterns. By setting the EEG sensitivity higher in pediatric populations, clinicians can capture these stronger signals more effectively, ensuring that the resultant data is as clear and interpretable as possible. This helps in accurately diagnosing conditions like epilepsy or sleep disorders within this demographic, where waveforms may differ significantly from those observed in adults. Considering the other options, while children do have unique characteristics in their brain activity patterns, the specific adjustment to sensitivity relates directly to capturing the higher amplitudes effectively. This understanding is crucial for conducting accurate and comprehensive sleep studies in pediatric patients.

9. What condition might be indicated by leg movements during sleep?

A. Restless Leg Syndrome (RLS)

B. Sleep-related Eating Disorder

C. Narcolepsy

D. Delayed Sleep Phase Disorder

Leg movements during sleep are primarily associated with Restless Leg Syndrome (RLS). This condition is characterized by an uncontrollable urge to move the legs, usually accompanied by uncomfortable sensations. Although these movements can also occur in other sleep disorders, the hallmark of RLS is that these movements typically happen during periods of rest or inactivity, particularly in the evening or night, disrupting sleep. In contrast, the other conditions listed involve different symptoms or features. Sleep-related eating disorder primarily involves episodes of eating while in a sleep state without awareness. Narcolepsy manifests with excessive daytime sleepiness and cataplexy, and is not specifically linked to leg movements during sleep. Delayed Sleep Phase Disorder pertains to a chronic inability to fall asleep and wake up at conventional times, rather than leg movements. Thus, the connection between leg movements and Restless Leg Syndrome makes it the most accurate choice in this context.

10. What advantage does using an oral appliance offer for patients with mild to moderate sleep apnea?

A. It is a permanent solution

B. It provides a comfortable alternative to CPAP

C. It eliminates the need for any other treatments

D. It is only used in serious cases of OSA

Using an oral appliance as a treatment for mild to moderate sleep apnea offers significant benefits, particularly in terms of comfort. These devices are designed to reposition the jaw and tongue to keep the airway open during sleep, making them a non-invasive option compared to continuous positive airway pressure (CPAP) therapy, which can often be uncomfortable for patients due to factors such as airflow pressure and mask fit. Many patients find oral appliances to be easier to tolerate and less disruptive to their sleep than CPAP machines. While oral appliances may not be a permanent solution like surgical interventions, they serve as an effective and more pleasant alternative for ongoing management of sleep apnea symptoms. This aspect makes them particularly appealing for individuals who experience difficulties with CPAP or are looking for a less cumbersome option. It's important to note that oral appliances may not completely eliminate the need for other treatments, especially in more severe cases of obstructive sleep apnea (OSA), which is why they are typically considered for cases characterized as mild to moderate. They are not exclusively used in serious cases, nor do they provide a one-size-fits-all solution.