



ISMC 2026 Newcastle

15th–18th September
International Sleep Medicine Course

MOCK EXAM

Hosted by the British Sleep Society (BSS)

in conjunction with the Belgian Association of Sleep Research and Sleep Medicine (BASS)

the Nederlandse Vereniging voor Slaap-Waak Onderzoek (NSWO) and the

Slaapgeneeskunde Vereniging Nederland (SVNL)

Name:

Email:

Friday 18th September 2026 Newcastle, United Kingdom

(2 Hours)

This exam is designed to cover aspects you have been taught over the last four days. All questions are based on the talks you have attended that were in line with the ESRS Textbook. Please note that these questions are to test and reinforce your learning only, and do not represent the format of the ESRS Somnologist or Somnologist-Technologist exam. **This Exam has not been written or verified by the ESRS and is not a past paper.**

INSTRUCTIONS:

Please read all questions carefully and select the **single best answer**. **Please complete your answers on the separate answer sheet provided.** Once you have completed the exam please hand to the exam co-ordinator and leave the exam room. The results for your exam paper will be sent out to you after the conference.

Please note: This exam will be taken under exam conditions and therefore you are requested to keep quiet and not to talk to other delegates during the exam. If you have any questions please ask the exam co-ordinator.



Requirements, as reported by the ESRS for the
12th Examination of Certification in Sleep Medicine
(<https://esrs.eu/sleep-medicine-examination/requirements/>)

Somnologist – Expert in Sleep Medicine

Format, Time and Place

The next ESRS Examination in Sleep Medicine will take place as an online event on Saturday, November 14, 2026.

The Examination

The examination will consist of two parts:-

1. The **first part** will be a written test consisting of 100 single-choice questions (one out of five) to be completed on-site. This part lasts 120 minutes. The passmark is 60%.
2. The **second part** of the examination will focus on practical skills and knowledges. This part will involve sleep staging, event scoring and interpreting sleep studies from PSG recordings and derived parameters, actigraphy, sleep diary, MSLT/MWT, interpretation of analysis of biological samples relevant for sleep medicine (from blood, saliva, cerebrospinal fluid incl. measures for melatonin, iron, HLA, cortisol, hypocretin). Regarding all scoring tasks, candidates are expected to achieve an 80% concordance with the panel of experts. This part lasts 90 minutes. The overall passmark of the practical examination is 60%.

Sleep Somnologist-Technologist

Format, Time and Place

The next ESRS Examination in Sleep Medicine will take place as an online event on Saturday, November 14, 2026.

The Examination

The examination will consist of two parts:-

1. The **first part** will be a written test, consisting of 70 multiple-choice questions to be completed on-site. 28 questions will be related to chapter 2 (Assessment of sleep disorders and diagnostic procedures) and the other 42 questions will be related to topics from chapters 1, 3 – 15 of the ESRS Textbook. This part lasts 105 minutes. The passmark is 60%.
2. The **second part** of the examination will focus on practical skills. This part will involve sleep staging, event scoring and interpreting two excerpts from PSG recordings and also a full MSLT recording. All consecutive 30-second epochs will be displayed on your monitor. Regarding all scoring tasks successful candidates must achieve an 85% concordance with the panel of experts. This part lasts 120 minutes. The overall passmark of the practical examination is 60%.

QUESTIONS

1. Which of the following is not a potential cause of circadian rhythm sleep disorders?
 - a. Abnormally short or long intrinsic circadian period
 - b. **Deficit in hypocretin**
 - c. Externally imposed asynchrony
 - d. Inability to entrain circadian rhythms
 - e. Inability to generate and maintain circadian rhythms
2. Which of the following is not generally a useful tool for the diagnosis of circadian rhythms sleep disorders?
 - a. Actigraphy
 - b. Circadian phase markers
 - c. DLMO
 - d. Sleep diaries
 - e. **Sleep EEG**
3. Which of these is not a correct statement? Actigraphy is indicated for use in:
 - a. Characterising sleep quantity in insomnia patients.
 - b. **Diagnosing obstructive sleep apnoea.**
 - c. Estimating average daily sleep in patients complaining of hypersomnia.
 - d. Evaluating circadian rhythm disorders.
 - e. Evaluating responses to treatments.
4. Which of the following statements is true? Home sleep apnoea testing:
 - a. Can be used as an alternative to polysomnography for the diagnosis of OSA in all patients.
 - b. Can be used for the diagnosis of OSA in patients with significant comorbid medical conditions.
 - c. Can be used for general screening of asymptomatic populations.
 - d. **Can be used as an alternative to polysomnography for the diagnosis of OSA in patients with a high pretest probability of moderate to severe OSA.**
 - e. Can be used for the diagnosis of OSA in children.
5. When treating a narcoleptic patient the primary treatment goal should be:
 - a. Reduce the amount of sleep during the day
 - b. **Improve daytime performance**
 - c. To avoid side effects of medication
 - d. To normalize as much as possible the result of the Maintenance of Wakefulness Test (MWT)
 - e. To improve the Epworth Sleepiness Scale score

6. When initiating treatment in a narcoleptic patient it is best to:
- Start with stimulants to give patients confidence that they can improve.
 - Explain that adjustments in daily life should be made and start at the same time with pharmacological treatment to support this.
 - Explain that adjustments in daily life should first be made, and implement changes that include a regular sleep wake schedule and scheduled daytime naps.**
 - Start with C, but replace daytime naps by medication if the scheduled naps are not sufficiently effective to function properly.
 - Start with the most potent stimulant medication as a first line therapy.
7. Which of the following statements are true regarding REM sleep behaviour disorder (RBD) or NREM parasomnia?
- Patients exhibiting REM-related parasomnias are often confused when they wake up.
 - Polysomnography is mandatory for the diagnosis of NREM-parasomnia.
 - It is impossible to have memory recollection of a NREM parasomnia event.
 - The 3Ps (predisposing, priming and precipitating factors) are not the pathophysiological basis of the NREM parasomnia.
 - Treating comorbid OSA or PLMS may assist with treating NREM parasomnia.**
8. Which of the following statements are true regarding REM sleep behaviour disorder (RBD)?
- When RBD is diagnosed in young adults, it is unlikely there is an increased risk of parkinsonism.**
 - RBD may be helped by anti-depressant drug therapy.
 - When RBD precedes a diagnosis of Parkinson's disease, it is usually a more benign form of the disease.
 - In episodes of RBD patients typically have their eyes open and often leave their bed.
 - In episodes of RBD patients may do not act violently or non-violently, and sometimes fall out of bed.
9. Which of the following conditions can be an important early marker of the development of α -synucleinopathies in older adults?
- Confusional arousals
 - Night terrors
 - Idiopathic REM sleep behaviour disorder**
 - Secondary REM sleep behaviour disorder
 - Sleepwalking

10. Which of the following statements is true? Short sleep has been shown to be associated with:
- An increased risk of obesity
 - An increased risk of developing high blood pressure.
 - An increased risk of developing Type2 diabetes.
 - An increased risk of Stroke
 - All the above**
11. Which of the following statements is true? Metabolic disturbances associated with short sleep have been shown to include:
- An increase in Leptin
 - A decrease in Ghrelin
 - A decrease in Leptin and increase in Ghrelin**
 - An increase in Leptin and increase in Ghrelin
 - An increase in Leptin and decrease in Ghrelin
12. In major depression, which of the following is true?
- Hypersomnia is more common than insomnia.**
 - REM onset latency is increased.**
 - Antidepressant medications all improve sleep.
 - Antidepressant medications may suppress REM sleep.**
 - REM deprivation exacerbates depression.
13. Which of the following statements is false?
- Nightmares increase suicide risk independent comorbid psychiatric conditions.
 - Non-REM parasomnias are more frequent in the presence of comorbid psychiatric conditions.**
 - Restless legs are associated with increased suicidality but the association disappears when comorbid depression is controlled for.
 - Insomnia is a risk factor for both new onset depression and depressive relapse.
 - Delayed circadian rhythms are found in the majority of ADHD patients.
14. Obesity hypoventilation syndrome is defined as:
- BMI > 25 kg/m² and diurnal P_aCO₂ > 45 mmHg without any other explanation for hypoventilation.
 - BMI > 30 kg/m² and diurnal P_aCO₂ > 45 mmHg without any other explanation for hypoventilation.**
 - BMI > 40 kg/m² with diurnal P_aCO₂ > 45 mmHg without any other explanation for hypoventilation.
 - BMI > 30 kg/m² and nocturnal P_aCO₂ > 45 mmHg without any other explanation for hypoventilation.
 - None of the above.

15. One of the following statements is true?
- a. COPD leads to an increase in REM sleep.
 - b. COPD patients suffer most from dyspnoea during the daytime.
 - c. **In COPD sleep quality is determined by the degree of hyperinflation.**
 - d. In general all patients with COPD sleep poorly.
 - e. COPD patients have no issues with sleep.
16. Which of the following statements is false? Short sleep duration is associated with:
- a. increased incidence of obesity.
 - b. incident diabetes mellitus.
 - c. **increased incidence of nocturia.**
 - d. atrial fibrillation and stroke.
 - e. a greater risk of all-cause mortality.
17. Regarding OSA, which of the following statements is true?
- a. **OSA may be associated with insulin resistance in non-diabetics.**
 - b. OSA does not occur in patients with heart failure.
 - c. Glycaemic control improves as OSA severity increases in patients with type 2 diabetes.
 - d. Treatment of hypothyroidism does not improve the severity of OSA.
 - e. OSA is not usually associated with Polycystic Ovary Syndrome.
18. Which of the following statements about circadian entrainment is true?
- a. A long free-running period can be entrained by a daily phase delay.
 - b. Parametric entrainment involves daily corrective phase shifts.
 - c. **A short tau can be entrained by daily phase delays.**
 - d. Melatonin administered in the early morning hours will induce phase advances.
 - e. Phase advances to light will be experienced when light is given before the Tmin.
19. Which combination of pathophysiological traits has the most important impact on increasing OSA severity?
- a. Low loop gain and low arousal threshold
 - b. Low loop gain and high arousal threshold
 - c. **High loop gain and low arousal threshold**
 - d. High loop gain and high arousal threshold
 - e. None of the above

20. Which statement is correct?

- a. OSA is the most prevalent type of sleep disordered breathing in patients with very severe heart failure with reduced rejection fraction (HFrEF).
- b. **Obesity hypoventilation syndrome is defined as a BMI > 30 kg/m², diurnal PaCO₂ > 45 mmHg and presence of sleep disordered breathing without other known causes of hypoventilation.**
- c. In the majority of patients with obesity hypoventilation syndrome, isolated hypoventilation is the predominant phenotype of sleep disordered breathing.
- d. In patients with chronic heart failure, the main pathophysiological mechanism for periodic breathing with central apnea is the presence of hypercapnia.
- e. Weight loss in obese patients does not improve sleep disordered breathing.

21. Which of the following conditions is a diagnostic entity in ICSD-3?

- a. Adjustment insomnia
- b. Psychophysiological insomnia
- c. Paradoxical insomnia
- d. Idiopathic insomnia
- e. **Chronic insomnia disorder**

22. Which of the following biomarkers has the best diagnostic specificity?

- a. Apnea-hypopnea index (AHI)
- b. HLA DQB1*0602
- c. **Hypocretin/orexin**
- d. Interleukin-6 (IL-6)
- e. Periodic limb movement index (PLMI)

23. Which of the following statements is correct?

- a. CPAP therapy is suitable to all patients.
- b. Adherence to CPAP therapy only falls off after 3-months.
- c. **Mandibular Advancement Devices (MAD) provide adequate non-CPAP therapy to patients with mild Obstructive Sleep Apnoea.**
- d. Positional trainers are superior to MAD therapy.
- e. Weight loss surgery is the treatment of choice for every patient who fails CPAP therapy.

24. Please select the correct statement below.
- a. Hypoglossal Nerve Stimulation is the first line therapy for patients with Obstructive Sleep Apnoea (OSA).
 - b. Maxilla-Mandibular Advancement surgery is ineffective.
 - c. Weight loss surgery is indicated in all patients with OSA.
 - d. **CPAP adherence, according to big datasets from North America, is about 75% at 3-months follow up.**
 - e. There is no effective treatment alternative to CPAP therapy for anyone who is non-adherent.
25. When scoring Hypopnoeas, which of the following is false?
- a. **It is recommended to use the Oronasal thermal sensor.**
 - b. It is recommended to use the Nasal pressure transducer.
 - c. It must be ≥ 10 seconds in duration.
 - d. It must have a drop in peak signal excursion by $\geq 30\%$ of the pre-event baseline.
 - e. None of the above.
26. Which of the following statements best characterises Cheyne-Stokes respiration?
- a. ≥ 5 consecutive central apnoeas and/or hypopnoeas with crescendo-decrescendo breathing and a cycle length of >45 seconds
 - b. **≥ 3 consecutive central apnoeas and/or hypopnoeas with crescendo-decrescendo breathing and a cycle length of >40 seconds**
 - c. ≥ 3 consecutive central apnoeas and/or hypopnoeas with crescendo-decrescendo breathing and a cycle length of >45 seconds
 - d. ≥ 5 consecutive central apnoeas and/or hypopnoeas with crescendo-decrescendo breathing and a cycle length of >40 seconds
 - e. None of the above
27. Which key variables would one measure with most sleep diaries to confirm the presence of insomnia symptoms?
- a. Sleep onset latency, sleep efficiency, and sleep quality
 - b. **Sleep onset latency, wake after sleep onset and early morning awakenings**
 - c. Sleep quality and sleep efficiency
 - d. Time in bed
 - e. Bedtime and get-up time
28. According to its original conception, stimulus control ensures which of the following?
- a. **the bedroom becomes a strong cue for sleep onset.**
 - b. no napping occurs to increase the homeostatic pressure for sleep.
 - c. the bedroom is quiet and dark.
 - d. minor sleep deprivation occurs to help the patient fall asleep quicker.
 - e. the body clock is re-entrained because the patient is instructed to get up at the same time each day.

29. Implementing sleep restriction therapy is challenging when any of the following occur, except:
- It increases daytime sleepiness and patients find it difficult to stay awake until their threshold time.
 - It disrupts the bedpartner/household.
 - Dysfunctional beliefs about “optimal” sleep needs remain.
 - Patient’s decision making is impaired upon awakening in the morning and they remain in bed after their get-up time.
 - Patients have too many sleep-disrupting objects in their bedroom.**
30. In a patient with sleep initiation difficulties, which of these statements is false?
- The patient’s symptoms could be a reflection of a circadian rhythm disorder.
 - The mycophenolate and the prednisolone the patient is taking could be contributory to the problem.
 - The restless leg syndrome is an uncommon cause of sleep initiation insomnia.
 - The patient could be putting off sleep because of anxiety about nightmares.
 - If the patient has OSA, it rules out insomnia as an explanation for their sleep onset problems.**
31. The maintenance of wakefulness test is often used to assess:
- Reaction time
 - Ability to fall asleep
 - Ability to keep still with eyes closed
 - Ability to stay awake**
 - Movement
32. Which statement is true? A defendant is more likely to be awake during alleged violent behaviour if they suffer from:
- Sleepwalking
 - Night Terrors
 - REM Behaviour Disorder
 - Sleep-related seizures
 - Sleep-related dissociative disorder**
33. The investigation and treatment of restless legs should include?
- A video polysomnography for all suspected cases.
 - Review of lifestyle factors that may exacerbate RLS including smoking and obesity.**
 - Cessation of aggravating medication such as antidepressant prior to commencing any RLS specific therapy.
 - Impulse control disorders are a rare complication of dopamine agonist therapy.
 - Dopamine agonist therapy treats the cause of RLS.
34. Which of the following is true? In patients with schizophrenia and complaints of poor sleep:

- a. Obstructive sleep apnoea is an unusual cause and routine screening should be avoided.
 - b. Many of the psychotropic medications used to treat acute psychosis will cause insomnia.
 - c. Circadian rhythm disorders including non 24 pattern are far less common than in the background population.
 - d. **The weight gain seen with many psychotropic drugs is one likely risk factor for sleep disordered breathing in those with mental health problems.**
 - e. Antipsychotics are often used to treat restless legs associated with depression.
35. Compared to young adults, sleep in older adults is associated with:
- a. Reduced melatonin secretion, stronger circadian modulation, and reduced sleep spindle frequency.
 - b. Increased melatonin secretion, weaker circadian modulation, and increased sleep spindle frequency.
 - c. **Reduced melatonin secretion, weaker circadian modulation, and reduced sleep spindle frequency.**
 - d. Reduced melatonin secretion, weaker circadian modulation, and increased sleep spindle frequency.
 - e. Increased melatonin secretion, weaker circadian modulation, and reduced sleep spindle frequency.
36. Which of the following statements regarding actigraphy is false?
- a. Actigraphy monitors activity/inactivity over a prolonged period of time.
 - b. Actigraphy is not indicated for diagnosis of sleep-related breathing disorders.
 - c. Actigraphy is useful in the assessment of circadian rhythm disorders.
 - d. Actigraphy can indicate nocturnal restlessness.
 - e. **Actigraphy is not suitable for use in children.**
37. Which of the following is correct? The Insomnia Severity Index (ISI):
- a. is elevated only in patients with primary insomnia.
 - b. **strongly correlates with PSG measures.**
 - c. yields a number between 0 and 30.
 - d. is not useful to measure any therapeutic effect.
 - e. includes a question on daytime functioning .

38. According to Spielman, insomnia is comprised of Predisposing, Precipitating and:
- Putative Factors
 - Perpetuating Factors**
 - Protective Factors
 - Presumptive Factors
 - Principle Factors
39. What are clinical features of Kleine-Levin-Syndrome?
- Recurrent episodes of daytime sleepiness
 - Presence of neuropsychiatric abnormalities such as cognitive dysfunction during the episodes
 - Presence of neuropsychiatric abnormalities such as eating disorder
 - A and B**
 - A and C
40. Which of the following statements regarding CPAP is NOT true?
- CPAP stabilizes the upper airway.
 - CPAP may increase functional residual capacity.
 - CPAP reduces the work of breathing.
 - CPAP improves cardiac function by increasing preload and afterload.**
 - CPAP may improve stability of central respiratory drive.
41. In some parasomnias there is a gender difference. Which of the mentioned parasomnias is more frequent in females than in males?
- REM sleep behavior disorder
 - Childhood sleep enuresis
 - Sleepwalking
 - Sleep-related eating disorder**
 - Sleep terrors
42. Which of the following diagnostic procedures will be the diagnostic test of choice, needed for the differential diagnosis between parasomnia and Nocturnal frontal lobe epilepsy?
- Standard EEG recording during day-time
 - Polygraphy to rule out apnoeas
 - Polysomnography, with synchronized audiovisual recording, including an extended EEG montage**
 - Polysomnography with synchronized audiovisual recording
 - Standard Polysomnography

43. Which is the correct statement below?
- a. During non-rapid eye movement (NREM) sleep, the respiratory muscles and upper airway tone are considerably decreased, resulting in relative hyperventilation.
 - b. During non-rapid eye movement (NREM) sleep, the respiratory muscles and upper airway tone are considerably increased, resulting in relative hypoventilation.
 - c. **During non-rapid eye movement (NREM) sleep, the respiratory muscles and upper airway tone are considerably decreased, resulting in relative hypoventilation.**
 - d. During rapid eye movement (REM) sleep, the respiratory muscles and upper airway tone are considerably decreased, resulting in relative hypoventilation.
 - e. During rapid eye movement (REM) sleep, and the respiratory muscles and upper airway tone are considerably increased, resulting in relative hypoventilation.
44. Which of the following is true? Neurones of the medullary respiratory centres:
- a. Are located in the hippocampus.
 - b. Generate a rhythmic inspiratory drive by a group of cells called the Kolliker-Fuse nucleus.
 - c. May be temporarily overridden by volitional control from the cerebral cortex in rapid eye movement (REM) sleep.
 - d. Consist of the pre-Bötzinger complex in the dorsolateral medulla.
 - e. **Modulates motor output from the brainstem to influence the activity of the respiratory muscle pump.**
45. Which statement is false regarding overlap syndrome?
- a. **Overlap refers to the coexistence of obstructive sleep apnea and heart failure, COPD, interstitial lung disease, kyphoscoliosis, obesity, hypothyroidism.**
 - b. Both components have a high prevalence and coexist by coincidence.
 - c. Patients with overlap syndrome develop more severe hypoxemia compared to patients with isolated OSA.
 - d. Patients with overlap syndrome develop higher pulmonary arterial pressures compared to patients with isolated OSA.
 - e. Overlap syndrome occurs in about 1% of the population.
46. According to International Classification of Sleep Disorders, 3rd edition (ICSD3), the "Sleep Related Hypoxemia Disorder" is part of category:
- a. Obstructive Sleep Apnoea Disorders
 - b. Central Sleep Apnoea Syndromes
 - c. Sleep Related Hypoventilation Disorders
 - d. **Sleep related breathing disorders**
 - e. Isolated symptoms and Normal Variants

47. A patient with DSWPD may be treated with:
- Morning melatonin administration
 - Evening bright Light
 - Evening bright light + evening melatonin administration
 - Avoidance of morning light
 - Evening light avoidance and evening melatonin administration**
48. Sleep during sleep restriction (i.e. repeated partial sleep deprivation) is characterized by:
- A large reduction in SWS/SWA
 - A reduction in REM sleep duration**
 - An increase in REM sleep duration
 - A reduction in sleep efficiency
 - A large increase SWS/SWA
49. Rhythmic movement disorder in a 13 month old child:
- Is a normal phenomenon at this age and does not require additional work-up**
 - Is possibly pathological after 12 months and requires a neurological consult
 - Requires treatment because of association with insomnia
 - Full nocturnal EEG should be ordered
 - None of the Above
50. The correct definition for obstructive apneas and for diagnosing obstructive sleep apnea in children using the obstructive apnea index (OAI) in children is:
- the same as in adults: obstructive apneas should last longer than 10 sec. and OAI > 5 per hour.
 - obstructive apneas should last longer than 2 breathing cycles and OAI > 1 per hour.**
 - obstructive apneas of any duration and OAI > 1 per hour.
 - obstructive apneas of any duration and OAI > 5 per hour.
 - obstructive apneas should last longer than 2 breathing cycles and OAI > 5 per hour.
51. Consider the following statements, which one is NOT true?
- Insomnia may be caused by systemic steroid treatment.
 - REM Sleep Behaviour Disorder (RBD) may be caused by antidepressants.**
 - Usage of lithium carbonate and anticholinergics has been associated with onset of sleep walking.
 - Antidepressants, antihistamines, Prochlorperazine and metoclopramide often exacerbate symptoms of Restless Legs Syndrome-Willis Ekbohm Disease (RLS-WED).
 - Excessive sleepiness in the wake time may be a side effect of Gabapentin and Pregabalin.

52. Which neurotransmitter system provides the main inhibitory influence on the ascending reticular activating system during sleep?
- Acetylcholine (ACh)
 - Serotonin (5-HT)
 - Dopamine (DA)
 - Glutamate (GLU)
 - γ -aminobutyric acid (GABA)**
53. All of the following are indications that a patient is entering stage N1 sleep from wake except:
- Slow rolling eye movements appear.
 - A train of distinct waves with frequency 11-16 Hz $\geq$ 0.5 seconds in duration appear in the central derivations.**
 - Alpha frequencies in occipital channels have attenuated or stopped entirely.
 - There is a reduction in chin EMG amplitude.
 - Sharply contoured waves with duration <0.5 seconds appear in the central derivations.
54. Regarding lifestyle measures in OSA, which of the following statements is correct?
- They only help mild OSA and snoring.
 - Weight loss always improves OSA.
 - Weight loss can be very effective in terms of OSA reduction but its benefits are difficult to predict for individual patients.**
 - Alcohol reduction is only useful through reducing calorie intake and improving sleep architecture.
 - Sleep hygiene advice is only necessary if there is coexistent insomnia.
55. Which of the following statements is correct?
- Bilevel positive airway pressure is the first line treatment for obstructive sleep apnoea.
 - Patients with CPAP therapy do not require any follow up, as their treatment adherence is high.
 - Upper airway surgery is always an effective second line therapy for patients with sleep apnoea.
 - Adaptive servo-ventilation is effectively treating central sleep apnoea, but has been found to have adverse long-term outcomes in patients with low ejection fraction.**
 - Nasal surgery can be recommended as an exclusive therapy for the treatment of OSA.

56. In REM sleep, one of the following is untrue, which one?
- a. Deep tendon reflexes are absent and the plantar reflex response may be upgoing.
 - b. Autonomic cardiovascular parameters show instability.
 - c. **Areas within the limbic lobe show profound underactivity on functional brain imaging studies.**
 - d. Olfactory sensory phenomena do not contribute to REM sleep dreaming.
 - e. The ability to regulate body temperature is significantly reduced.
57. One of these statements about cataplexy is true?
- a. It usually starts in the legs and spreads to the head.
 - b. Cataplexy never occurs in narcolepsy patients who also exhibit REM sleep behaviour disorder during sleep.
 - c. Cataplexy always occurs with positive emotions such as laughter.
 - d. Cataplexy causes exaggeration of deep tendon reflexes during attacks.
 - e. **In children, cataplexy may manifest as facial grimacing or tongue protrusion.**
58. Non-24-Hour Sleep-Wake Rhythm Disorder is often observed in:
- a. Retired individuals
 - b. Blind individuals with intact melatonin suppression by light
 - c. **Blind individuals with no melatonin suppression by light**
 - d. Pilots on long-haul flights across multiple time zones
 - e. C and D
59. According to the International Classification of Sleep Disorders, 3rd edition (ICSD3), “body rocking” can be classified in the following category:
- a. Parasomnias
 - b. NREM-related parasomnias
 - c. REM-related parasomnias
 - d. Other parasomnias
 - e. **Sleep Related Movement Disorders**
60. Awakenings from sleep occur:
- a. In healthy subjects, in response to oxygen desaturations to 80%.
 - b. In patients with obstructive sleep apnoea, in response to an irregular breathing pattern in rapid eye movement (REM) sleep.
 - c. **In healthy subjects, in response to a PaCO₂ rise of 2 kPa above the level of wakefulness.**
 - d. In REM sleep, in patients with obstructive sleep apnoea, in response to increased reflex-activation of the upper airway dilator muscles.
 - e. None of the above.

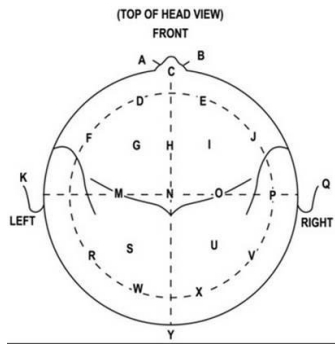
61. Which is the correct statement below?
- a. **Primary CSA, Cheyne-Stokes breathing (CSB), and treatment-emergent CSA are the result of high 'loop gain' of the respiratory control system, and usually occur in NREM sleep.**
 - b. Primary CSA, Cheyne-Stokes breathing (CSB), and treatment-emergent CSA are the result of low 'loop gain' of the respiratory control system, and usually occur in NREM sleep.
 - c. Primary CSA, Cheyne-Stokes breathing (CSB), and treatment-emergent CSA are the result of high 'loop gain' of the respiratory control system, and usually occur in REM sleep.
 - d. Primary CSA, Cheyne-Stokes breathing (CSB), and treatment-emergent CSA are the result of low 'loop gain' of the respiratory control system, and usually occur in REM sleep.
 - e. Primary CSA, Cheyne-Stokes breathing (CSB), and treatment-emergent CSA are the result of high 'loop gain' of the respiratory control system, and usually occur in cardiac failure.
62. Treatment of sleep related epilepsy is often difficult. Which of the following treatment options could be considered?
- a. High doses of anti-epileptic drugs during administered during day time.
 - b. Treating comorbid insomnia with CBT-i.
 - c. Surgical treatment in some refractory NFLE patients.
 - d. Carbamazepine (in low doses) before sleep.
 - e. **B, C and D can be considered if applied.**
63. Which factors are associated with or can trigger arousal disorders?
- a. Sleep deprivation
 - b. Previous history of sleep terrors
 - c. Obstructive sleep apnoea
 - d. Stressful events
 - e. **All of the above**
64. Which of the following statements about subjective measures of sleepiness is not true:
- a. The Epworth sleepiness score is weakly correlated with objective measures of sleepiness.
 - b. Individuals without sleep disorders can report Epworth sleepiness scale scores of above 10.
 - c. Scores of 8 or above on the Karolinska sleepiness scale predict increased risk in driving simulators.
 - d. **The impact of sleepiness can be assessed with questionnaires alone.**
 - e. Subjective measures of sleepiness are available in multiple languages and picture format.

65. Which of the following statements is true? Hypersomnia may be due to:
- Reduced transmission of noradrenaline and gamma-amino-butyric acid
 - Reduced transmission of dopamine and noradrenaline
 - Increased transmission of histamine and dopamine
 - Increased transmission of acetylcholine
 - Increased transmission of noradrenaline and histamine**
66. The DSM-5 suggests for a diagnosis of Insomnia Disorder it should be present for:
- Six months
 - One month
 - One year
 - Nine months
 - Three months**
67. Which of the following statements is true? The Pittsburgh Sleep Quality Index (PSQI):
- Is elevated only in patients with primary insomnia.
 - Strongly correlates with results from polysomnography (PSG).
 - Yields a number between 0 and 30.
 - Is not useful to measure any therapeutic effect.
 - Includes a question on driving ability.**
68. According to AASM practice parameters (Littner et al, 2005), the multiple sleep latency test (MSLT) is indicated for:
- Diagnosis of obstructive sleep apnoea/hypopnoea syndrome
 - Diagnosis of narcolepsy**
 - Assessment of insomnia
 - Diagnosis of circadian rhythm disorders
 - All of the above
69. In pregnancy, upper airway narrowing during sleep is more likely due to:
- increased transpulmonary pressure during inspiration, reduced FRC, and reduced ventilatory drive.
 - increased transpulmonary pressure during inspiration, reduced FRC, and increased ventilatory drive.**
 - reduced transpulmonary pressure during inspiration, reduced FRC, and increased ventilatory drive.
 - increased transpulmonary pressure during inspiration, increased FRC, and reduced ventilatory drive.
 - reduced transpulmonary pressure during inspiration, and increased ventilatory drive.

70. In patients with idiopathic parkinson's disease and poor sleep, which statement is most accurate?
- Sun downing is common in the evening as a cause of poor sleep.
 - Melatonin can be used to treat symptomatic REM sleep behaviour disorder.**
 - Tremor often wakes patients from sleep as a cause of insomnia.
 - Medication to treat nocturia may worsen insomnia.
 - Clonazepam causes few side effects in those with established Parkinson's disease who need therapy for REM sleep behaviour disorder.
71. Which of the following statements is true? Rhythmic movement disorder:
- Consists of rhythmic, stereotyped movements of the head and neck causing body rocking or head rolling and is a seizure phenomenon.
 - Consists of rhythmic, stereotyped movements of the head and neck causing body rocking or head rolling and usually occurs in early childhood.**
 - Is proven to be well treated with medical therapies such as clonazepam.
 - Can often occur as a new problem in early or late adulthood.
 - Commonly causes head or neck injury.
72. Implementing sleep restriction therapy is challenging when any of the following occur, except:
- It increases daytime sleepiness and patients find it difficult to stay awake until their threshold time.
 - It disrupts the bedpartner/household.
 - Dysfunctional beliefs about "optimal" sleep needs remain.
 - Patient's decision making is impaired upon awakening in the morning and they remain in bed after their get-up time.
 - Patients have too many sleep-disrupting objects in their bedroom.**
73. Which polysomnography marker determines whether a defendant was suffering from an arousal disorder at the time of their alleged behaviour?
- Abnormal cyclic alternating pattern
 - Hypersynchronous delta waves
 - None**
 - Fragmented slow wave sleep
 - Increased number of arousals in first NREM-REM sleep episode
74. In the MSLT, an average sleep latency of 5.8 minutes suggests:
- Normal sleepiness
 - Severe sleepiness
 - Moderate sleepiness
 - Mild to moderate sleepiness**
 - Inconclusive

75. Which combination of measured parameters would not permit you to score an obstructive hypopnea?
- Snoring during the event.
 - Increased inspiratory flattening of nasal pressure.
 - Periodic breathing during the event but not during the pre-event breathing.**
 - Paradoxical breathing during the event but not during the pre-event breathing.
 - Cessation of effort on RIP channels during the event.**
76. For Sleep-Wake studies, the recommended epoch length is:
- 5 minutes
 - 3 minutes
 - 1 minute**
 - 30 seconds
 - 15 seconds
77. Which of the following statements is true? The Epworth Sleepiness score:
- Is the most reliable assessment of ability to drive safely.
 - Is always raised in patients with obstructive sleep apnoea.
 - Is regarded as normal between 2-10/24.**
 - Correlates well with both the MSLT and MWT.
 - Is not accepted by the DVLA in medical reports.
78. Of the following options, which is likely to be the most effective way of advancing the phase of sleep onset in a patient with Delayed Sleep-Wake Phase Disorder?
- Taking Melatonin 2h before habitual sleep onset time
 - 20 minutes bright light therapy 1h before habitual wake time**
 - Chronotherapy
 - Progressive muscle relaxation before bed
 - Taking Tasimelteon at habitual bedtime
79. Which of the above does not adversely affect glucose metabolism?
- Recurrent hypoxia
 - Reduces sleep duration
 - Sleep fragmentation
 - high fibre diet**
 - High calorie diet

80. According to the Starling resistor model flow is determined by the ratio of:
- The pressure difference between the upstream segment and downstream segment, and nasal resistance.
 - The difference between the tissue pressure and the pressure downstream, divided by the nasal resistance.
 - The difference between the tissue pressure and the pressure upstream, divided by the nasal resistance.
 - The difference between the upstream pressure and the critical closing pressure, divided by the nasal resistance.
 - The difference between the upstream pressure and the critical closing pressure, divided by the upstream resistance.**
81. The SCN drives the melatonin rhythm through a:
- Direct monosynaptic pathway from the SCN to the pineal.
 - A polysynaptic pathway including the paraventricular nucleus of the hypothalamus, the intermediolateral cell column, the superior cervical ganglion and the pineal.**
 - A polysynaptic pathway including the paraventricular nucleus of the thalamus, the intermediolateral cell column, the superior cervical ganglion and the pineal.
 - A polysynaptic pathway including the ventrolateral pre-optic nucleus of the hypothalamus, the intermediolateral cell column, the superior cervical ganglion and the pineal.
 - A polysynaptic pathway including the optic chiasm, the intermediolateral cell column, the superior cervical ganglion and the pineal.
82. A teenager of 14 years old complains of insomnia with a mean sleep latency of 3 hours. She falls asleep around midnight. In the weekend she goes to bed around midnight and then she falls asleep within 30 minutes. She doesn't drink caffeine and limits screen use before bedtime. This history is suggestive of:
- Primary insomnia
 - Circadian rhythm disorder**
 - Psychological stress
 - Substance abuse
 - None of the Above



83. What electrode site is represented by the letter X on the above picture?
- O1
 - F3
 - O2**
 - M1
 - None of the above
84. Which of the following statements is true in relation to assessing fitness to drive:
- All individuals with an Epworth sleepiness score above 10 are unfit to drive
 - Individuals with moderately-severe obstructive sleep apnoea (AHI >15) and an excessive sleepiness likely to impair safe driving must not drive and must notify the DVLA**
 - Individuals with mild obstructive sleep apnoea (AHI <15) and an Epworth sleepiness score above 10 who are expected to gain symptom control within three months must not drive and must notify the DVLA
 - Avoidance strategies like winding down the window whilst driving highlights safe drivers
 - Individuals with moderately-severe obstructive sleep apnoea (AHI >15) and an Epworth sleepiness score above 10 must not drive and must notify the DVLA
85. In blind patients with non-24h sleep-wake rhythm disorder, which of the following treatment suggestions is most likely true?
- Melatonin should be consistently given 1h before sleep onset.
 - Melatonin is best initiated when *actual* sleep onset time is 180 degrees out-of-phase with *ideal* sleep onset time.
 - Once initiated, Melatonin should be continued at a fixed time at night for several weeks before deciding if there has been entrainment.**
 - Betablockers should be used to suppress all endogenous melatonin secretion.
 - Sleep compression therapy is useful.
86. Which neural structure houses the master circadian clock?
- Basal forebrain (BF)
 - Suprachiasmatic nucleus (SCN)**
 - Median preoptic nucleus (MnPN)
 - Tuberomammillary nucleus (TMN)
 - Dorsal raphe nucleus (DRN)

87. What is the frequency of Theta waves?
- a. **4-7 Hz**
 - b. 8-13 Hz
 - c. 0.5-2 Hz
 - d. >13 Hz
 - e. 6-12 Hz
88. Which of the following statements is true?
- a. Medications are useless and irrelevant in the management of OSA.
 - b. Positional therapy may be all that is required in supine dependent OSA and there is high level evidence of long-term benefit.
 - c. Surgery is never effective in OSA.
 - d. Tracheostomy is highly effective and should be used more than it is.
 - e. **Hypoglossal nerve stimulation may benefit some patients but its role remains uncertain.**
89. Which statement regarding bariatric surgery is correct?
- a. Patients with a body mass index (BMI) above 35 without comorbidity are eligible for bariatric surgery.
 - b. **The majority of patients eligible for bariatric surgery have obstructive sleep apnoea.**
 - c. Screening for sleep apnoea is part of the work-up protocols for bariatric surgery.
 - d. Patients treated for sleep apnoea are easy to intubate for bariatric surgery.
 - e. All bariatric interventions impact equally on sleep apnoea severity.
90. Which one of the following is true about CPAP therapy?
- a. It is used before medications if hypertension is diagnosed at the same time as obstructive sleep apnoea.
 - b. CPAP modification such as adding in expiratory pressure relief is highly effective at improving CPAP adherence.
 - c. Auto-titrating CPAP allows you to delay follow-up of people starting treatment without undermining adherence.
 - d. **The main indications for treating OSA are excessive sleepiness or other significant impact on quality of life, or refractory hypertension.**
 - e. There is good evidence that CPAP reduces risk of heart attacks in severe OSA.

91. When considering whether to start someone newly diagnosed with OSA on CPAP, which one of the following is true?
- You should ignore severity according to the AHI.
 - The severity of oxygen desaturation should not influence decision making in the absence of excessive sleepiness.
 - It is better to start with a fixed CPAP pressure and make adjustments at an early review appointment.**
 - Telemonitoring is essential to a successful outcome.
 - CPAP should usually only be used after lifestyle modification and trial of an MAD if 4% ODI is less than 15/hr.
92. Which one of the following criteria is required for successful oral appliance therapy?
- Non custom device
 - Adjustability of appliance**
 - Material of manufacture
 - Edentulous lower jaw
93. What is not true with regards to MADs in the treatment of OSA?
- They are recommended by national and international guidelines to treat patients with OSA.
 - They improve the AHI.
 - They improve the ESS.
 - They are well tolerated in the long-term.
 - They have a greater effect on the AHI than CPAP therapy.**
94. Which of the following is true regarding the treatment of Obstructive Sleep Apnoea?
- CPAP is the first line option.**
 - CPAP improves daytime sleepiness more than Mandibular Advancement Devices (MAD).
 - MAD only help snoring and not OSA.
 - MAD should usually be considered before CPAP in mild OSA.
 - CPAP is better at improving high blood pressure than MAD.
95. Which of the following sleep-wake changes are observed in older adults?
- Decreased total sleep time
 - Decreased sleep efficiency
 - Circadian phase advance
 - Increased sleep fragmentation
 - All of the above**

96. Which of the following statements about Primary sleep enuresis is false?
- a. The child has never been consistently dry during sleep for 6 consecutive months
 - b. Voiding episodes during sleep happen at least five times in a week
 - c. **Can occur in all sleep stages but mostly in the first half of the night**
 - d. 80% of all SE cases are primary
 - e. Prevalence varies 5-10% of all 7 year old children
97. Which statement about benign sleep myoclonus in infancy (BSMI) is most correct?
- a. It is associated with paroxysmal muscle activity and ictal epileptic discharges. Occurs predominantly in quiet sleep. The myoclonus is not associated with arousals, awakening or sleep stage transition.
 - b. It is associated with normal EEG findings and sustained muscle activity. Occurs predominantly in quiet sleep. The myoclonus is not associated with arousals, awakening or sleep stage transition.
 - c. It is associated with normal EEG findings and paroxysmal muscle activity. Occurs predominantly in quiet sleep. The myoclonus is not associated with arousals, awakening or sleep stage transition.
 - d. It is associated with normal EEG findings and paroxysmal muscle activity. Occurs exclusively in active sleep. The myoclonus is not associated with arousals, awakening or sleep stage transition.
 - e. **It is associated with normal EEG findings and paroxysmal muscle activity. Occurs in all sleep stages, predominantly in quiet sleep. The myoclonus is often associated with arousals, awakening or sleep stage transition.**
98. Which of the following is not true of position trainers?
- a. Positional trainers are as effective as MAD for mild-moderate OSA.
 - b. Long-term compliance to the tennis ball technique is around 10%.
 - c. Sleep position trainers are non-inferior to APAP in positional OSA.
 - d. Sleep position trainers reduce sleep efficiency by around 10%.
 - e. **Use of a positional trainer and a MAD in combination has a better effect on the AHI than either treatment alone.**
99. All of the following are true about oral appliances except:
- a. Long term use of oral appliances can cause changes to the bite.
 - b. Complete concentric collapse at the level of the soft palate is associated with adverse outcome in MAD.
 - c. MAD can be used in edentulous patients.
 - d. Low BMI is a predictor of success with MAD.
 - e. **Tongue base collapse is associated with poor outcomes in MAD treatment.**

100. Which of the following is true of both an MSLT and an MWT?
- a. Patient should be lying in bed comfortably with the lights turned off
 - b. Patient is given 40 minutes in which they are asked to make maximum effort to remain awake.
 - c. Must be conducted after an overnight PSG.
 - d. **Sleep latency and stages are determined using EEG, EOG and EMG monitoring.**
 - e. Is recommended to detect sleep apnea.



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