JT-RT-47

READING TEXT

Blepharitis: Texts

TEXT A

What is blepharitis?

Blepharitis is an inflammatory condition of the eyelids. It can affect people of all ages, but it is more common in older people.
The eyelid margins, as well as having eyelashes protruding from their anterior (front) surface, have the openings of oil glands (Meibomian glands) behind the lashes.

There are three main types of blepharitis:

- Anterior blepharitis: This affects the front of the eyelids around the eyelashes and may be due to seborrhoeic dermatitis (similar to dandruff). This may also involve the scalp, face and ears, or be due to bacterial (staphylococcal) infection.
- Posterior blepharitis: This mainly affects the back of the eyelids, around the Meibomian glands. It is often associated with rosacea (a skin disease causing redness of the face).
- Mixed anterior and posterior blepharitis: a combination of the above.\

What are the symptoms of blepharitis?
The symptoms of blepharitis are:

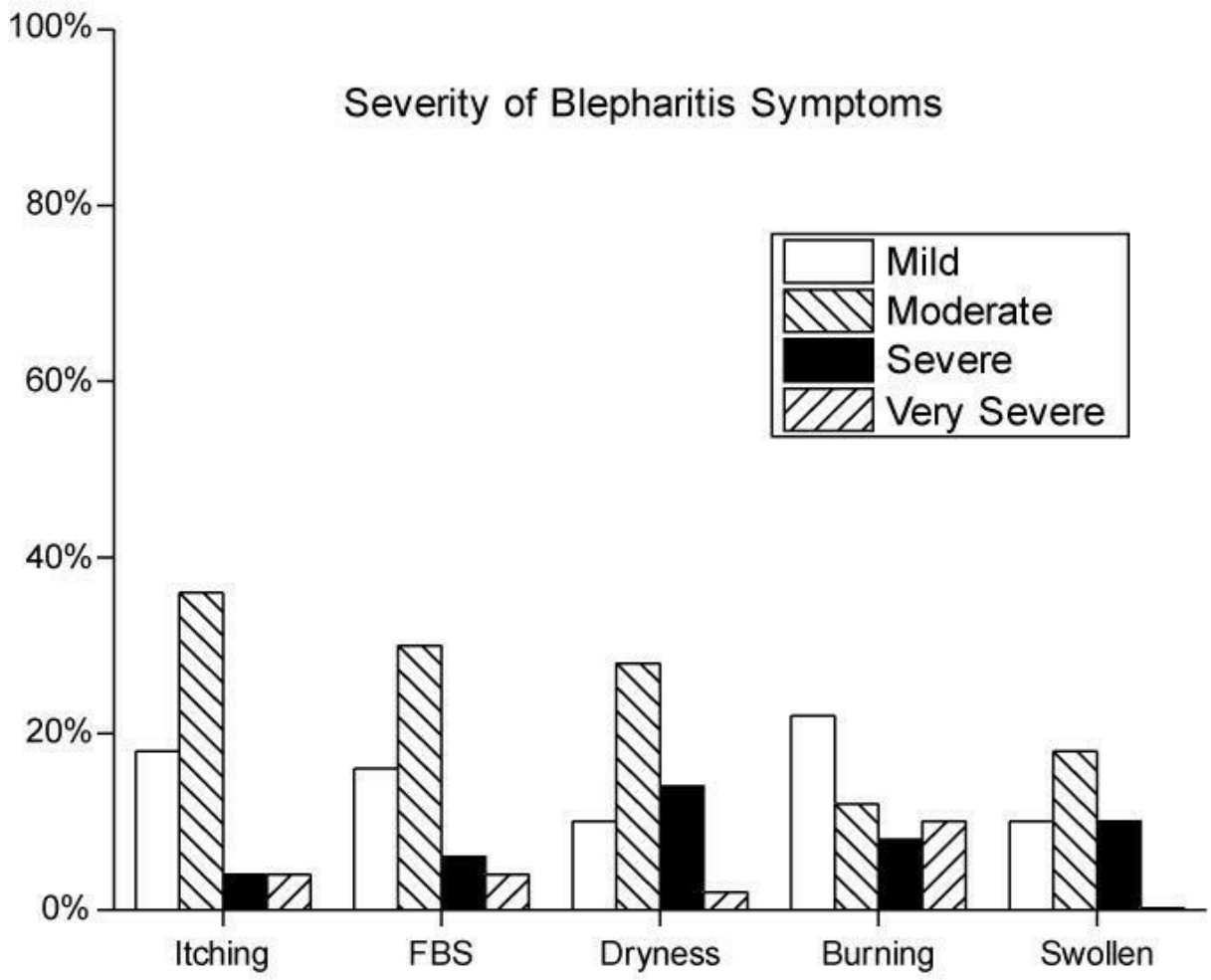
- crusting, swelling and redness of the eyelids
- dryness of the eye
- a gritty feeling and burning sensation in the eye
- tiny flakes on the eyelids similar to fine dandruff
- sensitivity to light
- blurred vision
- loss of eyelashes / in-growing eyelashes
- styes (an infection at the root of an eyelash) on the eyelid
- small ulcers on the eyelids.

How is blepharitis diagnosed?

In most cases the diagnosis is confirmed by an ophthalmologist (specialist eye doctor) using a microscope called a slit-lamp. The microscope gives a magnified view of the different parts of the eye. With blepharitis the eyelids appear red and inflamed with crusts and scales around the bases of the eyelashes. The Meibomian gland openings may be blocked and the lid may have associated notches, styes and Meibomian gland cysts. The tear film, which coats the eye, is often uneven. This can be identified by staining the tear film with a yellow dye called fluorescein. Inflammation and loss of skin cells on the cornea (the epithelium) may also be seen with this fluorescein staining.

TEXT B

Prevalence and Severity of individual symptoms of blepharitis.



TEXT C

What treatments are available?

Blepharitis is a long-term condition. There is no cure but symptoms can be improved and controlled. It may take some time before treatments are successful.
Your ophthalmologist may recommend the following treatments to ease your symptoms:

- Cleaning your eyelids to remove the crusts and scales from the eyelid margins and unblock the eyelid glands. To begin with you may need to clean your eyelids twice a day. In the long- term, you will need to clean them at least two or three times a week to prevent blepharitis from returning.
- Artificial tear drops to treat dry eye symptoms and tear film instability.
- Antibiotic eye-drops and ointments to treat any serious infection.
- Mild steroid eyedrops to treat any associated corneal and conjunctival inflammation.

These are only given for short courses and only under the supervision of yourophthalmologist.

- Antibiotics – Some forms of blepharitis such as posterior types and those associated with rosacea need to be treated with a course of antibiotic tablets (tetracyclines). You may need to take these for several months. If you are pregnant or breast feeding you should not take tetracyclines. You may not be able to take them if you have had liver disease or kidney disease. Please tell your ophthalmologist if you have had a history of these conditions. Long- term use of tetracyclines has been linked to the failure of oral contraception, but this is rare. You should not take tetracyclines with milk or antacids.
- Anti-yeast shampoo may be prescribed if you have a form of blepharitis linked to the overgrowth of yeast in your skin.
- Omega 3 supplements have been shown to reduce the symptoms of blepharitis and eye dryness. They are not available on prescription, but you can buy them from a range of pharmacies and health food shops.
- Gentle face washes and shampoos containing tea tree oil can be of benefit by reducing the population of the demodex mite, which can sometimes contribute to someone getting blepharitis. These can be bought from most pharmacists and supermarkets.

What happens if I do not gettreatment?

Blepharitis will not go away. It may get worse and irritate the front surface of your eye (the cornea). This could lead to discomfort and infection.

TEXT D

How do I clean my eyelids?

1. Wash your hands.
2. Soak a flannel/wash cloths with warm water(make sure the water is not too hot).Close your eyes and gently press the flannel against them for five to seven minutes. This will help to soften any hardened oil secretions. An alternative to the flannel/washcloth method is to purchase a device such as an 'eye bag' over the internet. These bags can be heated in a microwave and then placed over your eyes in a similar manner to the flannel. They have the advantage that they release heat more slowly and unlike a flannel do not have to be re-soaked in warm water every few minutes to maintain their heat.
3. Massage your eyelids using your forefinger. Move in a downward motion for the upper eyelid and an upward motion for the lower eyelid. Soak a cotton bud in cooled boiled water. Use the cotton bud to clean your eyelids. Gently rub the cotton bud along the edge of the lower lid. It helps to tilt the lid outward using a finger from your other hand. The upper lid is more difficult to clean. It is best done with the eyelid closed and pulled slightly over the lower lid. This makes sure that you can't poke yourself in the eye.
4. You can add ointments and drops after you've finished cleaning your eyes.

Part A

TIME: 15 minutes

- Look at the four texts, A-D, in the separate Text Booklet.
- For each question, 1-20, look through the texts, A-D, to find the relevant information.
- Write your answers on the spaces provided in this Question Paper.
- Answer all the questions within the 15-minute time limit.
- Your answers should be correctly spelt.

Snakebite including sea snake: Texts

Questions 1-7

For each question, 1-7, decide which text (A, B, C or D) the information comes from. You may use any letter more than once.

In which text can you find information about?

1. Which fingers to be used to massage the eyes? _____
2. Contra-indications in the use of a specific class of drugs? _____
3. How to make hardened eye secretions soft? _____
4. What blepharitis may result from and result in? _____
5. The proportion of patients reporting mild inflammation of the eyelids? _____
6. The kind of bathing care advised? _____
7. Whether children can contract blepharitis? _____

Questions 8-14

Answer each of the questions, **8-14**, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

8. Which skin problem is frequently linked to posterior blepharitis?

   _____

9. Once eyes are cleaned, what can be added to the eyes?

   _____

10. What solution is recommended to treat the symptoms of dry eyes and tear film instability?

    _____

11. Which bacteria can cause blepharitis?

    _____

12. What is the prescribed alternative to using a flannel or wash cloths?

    _____

13. How frequently should the eyelids be cleaned ideally?

_____

14. If blepharitis is left untreated, what might finally be caused?

_____

Questions 15-20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

15. The growth of demodex population can be curtailed by the shampoos and face washes having_____.

16. As in the case of_____, anterior blepharitis can be caused by seborrhoeic dermatitis

17. No blepharitis patient reported very severe_____.

18. A type of microscope known as_____is often used by an ophthalmologist in diagnosing blepharitis.

19. It is recommended that cotton buds be soaked in_____before using them to clean the eye lids.

20. Over_____per cent of blepharitis patients reported mild blurred vision.

END OF PART A
THIS QUESTION PAPER WILL BE COLLECTED

Part B

In this part of the test, there are six short extracts relating to the work of health professionals. For questions 1 to 6, choose the answer (A , B or C) which you think fits best according to the text.

Write your answers on the separate Answer Sheet.

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1. Statins act as the first line of preventive medicines in the people with

   A) Early stage CVD

   B) No CVD

   C) Advanced stage CVD

STATINS:

Statins, also known as HMG-CoA reductase inhibitors, are a class of lipid-lowering medications. Statins have been found to reduce cardiovascular disease (CVD) and mortality in those who are at high risk of cardiovascular disease. The evidence is strong that statins are effective for treating CVD in the early stages of the disease (secondary prevention) and in those at elevated risk but without CVD (primary prevention).

Side effects of statins include muscle pain, increased risk of diabetes mellitus, and abnormalities in liver enzyme tests.[3] Additionally, they have rare but severe adverse effects, particularly muscle damage.[4] They inhibit the enzyme HMG-CoA reductase which plays a central role in the production of cholesterol. High cholesterol levels have been associated with cardiovascular disease (CVD).

2. Compared to the present, enteral feeding in the past

   A) carried lower risk of incorrect administration

   B) was difficult to operate

   C) presented no chance of microbial infection

Enteral Feeding:

Enteral feeding has advanced significantly since its conception. The use of enteral feeding pumps is now a standards-driven process for patients who require assistance with meeting nutritional requirements, when the oral route is ineffective. The safety of pumps has evolved with the advent of new closed systems that reduce incorrect administration and microbial risk and the development of feeding pumps that are user friendly and more accurate in their delivery of enteral nutrition formulae. Research regarding efficacy, safety, and especially patient experience is still limited. The patient population themselves are an important resource for clinicians and manufacturers. Their understanding, perceptions, and views will be important in informing future enteral feed provision and the most acceptable pump delivery systems for an increasingly diverse population.

3. Which of the following could result in injury to the user?

A) Not placing the recliner riser away from walls

B) Not consulting a physician before using the recliner riser

C) Not assembling the recliner riser correctly

Recliner Risers :

This product is only intended to provide a biomechanical advantage while sitting and standing.

Patients suffering from an ailment or injury or taking medications that affect balance or ability to stand or sit down should first consult with a physician before using this product. If the product is not used properly, serious injury or harm could result.

Improper installation of the chair may cause serious injury. Regularly check the Recliner Risers to identify any signs of instability in the recliner. Position your recliner the appropriate distance away from the wall so the recliner may fully recline. Additional safety measures should be taken for users that are at high risk. Such users include those who are not mentally conscious (including those individuals under medication), and users who have size or weight conditions that may apply extreme stress on the Recliner Risers.

After installation of the Recliner Risers, children should not be allowed to stand or jump on the recliner.

4. A patient surrogate can make decision

   A) even when the patient is conscious

   B) only when the patient is unconscious

   C) when the patient has previously expressed preference

Patient Surrogate:

A surrogate decision-maker is the individual legally authorized to make decisions on behalf of the patient. The goal of surrogate decision-making is to reflect what the individual would have decided, if able to speak for him/ herself. This substitute judgment is used when the patient has previously expressed preferences, or when the surrogate can reasonably infer what the patient would want. When the patient's preferences are unknown or unclear, then the surrogate decision-maker should make decisions based on their determination of the patient's best interests.

Any health care surrogate agent is granted the same rights in regard to access of medical information and decision-making as would the alert and competent patient. These rights remain until such time as the client regains decisional capacity, a guardian is appointed, or the patient's death occurs.

5. The product could help epileptic patients by
   A) preventing seizures during sleep

B) eliminating false alarms during patient's movements

C) reducing patient's dependence on others

MEDPAGE MP5:

Seizing during sleep can be dangerous and Medpage MP5 eliminates the need for carers to make physical checks, promoting independence and dignity for the user.
This solution may benefit people living with epilepsy to support and complement professional care where individuals are concerned about having seizures overnight.

The Medpage MP5 uses a motion sensor, which is positioned under the patient's mattress roughly at a shoulder height position. The monitor is powered by a mains charger and has a 12 hour battery backup in case of mains power failure or interruption. The sensor has a sensitivity control to allow for adjustment for patient body weight and bed mattress type. A quick tweak of the control dial is all that is required to set the correct movement detection level, confirmed by a lit LED. The feature of permissible movement alarm delay also has a control dial allowing adjustment from 2 – 20 seconds. This setting allows a person to turn over, cough, or reposition themselves on their bed without an alarm generated. This feature virtually eliminates false alarms.

6. Which of the following must be ensured during RSI?

A) Hyperextending or rotating the neck

B) Uninterrupted supply of oxygen

C) Completion of the process in no less than 20 seconds

RSI:

Rapid Sequence Induction (RSI) is usually performed with any patient considered at risk of regurgitating their stomach contents. Muscle relaxant and sedative is administered in rapid sequence.

Confirm with anaesthetist that necessary equipment is readily available prior to procedure.

Ensure infant / child is supine with head at side of incubator/ radiant warmer or the top of the cot / bed.

The anaesthetist stands at the child's head which is positioned midline with minimal extension of the neck (infant neutral and child in sniffing position). A roll may be placed under shoulders.

Avoid hyperextending or rotating the neck.

Maintenance of oxygenation is a priority during the procedure.

Procedure should be limited to maximum of 20 seconds.

- Ensure yankauer suction is available to hand at infant / child's shoulder to allow easy access for the anaesthetist.

Part C

In this part of the test, there are two texts about different aspects of health care. For questions 1 to 8, choose the answer (A , B , C or D) which you think fits best according to the text.

Write your answers on the separate Answer Sheet.

Text 1:

Alzheimer's Disease : New Treatment

Sending electronic pulses through a brain that is being damaged by Alzheimer's disease might become a new method of early treatment. A study headed by Dr. Andres Lozano at Toronto Western Hospital's Krembil Neuroscience Centre in Canada, has concluded that patients over the age of 65 with mild Alzheimer's disease can benefit from deep brain stimulation.

Deep brain stimulation is nothing new but using it as a more targeted therapy could yield dividends. "Deep brain stimulation (DBS) implants have been used for over 30 years, mostly to treat the tremors of Parkinson's disease patients," Dr. Doug Scharre, director of the Division of Cognitive Neurology at The Ohio State University Wexner Medical Center, told Healthline.
Scharre notes that while DBS treatment is approved by the Food and Drug Administration (FDA) for Parkinson's disease, it's still an experimental therapy when it comes to Alzheimer's.
Lozano's phase II trial directed stimulation at the fornix, a bundle of nerve fibers in the brain.

Researchers found that participants aged 65 or older appeared to experience a slower ***progression*** of the disease than younger participants. Encouraged by these findings, Lozano and his team will launch phase III trials soon. "I think it's an interesting paper and it's important to expand the types of therapies that we're exploring," James Hendrix, PhD, director of global science initiatives at the Alzheimer's Association, told. Hendrix did note this latest research involved a relatively small study group. "The main aim was to look at safety in people with mild Alzheimer's disease, and it does appear to be safe," Hendrix said. "We just need more research to be done in this area before we can say for sure if this is going to be an effective treatment."

There are no expectations of finding a cure for Alzheimer's disease in the near future. However, that doesn't mean that researchers aren't making breakthroughs. "One of the most promising areas of research that's ongoing right now is the research into biomarkers," said Hendrix. The reason that biomarkers are so important, particularly when it comes to developing drugs for Alzheimer's patients, is that it gives doctors and researchers more definitive ways to diagnose the disease, particularly early in its progression when symptoms might be mild. "Until a few years ago, the only way you could tell if someone had Alzheimer's disease was through an autopsy," explains Hendrix. "We had to find people to be in clinical trials just based on their targeted symptoms. These new technologies allow us to look inside of a living brain to see

what's going on." Hendrix also notes that lifestyle changes may help patients stay healthy and ward off disease.

The Alzheimer's Association is supporting a U.S. POINTER study, a two-year clinical trial that looks into whether lifestyle interventions can protect brain health. The most obvious issue with treating Alzheimer's disease is that the best-case scenario isn't a cure but rather slowing the rate of decline. But there's a host of less-obvious issues that stand in the way of finding effective therapies for Alzheimer's disease.
Scharre notes that DBS therapy has its limitations. "It requires brain surgery to place the stimulator wires into the brain," he explains. "While this is now a standard procedure and frequently used for

Parkinson's disease, brain surgery with anesthesia is required. Battery packs have to be changed or recharged regularly. Adjustments for the stimulator settings are required at the beginning to find the optimal settings for each individual patient, requiring ambulatory visits after surgery."

Hendrix says there are two significant hurdles when it comes to the big picture of researching potential therapies: money and finding appropriate study participants. "***It***s very expensive — there are estimates that the cost of drug therapy development is upward of $2 billion," he said. "That's certainly something that very few organizations can bear the cost of, especially considering the high risk. The reason it's so expensive is that Alzheimer's is a slowly progressive disease, so the trials tend to be longer." In order to prove that a therapy is effective, researchers need to show that the group receiving the therapy is doing better than the group receiving the placebo. With a slowly progressing disease like Alzheimer's, Hendrix says this can take a long time. There's also the fact that some of the new diagnostic technologies are expensive. "There's the cost of biomarkers in clinical research," said Hendrix. "Amyloid and PET (positron emission tomography) imaging is anywhere between 3,000 and 5,000 dollars per scan. So if you've got 3,000 people in your phase 3 trial, and everybody needs to get a PET scan, or maybe two or three, you can see how quickly the costs go up."

Despite the fact that Alzheimer's disease is widespread in the United States, it's actually difficult for researchers to find appropriate study participants for clinical trials. "It's very challenging because many trials have inclusion and exclusion criteria," said Hendrix. "Many people don't know they have Alzheimer's disease in the early stages and so therefore they might not seek a clinical trial, and once they progress further in the disease they may then become ineligible for the trial."
This hurdle is significant enough that the Alzheimer's Association offers a free clinical studies matching service called TrialMatch. This service generates customized lists of studies based on user-provided information, allowing potential study participants to see what studies they might qualify for.
While the challenges loom large, technologies like biomarker analysis and deep brain stimulation show that progress is being made, even if a cure isn't yet in sight. "I think that deep brain stimulation is an example of expanding the types of therapies that we're interested in," said Hendrix. "At the Alzheimer's Association, we're interested in all types. We want to treat this

disease effectively. We're interested in device approaches like DBS, we're interested in drug approaches, and we're also interested in lifestyle as a way of lowering risk."

Text 1: Questions 7 to 14

7. According to Dr Andres Lozano's report, for whom is deep brain stimulation suitable?
   A) people over 65 with advanced Alzheimer's disease
   B) people aged 66 and above in the earlier stages of Alzheimer's
   C) 65-year-old patients with mild Alzheimer's disease
   D) patients under the age of 65 with mild Alzheimer's disease

8. What point can be inferred about DBS in the second paragraph?
   A) It is used for conditions other than Parkinson's and Alzheimer's also.
   B) It was first used in the year 1988
   C) It is still an experimental therapy for Parkinson's disease
   D) Its use in treating Alzheimer's patients has been approved by FDA

9. In the paragraph 3, the word progression could best be replaced by
   A) deterioration
   B) improvement
   C) recovery
   D) convalescence

10. In the fourth paragraph, Hendrix says biomarkers are important because
   A) they can treat Alzheimer's disease particularly in the early stages.
   B) they are the only way available to diagnose Alzheimer's disease.
   C) they prevent the symptoms from becoming severe.
   D) they can help recognise the Alzheimer's symptoms conclusively.

11. The problem with DBS, which Scharre points out in the fifth paragraph is that
   A) It requires a very complex brain surgery to implant batteries.
   B) it needs periodical replacement of simulator wires.
   C) it involves multiple complexities.
   D) adjustments for stimulator settings differs from person to person.

12. What does it refer to in the sixths paragraph?
   A) finding appropriate study participants
   B) drug therapy development
   C) money
   D) Deep Brain Stimulation

13. According to the final paragraph, appropriate subjects for clinical trials are those
   A) who have mild Alzheimer's disease.
   B) who are young patients of Alzheimer's disease.
   C) Who are unaware that the have Alzheimer's disease.
   D) who do not know anything about Alzheimer's disease.

14. The approach Alzheimer's association takes towards exploring therapies for the disease can best be described as
   A) omnipotent
   B) unilateral
   C) ultra-sophisticated
   D) multi-pronged

Text 2:

Circadian Rhythm

In humans, circadian rhythms of 24 h must be synchronized to coincide with the daily rotational cycle of the earth. The alignment of this autonomous circadian rhythm to an external rhythm is defined as entrainment. The light patterns represent the principal environmental stimulus for the rest/activity and sleep/wake cycles. It is also indirectly responsible for timing of food intake, another powerful entrainer of rhythm.

Circadian photoentrainment is the process by which the internal clock in the deep brain becomes synchronised with the daily external cycle of solar light and dark. The clocks in most mammalian cells are not directly photoreceptive, unlike those of most other organisms, but instead are entrained indirectly to the environmental light–dark cycle via photoreception in the retina, the retino-hypothalamic tract, and a central pace- maker tissue in the suprachiasmatic nucleus (SCN) of the hypothalamus.This process is initiated by a type of retinal ganglion cells that send axonal projections to the SCN, the region of the circadian pacemaker. In contrast to retinal cells mediating vision, these cells are intrinsically sensitive to light, independent of synaptic input from rod and cone photoreceptors. Photoentrainment of the master pacemaker needs signaling from retinal ganglion cells containing the photopigment melanopsin and intrinsically photosensitive. The cryptochrome/photolyase family of photoreceptors mediates adaptive responses to ultraviolet and blue light exposure in all life forms. The SCN subsequently synchronizes peripheral clocks via mediators including hormones and neuronal signals, primarily using the hypothalamic–pitu- itary–adrenal (HPA) axis and the autonomic nervous system. The principal hormones i.e. glucocorticoids and catecholamines (epinephrine and norepinephrine), are released by the adrenal gland via the HPA axis [29], but norepinephrine is also derived from sympathetic nerve endings. The HPA is controlled by the SCN which projects to the paraventricular nucleus of the hypothalamus, and this in turn induces the release of adrenocorticotropic hormone by the pituitary, thus regulating the adrenal gland. Catecholamines act via adrenergic receptors, which have many effects on immune cells, as well as increasing the humoral immune responses.

The central biological CLOCK system, influenced by light/dark changes, ‘creates’ the internal circadian rhythms, and the organism ‘feels’ these changes to put in ***frame*** physical activities, including energy metabolism, sleep, and immune function.

A recent review listed the following pathological conditions showing diurnal or 24 h patterning, by the organ/tissue/system affected, skin: atopic dermatitis, urticaria, psoriasis, and palmar hyperhidrosis; gastro-intestinal: esophageal reflux, peptic ulcer, biliary colic, hepatic variceal hemorrhage, and proctalgia; infection: susceptibility, fever, and mortality; neural: frontal, parietal, temporal, and occipital lobe seizures, Parkinson’s and Alzheimer’s disease, hereditary

progressive dystonia, and pain (cancer, post-surgical, diabetic neuropathy, burning mouth and temporomandibular syndromes, fibromyalgia, sciatalgia, and migraine, headache); renal: colic and nocturnal enuresis and polyuria; ocular: conjunctival redness, keratoconjunctivitis sicca, intraocular pressure, anterior ischemic optic neuropathy, and recurrent corneal erosion syndrome; psychiatric/behavioural:major and seasonal affective depressive disorders, bipolar disorder, suicide, and addictive alcohol, tobacco, and heroin cravings and withdrawal phenomena; plus autoimmune and musculoskeletal: rheumatoid arthritis, osteoarthritis, axial spondylarthritides, gout, Sjogren’s syndrome, and systemic lupus erythematosus. Some are directly linked to disruption of circadian rhythms, others result in disturbed sleep with loss of rhythmicity; the peripheral clocks in different tissues become out of phase with the central regulator and other physiologic functions, and ***this*** in turn aggravates the symptoms and alters the clinical picture.

The time and duration of sleep is tightly controlled by central mechanisms. These may be disrupted by disease processes, but also by other external conditions, such as night shifts, long range flight travels (jet-lag) and social nocturnal activity (social jet-lag). Pro-inflammatory cytokines are generally indicated as sleep-inducing, and basal plasma levels of these cytokines appear higher during the rest phase. Infection-associated sleepiness has been attributed to increased pro-inflammatory cytokine plasma levels.

The 2017 Nobel Prize for Physiology or Medicine has focused the attention on the importance of homeostasis and balanced distribution of energy resources ensured by the presence of circadian rhythms. These are centrally controlled by the master clock in the SCN and photoentrained to the light–dark cycle through inputs from melanopsin-containing retinal ganglion cells. The circadian clocks are not built in a rigid top-down scheme, allowing for oscillations of peripheral clocks in different cells and tissues, thus maximizing flexibility and adaptation to changes in the environment and in the organism. At the biochemical level, they consist of coupled feedback loops that establish a self-sustained, adjustable molecular scillator that controls, via transcriptional programs, a wide spectrum of cellular and organismal processes. Many physiological events, from sleep to feeding, as well as immune responsiveness, are interlinked to the circadian rhythms. Their disruption can have profound effects on physiology, and modern society and way of life puts increasing pressures to push activity and sleep out of sync with circadian rhythmicity, as in working and eating habits. This poses additional threats to health conditions of workers on night shift, or subjected to long distance travel through many time zones (jet-lag) or working in artificial light conditions mimicking solar light. Finally, the emerging importance of chrono-feeding (to avoid the epidemics of obesity and associated cardio-metabolic disorders) and chronopharmacology impose changes in current standard practices which have little regard for circadian rhythms.

Questions 15-22

15. According to the paragraph 1, the term "entrainment" refers to

    A) synchronising the earth's daily rotational cycle with that of humans.
    B) aligning the human circadian rhythm with that of the earth.
    C) alignment of rest/activity cycle with sleep/wake cycle
    D) syncing the human daily biological cycle with an external rhythm

16. It can be deduced from the second paragraph that the cells of many non-mammalian organisms

    A) share properties of mammalian retinal cells.
    B) are less photoreceptive than mammalian cells.
    C) are entrained indirectly to the environmental light-dark rhythm.
    D) are more efficient than mammalian cells.

17. In the paragraph 3, the word frame could best be replaced by

    A) display
    B) limit
    C) picture
    D) order

18. In the fourth paragraph, the list of conditions showing diurnal or 24-hour patterning does Not include

    A) stomach disorders
    B) changes in body temperature
    C) substance abuse
    D) conjunctivitis

19. The word this in the paragraph 4 refer to

    A) central regulator
    B) disruption of circadian rhythm
    C) disorientation of physiological rhythms
    D) disturbed sleep

20. What can we learn in the fifth paragraph?

    A) Diseases may result from working night shifts
    B) There is an association between time and duration of sleep and dayshift work
    C) Partying could be harmful to health
    D) Long-range flight travel in the night disrupts time and duration of sleep

21. In the final paragraph, the author highlights that

    A) in the absence circadian rhythms, energy resources would be unevenly distributed among biological systems.
    B) circadian clocks are built in rigid top-down plan
    C) homeostasis and distribution of energy sources are directly regulated by the SCN
    D) circadian clocks are often not flexible

22. What does the writer feel about the current standard practices?

    A) They take into account circadian rhythms to some extent
    B) They have no regard for circadian rhythms
    C) They impose changes in chrono-feeding and chronopharmacology
    D) They are better than the old practices

END OF READING TEST
THIS BOOKLET WILL BE COLLECTED