

Media Literacy in Health and Biology

Health Science And Media Literacy · Answer Key · 18 Questions

1. Which hormone is primarily responsible for the regulation of the circadian rhythm in response to light exposure, often disrupted by blue light from digital media screens?

- A) Cortisol
- B) Melatonin**
- C) Adrenaline
- D) Insulin

2. The 'Nocebo Effect' is a well-documented phenomenon in health media literacy where a person experiences negative side effects from a treatment because:

- A) They have a severe allergic reaction to the placebo
- B) They expect the treatment to cause harm**
- C) The media inaccurately reports chemical composition
- D) The body undergoes acute physical stress from misinformation

3. Which organ is responsible for the detoxification of metabolic waste products, a process often misrepresented by 'detox' tea and cleanse trends promoted in media?

- A) Gallbladder
- B) Pancreas
- C) Liver**
- D) Spleen

4. In the context of health misinformation, what is the 'scientific consensus' regarding the function of the human appendix?

- A) It serves no function and is strictly a vestigial organ
- B) It acts as a reservoir for beneficial gut bacteria**
- C) It is the primary site for red blood cell production
- D) It is essential for the digestion of cellulose

5. What is the primary biological reason that 'spot reduction' (losing fat from only one specific area of the body) is physiologically impossible?

- A) Fat cells are distributed in discrete, non-communicating layers
- B) Lipolysis occurs via systemic hormonal signaling**
- C) The bloodstream cannot transport fatty acids from specific regions
- D) Adipocytes are anchored to the skeletal structure

6. Which physiological process explains why chronic exposure to stress-inducing sensationalist media can weaken the immune system?

A) Elevated long-term cortisol levels suppress lymphocyte production

- B) Increased heart rate causes lymphatic depletion
- C) Constant screen exposure dehydrates white blood cells
- D) Rapid eye movement prevents cytokine release

7. Why is the claim that humans only use '10% of their brains' considered a neurobiological myth?

A) Functional MRI scans show activity across the entire brain even during rest

- B) The brain's energy consumption is too low to support 100% usage
- C) Only the frontal lobe requires active neural firing
- D) Neural pruning renders 90% of the brain inactive by adulthood

8. Which nutrient deficiency is the most common cause of anemia worldwide, despite media trends often suggesting more obscure dietary imbalances?

- A) Vitamin B12
- B) Magnesium

C) Iron

- D) Zinc

9. What is the primary mechanism by which the 'Placebo Effect' influences patient-reported outcomes in clinical trials?

A) Psychoneuroimmunological modulation of pain pathways

- B) The physical intake of inert substances
- C) Reporting bias caused by researcher interference
- D) The physiological reaction to the taste of a pill

10. According to clinical endocrinology, what is the 'set point theory' regarding human weight?

A) The body maintains a weight range through complex metabolic feedback loops

- B) Weight is determined solely by the number of calories consumed
- C) The hypothalamus permanently resets to the lowest weight achieved
- D) Body fat percentage is controlled by the rate of hair growth

11. Which vitamin is synthesized by the human body through a photochemical reaction when skin is exposed to UVB radiation, frequently misunderstood in health media regarding skin cancer risk?

- A) Vitamin A
- B) Vitamin C

C) Vitamin D

- D) Vitamin K

12. What is the role of 'Telomeres' in human cellular aging, a topic often exploited by anti-aging supplement advertisements?

- A) They are enzymes that accelerate cell death
- B) They are protective caps on DNA strands that shorten with cell division**
- C) They are protein receptors that store memory
- D) They are segments of the cell wall that prevent viral entry

13. The 'Dunning-Kruger Effect' in the context of public health literacy refers to:

- A) The tendency for individuals with low ability to overestimate their medical knowledge**
- B) The biological inability to recall complex health information
- C) The impact of sensory overload on reading comprehension
- D) The rapid decline of memory due to information saturation

14. Which physiological structure regulates the body's internal temperature, often used to debunk media claims regarding 'detoxification' through sweating?

- A) The hypothalamus**
- B) The thyroid gland
- C) The epidermis
- D) The lymphatic system

15. Which of these is the scientifically accurate definition of 'metabolism' in the human body?

- A) The speed at which one loses weight
- B) The sum of all chemical reactions occurring within the body**
- C) The rate of oxygen intake during exercise
- D) The process of digestion in the small intestine

16. What is the primary function of the 'Blood-Brain Barrier' that misinformation about 'brain-boosting' supplements often overlooks?

- A) Filtering toxins from the blood to protect neural tissue**
- B) Pumping oxygenated blood directly to the neocortex
- C) Increasing the production of neurotransmitters
- D) Removing dead neurons from the skull

17. Regarding human vision, what is the physiological cause of 'Digital Eye Strain' when viewing media for extended periods?

- A) The constant change in focus between pixels
- B) The radiation emitted from LED displays
- C) Reduced blink rate leading to corneal dryness**
- D) The absorption of blue light by the retina

18. Which organ secretes insulin and glucagon, and is frequently the target of misleading 'diabetes cure' scams in health media?

A) Liver

B) Pancreas

C) Adrenal gland

D) Pituitary gland