Renewable Energy and Human Health

Renewable Energy · Answer Key · 20 Questions

1. How does transitioning from coal-fired power to wind energy impact human respiratory health?

A) It increases heavy metal accumulation in lungs

B) It reduces particulate matter emissions that trigger asthma

C) It causes long-term exposure to infrasound

D) It increases lung cancer rates

2. What is a direct health benefit of replacing household biomass combustion with solar-powered cookstoves?

A) Elimination of indoor air pollution from smoke

B) Increased exposure to ultraviolet radiation

C) Reduction in dietary fiber intake

D) Prevention of bone density loss

3. Which organ system is most negatively affected by the fine particulate matter (PM2.5) released by fossil fuel combustion?

A) The skeletal system

B) The cardiovascular and respiratory systems

C) The integumentary system

D) The reproductive system

4. The World Health Organization identifies ambient air pollution from traditional energy sources as a leading cause of which condition?

A) Premature mortality

B) Color blindness

C) Chronic fatigue syndrome

D) Type 1 diabetes

5. What physiological benefit is associated with the reduction of nitrogen oxides (NOx) due to the use of electric vehicles powered by renewable sources?

A) Lower incidence of airway inflammation

B) Increased blood glucose levels

C) Decreased bone mineral density

D) Improved ocular muscle coordination

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6. Hydroelectric dam construction can sometimes lead to an increase in which health-related risk in tropical regions?

A) Vector-borne diseases like malaria
B) Increased respiratory virus transmission
C) Vitamin D deficiency
D) Severe cases of scurvy

7. Which health risk is significantly mitigated by the decrease in sulfur dioxide (SO_2) emissions achieved through renewable energy adoption?

A) Acidification of the respiratory tract
B) Hypercalcemia
C) Influenza A mutation
D) Tinnitus

8. How do solar panels indirectly improve health by reducing the demand for coal-generated electricity?

A) They lower the release of mercury, a neurotoxin
B) They increase the concentration of oxygen in the air
C) They neutralize all soil-based carcinogens
D) They decrease the incidence of lactose intolerance

9. Long-term exposure to coal ash, a byproduct of non-renewable energy, is linked to an increase in which health condition?

A) Cardiovascular disease
B) Color perception deficiency
C) Hypersomnia
D) Enhanced muscle growth

10. What is the primary way that wind energy contributes to public health, according to the WHO?

A) Through the reduction of climate-changing pollutants
B) By directly inducing hormone regulation
C) By improving the absorption of trace minerals
D) By eliminating the need for sleep

11. Which health effect is commonly observed in populations living near coal power plants due to high levels of airborne pollutants?

A) Reduced lung function in children
B) Heightened sensory perception
C) Enhanced bone density
D) Increased resistance to common cold viruses

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12. Transitioning to geothermal energy for heating can reduce the health hazards associated with which substance?

A) Carbon monoxide from burning gas
B) Atmospheric ozone depletion
C) Increased ultraviolet light exposure
D) Excessive oxygen toxicity

13. How does the shift to renewable energy impact the incidence of stroke in urban populations?

A) It reduces exposure to combustion-related neurotoxicants
B) It increases the intake of dietary antioxidants
C) It has no impact on stroke risk
D) It causes changes in atmospheric pressure that improve blood flow

14. Which heavy metal, frequently released by fossil fuel power plants, is known to cause developmental delays in children?

A) Mercury
B) Iron
C) Calcium
D) Zinc

15. The reduction of ground-level ozone, achieved through the use of clean energy, helps prevent which health issue?

A) Asthma exacerbation
B) Dental caries
C) Restless leg syndrome
D) Hair loss

16. Why is renewable energy adoption considered a 'preventive medicine' approach by health organizations?

A) It minimizes the underlying causes of pollution-related illness
B) It provides direct physical therapy
C) It promotes mandatory daily exercise
D) It mandates a balanced diet

17. Which health-related 'external cost' is lowest for wind and solar energy compared to coal?

A) Direct medical expenditures for pollution-related diseases
B) The cost of electrical equipment maintenance
C) The cost of land acquisition
D) The cost of labor wages

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18. What impact do electric, renewable-powered buses have on the urban 'heat island' effect?

A) They reduce waste heat discharge compared to internal combustion engines

B) They increase the overall ambient temperature

C) They have no impact on urban thermal regulation

D) They produce excess water vapor that increases humidity

19. How does the lack of renewable, reliable energy (energy poverty) impact health in developing nations?

A) It necessitates the use of polluting indoor cooking fuels

B) It leads to an excess of physical activity

C) It improves access to high-quality refrigeration

D) It eliminates the risk of infectious disease

20. Which health benefit is linked to the increased energy efficiency often paired with renewable technology?

A) Better indoor temperature control reduces stress-related mortality

B) Increased frequency of allergies

C) Reduced need for water consumption

D) Increased absorption of harmful radon gas

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