



Deadly Molecular Devils: Fatal Diseases Unleashed.

Description

The prion, a tiny protein, is a unique germ responsible for one of the most horrifying ways to die. Unlike bacteria, fungi, or viruses, prions lack a genetic signature of life. They have the ability to transform into a malevolent, zombie-like form that converts normal prions into copies of themselves, ultimately leading to the destruction of the brain. In Michel Brahic's latest book, [The Power of Prions](#), he delves into the enigmatic world of these proteins.

Having spent his career studying brain diseases triggered by viruses and prions, Brahic sheds light on how prions play a role in ailments like Creutzfeldt-Jakob disease (CJD) and mad cow disease. He also explores the link between prions and common disorders such as Alzheimer's and [type 2 diabetes](#), highlighting the significance of these proteins.

Brahic discusses the havoc wreaked by prions in the brain, causing fatal diseases like kuru, CJD, chronic wasting disease, and mad cow disease. He emphasizes how understanding these proteins could lead to breakthroughs in treating other neurodegenerative diseases. Despite prions being terrifying, their role in life's origin and essential functions cannot be overlooked.

While prion diseases may seem unbeatable, research is ongoing to develop drugs that can interfere with their toxic effects. Brahic remains hopeful that these efforts will lead to new treatments and a better understanding of these mysterious "molecular devils."

In his book, Brahic not only unravels the complexities of prions but also aims to bridge the gap between scientific discoveries and public understanding, emphasizing the importance of transparent communication in the field of science.

Vocabulary List:

1. **Prion** /'praɪ.ɒn/ (noun): A type of infectious agent composed of protein causing certain neurodegenerative diseases.
2. **Neurodegenerative** /,njʊə.rəʊ.dɪ'dʒen.ə.rə.tɪv/ (adjective): Relating to the degeneration of nervous tissue.
3. **Malevolent** /mə'levələnt/ (adjective): Having or showing a wish to do evil to others.
4. **Ailment** /'eɪl.mənt/ (noun): An illness typically a minor one.
5. **Havoc** /'hæv.ək/ (noun): Widespread destruction or devastation.
6. **Significance** /sɪg'nɪf.ɪ.kəns/ (noun): The importance or meaning of something.



Comprehension Questions

Multiple Choice

1. What is a prion?
 - Option: A tiny protein responsible for brain diseases
 - Option: A type of bacteria
 - Option: A genetic virus
 - Option: An essential protein for brain health
2. What distinguishes prions from bacteria, fungi, or viruses?
 - Option: Lack of genetic signature of life
 - Option: Ability to reproduce rapidly
 - Option: Presence of DNA
 - Option: Non-protein structure
3. Which of the following diseases are linked to prions according to Michel Brahic?
 - Option: Alzheimer's and type 2 diabetes
 - Option: Malaria and tuberculosis
 - Option: Influenza and common cold
 - Option: Measles and chickenpox
4. What do prions do in the brain?
 - Option: Convert normal prions into copies of themselves
 - Option: Generate new brain cells
 - Option: Repair damaged tissue
 - Option: Neutralize toxins
5. What is the potential impact of understanding prions according to Brahic?
 - Option: Lead to breakthroughs in treating neurodegenerative diseases
 - Option: Improve eyesight
 - Option: Enhance muscle strength
 - Option: Prevent common cold
6. What is one goal of research on prion diseases?
 - Option: Develop drugs to interfere with toxic effects



- Option: Create vaccines for the common flu
- Option: Study the effects of bacteria
- Option: Regenerate damaged organs

True-False

7. Prions have a genetic signature of life.
8. Prions can lead to the destruction of the brain.
9. Research on prions is not aimed at developing treatments for neurodegenerative diseases.
10. Understanding prions may not provide insights into other brain conditions.
11. Prions are known as "molecular devils" in Brahic's book.
12. Transparent communication is not considered important in the field of science according to Brahic.

Gap-Fill

13. Prions lack a _____ of life.
14. Understanding prions could lead to breakthroughs in treating other _____ diseases.
15. Research is ongoing to develop drugs that can _____ with toxic effects of prions.
16. Michel Brahic aims to bridge the gap between scientific discoveries and public understanding through _____ communication.
17. Prions play a role in ailments like Creutzfeldt-Jakob disease (CJD) and _____ disease.
18. Despite being terrifying, the role of prions in life's origin and essential functions cannot be _____.

Answer

- Multiple Choice:** 1. A tiny protein responsible for brain diseases 2. Lack of genetic signature of life
3. Alzheimer's and type 2 diabetes



4. Convert normal prions into copies of themselves 5. Lead to breakthroughs in treating neurodegenerative diseases 6. Develop drugs to interfere with toxic effects

True-False: 7. False 8. True 9. False 10. False 11. True 12. False

Gap-Fill: 13. genetic signature 14. neurodegenerative 15. interfere 16. transparent 17. mad cow 18. overlooked

Vocabulary quizzes

Multiple Choice (Select the Correct answer for each question.)

1. Which term refers to the proportion of individuals in a population having a particular ailment at a specific time?

- Option: Archaeologists
- Option: Skeletal
- Option: Prevalence
- Option: Diagnosis

2. Which term describes a condition involving the progressive degeneration of the structure or function of the nervous system?

- Option: Attribute
- Option: Prion
- Option: Neurodegenerative
- Option: Destigmatize

3. What term means to make something less severe serious or painful?

- Option: Intriguing
- Option: Mitigate
- Option: Consumption
- Option: Expenditure

4. Who are scientists who study past human societies through their material remains?

- Option: Proactive
- Option: Archaeologists
- Option: Vigilance
- Option: Significance

5. Which term refers to the using up of a resource?



- Option: Proactive
- Option: Consumption
- Option: Susceptibility
- Option: Destigmatize

6. What is a potentially serious sleep disorder in which breathing repeatedly stops and starts during sleep?

- Option: Inefficiency
- Option: Mitigate
- Option: Obstructive
- Option: Apnea

7. Which term refers to the identification of the nature of an ailment or other problems through examination of the symptoms?

- Option: Skeletal
- Option: Prion
- Option: Diagnosis
- Option: Consumption

8. What term refers to having knowledge or perception of a situation or fact?

- Option: Prion
- Option: Significance
- Option: Awareness
- Option: Havoc

9. Which term describes a harmful or evil influence?

- Option: Intriguing
- Option: Malevolent
- Option: Inefficiency
- Option: Consumption

10. Which term refers to a connection or cooperative link between people or organizations?

- Option: Association
- Option: Mitigate
- Option: Obstructive
- Option: Prion

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. _____ remains provide valuable insights into the physical characteristics of past populations.



12. It is important to maintain _____ against potential security threats.
13. Taking a _____ approach can help prevent issues before they occur.
14. Efforts are being made to _____ mental health issues and encourage open discussions.
15. Understanding the historical _____ of artifacts is crucial in archaeology.
16. An _____ sleep apnea can lead to serious health complications.
17. The company reduced unnecessary _____ to improve profitability.
18. Addressing _____ in processes can lead to cost savings and productivity gains.
19. Certain populations may have a higher _____ to specific diseases.
20. Post-surgery the patient experienced some unexpected _____ that required further treatment.

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. Prions are infectious agents composed of protein in a misfolded form.
22. Alzheimer's disease is a common type of disorder.
23. A minor like the flu can sometimes lead to significant complications.
24. The hurricane wreaked on the coastal town causing widespread destruction.
25. Genetic factors can increase one's to certain environmental factors.
26. Being rather than reactive can help in preventing crises.
27. Excessive food can lead to health problems such as obesity.
28. The team worked to meet the deadline for the project.
29. Early of cancer can significantly improve treatment outcomes.



30. The study found a strong positive between exercise and mental well-being.

Answer

Multiple Choice: 1. Prevalence 2. Neurodegenerative 3. Mitigate 4. Archaeologists 5. Consumption 6. Apnea
7. Diagnosis 8. Awareness 9. Malevolent 10. Association

Gap-Fill: 11. Skeletal 12. Vigilance 13. Proactive 14. Destigmatize 15. Significance 16. Obstructive
17. Expenditure 18. Inefficiency 19. Susceptibility 20. Complications

Matching sentence: 1. Prion 2. neurodegenerative 3. ailment 4. havoc 5. susceptibility 6. proactive
7. consumption 8. continuous 9. diagnosis 10. association

CATEGORY

1. Health - LEVEL4

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