Your Loved Ones Influence Your Gut Microbes: Science Reveals

Description

The bonds we share with our loved ones go beyond mere shared interests and activities. In fact, a recent study has revealed that we also exchange gut microbes with our family and friends, making our personal microbiomes a reflection of our social connections.

Conducted by Yale University researchers Francesco Beghini and Jackson Pullman, the study involved mapping the social networks of 1,787 adults in remote villages in Honduras and analyzing the microbial composition of their gut flora. Sociologist and physician Nicholas Christakis, also from Yale, described the extensive effort involved in collecting and analyzing stool specimens from these isolated communities.

The research delved into the impact of face-to-face interactions on the human gut microbiome, revealing that social connections strongly influence the microbial diversity within individuals. Participants were instructed to collect stool samples, which were then analyzed to identify microbial strains shared among community members.

Results showed that not only family members but also close friends and socially central individuals had similar gut flora compositions. Furthermore, the study found that the microbial profiles of individuals with more social connections became more alike over time.

This groundbreaking research highlights the intricate relationship between social interactions and microbial diversity, shedding light on how our microbiomes are shaped by our social structures. The findings suggest that community structure may play a crucial role in the emergence of certain health conditions linked to gut microbiomes, such as obesity, depression, and arthritis.

Published in Nature, this study underscores the profound impact of social ties on our microbiological makeup and opens up new avenues for exploring the intricate interplay between social connections and human health.

Vocabulary List:

1. **Microbiome** /ˌmaɪ.krəʊˈbaɪ.əʊm/ (noun): The collection of microorganisms living in a specific environment especially the gut.
2. **Composition** /ˌkɒm.pəˈzɪʃ.ən/ (noun): The nature of something's ingredients or constituents.
3. **Diversity** /daɪˈvɜː.sɪ.ti/ (noun): The state of being diverse; variety.
4. **Interaction** /ˌɪn.təˈræk.ʃən/ (noun): Mutual or reciprocal action or influence.
5. **Influence** /ˈɪn.flu.əns/ (noun): The capacity to have an effect on the character development or behavior of someone or something.
6. **Emergence** /ɪˈmɜː.dʒəns/ (noun): The process of coming into view or becoming exposed after being concealed.

Comprehension Questions

Multiple Choice

1. What did the recent study reveal about our social connections and gut microbes?

    Option: They have no impact on each other
    Option: We exchange gut microbes with our family and friends
    Option: Shared interests have a greater influence
    Option: Only face-to-face interactions influence gut microbes

2. Who were the Yale University researchers involved in the study?

    Option: Francesco Beghini and Nicholas Christakis
    Option: Jackson Pullman and Nicholas Christakis
    Option: Francesco Beghini and Jackson Pullman
    Option: Francesco Beghini and Nicholas Ryland

3. What did the study analyze in the isolated communities in Honduras?

    Option: Environmental factors
    Option: Personal interests
    Option: Microbial composition of gut flora
    Option: Genetic mutations

4. According to the research, who had similar gut flora compositions?

    Option: Unrelated individuals
    Option: Family members only
    Option: Close friends and socially central individuals
    Option: Participants with no social connections

5. What do the findings of the study suggest in relation to health conditions?

    Option: No correlation with health
    Option: Strong connection with mental health
    Option: Community structure plays a crucial role
    Option: Obesity has no link to gut microbiomes

6. Where was the study published?

    Option: The Lancet

Option: JAMA

Option: Science

Option: Nature

True-False

7. The study conducted by Yale University involved 1,787 adults in cities like New York.

8. The research revealed that only family members shared similar gut flora compositions.

9. Participants in the study were not required to collect stool samples for analysis.

10. The microbial profiles of individuals with more social connections became less alike over time.

11. The study suggests a link between social connections and certain health conditions such as arthritis.

12. The findings of the study have no implications for exploring the interplay between social connections and human health.

13. Yale University researchers Francesco Beghini and Jackson Pullman mapped the social networks of 1,787 adults in remote villages in Honduras and analyzed the microbial composition of their gut flora.

Gap-Fill

14. The study found that not only family members but also _____ had similar gut flora

compositions.

15. Participants in the study were instructed to collect stool samples to identify _____

shared among community members.

16. Results showed that the microbial profiles of individuals with more social connections became

_____ over time.

17. Published in Nature, this study underscores the profound impact of social ties on our

_____ makeup.

18. The findings suggest that community structure may play a crucial role in the emergence of health

conditions linked to gut microbiomes, such as obesity, depression, and _____ .

Answer

Multiple Choice: 1. We exchange gut microbes with our family and friends 2. Francesco Beghini and Jackson Pullman 3. Microbial composition of gut flora 4. Close friends and socially central individuals 5. Community structure plays a crucial role 6. Nature
True-False: 7. False 8. False 9. False 10. False 11. True 12. False 13. False
Gap-Fill: 14. close friends and socially central individuals 15. microbial strains 16. more alike 17. microbiological 18. arthritis

Vocabulary quizzes

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

1. What is the term used to describe the community of microorganisms that inhabit a particular environment?

   Option: Composition
   Option: Diversity
   Option: Microbiome
   Option: Interaction

2. Which term refers to the ability of an organism to cause disease?

   Option: Virulent
   Option: Pathogenic
   Option: Manifestations
   Option: Surveillance

3. What term best describes the process of combining different elements to create a whole?

   Option: Mutation
   Option: Synthesize
   Option: Meticulous
   Option: Encoding

4. Which term describes the quality of being correct or precise?

   Option: Revolutionize
   Option: Interface
   Option: Accuracy
   Option: Dissipation

5. What term best describes a work environment where individuals actively work together towards a common goal?

   Option: Gradient
   Option: Collaborative
   Option: Escalating
   Option: Microglia

6. What term refers to a permanent alteration in the DNA sequence that makes up a gene?

   Option: Pre-inflammatory
   Option: Implicated
   Option: Mutation
   Option: Neurodegenerative

7. Which term refers to treatments designed to cure or relieve symptoms of a disease?

   Option: Progression
   Option: Therapies
   Option: Microbiome
   Option: Emergence

8. What term describes the way in which two or more things affect each other?

   Option: Democratizing
   Option: Synthesize
   Option: Interaction
   Option: Meticulous

9. Which term refers to the symptoms or signs of a particular disease?

   Option: Influence
   Option: Manifestations
   Option: Surveillance
   Option: Apprehensive

10. Which term describes a significant and fundamental change in something?

   Option: Accuracy
   Option: Revolutionized
   Option: Dissipation
   Option: Gradient

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

11. _____ refers to the gradual disappearance of a trait or condition over time.

12. _____ is the process of coming into view or becoming exposed.

13. The conflict showed signs of _____ tension between the two parties.

14. The color changes of the sky during sunset created a beautiful _____ .

15. The evidence strongly _____ the suspect in the crime.

16. Her teachers had a significant _____ on her decision to pursue a career in science.

17. The artist was known for his _____ attention to detail in his paintings.

18. Alzheimer's disease is an example of a _____ condition that affects the brain.

19. The government increased _____ in the area following reports of criminal activity.

20. The virus was particularly _____ causing severe illness in those infected.

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

21. The of the painting was a blend of vibrant colors and geometric shapes.
22. The internet has played a significant role in access to information worldwide.
23. The medication aims to reduce processes in the body before they escalate into full inflammation.
24. The disease showed a steady worsening over time.
25. are a type of glial cell in the central nervous system that provide support and protection for neurons.
26. Samantha felt about the upcoming exam unsure if she had studied enough.
27. The genetic information in DNA is crucial for the process of proteins in cells.
28. The skin rash and fever were common of the allergic reaction.

29. The invention of the smartphone has helped to the way we communicate and access information.

30. The software developer focused on creating an easy-to-use for the new app.

Answer

Multiple Choice: 1. Microbiome 2. Pathogenic 3. Synthesize 4. Accuracy 5. Collaborative 6. Mutation 7. Therapies 8. Interaction 9. Manifestations 10. Revolutionized

Gap-Fill: 11. Dissipation 12. Emergence 13. Escalating 14. Gradient 15. Implicated 16. Influence 17. Meticulous 18. Neurodegenerative 19. Surveillance 20. Virulent

Matching sentence: 1. Composition 2. Democratizing 3. Pre-inflammatory 4. Progression 5. Microglia 6. Apprehensive 7. Encoding 8. Manifestations 9. Revolutionize 10. Interface

CATEGORY

1. Health - LEVEL5

Date Created
2024/11/22
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