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# 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.

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## Vocabulary List:

1. **Microbiome** /,maɪ.krəʊ'baɪ.əʊm/ (noun): The collection of microorganisms living in a specific environment especially the gut.
2. **Composition** /,kɒm.pə'zɪʃ.ən/ (noun): The nature of something's ingredients or constituents.
3. **Diversity** /daɪ'vɜːsɪ.ti/ (noun): The state of being diverse; variety.
4. **Interaction** /,ɪn.tə'ræk.ʃən/ (noun): Mutual or reciprocal action or influence.
5. **Influence** /'ɪn.flu.əns/ (noun): The capacity to have an effect on the character development or behavior of someone or something.
6. **Emergence** /ɪ'mɜː.dʒəns/ (noun): The process of coming into view or becoming exposed after being concealed.



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## 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



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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

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