

Understanding the Effects of Psilocybin on Brain Plasticity: Exploring the Connection between Drugs and Neuroplasticity

Description

New Study Shows How Psychedelics Affect the Brain

A recent study published in the journal Nature has shed light on how psychedelic drugs, such as psilocybin found in magic mushrooms, affect the brain. The study involved seven participants, including Dr. Nico Dosenbach, who ingested a high dose of psilocybin before undergoing brain scans.

The results of the study suggest that psychedelic drugs disrupt specific brain networks, particularly those associated with spatial awareness, time perception, and self-awareness. Dr. Petros Petridis of New York University's Langone Center for Psychedelic Medicine, who co-authored an editorial on the study, explained that the drugs enhance the brain's ability to adapt and change, known as plasticity.

Dr. Joshua Siegel, the lead author of the study, pointed out that the disrupted brain networks are responsible for the plasticity effects of psychedelics. This finding could explain why these drugs show promise in treating addiction and depression.

Participants described their experiences under the influence of psilocybin as mind-bending and enlightening. Dr. Dosenbach likened his trip to "riding brain waves" and even feeling like a renowned neuroscientist, Dr. Marcus Raichle.

The study's detailed brain scans revealed that psilocybin caused significant changes in specific brain networks, leading to a state of enhanced plasticity that persisted for weeks. The default mode network, associated with self-referential memory, was particularly affected.

While the study highlights the potential therapeutic benefits of psychedelics, experts caution that these drugs have risks. However, they also acknowledge the drugs' unique ability to help patients recognize their capacity for change and recovery.

In conclusion, the study provides valuable insights into how psychedelic drugs impact the brain and offers hope for their future use in psychiatric treatment.

Vocabulary List:

- 1. **Psychedelic** /,saɪ.kə'dɛl.ɪk/ (adjective): Relating to or denoting drugs that produce altered states of perception and consciousness.
- 2. Plasticity /plæs'tɪs.ɪ.ti/ (noun): The ability of the brain to change and adapt as a result of experience.
- 3. **Network** /'nɛt.wɜrk/ (noun): A group or system of interconnected people or things.
- 4. **Perception** /pər'sɛpʃən/ (noun): The way in which something is regarded understood or interpreted.



- 5. **Disrupt** /dɪsˈrʌpt/ (verb): To interrupt the normal progress or activity of something.
- 6. **Therapeutic** /,θετθ'pju:tɪk/ (adjective): Relating to the healing of disease or having a beneficial effect on health.

Comprehension Questions

Multiple Choice

1. What is the main focus of the recent study published in the journal Nature?

Option: Effects of caffeine on the brain

Option: Effects of psychedelic drugs on the brain

Option: Effects of exercise on the brain Option: Effects of meditation on the brain

2. Which specific brain networks are disrupted by psychedelic drugs according to the study?

Option: Emotional processing networks Option: Language processing networks

Option: Spatial awareness time perception and self-awareness networks

Option: Motor control networks

3. Who is mentioned as feeling like a renowned neuroscientist during the study?

Option: Dr. Nico Dosenbach Option: Dr. Petros Petridis Option: Dr. Joshua Siegel Option: Dr. Marcus Raichle

4. What effect do psychedelic drugs have on the brain networks as explained by Dr. Joshua Siegel?

Option: They stabilize the networks Option: They disrupt the networks Option: They magnify the networks Option: They reroute the networks

5. Which brain network associated with memory was particularly affected by psilocybin in the study?

Option: Executive control network Option: Default mode network

Option: Visual network
Option: Auditory network



6. What is one potential application of psychedelic drugs mentioned in the study?

Option: Improving math skills

Option: Treating addiction and depression Option: Enhancing athletic performance

Option: Boosting creativity

Answer

Multiple Choice: 1. Effects of psychedelic drugs on the brain 2. Spatial awareness time perception and selfawareness networks 3. Dr. Nico Dosenbach 4. They disrupt the networks 5. Default mode network 6. Treating addiction and depression

Vocabulary quizzes

ESL-NEWS.CON Multiple Choice (Select the Correct answer for each question.)

1. What are different forms of a virus called?

Option: A. Mutations Option: B. Adaptations Option: C. Variants

Option: D. Transformations

2. What can arise as a result of untreated medical conditions?

Option: A. Complications Option: B. Symptoms Option: C. Recoveries Option: D. Diagnoses

3. What term describes something that is harmful or damaging?

Option: A. Detrimental Option: B. Beneficial Option: C. Neutral Option: D. Supportive

4. What word best describes actions taken in advance to prevent issues?

Option: A. Proactive Option: B. Reactive Option: C. Passive Option: D. Inactive



Option: A. Rare

Option: B. Uncommon

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12. Airport security emphasized the need for constant in detecting potential	
11. The doctor noted an heart rate in the patient.	
Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)	
Option: D. Restfulness	
Option: C. Stagnation	
Option: B. Activity	
Option: A. Passivity	
10. What term describes the state of being active or in motion?	
Option: D. Conventional	
Option: C. Traditional	
Option: B. Pioneering	
Option: A. Following	
9. Which word is used to describe individuals or entities that initiate new developments or ideas?	
Option: D. Stability	
Option: C. Plasticity	
Option: B. Rigidity	
Option: A. Solidity Option: B. Rigidity Option: C. Plasticity	
8. What term refers to the brain's ability to change and adapt over time?	
Option: D. Prevention	
Option: C. Treatment	
Option: B. Contagiousness	
Option: A. Infectiousness	
another?	
7. What characteristic describes the ease with which a disease can be transmitted from one person to	
Option: D. Omission	
Option: C. Abstinence	
Option: B. Intervention	
Option: A. Noninterference	
6. What term refers to the act of interfering with a situation to modify its outcome?	
option. B. Isolatea	
Option: C. Prevalent Option: D. Isolated	

5. If something is widespread or commonly occurring it is described as being:



threats.		
13. The successful	of the new software system greatly improved efficiency.	
14. The company recorded a	increase in profits this quarter.	
15. The procedure	required a longer recovery time for the patient.	
16. The artist created a	painting with vibrant colors and abstract shapes.	
17. The doctor explained the strong	between smoking and lung cancer.	
18. The IT department upgraded the company's computer to improve		
connectivity.		
19. The sudden of	the new technology took the market by storm.	
20. Only authorized personnel were granted	into the restricted area.	
Matching Sentences (Match each definition to the correct word from the vocabulary list.)		



- 21. Regular exercise is important to maintain a healthy lifestyle.
- 22. The doctor prescribed antibiotics to treat the bacterial .
- 23. The security guard remained throughout the night patrol.
- 24. The professor's research focused on the processes involved in decision-making.
- 25. The spa offered a range of treatments to help guests relax and rejuvenate.
- 26. The scientist's discovery was hailed as a advancement in the field of medicine.
- 27. People infected with the virus may remain and unknowingly spread the disease.
- 28. The new technology has the potential to traditional business models.
- 29. Health officials are monitoring the of the influenza virus in the community.
- 30. Skipping breakfast can have effects on one's metabolism.

Answer

Multiple Choice: 1. A. Mutations 2. A. Complications 3. A. Detrimental 4. A. Proactive 5. C. Prevalent 6. B. Intervention 7. B. Contagiousness 8. C. Plasticity 9. B. Pioneering 10. B. Activity

Gap-Fill: 11. elevated 12. vigilance 13. implementation 14. substantial 15. invasive 16. psychedelic 17. association 18. network 19. emergence 20. admittance

Matching sentence: 1. Activity 2. Infections 3. Vigilant 4. Cognitive 5. Therapeutic 6. Groundbreaking 7. Asymptomatic 8. Disrupt 9. Prevalence 10. Detrimental

CATEGORY

1. Health - LEVEL6

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