

UK boy receives groundbreaking epilepsy device implanted in skull

Description

A boy named Oran, who lives in Somerset, has **Lennox-Gastaut syndrome**, a severe form of epilepsy. At the age of 13, he became the first person in the world to try a new device **implanted** in his skull to control **seizures**. The device, called Picostim, sends electrical signals deep into his brain, reducing Oran's seizures by 80%. His mother, Justine, shared that Oran is now happier and has a better quality of life.

The surgery took place at Great Ormond Street Hospital in London as part of the CADET project, which assesses deep brain **stimulation** for severe epilepsy. The device, inserted into Oran's brain and anchored in his skull, stimulates specific parts of the brain to disrupt abnormal signals that trigger seizures.

Oran's family is hopeful for the future, as the device has already shown significant improvements in his condition. The next phase of the trial aims to make the **neurostimulator** respond in real-time to prevent seizures, offering even more hope for Oran and his family.

Vocabulary List

Lennox-Gastaut syndrome /lə'nɔks'gæstɔ:t ˈsɪndrəm/ (noun): A severe form of epilepsy.

Seizures /'si:zjʊəz/ (noun): Sudden, uncontrolled electrical disturbances in the brain. **Implanted** /'ɪm'plæntɪd/ (verb): Inserted surgically into the body.

Stimulation /stɪ'mjʊleɪʃn/ (noun): The action of applying electrical signals to nerves.

Neurostimulator /nju:ro'stɪmju:latər/ (noun): A device that sends electrical impulses to nerves.

Vocabulary List:

1. **Syndrome** /'sɪndrəm/ (noun): A group of symptoms that occur together and characterize a particular abnormality or condition.
2. **Seizures** /'si:zjʊəz/ (noun): Sudden uncontrolled electrical disturbances in the brain.
3. **Implanted** /'ɪm'plæntɪd/ (verb): Inserted surgically into the body.
4. **Stimulation** /stɪ'mjʊleɪʃn/ (noun): The action of applying electrical signals to nerves.
5. **Neurostimulator** /nju:ro'stɪmju:latər/ (noun): A device that sends electrical impulses to nerves.
6. **Condition** /kən'dɪʃən/ (noun): The state of something especially with regard to its appearance quality or working order.

Comprehension Questions

Multiple Choice

1. Where does Oran live?

- Option: London
- Option: Somerset
- Option: Paris
- Option: New York

2. What is the name of the new device implanted in Oran's skull?

- Option: Electrobrain
- Option: Neurobolt
- Option: Picostim
- Option: SeizureGuard

3. What percentage of reduction in seizures did Oran experience with the device?

- Option: 50%
- Option: 60%
- Option: 70%
- Option: 80%

4. Where was the surgery performed on Oran?

- Option: Great Ormond Street Hospital in Paris
- Option: Johns Hopkins Hospital in New York
- Option: St. Thomas Hospital in London
- Option: Great Ormond Street Hospital in London

5. What is the purpose of the device implanted in Oran?

- Option: To monitor heart rate
- Option: To regulate body temperature
- Option: To control seizures
- Option: To improve vision

6. What is the next phase of the trial aiming to do?

- Option: Develop new medications
- Option: Make Oran stronger

Option: Prevent future seizures

Option: Conduct more surgeries

Answer

Multiple Choice: 1. Somerset 2. Picostim 3. 80% 4. Great Ormond Street Hospital in London 5. To control seizures 6. Prevent future seizures

Vocabulary quizzes

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

1. Which type of food is highly processed and typically low in essential nutrients?

Option: Refined grains

Option: Whole grains

Option: Fruits

Option: Vegetables

2. What type of substance helps protect cells from damage caused by free radicals?

Option: Antioxidant

Option: Carbohydrate

Option: Protein

Option: Fat

3. Who is a scientist who studies the patterns causes and effects of health and disease conditions in defined populations?

Option: Epidemiologist

Option: Psychiatrist

Option: Cardiologist

Option: Endocrinologist

4. What medical device delivers electrical stimulation to specific nerve sites in the body?

Option: Neurostimulator

Option: Pacemaker

Option: Insulin pump

Option: Oxygen concentrator

5. Which process involves all the chemical reactions that occur in the body to maintain life?

Option: Metabolism

Option: Respiration

Option: Photosynthesis

Option: Digestion

6. What term describes the state of having adequate water or fluid in the body?

Option: Hydrated

Option: Dehydrated

Option: Satiated

Option: Starved

7. What is the body's response to injury or infection causing redness swelling pain or heat?

Option: Inflammation

Option: Circulation

Option: Lubrication

Option: Mobilization

8. Which carbohydrate is commonly found in foods such as potatoes rice and wheat?

Option: Starch

Option: Fiber

Option: Sugar

Option: Protein

9. Which term describes a medical device or material that is inserted into the body?

Option: Implanted

Option: External

Option: Surface

Option: Portable

10. What describes a person environment or action that provides encouragement or assistance to others?

Option: Supportive

Option: Oppressive

Option: Critical

Option: Indifferent

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

11. Consuming too many _____ may lead to health issues due to high levels of added sugars fats and salt.

12. A neurostimulator is used to manage a specific medical _____ by providing targeted

stimulation.

13. Patients with inflammation may experience a range of _____ such as pain fever and swelling.

14. Cravings for unhealthy foods can be controlled by opting for nutrient-dense snacks over unhealthy _____.

15. During a _____ staying cool and hydrated is crucial to prevent heat-related illnesses.

16. Severe inflammation near the spinal cord can lead to temporary or permanent _____ in certain body parts.

17. Lack of a specific _____ may result in difficulty digesting certain types of carbohydrates.

18. Regular physical activity can help build _____ to certain health conditions.

19. Individuals with implanted neurostimulators may experience fewer _____ associated with their condition.

20. Sudden changes in cognitive function could be _____ and may require immediate medical attention.

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

21. The campaign aimed to educate the public about the importance of making healthy food choices.

22. Improved infrastructure and policies can enhance the availability and quality of medical services in underserved areas.

23. The cognitive abilities of the elderly can be maintained through engaging activities and social interactions.

24. Regular exercise and stress management techniques contribute to overall well-being and mental health.

25. Many students opt to live in university dorms for the convenience and social aspects of communal living.

26. Athletes focus on nutrition and training to optimize their physical and mental performance during competitions.

27. The combination of symptoms observed in the patient indicated a rare genetic syndrome.

28. The neurologist recommended brain stimulation therapy to help alleviate chronic pain.

29. The surgeon successfully implanted the artificial heart valve during the open-heart surgery.

30. She found a supportive community online that helped her cope with the challenges of her medical condition.

Answer

Multiple Choice: 1. Refined grains 2. Antioxidant 3. Epidemiologist 4. Neurostimulator 5. Metabolism
6. Hydrated 7. Inflammation 8. Starch 9. Implanted 10. Supportive

Gap-Fill: 11. processed foods 12. condition 13. symptoms 14. cravings 15. heat wave 16. paralysis 17. enzyme 18. resistance 19. seizures 20. concerning

Matching sentence: 1. nutrition awareness 2. healthcare access 3. cognitive 4. well-being 5. dorms
6. performance 7. syndrome 8. stimulation 9. implanted 10. supportive

CATEGORY

1. Health - LEVEL2

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Author

aimeeyoung99