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# Scientists Explore Genes of Woman Who Lacked Pain Sensation

## Description

Jo Cameron from Scotland lives without feeling pain. Most of her life, she thought this was normal for her. Even after surgeries, she felt no pain. Doctors began to study her after they saw this unusual situation.

In 2019, researchers found a gene called FAAH-OUT. This gene is very special. Jo is one of only two people in the world with changes in this gene. Now in her late 70s, scientists continue to learn from her case.

Jo told reporters she did not know her lack of pain was strange. She only realised something was different when she was 65. She felt happy but did not know her body worked differently.

Before studying Jo, scientists thought the FAAH-OUT gene was useless. Now, they see it helps control pain and mood. A new study showed that this gene could help with healing wounds and mood disorders.

Scientists want to use this knowledge to create better medicines. They hope their work will help many patients in the future.

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## Vocabulary List:

1. **gene** //dʒiːn// (noun): part of cells that tells how you grow
2. **surgeries** //ˈsɜːdʒərɪz// (noun): medical operations to fix or remove problems
3. **unusual** //ənˈjuːʒuəl// (adjective): not normal and different from most things
4. **researchers** //rɪˈsɜːtʃərz// (noun): people who study subjects to find new facts
5. **control** //kənˈtrɒl// (verb): to make something happen or not happen
6. **healing** //ˈhiːlɪŋ// (noun): making a body part become healthy again

## Comprehension Questions

### Multiple Choice

1. What is the name of the special gene that Jo Cameron has?

Option: FAAH-OUT

Option: GENE-X

Option: PAIN-LESS



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Option: MUT-1

2. At what age did Jo Cameron realize her lack of pain was unusual?

- Option: 55
- Option: 60
- Option: 65
- Option: 70

3. How many people in the world are known to have changes in the FAAH-OUT gene?

- Option: 1
- Option: 2
- Option: 3
- Option: 4

4. What did researchers initially think of the FAAH-OUT gene?

- Option: Useful
- Option: Useless
- Option: Harmful
- Option: Dangerous

5. What is one of the potential benefits of the FAAH-OUT gene discovered by scientists?

- Option: Memory enhancement
- Option: Better pain control
- Option: Increased risk of diseases
- Option: Weight loss

6. In which country does Jo Cameron live?

- Option: England
- Option: Scotland
- Option: Wales
- Option: Northern Ireland

### True-False

7. Jo Cameron has felt pain after surgeries.

8. FAAH-OUT gene was previously thought to be useless.



9. Jo Cameron is in her 50s.
10. Researchers want to use the knowledge gained from Jo Cameron to improve medicine.
11. Jo only realized her body worked differently after turning 70.
12. Jo Cameron is one of three people with changes in the FAAH-OUT gene.

### Gap-Fill

13. Jo Cameron lives without feeling \_\_\_\_\_ pain.
14. The FAAH-OUT gene is said to help control pain and \_\_\_\_\_.
15. Jo Cameron was studied by doctors after they noticed her \_\_\_\_\_ situation.
16. She only realized something was different about her body when she was \_\_\_\_\_.
17. Scientists hope their work will lead to better \_\_\_\_\_ for patients.
18. Jo Cameron was born in \_\_\_\_\_ and still continues to share her story.

### Answer

**Multiple Choice:** 1. FAAH-OUT 2. 65 3. 2 4. Useless 5. Better pain control 6. Scotland

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

**Gap-Fill:** 13. any 14. mood 15. unusual 16. 65 17. medicines 18. Scotland

### Vocabulary quizzes

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

1. What type of cancer is primarily characterized by uncontrolled cell growth?
  - Option: Carcinoma
  - Option: Melanoma
  - Option: Leukemia
  - Option: Lymphoma



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2. Which type of skin cancer specifically arises from melanocytes?
    - Option: Basal cell carcinoma
    - Option: Melanoma
    - Option: Squamous cell carcinoma
    - Option: Adenocarcinoma
  
  3. What is the primary method used to identify the presence of cancer?
    - Option: Detection
    - Option: Prevention
    - Option: Treatment
    - Option: Diagnosis
  
  4. What term is used to describe the continuation of life after a cancer diagnosis?
    - Option: Cure
    - Option: Recovery
    - Option: Survival
    - Option: Mortality
  
  5. What is the term for the process by which cancer cells move from one part of the body to another?
    - Option: Proliferation
    - Option: Metastasis
    - Option: Invasion
    - Option: Tumorigenesis
  
  6. What is the term for managing cancer symptoms through various methods?
    - Option: Detected
    - Option: Treated
    - Option: Survived
    - Option: Prevented
  
  7. What are segments of DNA that influence traits, including the risk for cancer?
    - Option: Chromosomes
    - Option: Genes
    - Option: Alleles
    - Option: Genomes
  
  8. What medical procedures are often performed to remove cancerous tissue?
    - Option: Therapies
    - Option: Surgeries
    - Option: Medications
    - Option: Tests



9. What is the name of the cancer treatment that uses drugs to kill cancer cells?

- Option: Radiation
- Option: Surgery
- Option: Chemotherapy
- Option: Immunotherapy

10. Which hormone is produced by the pineal gland and has roles in regulating sleep and potentially influencing cancer?

- Option: Serotonin
- Option: Cortisol
- Option: Melatonin
- Option: Adrenaline

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

11. The early \_\_\_\_\_ of cancer significantly improves treatment outcomes.

12. Factors such as stage at diagnosis affect cancer \_\_\_\_\_ rates.

13. The \_\_\_\_\_ of cancer cells to other organs is known as metastasis.

14. Cancer can be \_\_\_\_\_ using a combination of surgery, radiation, and chemotherapy.

15. Mutations in specific \_\_\_\_\_ can lead to an increased risk for certain cancers.

16. Many cancer patients undergo \_\_\_\_\_ to remove tumors and affected tissues.

17. Research suggests that \_\_\_\_\_ may play a role in cancer prevention.

18. Patients often receive \_\_\_\_\_ to eliminate cancer cells after surgery.

19. Chronic \_\_\_\_\_ has been linked to the development of certain cancers.

20. Certain herbal \_\_\_\_\_ have been researched for their potential anti-cancer properties.

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

21. Carcinoma is the most common type of cancer that develops in epithelial tissue.

22. Melanoma is a serious type of skin cancer that can spread to other parts of the body.



23. Survival rates for cancer can vary significantly depending on the type and stage of cancer.
24. Inflammation is a natural process that can sometimes contribute to cancer progression.
25. Chemotherapy is often used to treat cancer by targeting rapidly dividing cells.
26. Hormones such as estrogen can influence the growth of certain cancers.
27. Researchers are continually studying new treatments to improve cancer outcomes.
28. Surgeries are performed to remove tumors and affected areas in cancer patients.
29. Mutations in specific genes can increase an individual's risk for developing cancer.
30. Certain dietary supplements are being investigated for their potential role in cancer prevention.

## Answer

**Multiple Choice:** 1. Carcinoma 2. Melanoma 3. Detection 4. Survival 5. Metastasis 6. Treated 7. Genes 8. Surgeries 9. Chemotherapy 10. Melatonin

**Gap-Fill:** 11. detection 12. survival 13. spread 14. treated 15. genes 16. surgeries 17. melatonin 18. chemotherapy 19. inflammation 20. extracts

**Matching sentence:** 1. carcinoma 2. melanoma 3. survival 4. inflammation 5. chemotherapy 6. hormone 7. researchers 8. surgeries 9. gene 10. supplements

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1. Health - LEVEL1

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