
Stem Cell Treatments Approved for Parkinson's and Heart Failure

Description

Japan has approved innovative stem-cell treatments for Parkinson's disease and severe heart failure, according to manufacturers and media reports. These therapies are expected to be available to patients within months.

The pharmaceutical company Sumitomo Pharma announced that it received approval for Amchepry, a treatment that involves transplanting stem cells into the brain of Parkinson's patients. Additionally, Japan's health ministry approved ReHeart, a product developed by medical startup Cuorips. This treatment uses heart muscle sheets to promote the formation of new blood vessels and improve heart function.

Reports suggest these treatments could be on the market as early as this summer, making them the first commercially available medical products using induced pluripotent stem (iPS) cells, which can become any type of cell in the body.

Shinya Yamanaka, a Japanese scientist who won the Nobel Prize in 2012, pioneered research into iPS cells. The health minister, Kenichiro Ueno, expressed hope that these advances would benefit patients not just in Japan, but around the globe. He assured that all necessary steps would be quickly taken to ensure patient access.

Sumitomo Pharma stated it received "conditional and time-limited approval" for Amchepry, allowing for faster patient access compared to ordinary clinical trials. Initial studies conducted at Kyoto University indicated the treatment was safe and showed symptom improvements. Seven patients aged 50 to 69 received either five million or ten million cells implanted in their brains and were monitored for two years, with four reporting better symptoms.

Parkinson's disease affects approximately 10 million people worldwide and currently available therapies only manage symptoms without stopping disease progression.

Vocabulary List:

1. **induced pluripotent stem (iPS) cells** /ɪn'dju:st ,plʊrɪ'pʊʊtənt stɛm aɪ pi: 'ɛs sɛlz/ (noun phrase): Laboratory-made cells that can develop into many different types of body cells; used in regenerative medicine.
 2. **transplanting** /træns'plæntɪŋ/ (verb (gerund)): The act of moving cells tissue or an organ from one place to another often into a patient's body.
 3. **implanted** /ɪm'plæntɪd/ (verb (past participle/adjective)): Placed or fixed into the body as when cells or a device are put into an organ or tissue.
 4. **conditional** /kən'dɪʃənəl/ (adjective): Depending on certain requirements or conditions; not final or permanent until conditions are met.
 5. **commercially** /kə'mɜ:rfəli/ (adverb): In a way that relates to buying and selling; available for sale to the public.
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6. **progression** /prə'grɛʃən/ (noun): The process of a disease becoming worse over time.

Vocabulary quizzes

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

1. What organization manages government revenue and expenditure?
Option: Federal Reserve
Option: Treasury
Option: Central Bank
Option: Finance Ministry
2. What term describes the degree of variation of a trading price series over time?
Option: Stability
Option: Volatility
Option: Predictability
Option: Consistency
3. What term is used when a borrower revises their payment schedule for repaying debt?
Option: Rebuild
Option: Refinance
Option: Restructure
Option: Reborrow
4. Which concept refers to meeting the needs of the present without compromising future generations?
Option: Sustainability
Option: Scalability
Option: Profitability
Option: Efficiency
5. What event is a public sale where goods or property are sold to the highest bidder?
Option: Fair
Option: Auction
Option: Market
Option: Bazaar
6. What term refers to a statistical measure of changes in a representative group of individual data points?



- Option: Indices
- Option: Trends
- Option: Data sets
- Option: Averages

7. What economic term describes the rate at which the general level of prices for goods and services is rising?

- Option: Deflation
- Option: Stagnation
- Option: Inflation
- Option: Depreciation

8. What shape is described as having a circular cross-section and extending in a straight line?

- Option: Cubical
- Option: Spherical
- Option: Cylindrical
- Option: Elliptical

9. Which term describes processes that are capable of renewal or restoration?

- Option: Regenerative
- Option: Degenerative
- Option: Destructive
- Option: Transient

10. What term refers to activities intended for profit or business purposes?

- Option: Locally
- Option: Residentially
- Option: Commercially
- Option: Socially

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

11. Technological advancements can significantly _____ the capabilities of existing systems.

12. If the conflict _____, it could lead to significant economic repercussions.

13. The project requires _____ efforts to be successful over the long term.

14. The company aims to _____ its production within the next three years.



15. The engine's _____ is essential for determining its overall performance.
16. _____ are a groundbreaking development in regenerative medicine.
17. The process of _____ organs has advanced significantly over the past decade.
18. The device was successfully _____ in the patient's chest and is functioning well.
19. The approval for the project is _____ upon meeting safety standards.
20. The doctor noted the _____ of the disease and recommended further treatment.

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

21. The Treasury is responsible for managing the government's financial resources.
22. Volatility in the stock market can lead to significant investment risk.
23. To refinance a loan means replacing an existing loan with a new one under different terms.
24. Sustainability practices focus on reducing our ecological footprint.
25. An auction allows participants to compete to purchase assets.
26. Indices are used to gauge market performance and economic health.
27. Inflation affects purchasing power and is a key economic indicator.
28. Cylindrical shapes are often used in engineering due to their strength.
29. Regenerative technologies aim to restore and replenish natural resources.
30. Products that are developed commercially are aimed at generating profit.

Answer

Multiple Choice: 1. Treasury 2. Volatility 3. Refinance 4. Sustainability 5. Auction 6. Indices 7. Inflation 8. Cylindrical 9. Regenerative 10. Commercially

Gap-Fill: 11. enhance 12. escalates 13. sustained 14. quadruple 15. torque 16. Induced pluripotent stem (iPS) cells 17. transplanting 18. implanted 19. conditional 20. progression

Matching sentence: 1. Treasury 2. volatility 3. refinance 4. sustainability 5. auction 6. indices 7. inflation 8. cylindrical



9. regenerative 10. commercially

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Date Created

2026/03/09

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