

Nano-chip may heal organs with one touch

10th August, 2017



The medical world sees another example of science fiction coming true. Scientists have revealed a "breakthrough technology" that repaired cells and organs in mice and pigs with a 90 per

cent success rate. Researchers at Ohio State University in the USA have developed a device barely a centimeter wide that is full of tiny microchips called nanochips. The new device is a pad that is placed on the skin. It initiates the process of repairing damaged organs and healing serious wounds. The nanochips "reprogramme" damaged cells to restore them to their functional state. Researcher Dr Chandan Sen said: "With this technology, we can convert skin cells into elements of any organ with just one touch."

The new technology is called tissue nano-transfection (TNT). It is a non-invasive procedure, which means surgeons do not have to cut the body. It works by placing the pad of nanochips over a damaged area of the body. A small electric current then injects DNA into the skin's cells in less than a second. This transforms the cells into building blocks that then regenerate any nearby damaged tissue, such as skin, arteries, or even organs like the liver, lungs and heart. Researchers say it could replace the need for patients needing reconstructive surgery and revitalize organs that are prematurely aging. It could even help repair the brain. Testing will begin on humans next year.

Sources: technology.co.uk / news-medical.net / medicalnewstoday.com

Writing

What would the advantages be of medical technology keeping us alive to be 200?

Chat

Talk about these words from the article.

medical / science fiction / coming true / mice / pigs / microchips / healing / wounds / tissue / surgeons / DNA / building blocks / skin / heart / patients / aging / testing

True / False

- The article says science fiction is coming true in the medical world. T / F
- A device repaired organs with 90% success in pigs and mice. T / F
- The new device has microchips in it. T / F
- The device can transform skin cells into elements of any organ. T / F
- The new technology still needs surgeons to cut the body. T / F
- The procedure involves injecting DNA into the skin's cells. T / F
- The technology will not be effective on the brain. T / F
- Testing will begin on humans in five years from now. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|------------------------|---------------|
| 1. breakthrough | a. launches |
| 2. barely | b. fix |
| 3. initiates | c. components |
| 4. convert | d. revive |
| 5. elements | e. advance |
| 6. procedure | f. putting |
| 7. placing | g. untimely |
| 8. regenerate | h. change |
| 9. prematurely | i. method |
| 10. repair | j. hardly |

Discussion – Student A

- What do you think of science fiction?
- What do you think of scientific breakthroughs in medicine?
- How hopeful are you this technology works?
- How could this technology save the world?
- How much like science fiction is this breakthrough?
- Would you volunteer to have this new technology tested on you?
- What do you think of the idea of skin self-repair kits?
- What would the next stage of this technology be?

BreakingNewsEnglish - The Mini Lesson

Phrase Match

- | | |
|--|------------------------------|
| 1. another example of science fiction | a. rate |
| 2. breakthrough | b. surgery |
| 3. a 90 per cent success | c. state |
| 4. healing serious | d. technology |
| 5. restore them to their functional | e. blocks |
| 6. It is a non-invasive | f. aging |
| 7. A small electric current then injects | g. coming true |
| 8. building | h. procedure |
| 9. reconstructive | i. wounds |
| 10. prematurely | j. DNA into the skin's cells |

Discussion – Student B

- What do you think about what you read?
- How could this technology change the world?
- Would you be happy if this device lets us live to be 200?
- Have you ever had surgery?
- Could technology one day replace all doctors?
- How do you think the testing will go on humans?
- How might this device change your life?
- What questions would you like to ask the researchers?

Spelling

- revealed a rbgohhkutrae technology
- developed a ecveid
- It iaetinitis the process
- restore them to their aniclutonf state
- we can ncvoert skin cells
- emeesltn of any organ
- It is a non-invasive dcourpeer
- A small electric rnrtecu
- building blocks that then ererngatee
- tissue such as skin, aitserer, or ...
- patients needing reconstructive grusery
- organs that are rmepyltareu aging

Answers – Synonym Match

| | | | | |
|------|------|------|------|-------|
| 1. e | 2. j | 3. a | 4. h | 5. c |
| 6. i | 7. f | 8. d | 9. g | 10. b |

Role Play

Role A – Staying Young Looking

You think staying young looking is the most desired medical breakthrough. Tell the others three reasons why. Tell them what is wrong with their breakthroughs. Also, tell the others which is the least desirable of these (and why): no obesity, easy transplants or a no-sleep pill.

Role B – No Obesity

You think no obesity is the most desired medical breakthrough. Tell the others three reasons why. Tell them what is wrong with their breakthroughs. Also, tell the others which is the least desirable of these (and why): staying young looking, easy transplants or a no-sleep pill.

Role C – Easy Transplants

You think easy transplants is the most desired medical breakthrough. Tell the others three reasons why. Tell them what is wrong with their breakthroughs. Also, tell the others which is the least desirable of these (and why): no obesity, staying young looking or a no-sleep pill.

Role D – A No-Sleep Pill

You think a no-sleep pill is the most desired medical breakthrough. Tell the others three reasons why. Tell them what is wrong with their breakthroughs. Also, tell the others which is the least desirable of these (and why): no obesity, easy transplants or staying young looking.

Speaking – Breakthroughs

Rank these with your partner. Put the best medical breakthroughs at the top. Change partners often and share your rankings.

- | | |
|------------------|-------------------------|
| • looking young | • easy transplants |
| • no tooth decay | • no more headaches |
| • no obesity | • resistance to viruses |
| • cancer cure | • no sleep pill |

Answers – True False

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | T | b | T | c | F | d | T | e | F | f | T | g | F | h | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Answers to Phrase Match and Spelling are in the text.