

## Brain implant lets man write using thoughts

16th May, 2021



A man who cannot move his arms or hands has used his thoughts to write on a computer screen. The man has been paralyzed from the neck down for almost a decade. Scientists from Stanford

University in the USA implanted two tiny sensors into the man's brain. The scientists gave this method two names - "brain-to-text" and "mindwriting". The man wants to remain anonymous, so scientists have called him T5. He became paralyzed after suffering a spinal cord injury ten years ago. The implants have allowed T5 to use his mind to write. He can write 90 characters (about 18 words) per minute. This is five words slower than the average person writing a text message on a smartphone.

The mindwriting system is very simple, but it involved a lot of advanced technology. Scientists asked T5 to imagine holding a pen and then writing a sentence on a paper. The sensors in T5's brain detected the activity in his brain as he imagined writing. A computer decoded this activity into text on a screen. The scientists used a special algorithm to do this. Professor Jaimie Henderson, a Stanford University researcher, hopes this research could help millions of paralyzed people, and those who have lost the ability to speak, to write again. He said: "The goal is to restore their ability to communicate by text." This technology may one day help anyone to write at the speed of thought.

Sources: [cnn.com](http://cnn.com) / [the-scientist](http://the-scientist) / [nature.com](http://nature.com)

### Writing

Brain implants could be a great way for us to download a language. Discuss.

### Chat

Talk about these words from the article.

arms / screen / neck / tiny / names / mindwriting / paralyzed / implants / average / system / simple / advanced / technology / sentence / brain / millions / communicate

### True / False

- 1) The man in the article cannot move his body below his neck. T / F
- 2) Scientists from Yale University in the USA helped the paralyzed man. T / F
- 3) The scientists called their system "mindwriting" and "brain-to-text". T / F
- 4) The man can write about 18 words per minute using his mind. T / F
- 5) The man was able to hold a pen after scientists asked him to. T / F
- 6) A special algorithm was used to translate the man's thoughts into text. T / F
- 7) A scientist hopes the technology will help people who cannot speak. T / F
- 8) The technology might allow us to write at the speed of thought. T / F

### Synonym Match

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

- |                     |                    |
|---------------------|--------------------|
| 1. <b>decade</b>    | a. noticed         |
| 2. <b>implanted</b> | b. procedure       |
| 3. <b>method</b>    | c. ordinary        |
| 4. <b>suffering</b> | d. assist          |
| 5. <b>average</b>   | e. 10 years        |
| 6. <b>simple</b>    | f. words           |
| 7. <b>detected</b>  | g. experiencing    |
| 8. <b>text</b>      | h. capacity        |
| 9. <b>ability</b>   | i. inserted        |
| 10. <b>help</b>     | j. straightforward |

### Discussion – Student A

- a) What do you think of the brain?
- b) What do you know about brain implants?
- c) What do you think of putting sensors in the brain?
- d) How will technology be able to help people who are paralyzed?
- e) What do you think of brain-to-text technology?
- f) What do you think of writing messages on smartphones?
- g) Are there any dangers with brain implants?
- h) What advice do you have for T5?

## Phrase Match

- |                                          |                           |
|------------------------------------------|---------------------------|
| 1. A man who cannot                      | a. spinal cord injury     |
| 2. The man has been paralyzed from       | b. average person         |
| 3. The man wants to remain               | c. by text                |
| 4. paralyzed after suffering a           | d. text on a screen       |
| 5. five words slower than the            | e. the neck down          |
| 6. it involved a lot of advanced         | f. of thought             |
| 7. A computer decoded this activity into | g. move his arms or hands |
| 8. scientists used a special             | h. technology             |
| 9. restore their ability to communicate  | i. anonymous              |
| 10. help anyone to write at the speed    | j. algorithm to do this   |

## Discussion – Student B

- What do you think about what you read?
- What do you think of the idea of 'mindwriting'?
- What advanced technology do you like?
- What do you think of brain implants allowing us to learn languages?
- Might brain implants mean governments could control us?
- What would change if we could write at the speed of thought?
- What do you think of never needing to use a pen again?
- What questions would you like to ask the scientists?

## Spelling

- aeplydrza from the neck down
- for almost a ecdead
- The man wants to remain onauoynsm
- after suffering a spinal cord uirynj
- slower than the vareega person
- writing a text ssaemeg
- it ivnlvdeo a lot of advanced technology
- writing a cneetens on a paper
- sensors in T5's brain tedcedet the activity
- The scientists used a special holrgitam
- The goal is to seerrot their ability
- cntuecmaimo by text

### Answers – Synonym Match

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

## Role Play

### Role A – Body Language

You think body language is the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): phone calls, writing letters or SMS texts.

### Role B – Phone Calls

You think phone calls are the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): body language, writing letters or SMS texts.

### Role C – Writing Letters

You think writing letters is the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): phone calls, body language or SMS texts.

### Role D – SMS Texts

You think SMS texts are the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): phone calls, writing letters or body language.

## Speaking – Communication

Rank these with your partner. Put the best ways to communicate at the top. Change partners often and share your rankings

- |                |                       |
|----------------|-----------------------|
| • Letters      | • Face-to-face speech |
| • Phone calls  | • Writing             |
| • Mind reading | • Body language       |
| • SMS          | • Social media posts  |

### Answers – True False

1 T	2 F	3 T	4 T	5 F	6 T	7 T	8 T
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Answers to Phrase Match and Spelling are in the text.