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Level 6

Nano-chip may heal organs with one touch

10th August, 2017

<http://www.breakingnewsenglish.com/1708/170810-body-repair.html>

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Please try Levels 4 and 5 (they are easier).

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THE ARTICLE

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

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: <http://www.telegraph.co.uk/science/2017/08/07/penny-sized-nanochip-pad-regrow-organs-heal-injuries/>
<https://www.news-medical.net/news/20170807/Nanotechnology-wonders-Organ-healing-with-a-single-touch!.aspx>
<http://www.medicalnewstoday.com/articles/318841.php>

WARM-UPS

1. REPAIRING THE BODY: Students walk around the class and talk to other students about repairing the body. Change partners often and share your findings.

2. CHAT: In pairs / groups, talk about these topics or words from the article. What will the article say about them? What can you say about these words and your life?

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

Have a chat about the topics you liked. Change topics and partners frequently.

3. REGENERATING: Students A **strongly** believe it is wrong that technology can regenerate body parts; Students B **strongly** believe it isn't. Change partners again and talk about your conversations.

4. SCIENCE FICTION: What do you think medicine will be like for these things in the future? Complete this table with your partner(s). Change partners often and share what you wrote.

| | What medicine will be like | Good or Bad? |
|---------------|----------------------------|--------------|
| Transplants | | |
| Obesity | | |
| Teeth | | |
| Pregnancy | | |
| Brain disease | | |
| Looks | | |

5. ORGAN: Spend one minute writing down all of the different words you associate with the word "organ". Share your words with your partner(s) and talk about them. Together, put the words into different categories.

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

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

BEFORE READING / LISTENING

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

1. TRUE / FALSE: Read the headline. Guess if a-h below are true (T) or false (F).

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

2. SYNONYM MATCH:

Match the following synonyms. 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 |

3. PHRASE MATCH: (Sometimes more than one choice is possible.)

- | | |
|--|------------------------------|
| 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 |

GAP FILL

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

The medical world sees another (1) _____ of science fiction coming true. Scientists have revealed a "breakthrough technology" that (2) _____ cells and organs in mice and pigs with a 90 per cent success (3) _____. Researchers at Ohio State University in the USA have developed a device (4) _____ a centimeter wide that is full of tiny microchips called nanochips. The new device is a pad that is placed on the skin. It (5) _____ the process of repairing damaged organs and (6) _____ serious wounds. The nanochips "reprogramme" damaged cells to restore them to their (7) _____ state. Researcher Dr Chandan Sen said: "With this technology, we can convert skin cells into (8) _____ of any organ with just one touch."

rate
healing
barely
elements
example
functional
initiates
repaired

The new technology is called tissue nano-transfection (TNT). It is a non-invasive (9) _____, which means surgeons do not have to cut the body. It works by placing the pad of nanochips over a damaged (10) _____ of the body. A small electric current then (11) _____ DNA into the skin's cells in less than a (12) _____. This transforms the cells into building (13) _____ that then regenerate any nearby damaged tissue, such as skin, (14) _____, or even organs like the liver, lungs and heart. Researchers say it could replace the need for (15) _____ needing reconstructive surgery and revitalize organs that are prematurely (16) _____. It could even help repair the brain. Testing will begin on humans next year.

patients
second
area
blocks
procedure
aging
arteries
injects

LISTENING – Guess the answers. Listen to check.

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

- 1) The medical world sees another example of science fiction _____
 - a. come in true
 - b. coming truth
 - c. coming in true
 - d. coming true
- 2) Scientists have revealed a "breakthrough technology" that repaired _____
 - a. cells sand organs
 - b. cell sand organ
 - c. cells and organs
 - d. cells and organ
- 3) It initiates the process of repairing damaged organs and healing _____
 - a. seriously wounds
 - b. serious wounds
 - c. series wounds
 - d. serious wands
- 4) The nanochips "reprogramme" damaged cells to restore them to their _____
 - a. function all state
 - b. functionally state
 - c. functionally states
 - d. functional state
- 5) we can convert skin cells into elements of any organ with _____
 - a. just one touch
 - b. just once touch
 - c. just won touch
 - d. just wane touch
- 6) The new technology is called tissue _____
 - a. nano-transaction
 - b. nano-transition
 - c. nano-infection
 - d. nano-transfection
- 7) It is a non-invasive procedure, which means surgeons do not have to _____
 - a. cut the bodily
 - b. cut the body
 - c. cut the bodice
 - d. cut the embody
- 8) A small electric current then injects DNA into the skin's cells in _____ second
 - a. fewer than a
 - b. less than a
 - c. lower than a
 - d. least than a
- 9) building blocks that then regenerate any nearby damaged tissue, such _____
 - a. as skin, art a rise
 - b. as skins, arteries
 - c. as skinned, arteries
 - d. as skin, arteries
- 10) needing reconstructive surgery and revitalize organs that are _____
 - a. premature lea aging
 - b. prematurely age in
 - c. prematurely aging
 - d. prematurely aged in

LISTENING – Listen and fill in the gaps

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

The medical world (1) _____ of science fiction coming true. Scientists have revealed a "breakthrough technology" that repaired cells and (2) _____ pigs with a 90 per cent success rate. Researchers at Ohio State University in the USA have (3) _____ barely a centimeter wide that is full of tiny microchips called nanochips. The new (4) _____ that is placed on the skin. It initiates the process of repairing damaged organs and healing (5) _____. 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 (6) _____ any organ with just one touch."

The new technology is called tissue nano-transfection (TNT). It is a (7) _____ procedure, which means surgeons do not have to cut the body. It works by placing the pad of (8) _____ damaged area of the body. A small electric current then injects DNA into the skin's (9) _____ than a second. This transforms the cells into building blocks that then (10) _____ nearby damaged tissue, such as skin, arteries, (11) _____ like the liver, lungs and heart. Researchers say it could replace the need for patients needing reconstructive surgery and (12) _____ that are prematurely aging. It could even help repair the brain. Testing will begin on humans next year.

COMPREHENSION QUESTIONS

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

1. What kind of fiction did the article say this news was an example of?
2. What kind of success did the tests have on mice and pigs?
3. What is the device made up of?
4. What does the device heal besides organs?
5. Who is Dr Chandan Sen?
6. What does the technology mean surgeons do not have to do?
7. What does the device inject into the skin?
8. What do the building blocks regenerate?
9. What kind of organs could the device revitalize?
10. When will testing on humans begin?

MULTIPLE CHOICE - QUIZ

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

- 1) What kind of fiction did the article say this news was an example of?
 - a) light fiction
 - b) modern fiction
 - c) pulp fiction
 - d) science fiction
- 2) What kind of success did the tests have on mice and pigs?
 - a) reasonable success
 - b) 90% success
 - c) sporadic success
 - d) no success
- 3) What is the device made up of?
 - a) porcelain
 - b) silicon
 - c) plastic
 - d) nanochips
- 4) What does the device heal besides organs?
 - a) relationships
 - b) headaches
 - c) serious wounds
 - d) hearts
- 5) Who is Dr Chandan Sen?
 - a) a hospital owner
 - b) a nanochip maker
 - c) an inventor
 - d) a researcher
- 6) What does the technology mean surgeons do not have to do?
 - a) study so hard
 - b) work long hours
 - c) cut the body
 - d) use microchips
- 7) What does the device inject into the skin?
 - a) DNA
 - b) nanochips
 - c) adrenalin
 - d) cells
- 8) What do the building blocks regenerate?
 - a) proteins
 - b) youth
 - c) nearby damaged tissue
 - d) hair
- 9) What kind of organs could the device revitalize?
 - a) healthy organs
 - b) prematurely aging
 - c) regenerative organs
 - d) DNA
- 10) When will testing on humans begin?
 - a) next year
 - b) 2024
 - c) next week
 - d) once researchers get funds

ROLE PLAY

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

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.

AFTER READING / LISTENING

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

1. WORD SEARCH: Look in your dictionary / computer to find collocates, other meanings, information, synonyms ... for the words 'body' and 'repair'.

| body | repair |
|-------------|---------------|
| | |

- Share your findings with your partners.
- Make questions using the words you found.
- Ask your partner / group your questions.

2. ARTICLE QUESTIONS: Look back at the article and write down some questions you would like to ask the class about the text.

- Share your questions with other classmates / groups.
- Ask your partner / group your questions.

3. GAP FILL: In pairs / groups, compare your answers to this exercise. Check your answers. Talk about the words from the activity. Were they new, interesting, worth learning...?

4. VOCABULARY: Circle any words you do not understand. In groups, pool unknown words and use dictionaries to find their meanings.

5. TEST EACH OTHER: Look at the words below. With your partner, try to recall how they were used in the text:

| | |
|---|--|
| <ul style="list-style-type: none">• fiction• mice• barely• process• restore• convert | <ul style="list-style-type: none">• non-• cut• area• blocks• heart• testing |
|---|--|

REPAIRING THE BODY SURVEY

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

Write five GOOD questions about repairing the body in the table. Do this in pairs. Each student must write the questions on his / her own paper. When you have finished, interview other students. Write down their answers.

| | STUDENT 1 _____ | STUDENT 2 _____ | STUDENT 3 _____ |
|------|--------------------|--------------------|--------------------|
| Q.1. | | | |
| Q.2. | | | |
| Q.3. | | | |
| Q.4. | | | |
| Q.5. | | | |

- Now return to your original partner and share and talk about what you found out. Change partners often.
- Make mini-presentations to other groups on your findings.

REPAIRING THE BODY DISCUSSION

STUDENT A's QUESTIONS (Do not show these to student B)

1. What did you think when you read the headline?
2. What images are in your mind when you hear the word 'body'?
3. What do you think of science fiction?
4. What do you think of scientific breakthroughs in medicine?
5. How hopeful are you this technology works?
6. How could this technology save the world?
7. How much like science fiction is this breakthrough?
8. Would you volunteer to have this new technology tested on you?
9. What do you think of the idea of skin self-repair kits?
10. What would the next stage of this technology be?

Nano-chip may heal organs with one touch – 10th August, 2017
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REPAIRING THE BODY DISCUSSION

STUDENT B's QUESTIONS (Do not show these to student A)

11. Did you like reading this article? Why/not?
12. What do you think of when you hear the word 'repair'?
13. What do you think about what you read?
14. How could this technology change the world?
15. Would you be happy if this device lets us live to be 200?
16. Have you ever had surgery?
17. Could technology one day replace all doctors?
18. How do you think the testing will go on humans?
19. How might this device change your life?
20. What questions would you like to ask the researchers?

DISCUSSION (Write your own questions)

STUDENT A's QUESTIONS (Do not show these to student B)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

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DISCUSSION (Write your own questions)

STUDENT B's QUESTIONS (Do not show these to student A)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

LANGUAGE - CLOZE

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

The medical world sees another example (1) _____ science fiction coming true. Scientists have revealed a "breakthrough technology" that repaired cells and organs in mice and pigs (2) _____ a 90 per cent success rate. Researchers at Ohio State University in the USA have developed a device (3) _____ a centimeter wide that is full of tiny microchips called nanochips. The new device is a pad that is placed on the skin. It (4) _____ the process of repairing damaged organs and healing serious (5) _____. 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 (6) _____ organ with just one touch."

The new technology is called tissue nano-transfection (TNT). It is a (7) _____-invasive procedure, which means surgeons do not have to cut the body. It works by (8) _____ the pad of nanochips over a damaged area of the body. A small electric current then (9) _____ DNA into the skin's cells in less than a second. This transforms the cells into building blocks that then regenerate any (10) _____ damaged tissue, such as skin, arteries, or even organs like the liver, lungs and heart. Researchers say it could replace the need for patients (11) _____ reconstructive surgery and revitalize organs that are prematurely aging. It could even help repair the brain. Testing will begin (12) _____ humans next year.

Put the correct words from the table below in the above article.

- | | | | | |
|-----|----------------|---------------|----------------|----------------|
| 1. | (a) by | (b) of | (c) at | (d) on |
| 2. | (a) as | (b) with | (c) by | (d) that |
| 3. | (a) bares | (b) bare | (c) bared | (d) barely |
| 4. | (a) inculcates | (b) initiates | (c) instigates | (d) inebriates |
| 5. | (a) wands | (b) wends | (c) winds | (d) wounds |
| 6. | (a) many | (b) some | (c) any | (d) all |
| 7. | (a) non | (b) not | (c) no | (d) none |
| 8. | (a) placed | (b) place | (c) placing | (d) places |
| 9. | (a) reject | (b) infect | (c) disinfect | (d) inject |
| 10. | (a) nearby | (b) nearly | (c) neared | (d) nearing |
| 11. | (a) needing | (b) needy | (c) needs | (d) need |
| 12. | (a) on | (b) in | (c) by | (d) at |

SPELLING

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

Paragraph 1

1. revealed a rbgohhkutrae technology
2. developed a ecveid
3. It iaetinits the process
4. restore them to their aniclutonf state
5. we can ncvoert skin cells
6. emeesltn of any organ

Paragraph 2

7. It is a non-invasive dcourpeer
8. A small electric rnrtecu
9. building blocks that then ererngatee
10. tissue such as skin, aitserer, or ...
11. patients needing reconstructive grusery
12. organs that are rmepyltareu aging

PUT THE TEXT BACK TOGETHER

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

Number these lines in the correct order.

- () cells to restore them to their functional state. Researcher Dr Chandan Sen said: "With this technology, we can
- () 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
- () revealed a "breakthrough technology" that repaired cells and organs in mice and pigs with a 90 per cent success
- () second. This transforms the cells into building blocks that then regenerate any nearby damaged
- () area of the body. A small electric current then injects DNA into the skin's cells in less than a
- () for patients needing reconstructive surgery and revitalize organs that are prematurely
- () The new technology is called tissue nano-transfection (TNT). It is a non-invasive procedure, which means
- (**1**) The medical world sees another example of science fiction coming true. Scientists have
- () aging. It could even help repair the brain. Testing will begin on humans next year.
- () surgeons do not have to cut the body. It works by placing the pad of nanochips over a damaged
- () convert skin cells into elements of any organ with just one touch."
- () process of repairing damaged organs and healing serious wounds. The nanochips "reprogramme" damaged
- () tissue, such as skin, arteries, or even organs like the liver, lungs and heart. Researchers say it could replace the need

PUT THE WORDS IN THE RIGHT ORDER

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

1. sees medical fiction of another world The science example .
2. cells a technology' repaired Revealed 'breakthrough that .
3. a is new the is device skin placed pad The on that .
4. It repairing the damaged process of initiates organs .
5. can cells of We skin elements organ convert into any .
6. the a pad damaged of area nanochips Placing over .
7. the small then into A current DNA skin electric injects .
8. blocks transforms cells building This the into .
9. It surgery reconstructive the for replace need could .
10. year will on next Testing begin humans .

CIRCLE THE CORRECT WORD (20 PAIRS)

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

The medical world *seen / sees* another example of science fiction coming true. Scientists have *revealed / revealing* a "breakthrough technology" that repaired cells and organs *on / in* mice and pigs with a 90 per cent *successful / success* rate. Researchers at Ohio State University in the USA have developed a device *barely / bared* a centimeter wide that is full of tiny microchips called nanochips. The new device is a pad that is *placing / placed* on the skin. It initiates the process *if / of* repairing damaged organs and healing serious *winds / wounds*. The nanochips "reprogramme" damaged cells to restore them to their *functional / function* state. Researcher Dr Chandan Sen said: "With this technology, we can convert skin cells into elements of any organ with just *one / once* touch."

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

Talk about the connection between each pair of words in italics, and why the correct word is correct.

INSERT THE VOWELS (a, e, i, o, u)

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

Th_ m_d_c_l w_rld s__s _n_th_r _x_mpl_ _f sc__nc_ f_ct__n c_m_ng tr__ . Sc__nt_sts h_v_ r_v__l_d _ "br__kthr__gh t_chn_l_gy" th_t r_p__r_d c_lls _nd _rg_ns _n m_c_ _nd p_gs w_th _ 90 p_r c_nt s_cc_ss r_t_ . R_s__rch_rs t_h__ St_t_ _n_v_rs_ty _n th_ _S_ h_v_ d_v_l_p_d _ d_v_c_ b_r_ly _ c_nt_m_t_r w_d_ th_t _s f_ll _f t_ny m_cr_ch_ps c_ll_d n_n_ch_ps. Th_ n_w d_v_c_ _s _ p_d th_t _s pl_c_d _n th_ sk_n. _t _n_t__t_s th_ pr_c_ss _f r_p__r_ng d_m_g_d _rg_ns _nd h__l_ng s_r__s w__nds. Th_ n_n_ch_ps "r_pr_gr_mm_" d_m_g_d c_lls t_r_st_r th_m t_th__r f_nct__n_l st_t_ . R_s__rch_r Dr Ch_nd_n S_n s__d: "W_th th_s t_chn_l_gy, w_ c_n c_nv_rt sk_n c_lls _nt_ _l_m_nts _f _ny _rg_n w_th j_st _n_t__ch."

Th_ n_w t_chn_l_gy _s c_ll_d t_ss__ n_n_-tr_nsf_ct__n (TNT). _t _s _ n_n-_nv_s_v_ pr_c_d_r_ , wh_ch m__ns s_rg__ns d_n_t h_v_ t_c_t th_b_dy. _t w_rks by pl_c_ng th_ p_d_f n_n_ch_ps _v_r _d_m_g_d_r__ _f th_b_dy. _ sm_ll _l_ctr_c c_rr_nt th_n _nj_cts DN_ _nt_ th_ sk_n's c_lls _n l_ss th_n _ s_c_nd. Th_s tr_nsf_rms th_ c_lls _nt_ b__ld_ng bl_cks th_t th_n r_g_n_r_t_ _ny n__rby d_m_g_d t_ss__ , s_ch _s sk_n, _rt_r__s, _r_v_n _rg_ns l_k_ th_ l_v_r, l_ngs _nd h__rt. R_s__rch_rs s_y _t c__ld r_pl_c_ th_ n__d f_r p_t__nts _n_d_ng r_c_nstr_ct_v_ s_rg_ry _nd r_v_t_l_z_ _rg_ns th_t _r_ pr_m_t_r_ly _g_ng. _t c__ld _v_n h_lp r_p__r th_ br__n. T_st_ng w_ll b_g_n _n h_m_ns n_xt y__r.

PUNCTUATE THE TEXT AND ADD CAPITALS

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

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

PUT A SLASH (/) WHERE THE SPACES ARE

From <http://www.BreakingNewsEnglish.com/1708/170810-body-repair.html>

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 percent 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 return 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.

HOMework

1. VOCABULARY EXTENSION: Choose several of the words from the text. Use a dictionary or Google's search field (or another search engine) to build up more associations / collocations of each word.

2. INTERNET: Search the Internet and find out more about this news. Share what you discover with your partner(s) in the next lesson.

3. REPAIRING THE BODY: Make a poster about repairing the body. Show your work to your classmates in the next lesson. Did you all have similar things?

4. ORGAN REPAIR: Write a magazine article about organ repair and how it could keep us alive until 200. Include imaginary interviews with people who are for and against it.

Read what you wrote to your classmates in the next lesson. Write down any new words and expressions you hear from your partner(s).

5. WHAT HAPPENED NEXT? Write a newspaper article about the next stage in this news story. Read what you wrote to your classmates in the next lesson. Give each other feedback on your articles.

6. LETTER: Write a letter to an expert on repairing the body. Ask him/her three questions about repairing the body. Give him/her three of your ideas. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

TRUE / FALSE (p.4)

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

SYNONYM MATCH (p.4)

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

COMPREHENSION QUESTIONS (p.8)

1. Science fiction
2. 90% success
3. Nanochips
4. Serious wounds
5. A researcher
6. Cut the body
7. DNA
8. Nearby damaged tissue
9. Prematurely aging organs
10. Next year

MULTIPLE CHOICE - QUIZ (p.9)

1. d 2. b 3. d 4. c 5. d 6. c 7. a 8. c 9. b 10. a

ALL OTHER EXERCISES

Please check for yourself by looking at the Article on page 2.
(It's good for your English ;-)