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Level 3

Scientists find gene that erases memories

25th September, 2013

<http://www.breakingnewsenglish.com/1309/130925-post-traumatic-stress-disorder.html>

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Please try Levels 0, 1 and 2 (they are easier).

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THE ARTICLE

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Researchers from the Massachusetts Institute of Technology have found the gene that could help people forget traumatic experiences. They say the research could benefit people with painful memories. Soldiers, crime victims and people who survived natural disasters are some of the people this research could help. Many of these people suffer from very bad stress because of their memories. It is an illness called post-traumatic stress disorder (PTSD). The scientists found the memory gene in mice. They hope that one day they can erase painful memories in humans. They think they can replace upsetting memories with more positive thoughts and feelings. This would help millions of people who suffer from PTSD.

The head researcher, Li-Huei Tsai, did many tests to make mice forget their fear. Scientists put the mice into a cage and gave them a small electric shock. After many shocks, the mice became afraid of the cage. They were stressed when they saw it. Once the mice had "cage shock," the scientists put the mice in the cage again but didn't give them an electric shock. After a period of time, the mice no longer feared the cage. Positive feelings replaced their stress and fear. The scientists looked at the brain activity when the mice were afraid and when they were not afraid. They were surprised to find the gene that replaced old memories with new ones. They will now try to find this gene in humans.

Sources: <http://www.medicalnewstoday.com/articles/266368.php>
<http://news.sky.com/story/1145178/memory-erasing-gene-discovered-in-mice>

WARM-UPS

1. BAD MEMORIES: Students walk around the class and talk to other students about bad memories. Change partners often and share your findings.

2. CHAT: In pairs / groups, decide which of these topics or words from the article are most interesting and which are most boring.

researchers / traumatic / benefit / crime victims / memories / stress / positive thoughts / fear / electric shock / a period of time / brain activity / surprised / genes in humans

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

3. MEMORIES: Complete this table with your partner(s) and share what you wrote. Change partners often.

Memory	What do you remember?	How do you feel thinking about it?
Earliest memory		
Embarrassing memory		
First English lesson		
Happiest childhood memory		
First day at school		
First computer		

4. GENES: Students A **strongly** believe it is good to use genes to change our memories; Students B **strongly** believe it isn't. Change partners again and talk about your conversations.

5. FEELINGS: Rank these and share your rankings with your partner. Put the feelings you would like to erase most at the top. Change partners often and share your rankings.

- fear
- stress
- embarrassment
- sadness
- pain
- hate
- jealousy
- anger

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

BEFORE READING / LISTENING

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

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

- | | |
|---|-------|
| a. Scientists have found the gene in human brains to erase memories. | T / F |
| b. Scientists say their research could help people who are very stressed. | T / F |
| c. Many people suffer from an illness called PDST. | T / F |
| d. Scientists think they can replace bad memories with good ones. | T / F |
| e. Researchers gave mice electric shocks to make them afraid. | T / F |
| f. Mice became stressed about and afraid of a cage. | T / F |
| g. The mice never lost their fear of the cage. | T / F |
| h. Scientists said they will never find the gene in human brains. | T / F |

2. SYNONYM MATCH: Match the following synonyms from the article.

- | | |
|----------------|----------------|
| 1. traumatic | a. frightened |
| 2. benefit | b. locate |
| 3. erase | c. shocking |
| 4. replace | d. have |
| 5. suffer from | e. good |
| 6. tests | f. amazed |
| 7. afraid | g. swap |
| 8. positive | h. experiments |
| 9. surprised | i. help |
| 10. find | j. delete |

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

- | | |
|---------------------------------------|---------------------------|
| 1. the gene that could | a. stress disorder (PTSD) |
| 2. an illness called post-traumatic | b. gene in humans |
| 3. erase painful | c. who suffer from PTSD |
| 4. replace upsetting memories with | d. shock |
| 5. This would help millions of people | e. help people forget |
| 6. tests to make mice | f. memories in humans |
| 7. electric | g. activity |
| 8. the mice no | h. more positive thoughts |
| 9. brain | i. longer feared the cage |
| 10. They will now try to find this | j. forget their fear |

GAP FILL

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Researchers from the Massachusetts Institute of Technology have found the gene that could help people forget (1) _____ experiences. They say the research could (2) _____ people with painful memories. Soldiers, crime (3) _____ and people who survived natural disasters are some of the people this research could help. Many of these people (4) _____ from very bad stress because of their memories. It is an illness called post-traumatic stress (5) _____ (PTSD). The scientists found the memory gene in mice. They hope that one day they can (6) _____ painful memories in humans. They think they can replace (7) _____ memories with more positive thoughts and feelings. This would help (8) _____ of people who suffer from PTSD.

suffer
erase
benefit
millions
traumatic
disorder
victims
upsetting

The head researcher, Li-Huei Tsai, did many tests to make mice forget their (9) _____. Scientists put the mice into a cage and gave them a small (10) _____ shock. After many shocks, the mice became afraid of the cage. They were (11) _____ when they saw it. Once the mice had "cage shock," the scientists put the mice in the cage again but didn't give them an electric shock. After a (12) _____ of time, the mice no longer feared the cage. Positive feelings (13) _____ their stress and fear. The scientists looked at the brain (14) _____ when the mice were afraid and when they were not afraid. They were (15) _____ to find the gene that replaced old memories with new ones. They will now try to find this (16) _____ in humans.

replaced
surprised
electric
activity
stressed
fear
gene
period

LISTENING – Guess the answers. Listen to check

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

- 1) Researchers from the Massachusetts _____
 - a. Institute of Technologies
 - b. Institute of Technological
 - c. Institute of Technology
 - d. Institute of Technologists
- 2) the gene that could help people forget _____
 - a. traumatic experience
 - b. traumatic experience is
 - c. traumatic experienced
 - d. traumatic experiences
- 3) Soldiers, crime victims and people who _____
 - a. survived natural disasters
 - b. survived national disasters
 - c. survived nature disasters
 - d. survived notional disasters
- 4) They hope that one day they can erase painful _____
 - a. memories in humans
 - b. memories in human
 - c. memories in humanly
 - d. memories in humanise
- 5) They think they can replace upsetting memories with more positive _____
 - a. thoughts and feeling
 - b. thoughts and feelings
 - c. thoughts and feel inns
 - d. thoughts and feels in
- 6) The head researcher, Li-Huei Tsai, did many tests to make mice _____
 - a. forget their here
 - b. forget their hear
 - c. forget their fear
 - d. forget their fair
- 7) Scientists put the mice into a cage and gave them a _____
 - a. small electric stock
 - b. small electric sock
 - c. small electric shock
 - d. small electric smock
- 8) After a period of time, the mice no longer _____
 - a. fear the cage
 - b. fears the cage
 - c. fearing the cage
 - d. feared the cage
- 9) The scientists looked at the _____
 - a. brain active
 - b. brain activity
 - c. brain activities
 - d. brain activate
- 10) They were surprised to find the gene that replaced old memories _____
 - a. with newer ones
 - b. with new one
 - c. with news ones
 - d. with new ones

LISTENING – Listen and fill in the gaps

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Researchers from the Massachusetts (1) _____ have found the gene that could help people forget traumatic experiences. They say the research (2) _____ with painful memories. Soldiers, crime victims and people who survived (3) _____ are some of the people this research could help. Many of these people suffer from very bad stress because of their memories. It is an illness (4) _____ stress disorder (PTSD). The scientists found the memory gene in mice. They hope that one (5) _____ painful memories in humans. They think they can replace upsetting memories with more positive thoughts and feelings. This would help millions of people (6) _____ PTSD.

The head researcher, Li-Huei Tsai, did (7) _____ mice forget their fear. Scientists put the mice into a cage and gave them a small electric shock. After many shocks, the mice (8) _____ the cage. They were stressed when they saw it. Once the mice had "cage shock," the scientists (9) _____ the cage again but didn't give them an electric shock. After a period of time, the mice (10) _____ the cage. Positive feelings replaced their stress and fear. The scientists looked at the (11) _____ the mice were afraid and when they were not afraid. They were surprised to find the gene that replaced old memories with new ones. They will now (12) _____ gene in humans.

COMPREHENSION QUESTIONS

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

1. Which institute of technology found the gene?

2. What survivors could the research help?

3. What's the missing word: post-traumatic _____ disorder?

4. When do scientists think they can erase painful memories in humans?

5. How many people suffer from PTSD?

6. How many tests did the scientists do on the mice?

7. What did the scientists give the mice?

8. What replaced stress and fear in the mice?

9. What did scientists look at in the mice?

10. What do scientists now want to find?

MULTIPLE CHOICE - QUIZ

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

1. Which institute of technology found the gene?
 - a) Massachusetts
 - b) Minnesota
 - c) Kalamazoo
 - d) Timbuktu
2. What victims could the research help?
 - a) innocent victims
 - b) unsuspecting
 - c) crime victims
 - d) fashion victims
3. What's the missing word: post-traumatic _____ disorder?
 - a) stressful
 - b) stresses
 - c) stressed
 - d) stress
4. When do scientists think they can erase painful memories in humans?
 - a) within a generation or two
 - b) one day
 - c) before 2020
 - d) next year
5. How many people suffer from PTSD?
 - a) millions
 - b) hundreds of millions
 - c) a billion or so
 - d) countless
6. How many tests did the scientists do on the mice?
 - a) 5 a day for 6 months
 - b) a few
 - c) 649
 - d) many
7. What did the scientists give the mice?
 - a) a shower
 - b) their favourite food
 - c) electric shocks
 - d) a friend
8. What replaced stress and fear in the mice?
 - a) anxiety and terror
 - b) positive feelings
 - c) happiness and joy
 - d) numbness and emptiness
9. What did scientists look at in the mice?
 - a) heart rate
 - b) pulse
 - c) brain activity
 - d) blood pressure
10. What do scientists now want to find?
 - a) new jobs
 - b) the gene in humans
 - c) the secret of immortality
 - d) more mice

ROLE PLAY

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Role A – Memories of first love

You think memories of first love are most important. Tell the others three reasons why. Tell them things that aren't important about their memories. Also, tell the others which is the least important of these (and why): the earliest memories of school, memories of winning or our earliest family memories.

Role B – Earliest memories of school

You think the earliest memories of school are most important. Tell the others three reasons why. Tell them things that aren't important about their memories. Also, tell the others which is the least important of these (and why): memories of first love, memories of winning or our earliest family memories.

Role C – Memories of winning

You think memories of winning are most important. Tell the others three reasons why. Tell them things that aren't important about their memories. Also, tell the others which is the least important of these (and why): the earliest memories of school, memories of first love or our earliest family memories.

Role D – Earliest family memories

You think our earliest family memories are most important. Tell the others three reasons why. Tell them things that aren't important about their memories. Also, tell the others which is the least important of these (and why): the earliest memories of school, memories of winning or memories of first love.

AFTER READING / LISTENING

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

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

erase	memory
--------------	---------------

- 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">• help• natural• bad• day• upsetting• millions	<ul style="list-style-type: none">• many• small• again• period• activity• find
---	---

BAD MEMORIES SURVEY

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Write five GOOD questions about bad memories 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.

BAD MEMORIES DISCUSSION

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

- a) What did you think when you read the headline?
- b) What springs to mind when you hear the word 'stress'?
- c) What do you think about what you read?
- d) Would you like to forget painful memories?
- e) Is this research dangerous?
- f) How can we help people with post-traumatic stress disorder?
- g) What do you do when you get stressed?
- h) Is it good to replace bad memories with good ones?
- i) Could this research make everyone happy one day?
- j) What do you do to relieve stress?

Scientists find gene that erases memories – 25th September, 2013
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BAD MEMORIES DISCUSSION

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

- a) Did you like reading this article? Why/not?
- b) What do you get stressed about?
- c) Is it wrong to give mice electric shocks?
- d) Would you go to a doctor to forget memories?
- e) Could doctors erase all your memories?
- f) Who would you be if all your memories disappeared?
- g) Could this research make fear disappear?
- h) Would we hurt ourselves if we had no fear?
- i) What's your worst memory?
- j) 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/1309/130925-post-traumatic-stress-disorder.html>

Researchers from the Massachusetts Institute of Technology have found the gene that could help people forget (1) ____ experiences. They say the research could benefit people with (2) ____ memories. Soldiers, crime victims and people who survived natural disasters are (3) ____ of the people this research could help. Many of these people suffer (4) ____ very bad stress because of their memories. It is an illness called post-traumatic stress disorder (PTSD). The scientists found the memory gene in mice. They hope that one day they can erase painful memories in humans. They think they can replace (5) ____ memories with more positive (6) ____ and feelings. This would help millions of people who suffer from PTSD.

The head researcher, Li-Huei Tsai, did many tests to (7) ____ mice forget their fear. Scientists put the mice into a cage and gave them a small electric shock. After many shocks, the mice became (8) ____ of the cage. They were stressed when they saw it. (9) ____ the mice had "cage shock," the scientists put the mice in the cage again but didn't give them an electric shock. After a period of time, the mice no (10) ____ feared the cage. Positive feelings replaced their stress and fear. The scientists looked at the brain activity when the mice were afraid and when they were not afraid. They were surprised (11) ____ find the gene that replaced old memories with new ones. They will now try to find this gene in (12) ____.

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

- | | | | | |
|-----|---------------|----------------|----------------|--------------|
| 1. | (a) trauma | (b) traumatic | (c) traumatise | (d) traumas |
| 2. | (a) pains | (b) painful | (c) painfully | (d) pain |
| 3. | (a) few | (b) lot | (c) much | (d) some |
| 4. | (a) for | (b) from | (c) of | (d) by |
| 5. | (a) upset | (b) upsetting | (c) upsets | (d) setting |
| 6. | (a) thinks | (b) thoughtful | (c) thoughts | (d) thinkers |
| 7. | (a) mean | (b) do | (c) make | (d) try |
| 8. | (a) frightens | (b) fear | (c) afraid | (d) scary |
| 9. | (a) Twice | (b) Thrice | (c) Four times | (d) Once |
| 10. | (a) longs | (b) longing | (c) length | (d) longer |
| 11. | (a) to | (b) at | (c) by | (d) of |
| 12. | (a) humankind | (b) human | (c) humans | (d) humane |

SPELLING

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Paragraph 1

1. the Massachusetts testIuitn of Technology
2. help people forget aartucitm experiences
3. the research could ifenetb people
4. natural idssersta
5. ipustentg memories
6. eoivsp thoughts

Paragraph 2

7. head ercheesrra
8. eeltcicr shock
9. They were sdessret
10. After a iepodr of time
11. the mice were fradai
12. They were isupsrdre to find the gene

PUT THE TEXT BACK TOGETHER

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Number these lines in the correct order.

- () activity when the mice were afraid and when they were not afraid. They were surprised to find the
- () memories with more positive thoughts and feelings. This would help millions of people who suffer from PTSD.
- () put the mice in the cage again but didn't give them an electric shock. After a period of time, the mice no longer
- () into a cage and gave them a small electric shock. After many shocks, the mice became afraid
- () day they can erase painful memories in humans. They think they can replace upsetting
- () The head researcher, Li-Huei Tsai, did many tests to make mice forget their fear. Scientists put the mice
- () of the cage. They were stressed when they saw it. Once the mice had "cage shock," the scientists
- (**1**) Researchers from the Massachusetts Institute of Technology have found the gene that could help people
- () disorder (PTSD). The scientists found the memory gene in mice. They hope that one
- () victims and people who survived natural disasters are some of the people this research could help. Many of these people suffer
- () from very bad stress because of their memories. It is an illness called post-traumatic stress
- () forget traumatic experiences. They say the research could benefit people with painful memories. Soldiers, crime
- () gene that replaced old memories with new ones. They will now try to find this gene in humans.
- () feared the cage. Positive feelings replaced their stress and fear. The scientists looked at the brain

PUT THE WORDS IN THE RIGHT ORDER

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

1. could memories benefit people The with research painful.

2. these bad from Many stress people of very suffer.

3. humans day erase in One can memories they painful.

4. memories upsetting Replace thoughts positive more with.

5. millions from of PTSD people who Help suffer.

6. their to fear make mice Many forget tests.

7. They it saw they when stressed were.

8. mice period the the a feared , After longer time no of cage.

9. that replaced old memories with new ones Find the gene.

10. this gene in humans They will now try to find.

CIRCLE THE CORRECT WORD (20 PAIRS)

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Researchers from the Massachusetts Institute of Technology have *discover / found* the gene that could help people forget traumatic experiences. They say the research could *beneficial / benefit* people with painful memories. Soldiers, crime victims and people who *survivor / survived* natural disasters are *some / much* of the people this research could help. Many of *that / these* people suffer from very bad stress because of their *memorise / memories*. It is an *illness / ill* called post-traumatic stress disorder (PTSD). The scientists found the memory gene *on / in* mice. They hope that one day they can erase painful memories in humans. They think they can replace *upsets / upsetting* memories with more positive thoughts and feelings. This would help millions of people who *suffering / suffer* from PTSD.

The head researcher, Li-Huei Tsai, did many *testing / tests* to make mice forget their *fear / afraid*. Scientists put the mice into a cage and gave them a small electric *sock / shock*. After many shocks, the mice became afraid of the cage. They were *stress / stressed* when they saw it. *Once / Twice* the mice had "cage shock," the scientists put the mice *in / on* the cage again but didn't give them an electric shock. After a period *for / of* time, the mice no longer feared the cage. Positive feelings *replaced / replacement* their stress and fear. The scientists looked at the brain activity when the mice were afraid and when they were not afraid. They were *surprises / surprised* to find the gene that replaced old memories with new ones. They will now try to find this gene *in / on* humans.

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/1309/130925-post-traumatic-stress-disorder.html>

R_s__rch_rs fr_m th_ M_ss_ch_s_tts _nst_t_t_ _f
T_chn_l_gy h_v_ f__nd th_ g_n_ th_t c__ld h_lp p__pl_
f_rg_t tr__m_t_c _xp_r__nc_s. Th_y s_y th_ r_s__rch
c__ld b_n_f_t p__pl_ w_th p__nf_l m_m_r__s.
S_ld__rs, cr_m_ v_ct_ms _nd p__pl_ wh_ s_rv_v_d
n_t_r_l d_s_st_rs _r_ s_m_ _f th_ p__pl_ th_s
r_s__rch c__ld h_lp. M_ny _f th_s_ p__pl_ s_ff_r fr_m
v_ry b_d str_ss b_c__s_ _f th__r m_m_r__s. _t_s_n
_lln_ss c_ll_d p_st-tr__m_t_c str_ss d_s_rdr (PTSD).
Th_ sc__nt_sts f__nd th_ m_m_ry g_n_ _n m_c_. Th_y
h_p_ th_t _n_d_y th_y c_n _r_s_ p__nf_l m_m_r__s
_n h_m_ns. Th_y thnk th_y c_n r_pl_c_ _ps_ttng
m_m_r__s w_th m_r_p_s_t_v_ th_ghts _nd f__l_ngs.
Th_s w__ld h_lp m_ll__ns _f p__pl_ wh_ s_ff_r fr_m
PTSD.

Th_ h__d r_s__rch_r, L_-H___ Ts__, d_d m_ny t_sts t_
m_k_ m_c_ f_rg_t th__r f__r. Sc__nt_sts p_t th_ m_c_
nt _c_g_ _nd g_v_ th_m_ _sm_ll_ l_ctr_c sh_ck.
_ft_r m_ny sh_cks, th_ m_c_ b_c_m_ _fr__d _f th_
c_g_. Th_y w_r_ str_ss_d wh_n th_y s_w _t. _nc_ th_
m_c_ h_d "c_g_ sh_ck," th_ sc__nt_sts p_t th_ m_c_ _n
th_ c_g_ _g__n b_t d_dn't g_v_ th_m_ _n l_ctr_c
sh_ck. _ft_r _p_r__d _f t_m_, th_ m_c_ n_lng_r
f__rd th_ c_g_. P_s_t_v_ f__l_ngs r_pl_c_d th__r
str_ss _nd f__r. Th_ sc__nt_sts l__k_d _t th_ br__n
_ct_v_ty wh_n th_ m_c_ w_r_ _fr__d _nd wh_n th_y
w_r_n_t _fr__d. Th_y w_r_ s_rpr_s_d t_f_nd th_ g_n_
th_t r_pl_c_d _ld m_m_r__s w_th n_w _n_s. Th_y w_ll
n_w try t_f_nd th_s g_n_ _n h_m_ns.

PUNCTUATE THE TEXT AND ADD CAPITALS

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

researchers from the massachusetts institute of technology have found the gene that could help people forget traumatic experiences they say the research could benefit people with painful memories soldiers crime victims and people who survived natural disasters are some of the people this research could help many of these people suffer from very bad stress because of their memories it is an illness called post-traumatic stress disorder (ptsd) the scientists found the memory gene in mice they hope that one day they can erase painful memories in humans they think they can replace upsetting memories with more positive thoughts and feelings this would help millions of people who suffer from ptsd

the head researcher li-huei tsai did many tests to make mice forget their fear scientists put the mice into a cage and gave them a small electric shock after many shocks the mice became afraid of the cage they were stressed when they saw it once the mice had "cage shock" the scientists put the mice in the cage again but didn't give them an electric shock after a period of time the mice no longer feared the cage positive feelings replaced their stress and fear the scientists looked at the brain activity when the mice were afraid and when they were not afraid they were surprised to find the gene that replaced old memories with new ones they will now try to find this gene in humans

PUT A SLASH (/) WHERE THE SPACES ARE

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Researchers from the Massachusetts Institute of Technology have found the gene that could help people forget traumatic experiences. They say the research could be a benefit for people with painful memories. Soldiers, crime victims and people who survive natural disasters are some of the people this research could help. Many of these people suffer from very bad stress because of their memories. It is an illness called post-traumatic stress disorder (PTSD). The scientists found the memory gene in mice. They hope that one day they can erase painful memories in humans. They think they can replace upsetting memories with more positive thoughts and feelings. This would help millions of people who suffer from PTSD. The head researcher, Li Huei Tsai, did many tests to make mice forget their fear. Scientists put the mice into a cage and gave them a small electric shock. After many shocks, the mice became afraid of the cage. They were stressed when they saw it. Once the mice had "cage shock," the scientists put the mice in the cage again but didn't give them an electric shock. After a period of time, the mice no longer feared the cage. Positive feelings replaced their stress and fear. The scientists looked at the brain activity when the mice were afraid and when they were not afraid. They were surprised to find the gene that replaced old memories with the new ones. They will now try to find this gene in humans.

FREE WRITING

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

Write about **bad memories** for 10 minutes. Comment on your partner’s paper.

ACADEMIC WRITING

From <http://www.BreakingNewsEnglish.com/1309/130925-post-traumatic-stress-disorder.html>

It is wrong to change people's brains. Discuss.

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 post-traumatic stress disorder. Share what you discover with your partner(s) in the next lesson.

3. BAD MEMORIES: Make a poster about bad memories. Show your work to your classmates in the next lesson. Did you all have similar things?

4. GENES: Write a magazine article about erasing bad memories using genes. 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 a scientist. Ask him/her three questions about bad memories. Give him/her three of your opinions on using this gene to erase bad memories. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

TRUE / FALSE (p.4)

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

SYNONYM MATCH (p.4)

- | | |
|----------------|----------------|
| 1. traumatic | a. shocking |
| 2. benefit | b. help |
| 3. erase | c. delete |
| 4. replace | d. swap |
| 5. suffer from | e. have |
| 6. tests | f. experiments |
| 7. afraid | g. frightened |
| 8. positive | h. good |
| 9. surprised | i. amazed |
| 10. find | j. locate |

COMPREHENSION QUESTIONS (p.8)

1. Massachusetts
2. Crime victims
3. Stress
4. One day
5. Millions
6. Many
7. Electric shocks
8. Positive feelings
9. Brain activity
10. The gene in humans

MULTIPLE CHOICE - QUIZ (p.9)

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

ALL OTHER EXERCISES

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