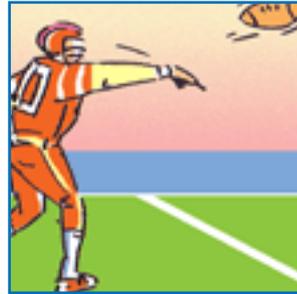




## Pre-Reading Activities

### A: What About You?



1. Work alone and answer these questions. Answer **Yes**, **No** or **Not sure** for each one. Then show your answers to a partner.

*I drink lots of tea and coffee each day.*

*I play contact sports frequently.*

*I often get drunk when I am with my friends.*

*I smoke cigarettes.*

*I eat lots of junk food.*

*I use a mobile phone a lot every day.*

*I don't do much exercise.*

*I often forget to brush my teeth and never floss them.*

*I allow myself to get very stressed by my work or study.*

*I drink sugary soft drinks.*

*I don't have any hobbies because I'm too busy (at work or school).*

2. With your partner say which of these activities you think could damage your long-term health. If you do any of the activities you think could damage your health, talk about why you do them.



## Reading Activities

### A: Complete the Headline

Read **Part One** of today's article and then fill the gaps in the headline. Do this as quickly as you can.

#### Part One

## Study: Ecstasy Damages Key \_\_\_\_\_

BY MAGGIE FOX, HEALTH AND SCIENCE CORRESPONDENT

1. WASHINGTON Thurs Sep 26 (Reuters) - Ecstasy, the popular "club drug" favored by young partygoers, may damage the same brain cells hurt in Parkinson's disease, U.S. researchers said on Thursday.

2. Their finding adds to fears that users of the drug, often teenagers or young adults attracted by the **euphoria** it induces, may be doing long-term damage to their brains.

3. "The most troubling **implication** of our findings is that young adults using Ecstasy may be increasing their risk for developing parkinsonism, a condition similar to Parkinson's disease, as they get older," Dr. George Ricaurte, a neurologist at Johns Hopkins University School of Medicine in Baltimore who led the study, said in a statement.

4. "The lack of obvious immediate harmful effects of Ecstasy is partly responsible for the widely held belief that the drug is safe," added Ricaurte, whose findings are published in Friday's issue of the journal Science.

5. "But people should be aware that the use of Ecstasy in

doses similar to those used in recreational settings can damage brain cells, and this damage can have serious effects."

6. Ricaurte and colleagues injected first monkeys and then baboons with Ecstasy, an **amphetamine** known chemically as methylene-dioxymethamphetamine or MDMA.

7. They found that 60 percent to 80 percent of the nerve endings of dopamine-producing neurons were destroyed after just a few doses. These are the same brain cells destroyed in Parkinson's disease, which starts out with a mild shakiness that progresses to near-paralysis. There is no cure and Parkinson's is always fatal.

8. "We don't know if human beings develop the same effects we describe in monkeys and in baboons," Ricaurte **cautioned** in a telephone interview.

"The broader issue is, are there hundreds of cases of unexplained parkinsonism in MDMA users? We don't know because we haven't looked." (Continued/...)

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**Glossary:** **euphoria** - an intense feeling of happiness and excitement **implication** - a possible effect or result of an action **amphetamine** - a drug that stimulates someone and makes them feel excited and very awake **cautioned** - warned or advised

### B: Finding Ideas

Read the following statements and find the paragraphs they refer to in **Part One** of the article . Then put the ideas in the order they appear in **Part One** .

- a.   Users of Ecstasy may have a greater risk of developing a condition known as parkinsonism.
- b.   Ricaurte warned that the results are inconclusive as it is not known whether the same thing happens to human users of Ecstasy.
- c.   The study revealed that the nerve endings of neurons were destroyed. These neurons are also destroyed in Parkinson's disease.
- d.   US researchers have announced that Ecstasy may damage brain cells.
- e.   Monkeys and baboons were injected with Ecstasy by the researchers.
- f.   This means that young people who use it may be doing themselves long-term damage.
- g.   Taking the amount of Ecstasy normally used by partygoers can damage the cells of the brain.
- h.   Many people believe that Ecstasy is quite safe because there are no obvious dangerous effects.

## C: Fill the Gaps

Some phrases have been removed from **Part Two** of the article. Read it and fill each gap with the correct phrase.

a. ...it is not easy...

b. ...and baboons...

c. ...of the 12 animals...

d. ...and dopamine are...

e. ...a group that...

f. ...have suddenly died...

### Part Two

## NO SYMPTOMS

(.../Continued) The monkeys **1.**\_\_\_\_\_ did not develop any symptoms, even though large areas of their brains were affected. "In animals we don't see **overt** parkinsonism despite the fact that they have large **lesions**," Ricaurte said. "But we know that in monkeys we have to deplete brain dopamine by greater than 90 percent to produce parkinsonism."

The study attracted immediate criticism from the Multidisciplinary Association for Psychedelic Studies, **2.**\_\_\_\_\_ promotes the use of MDMA, marijuana and other drugs. The group questioned whether injections of MDMA into monkeys accurately **simulates** drug use in humans.

But, Ricaurte specifically addressed that question.

"Rodent studies **indicate** that oral and systemic or injected MDMA produces identical effects in terms of neurotoxicity (damage to neurons)."

He said his team used injected MDMA because "as you might imagine, **3.**\_\_\_\_\_ to get a baboon to take an oral dose of a drug."

One **4.**\_\_\_\_\_ Ricaurte tested died, and he said studying what happened may explain why a few Ecstasy users **5.**\_\_\_\_\_. "It is certainly a worthy phenomenon to study," he said.

His team is now taking PET, or positron emission tomography, scans of the brains of human Ecstasy users to see if they can find damage to the dopamine-producing cells.

The drug is also known to damage serotonin-producing cells in the brain. Serotonin **6.**\_\_\_\_\_ both neurotransmitters or message-carrying cells. Serotonin is linked with mood, while dopamine is important to muscle movement.

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**Glossary:** **overt** - not secret or hidden **lesions** - damage to part of the body caused by injury or illness **simulates** - making an artificial thing as close to reality as possible **indicate** - to show that something is true

## D: Inference

Find evidence in **Part Two** of the article for the following statements. Highlight or underline the evidence.

1. The Multidisciplinary Association for Psychedelic Studies (MAPS) doubts that Ricaurte's study of the effects of MDMA on monkeys and baboons could be accurately compared with MDMA use in humans.
2. Ricaurte refuted the claim by MAPS that oral doses and injected doses have different effects on neuron damage.
3. It is very difficult to get a baboon to swallow a drug.

## E: True or False

Read the whole article again and decide whether these statements are true **T** or false **F**.

1.  Findings from the study indicate that users of Ecstasy may end up with long-term brain damage.
2.  The chemical name for Ecstasy is methylene-dioxymethamphetamine or MDMA.
3.  In the research project it took only a few doses of the drug to kill up to 80% of the nerve endings of dopamine-producing neurons.
4.  Parkinson's disease begins with paralysis and leads to death.
5.  A cure for Parkinson's disease has been found.
6.  It is unknown if people develop the same effects from taking Ecstasy as monkeys and baboons.
7.  The Multidisciplinary Association for Psychedelic Studies supports the use of recreational drugs like Ecstasy.
8.  Ricaurte believes that studying the death of one of the monkeys that was injected with MDMA might help explain the sudden deaths of a few Ecstasy users.
9.  PET is used to scan the brain and see if there is any damage to serotonin-producing cells.
10.  Ecstasy causes damage to dopamine-producing cells, those which control mood.

## Post-Reading Activities

You may do one or more of these.

### A: Language

- i) Some of the words from today's article have been put in this table of word families. Fill each empty cell in the table with the correct form of the word.

Verb	Adjective	Noun
attract	attraction	
_____	immediate	
popularize	popular	
_____	_____	injection
caution		caution
indicate	indicative	
_____	simulated	simulation
identify		identification

- ii) Use the correct forms of the words from the table to fill the gaps in the sentences below.
1. He is very \_\_\_\_\_ and will only get excited if he is certain that the results are conclusive.
  2. He tried to \_\_\_\_\_ his ideas by speaking to as many as reporters as possible.
  3. The baboons and monkeys were given a series of \_\_\_\_\_ of MDMA.
  4. Our experiments with monkeys \_\_\_\_\_ drug use in humans.
  5. The results \_\_\_\_\_ that use of MDMA leads to brain cell damage.
  6. She is trying to \_\_\_\_\_ extra funding by demonstrating how important the research is.
  7. The researchers were able to \_\_\_\_\_ the neurons that were destroyed after a few doses of MDMA.
  8. These findings could have an \_\_\_\_\_ effect on the number of young people experimenting with Ecstasy in the future.

### B: Discussion

Discuss the following statement in small groups.

*People should have the right to smoke, drink excessive amounts of alcohol or take recreational drugs even though medical science has shown that these practices may harm the human body and can lead to expensive hospital treatment. Society should accept the cost of paying for the treatment because the freedom of every individual to do what he or she chooses to do is very important.*

### C: Writing

Write a 250 to 300 word persuasive essay about the topic in **B: Discussion**. Decide which side of the argument you will present. Write a plan before you begin.

### D: Giving Advice

Work in pairs and take one of the roles. Think carefully about what you want to say before you begin the role play. After you have done the role-play, change roles.

**Student A:** You have just finished reading today's article on the research into Ecstasy. You are concerned that your teenage son / daughter, Student B, might feel pressured into taking some when he / she is out at parties. Tell Student B briefly what the article said and that you are worried that he / she might try the drug. Explain why you are worried. You may like to use some of the language below in your role:

*I've been reading this article and it says... The study warns that... Most importantly, it said... I'm worried that you and your friends might... Please be careful because... I know you think I'm fussing, but I think...*

**Student B:** You are a teenager and sometimes when you are at parties, you have seen your friends taking Ecstasy. You haven't tried it yet. Your friends have told you that it is harmless. Student A is your parent. He / She will tell you about some research done on Ecstasy. You are quite interested to know the results. Student A is worried about you, but you think he /she should trust you more.

# TEACHERS' NOTES AND ANSWER KEY

## Pre-Reading Activities

### A: What About You? - Notes

Students will probably enjoy this exercise more and comment more freely if they are able to work with someone they know well. Ask them to volunteer opinions and the main points of their discussion afterwards, but use discretion. For example, do not ask someone straight out "Do you get drunk with your friends?"

If you are working with very young students, you could either focus on the ones that may affect them most (e.g. eating junk food etc.) **or** ask them to go through the list and tick those that they think may damage the body. Ask them why they think this.

## Reading Activities

### A: Complete the Headline - Answers

Study: Ecstasy Damages Key **Brain Cells**

### B: Finding Ideas - Answers

1. d; 2. f; 3. a; 4. h; 5. g; 6. e; 7. c; 8. b.

### C: Fill the Gaps - Answers

1. b; 2. e; 3. a; 4. c; 5. f; 6. d.

### D: Inference - Answers

- The group questioned whether injections of MDMA into monkeys accurately simulates drug use in humans.
- "Rodent studies indicate that oral and systemic or injected MDMA produces identical effects in terms of neurotoxicity (damage to neurons)."
- He said his team used injected MDMA because "as you might imagine, it is not easy to get a baboon to take an oral dose of a drug."

### E: True or False - Answers

- T**
- T**
- T**
- F** (It begins with mild shakiness.)
- F** (There is still no cure.)
- T**
- T**
- T**
- F** (It is used to see if there is any damage to dopamine-producing cells.)
- F** (Dopamine-producing cells are linked to muscle movement.)

## Post-Reading Activities

### A: Language - Answers

i)	Verb	Adjective	Noun
	attract	<b>attractive</b>	attraction
	—	immediate	<b>immediacy</b>
	popularize	popular	<b>popularity</b>
	<b>inject</b>	—	injection
	caution	<b>cautious</b>	caution
	indicate	indicative	<b>indication</b>
	<b>simulate</b>	simulated	simulation
	identify	<b>identical, identifiable</b>	identification

- ii)
- He is very **cautious** and will only get excited if he is certain that the results are conclusive.
  - He tried to **popularize** his ideas by speaking to as many as reporters as possible.
  - The baboons and monkeys were given a series of **injections** of MDMA.
  - Our experiments with monkeys **simulate** drug use in humans.
  - The results **indicate** that use of MDMA leads to brain cell damage.
  - She is trying to **attract** extra funding by demonstrating how important the research is.
  - The researchers were able to **identify** the neurons that were destroyed after a few doses of MDMA.
  - These findings could have an **immediate** effect on the number of young people trying Ecstasy in the future.

