

Car fumes can change the brain in 2 hours

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Breathing in air pollution could change our brain. A new study shows that car fumes can change how our brain is wired - how parts of the brain connect with other parts. The research is from the University of British

Columbia in Canada. Researchers found that car fumes can change our brain's connectivity in just two hours. A researcher, Professor Chris Carlsten, was surprised at what he found. He said: "For many decades, scientists thought the brain may be protected from the harmful effects of air pollution." He added: "This study, which is the first of its kind in the world, provides fresh evidence supporting a connection between air pollution and [thinking]."

The traffic pollution study was on 25 adults. The researchers asked the adults to breathe in car fumes in a laboratory. The research team took brain scans of the adults for two hours. The scans showed that networks in the brain that we use for thinking and remembering changed. There were fewer connections between the networks. Another professor said the research was worrying. She said: "It's concerning to see traffic pollution interrupting these networks." The researchers said there needed to be more research to see how car fumes change our brain. They also advised people to close car windows when in traffic. The brains of the 25 people returned to normal after they breathed clean air.

Sources: sciencealert.com / neurosciencenews.com / yahoo.com

Writing

All vehicles on the roads should be electric only. Discuss.

Chat

Talk about these words from the article.

breathing / air pollution / brain / wired / car fumes / connectivity / scientists / world / traffic / breathe / brain scans / networks / professor / research / car windows / normal

True / False

- 1) Car fumes can help to wire our brain. T / F
- 2) The research is from a university in Colombia. T / F
- 3) A researcher said the findings in his research weren't surprising. T / F
- 4) The article in the study is the first of its kind. T / F
- 5) Over 250 adults had brain scans as part of the research. T / F
- 6) Researchers scanned the brains of adults for two hours. T / F
- 7) A researcher advised people to close car windows in traffic. T / F
- 8) The brains of people who breathed car fumes returned to normal. T / F

Synonym Match

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

- | | |
|----------------------|---------------|
| 1. change | a. different |
| 2. wired | b. concerning |
| 3. other | c. proof |
| 4. harmful | d. shut |
| 5. evidence | e. damaging |
| 6. laboratory | f. connected |
| 7. showed | g. fresh |
| 8. worrying | h. revealed |
| 9. close | i. transform |
| 10. clean | j. lab |

Discussion – Student A

- a) What do you think about what you read?
- b) What dangers are there of breathing in car fumes?
- c) When do you have trouble thinking and remembering?
- d) Should all vehicles be electric?
- e) Do you always close your windows in city traffic?
- f) What three adjectives best describe this article?
- g) Where can you go to breathe cleaner, fresher air?
- h) What questions would you like to ask the researchers?

Phrase Match

- | | |
|---|-----------------------------|
| 1. Breathing in | a. air |
| 2. change how our brain | b. with other parts |
| 3. how parts of the brain connect | c. scans of the adults |
| 4. protected from the harmful | d. to normal |
| 5. the first of its kind | e. is wired |
| 6. The research team took brain | f. in the world |
| 7. There were fewer connections between | g. in traffic |
| 8. close car windows when | h. air pollution |
| 9. The brains of the 25 people returned | i. the networks |
| 10. they breathed clean | j. effects of air pollution |

Discussion – Student B

- How much do you worry about pollution?
- How bad is pollution where you live?
- How worried are you about car fumes?
- How do you feel when you breathe in car fumes?
- Is it healthier to live in the countryside?
- Why might car fumes change the way the brain connects?
- How can we reduce air pollution?
- What advice do you have for someone in a polluted city?

Spelling

- trgebainh in air pollution
- change how our brain is erdwi
- how parts of the brain ocnntc
- For many ceeads
- protected from the harmful sfecet
- fresh nivceed
- the tacrif pollution study
- in a yrbtaolora
- It's nreicnngoc to see
- tnpiurnrige these networks
- They also aveddsi people to close car windows
- returned to lomanr

Answers – Synonym Match

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

Role Play

Role A – Car Fumes

You think car fumes is the worst form of pollution. Tell the others three reasons why. Tell them why their forms of pollution aren't as bad. Also, tell the others which is the least damaging of these (and why): plastic, noise pollution or light pollution.

Role B – Plastic

You think plastic is the worst form of pollution. Tell the others three reasons why. Tell them why their forms of pollution aren't as bad. Also, tell the others which is the least damaging of these (and why): car fumes, noise pollution or light pollution.

Role C – Noise Pollution

You think noise pollution is the worst form of pollution. Tell the others three reasons why. Tell them why their forms of pollution aren't as bad. Also, tell the others which is the least damaging of these (and why): plastic, car fumes or light pollution.

Role D – Light Pollution

You think light pollution is the worst form of pollution. Tell the others three reasons why. Tell them why their forms of pollution aren't as bad. Also, tell the others which is the least damaging of these (and why): plastic, noise pollution or car fumes.

Speaking – Pollution

Rank these with your partner. Put the worst types of pollution at the top. Change partners often and share your rankings.

- | | |
|-----------------|-------------------|
| • Car fumes | • Litter |
| • Factory smoke | • Noise pollution |
| • Forest fires | • Light pollution |
| • Plastic | • Water pollution |

Answers – True False

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