Early Sugar Exposure and the Risk of Adult Anxiety

Name Date Class

Reading

1 Most research into diet and health has one persistent weakness: it depends on people accurately remembering what they ate, sometimes decades earlier. A rare exception exists in the United Kingdom, where the government strictly controlled the sugar supply through **rationing**, from the Second World War until 1953. Because rationing was decided by the government rather than by personal choice, scientists can now study early-life sugar **exposure** almost as though it had been a controlled experiment, without the usual problem of people simply choosing to eat more or less sugar. In 2024, economists writing in the journal Science used this history to link rationing in the first 1,000 days of life to a lower adult risk of type 2 diabetes and high blood pressure. A 2026 study from the University of Surrey, published in Translational Psychiatry, used the same history to ask a harder question: could the amount of sugar a person consumed before the age of two shape their mental health many decades later?

2 Researchers analyzed health records from more than 45,000 participants in the UK Biobank, a large medical database, all born between 1951 and 1956, a period spanning the final years of strict rationing and the years just after it ended. The **cohort** was divided according to how long each person's early sugar intake had been **restricted**. Some had experienced rationing only before birth, others through six, twelve, eighteen, or twenty-four months of life, and a comparison group had been born after sugar rationing ended completely, growing up with sugar freely available from birth. A further group born in Ireland, where sugar was no longer rationed in the early 1950s, was analyzed separately for comparison.

3 The results showed a fairly consistent pattern. Adults who had experienced the longest period of early sugar restriction tended to have the lowest risk of developing anxiety later in life, an **association** that appeared especially strong among women. A similar link showed up for depression at first, but it became much weaker once the researchers made a statistical **adjustment** for other factors that could explain it. The researchers suggest that depression, unlike anxiety, may be shaped more by diet later in adulthood than by what happened in infancy.

4 The researchers also examined brain scans collected from participants and found **distinct** differences linked to rationing history. Gray matter volume differed in 80 of the 139 brain regions studied when different rationing groups were compared with each other. Within that larger set, 11 regions showed a difference that was especially **significant** between most of the rationed groups and the group that had never experienced rationing at all, including parts of the cerebellum, a region best known for coordinating movement that also plays a part in processing emotions.

5 Early sugar exposure appeared to shape more than mental health alone. Participants who had experienced the least sugar during their first two years of life also reported the weakest adult **preference** for sweet foods, even though sugar consumption rose sharply for almost everyone once rationing ended nationwide. This pattern suggests that an infant's early diet may **influence** food preferences that last for the rest of their life, not only their later risk of anxiety.

6 The study has real limits, and the researchers are careful about this themselves. It is a **retrospective** study, looking back at decades-old records rather than following newborns forward in real time with detailed diaries, and no one measured exactly how much sugar any individual actually consumed as a baby. Exposure was estimated only from national rationing rules and each person's date of birth. Other social and economic differences between the postwar decades, not sugar alone, could also be **confounding** the results, and finding a link between early sugar exposure and adult anxiety does not establish **causation**: it does not show that one directly caused the other.

7 Even with these limits, the researchers argue that a dataset like this is unlikely to exist again, because it is hard to imagine another large population going without extra sugar and then having it slowly returned over several years. If the pattern holds up under further study, it would suggest that early nutrition **policy**, not only a person's dietary habits later in life, can have a **lasting** influence on mental health. An obvious next test is whether a similar pattern appears in younger generations, who grew up with very different, and generally much higher, amounts of sugar from birth.

Vocabulary Matching

Match each word from the reading with its meaning. Write the letter on the line.

1	**rationing**	_____	**A** the experience of being affected by something over time
2	**exposure**	_____	**B** the fact of one thing directly making another happen
3	**cohort**	_____	**C** an official plan or set of rules, especially by a government
4	**restricted**	_____	**D** a stronger liking for one thing over another
5	**association**	_____	**E** large or unlikely enough to be considered meaningful
6	**adjustment**	_____	**F** continuing for a very long time without fading away
7	**distinct**	_____	**G** a regular connection between two things
8	**significant**	_____	**H** a group of people studied together because they share something
9	**preference**	_____	**I** clearly different or separate from something else
10	**influence**	_____	**J** looking back at events that already happened
11	**retrospective**	_____	**K** making it hard to know which cause is responsible for a result
12	**confounding**	_____	**L** limited or controlled, often on purpose
13	**causation**	_____	**M** a change made to account for other possible influences
14	**policy**	_____	**N** a government system that limits how much people can buy
15	**lasting**	_____	**O** to have an effect on how something develops

Fill in the Blank

Choose a word from the box to complete each sentence. Use each word once. The words are already in the correct form.

adjustment	**association**	**causation**	**cohort**	**distinct**	**exposure**	**influence**	**lasting**	**policy**
preference	**rationing**	**restricted**	**retrospective**	**significant**				

1 During the war, the government controlled sugar supplies through _____ .

2 Researchers studied early-life sugar _____ using historical rationing records.

3 The _____ included more than 45,000 people born in the same few years.

4 Sugar was tightly _____ in the UK for more than a decade after the war.

5 Doctors have long noticed an _____ between poor sleep and low mood.

6 After a statistical _____ for income, the link to depression grew much weaker.

7 The scans showed _____ differences linked to each person's rationing history.

8 Researchers found a _____ difference in gray matter between the two groups.

9 Adults with less early sugar exposure reported a weaker _____ for sweet foods.

10 An infant's early diet may _____ food preferences for the rest of their life.

11 This is a _____ study, based on decades-old health records.

12 Years of smoking research finally showed clear _____ , not just a link, between cigarettes and lung cancer.

13 Early nutrition _____ might have a lasting effect on public health.

14 Early nutrition may have a _____ influence on mental health.

Comprehension Questions

Answer in your notebook or discuss with a partner. Questions 10 to 12 are IELTS-style.

1 According to the reading, why is UK sugar rationing history useful for research?

2 What question did the University of Surrey study try to answer?

3 How did researchers divide the study participants into groups?

4 What was the key finding about anxiety risk and early sugar exposure?

5 What happened to the link between early sugar exposure and depression after statistical adjustment, and what might this suggest?

6 What did the brain scan results show?

7 How did early sugar exposure relate to adult food preferences?

8 List three limitations of the study mentioned in the reading.

9 Why does the reading say that finding a link does not establish causation? Why does this matter for how we understand this study?

IELTS-Style Questions

10 **True, False, or Not Given:** "*The study proves that early sugar exposure directly causes anxiety in adulthood.*" Explain your answer using evidence from the reading.

11 **Yes, No, or Not Given:** "*The writer thinks diet research that relies on people's memories has a weakness.*" Explain your answer using evidence from the reading.

12 **Author's purpose:** Why does the writer include a paragraph about the study's limitations? Is the aim to dismiss the findings, to help readers judge the findings fairly, or something else?

True or False

Circle T (true) or F (false) according to the reading. Write a correction for each false statement on the dotted line.

1 **T / F** The reading says most diet research relies on people accurately remembering what they ate.

2 **T / F** UK sugar rationing continued without any change until the present day.

3 **T / F** The study used data from more than 45,000 UK Biobank participants.

4 **T / F** All participants in the study were grouped only by their current adult diet.

5 **T / F** The anxiety association was especially strong among women.

6 **T / F** The depression association became stronger after statistical adjustment.

7 **T / F** Gray matter volume differed across many brain regions by rationing group.

8 **T / F** Participants with the least early sugar exposure reported a stronger preference for sweet foods.

9 **T / F** The study proves for certain that early sugar exposure directly causes adult anxiety.

10 **T / F** The writer suggests testing whether a similar pattern appears in younger generations.

Discussion Questions

Talk with a partner or in a small group. The questions move from personal to more abstract.

1. Before reading this, did you know sugar was ever rationed in any country? What did you know about it?
2. Does it surprise you that a decades-old government policy could still affect researchers' understanding of health today?
3. The study found a stronger anxiety association in women than in men. Why do you think research results sometimes differ between men and women?
4. If you were a parent, would findings like these change how you think about a young child's diet? Why or why not?
5. The reading separates a link between two things from causation. Can you think of a time you saw this difference ignored in the news?
6. Would you trust a 70-year-old dataset more or less than a brand-new study? Why?
7. The researchers say a dataset like this is unlikely to exist again. Why would it be difficult, or wrong, to create one on purpose?
8. Governments today set many food policies, such as sugar taxes. Should research like this influence those policies? Why or why not?
9. The study found a weaker link for depression than for anxiety once other factors were considered. Why might two related conditions respond differently to the same explanation?
10. If your own childhood diet had been very different, do you think your adult food preferences would be different too?
11. Scientists say more research is needed before drawing firm conclusions. Why do many important scientific questions take so long to answer with confidence?
12. Earlier research used the same rationing history to study diabetes and blood pressure. Why might scientists return to one historical event again and again?
13. Wars, famines, and new laws can all create accidental “natural experiments.” What other events in history might scientists study this way?
14. What is one question you would want to ask the researchers about this study?

Language Focus: Passive Voice in Research Writing

The passive voice (to be + past participle) puts the focus on the action or the result, not on who performed it. It is common in science writing when the person doing something is unknown, obvious, or simply less important than what was done.

In the reading:

- “The cohort **was divided** according to how long each person's early sugar intake had been restricted.”
- “A further group born in Ireland…**was analyzed** separately for comparison.”
- “Exposure **was estimated** only from national rationing rules and each person's date of birth.”

Practice: Rewrite this sentence in the passive voice: *“Researchers compared the two groups.”*

Activities and speed challenge
englishbridges.com/lessons/early-sugar-exposure-anxiety

Notes