

Part I Reading Comprehension

A hormone that **extends** lifespan in mice by 40% is produced by specialized cells in the thymus gland, according to a new study by Yale School of Medicine researchers. The team also found that increasing the levels of this hormone, called FGF21, protects against the loss of immune function **that** comes with age.

Published online in the *Proceedings of the National Academy of Sciences* on Jan. 11, the study's findings have future implications for improving immune function in the elderly, for obesity, and for illnesses **such as** cancer and type-2 diabetes.

When functioning normally, the thymus produces new T cells for the immune system, but with age, the thymus becomes fatty and loses **its** ability to produce new T cells. This loss of new T cells in the body is one cause of increased risk of infections and certain cancers in the elderly.

Led by Vishwa Deep Dixit, professor of comparative medicine and immunobiology at Yale School of Medicine, the researchers studied transgenic mice with elevated levels of FGF21. The team knocked out the gene's function and studied the impact of decreasing levels of FGF21 on the immune system. **They** found that increasing the levels of FGF21 in old mice protected the thymus from age-related fatty degeneration and increased the ability of the thymus to produce new T cells, **while** FGF21 deficiency accelerated the degeneration of the thymus in old mice.

"We found that FGF21 levels in thymic epithelial cells is several fold higher than in the liver - - therefore FGF21 acts within the thymus to promote T cell production," said Dixit.

"Elevating the levels of FGF21 in the elderly or in cancer patients **who** undergo bone marrow transplantation **may** be an additional strategy to increase T cell production, and **thus** bolster immune function," said Dixit.

Dixit added that FGF21 is produced in the liver as an endocrine hormone. Its levels increase when calories are restricted to **allow** fats to be burned when glucose levels are low. FGF21 is a metabolic hormone that improves insulin sensitivity and also induces weight loss; therefore **it** is being studied for its therapeutic effects in type-2 diabetes and obesity.

Part I Reading Comprehension

Read the article and tick (✓) A, B, or C.

1. According to a study by Yale School of Medicine researchers, a hormone that extends lifespan in mice by 40% is produced by specialized cells in the kidneys.
A True B False C Doesn't say
2. The Yale School of Medicine researchers also found that reducing the levels of FGF21 protects against the loss of immune function that comes with age.
A True B False C Doesn't say
3. The Yale study's findings have future implications for improving immune function in the elderly, for obesity, and for illnesses such as cancer and type-2 diabetes.
A True B False C Doesn't say
4. With age, the thymus becomes fatty and produces more new T cells.
A True B False C Doesn't say
5. One of the reasons why the elderly are at increased risk of infections and certain cancers is the loss of new T cells in the body.
A True B False C Doesn't say

6. The researchers, led by Vishwa Deep Dixit, studied transgenic mice with low levels of FGF21.
A True B False C Doesn't say
7. It was found that decreasing the levels of FGF21 in old mice protected the thymus from age-related fatty degeneration and increased the ability of the thymus to produce new T cells, while FGF21 deficiency slowed the degeneration of the thymus in old mice.
A True B False C Doesn't say
8. Vishwa Deep Dixit has worked at the Yale School of Medicine for over a decade.
A True B False C Doesn't say
9. FGF21 levels increase when calories are restricted to allow fats to be burned when glucose levels are low.
A True B False C Doesn't say

Match the underlined words or expressions in the text to the word or expression with a similar meaning below.

10. _____ = whereas 13. _____ = enable
11. _____ = therefore 14. _____ = could
12. _____ = increases 15. _____ = for example

What do these words refer to? Choose (a), (b), or (c).

- | | | |
|---------------------------------|---------------------------|-------------------------|
| 16. that (line 4) | 18. They (line 15) | 20. it (line 28) |
| (a) the team | (a) The team | (a) FGF21 |
| (b) FGF21 | (b) the gene's function | (b) obesity |
| (c) the loss of immune function | (c) old mice | (c) weight loss |
-
- | | |
|-------------------------|--------------------------|
| 17. its (line 9) | 19. who (line 22) |
| (a) the thymus | (a) the elderly |
| (b) new T cells | (b) cancer patients |
| (c) the immune system | (c) Dixit |

PART II A

Complete each sentence with the correct expression.

- There is _____ to support the hypothesis.
a) Few evidences b) little evidence c) few evidence
- We used a new method _____ the subjects' overall fitness.
a) to assess b) for to assess c) in order for assessing
- The method enabled _____ more accurate measurements.
a) us make b) us making c) us to make
- This protocol induced _____ accumulation in all the subjects.
a) carbohydrates b) carbohydrate c) the carbohydrate
- A new indoor facility allowed _____ through the winter months.
a) us to train b) us training c) to train

6. The physical therapist advised _____ more stretching exercises.
a) that I do b) me doing c) me to do

Complete each sentence with the appropriate **transition signal**.

7. People tend to put on weight in middle age; _____, (**however, because, therefore**) gaining weight is not inevitable.
8. We were able to process all the data in a very short time _____ (**because of, because, although**) we had a whole team of researchers working on the project.
9. Maria has excellent qualifications and a lot of experience in the field. _____, (**Therefore, In addition, Nevertheless**) she is a very hard worker.
10. The patients suffered some rather severe side effects; _____, (**despite, in addition, therefore**) the medical committee decided to suspend the therapy.
11. (**Because of, Although, Despite**) _____ the considerable risks, she decided to participate in the clinical trial.
12. Some villages had to be evacuated _____ (**hence, because, because of**) the volcanic activity.

Part II B

Present Simple and Present Continuous

Complete the sentences with the correct form of the verbs in brackets.

1. He always(sleep) late on Sunday mornings.
2. ‘Where’s Debbie?’
‘She’s in her room. She..... (listen) to music.’
3. Please don’t make so much noise. I (try) to work.
4. I..... (want) to order something else. I’m still hungry.
5. What (you/do) next summer?
6. What (you/usually/do) on weekends?

Past Simple / Present Perfect Simple

Complete the sentences with the correct form of the verbs in brackets.

7. Where..... (you/spend) your holiday last summer?
8. I can’t take any pictures because I..... (not/buy) a camera yet.
9.(you/ever/see) a whale?
10. Our cousins (arrive) late last night.
11. We..... (know) Katy and Pete since we were kids, and we’re still close friends.

Complete with the **Past Continuous**, **Past Simple** or **Past Perfect**.

- 12./13. When we (arrive) at the theater, the show
.....(already/start) and we weren’t allowed to enter until the
intermission.

- 14./15. It(rain) hard when we
 (leave) the pub.
 16./17. I (break) my arm while I
 (play) football.

*Complete the sentences with **will, going to or the present continuous.***

18. Bye for now. Perhaps I(see) you later.
 19. We already have plans for the weekend. We(visit) some
 relatives in New York.
 20. Look at those black clouds! It (rain).
 21. Those bags look very heavy. I..... (help) you
 carry them to the car.

Relative Clauses

*Complete the sentences with a relative pronoun: **who, which, where, whose, that.***

22. My brother Dave, is a lawyer, is going to help us in
 the negotiations.
 23. The pizza we ordered wasn't very good.
 24. The Boeing 747, is one of the largest commercial airplanes, has an
 excellent safety record.
 25. I recently went back to the town I grew up.
 26. notebook is this? It's not mine.

Comparatives and Superlatives

*Complete the following sentences using a suitable form of the adjectives in brackets. Add **than, the or as** if necessary.*

27. This is (good) restaurant in town.
 28. My new job is (stressful) my old one.
 29. This is(relaxing) holiday I've ever had!
 30. She's much(talkative) her sister.
 31. The movie wasn't as(scary) we expected.

Articles

*Complete the sentences with **a/an, the, or - (no article).***

32. They say thatlove makes the world go around.
 33. Her father is pilot.
 34. They are currently doing research onstem cells.
 35. I forgot to lock front door when I left the house this morning.
 36. The diet can help reduce the incidence of diabetes.

Complete the sentences with the **-ing form** or **infinitive** of the verbs in brackets.

- 37. Would you mind (help) me with the dishes?
- 38. I'm thinking of (take) a year off before starting university.
- 39. She went to Ireland (improve) her English.
- 40. (eat) too much red meat is very unhealthy.
- 41. It's important (get) plenty of sleep.

Complete the **conditional** sentences with the right verb form.

- 42. If I (have) more time, I'd learn another language.
- 43. I (help) you if I had been there.
- 44. If I (miss) the bus, I'll take a taxi.

Rewrite the sentences in **the Passive Voice**. Maintain the same verb tense as the active sentence.

Example: Van Gogh painted this picture of sunflowers.
This picture of sunflowers was painted by Van Gogh.

- 45. They are repairing the damaged bridge.
The damaged bridge
- 46. You must make the final payment by the end of the month.
The final payment
- 47. They have changed the exam format.
The exam format.....
- 48. They destroyed most of the city.
Most of the city

Key

Part 1

- 1. B
- 2. B
- 3. A
- 4. B
- 5. A
- 6. B
- 7. B
- 8. C
- 9. A
- 10. while
- 11. thus
- 12. extends
- 13. allow
- 14. may
- 15. such as

- 16. C
- 17. A
- 18. A
- 19. B
- 20. A

Part II A

- 1. B
- 2. A
- 3. C
- 4. B
- 5. A
- 6. C
- 7. however
- 8. because
- 9. In addition
- 10. therefore
- 11. Despite
- 12. because of

Part II B *Both contractions and full forms can be used in Part II B.*

- 1. sleeps
- 2. is listening
- 3. am trying
- 4. want
- 5. are you doing
- 6. do you usually do
- 7. did you spend
- 8. haven't bought
- 9. Have you ever seen
- 10. arrived
- 11. have known
- 12. /13. arrived; had already started
- 14./15. was raining; left
- 16./17. broke/was playing
- 18. will see
- 19. are visiting/are going to visit
- 20. is going to rain
- 21. will help
- 22. who
- 23. that/which
- 24. which
- 25. where
- 26. Whose
- 27. the best
- 28. more stressful than
- 29. the most relaxing
- 30. more talkative than
- 31. scary as
- 32. –
- 33. a
- 34. –

35. the
36. –
37. helping
38. taking
39. to improve
40. Eating
41. to get
42. had
43. would have helped
44. miss
45. is being repaired.
46. must be made by the end of the month.
47. has been changed.
48. was destroyed.