

次の英文を読み、設問に答えよ。

In recent years, the 10,000-steps-a-day regime has become well-established in popular culture. You can barely walk down the street without someone walking past you wearing a FitBit health-tracking wrist band. A well-known example is Jeremy Hunt, the British health secretary, who was often pictured with his FitBit poking out from his shirtsleeves. It has become a global obsession: the research firm Gartner recently estimated that by 2020 there will be 500 million wearable devices used across the world.

This is all despite the fact that 10,000 steps is a completely arbitrary figure, one that originates from a successful Japanese marketing campaign in the mid-60s. In an attempt to capitalize on the enormous popularity of the 1964 Tokyo Olympics, the company Yamasa designed the world's first wearable step-counter, a device called a *manpo-kei*, which translates as "10,000-step meter." "There wasn't really any evidence for it at the time," says Professor David Bassett, head of sports studies at the University of Tennessee. "They just felt that was a number that suggested an active lifestyle and should be appropriate." Actually, Professor Yoshiro Hatano at Kyushu University of Health and Welfare came up with the slogan "10,000 steps per day for better health" and his research team investigated the potential benefits of taking 10,000 steps about 20 years ago. They concluded that the average Japanese person took between 3,500 and 5,000 steps a day, and that if these people increased their daily step count to 10,000, they could decrease their risk of heart disease.

The World Health Organization, the American Heart Foundation, and the US Department of Health and Human Services have all gradually adopted 10,000 steps as a daily activity recommendation. The Mayo Clinic's website explains that the average American walks 3,000 to 4,000 steps a day, or roughly 1.5 to 2 miles. It advises Americans to find out how many steps a day they walk now, as their own baseline. After that, they should work up toward the goal of 10,000 steps by aiming to add 1,000 extra steps a day every two weeks.

However, in recent years, the accuracy of this number has been increasingly called into question. Earlier this year, Mike Brannan, national lead for physical activity at Public Health England declared: "There's no health guidance that exists to back it." Indeed, most of the scientific studies that have been conducted to try to test whether 10,000 steps a day is ideal for health are themselves relatively weak. They simply compare people who have done 10,000 steps a day with those who have done far lower numbers, such as 3,000 or 5,000, and then measure calories burned, blood pressure, and blood glucose levels. "This number keeps being reinforced because of the way research studies are designed," says Professor Catrine Tudor-Locke of the

Center for Personalized Health Monitoring at the University of Massachusetts Amherst. “So, the study might find that 10,000 helps you lose more weight than 5,000 and then the media see it and report that people should go with 10,000 steps, but that could be because the study has only tested two numbers. It didn’t test 8,000, for example, and it didn’t test 12,000.”

For those who are frequently ill, have type 2 diabetes, or are older individuals who are used to a more inactive lifestyle, there are now concerns that making a rapid jump to 10,000 steps a day could have negative consequences. For others, that goal may seem impossible and can spoil intentions to increase daily physical activity. “We know that inactive lifestyles are bad, and if you’re taking fewer than 5,000 steps a day on average, this can lead to weight gain, weakened muscles, an increased risk of bone loss, and many other problems,” Tudor-Locke says. “There seems to be an obsession about 10,000 and how many steps are enough. Yet it’s more important, from a public health point of view, to get people off their couches. The question we should really be asking is: how many steps are too few?”

Some studies investigating the protective nature of exercise against ongoing illnesses ranging from heart disease to stroke and various forms of cancer suggest that somewhere between 6,000 and 8,000 steps could be the lower boundary to aim for. “Six thousand steps and above gets you into that range of activity that these studies show to be protective against heart disease in particular,” Bassett says. “And for people who have high risk factors to begin with, this can cause an improvement in those risk factors.” Scientists who have attempted to calculate an exact number of steps that are equivalent to the public health guidelines of 30 minutes of moderate exercise per day, have found that we should perhaps aim for a minimum of 7,500 steps.

But while the rise of the step-counter industry has led to a generation of fitness lovers obsessed with achieving 10,000 steps, we do not currently know the upper ceiling on how much is good for us. Exercise scientists are currently trying to conduct studies to see whether 15,000 or even 18,000 steps have long-term health benefits over the traditional 10,000 goal. Taking this many steps per day may seem impossible, but scientists who have studied the Amish people in rural Canada, who use no motorized forms of transport, have found that they average from 14,000 to 18,000 steps a day. And a study of Japanese patients with type 2 diabetes from the mid-90s found that those who averaged about 19,000 steps a day had far better outcomes compared with those who remained largely inactive.

One of the major problems with the 10,000-steps-a-day goal is that it doesn’t take into account the intensity of exercise. Getting out of breath and increasing your heart rate may well be even more important than the exact number of steps taken. Researchers are currently conducting studies to see whether people who take 10,000 steps a day merely by doing light household tasks

achieve the same health benefits as those who do so by brisk walking or playing sports. “More recently, scientists have started looking at cadence, which is the idea of step rate or frequency of stepping,” Tudor-Locke says. “When intensity’s better, your heart is pounding a little faster, more blood goes through your body; all these things are happening quicker.”

In June 2018, Tudor-Locke published some of the first findings on this, in a paper titled *How Fast Is Fast Enough?* It suggested that a minimum of 100 steps per minute is required for exercise to be beneficial. “This is the kind of pace which you naturally achieve when you’re doing purposeful walking,” she says. “But this is just the beginning of this area of research: looking at how healthy people are by measuring not only how many steps they’ve taken but also the rate at which they’ve done it.”

問1 Choose the best answer based on the reading.

1. Which indicates the global popularity of walking 10,000 steps each day?
  - A. The difficulty of walking down crowded streets everywhere.
  - B. Research by Gartner on global popular culture.
  - C. The British health secretary using a FitBit wrist band.
  - D. The number of wearable devices sold worldwide.
2. Where did the concept of walking 10,000 steps each day come from?
  - A. A professor of sports studies at the University of Tennessee.
  - B. Athletes in the 1964 Olympics who did this training.
  - C. The company that designed the first wearable step-counter.
  - D. A research team at a university in Kyushu.
3. What does the Mayo Clinic advise beginning walkers to do first?
  - A. Walk between 3,000 and 4,000 steps each day.
  - B. Measure how many steps per day they usually take.
  - C. After measuring their baseline, they should attempt 10,000 steps.
  - D. Walk 1,000 steps the first day, then add 1,000 more each day.
4. Most studies on the effectiveness of 10,000 steps are problematic because they ...
  - A. generally compare 10,000 steps to a much lower number of steps.
  - B. measure physical outcomes, but not participants’ satisfaction.
  - C. have been designed to question the number 10,000.
  - D. do not provide enough health guidance to the participants.

5. According to Prof. Catrine Tudor-Locke, what should public health focus on?
  - A. Getting everyone to be able to walk at least 5,000 steps.
  - B. Helping inactive people quickly reach the goal of 10,000 steps.
  - C. Preventing people from setting impossible goals for physical activity.
  - D. Discovering the minimum amount of activity needed for health.
  
6. What is the minimum number of steps recommended to protect against ongoing illnesses?
  - A. Between 5,000 and 7,500 steps a day.
  - B. Between 6,000 and 8,000 steps a day.
  - C. Between 8,000 and 12,000 steps a day.
  - D. Between 10,000 and 15,000 steps a day.
  
7. What is the highest number of steps per day that people should take?
  - A. 10,000 steps.
  - B. 14,000 to 18,000 steps.
  - C. 19,000 steps.
  - D. Scientists don't know.
  
8. What may be as important as walking 10,000 steps?
  - A. Walking quickly enough to get out of breath.
  - B. Doing light household tasks that add up to 10,000 steps.
  - C. Playing sports intensely enough to increase your heart rate.
  - D. Walking until your heart no longer pounds quickly.
  
9. What are scientists starting to investigate?
  - A. How many steps people with long-term illnesses can take.
  - B. How the number and speed of steps affect health.
  - C. Whether people with heart disease can benefit from walking.
  - D. The purpose of walking 100 steps per minute.
  
10. What would be a good title for this passage?
  - A. The Origin Of The 10,000-Step Goal
  - B. How Many Steps Are Too Few?
  - C. Moving Beyond The Goal Of 10,000 Steps
  - D. How Fast Is Fast Enough?

問2 Complete the following chart.

People	Opinions
Professor David Bassett	The goal of 10,000 steps a day ( 11 ).
Professor Yoshiro Hatano	If Japanese doubled or tripled their number of steps a day, they would be ( 12 ).
Mike Brannan	( 13 ) the goal of 10,000 steps a day.
Professor Catrine Tudor-Locke	Research studies regarding the 10,000-steps-a-day goal have been limited in ( 14 ).

11. A. lacked any scientific proof at first  
B. was backed up by a research team in Japan  
C. actually improved people's health  
D. was researched by the Japanese company Yamasa
12. A. less likely to benefit from his research  
B. more likely to benefit from a *manpo-kei*  
C. less likely to suffer from heart disease  
D. more likely to suffer from high blood pressure
13. A. England is leading the research regarding  
B. There is sufficient research regarding  
C. It is too difficult to achieve  
D. It is highly questionable to push
14. A. design  
B. number  
C. time  
D. area

問3 Mark A for TRUE and B for FALSE for each of the following statements.

15. If you take less than 5,000 steps a day, you are likely to become less healthy.
16. A minimum of 5,000 steps a day is required to meet the public health guidelines of 30 minutes of moderate exercise.
17. Studies are being conducted to examine the health benefits of walking more than 10,000 steps a day.
18. Some scientists have conducted studies to examine the effect of step rate on health.

2

次の 19～26 の空所に入れる語句として最も適切なものを A～D の中から選べ。

19. X: Mary said you got another part-time job.  
Y: I need extra money to pay my ( ).  
A. edition            B. constitution    C. intuition        D. tuition
20. X: Where are you going to live if you are admitted to that university in the U.K.?  
Y: I don't know yet, but I heard ( ) all the students live in the university halls of residence.  
A. eventually        B. habitually       C. mutually        D. virtually
21. X: How is the recruitment of new employees going?  
Y: Oh, we are actually ( ) by the number of applications.  
A. proved            B. overpowered    C. overwhelmed    D. revealed
22. X: Do you know where the new project meetings will be held?  
Y: The first one will be held in the headquarters office, but all the ( ) meetings will be held online.  
A. intelligent       B. efficient        C. subsequent      D. sufficient
23. X: Nowadays Charles looks healthier than before.  
Y: He said that he ( ) changed his lifestyle to lose weight.  
A. frankly            B. drastically      C. terribly          D. hardly
24. X: I think Richard should undergo anger management therapy.  
Y: Yes, he is ( ) to anger. He seems to have difficulty controlling his emotions.  
A. frequent           B. inability        C. sick              D. prone
25. X: I was surprised that the mayor was arrested.  
Y: I wasn't. It's a clear case of bribery and ( ).  
A. adoption          B. consumption    C. corruption        D. inception
26. X: You don't look so well today. Is anything wrong?  
Y: I guess I'm just suffering from physical and mental ( ).  
A. fatigue            B. outrage           C. happiness        D. wellness



4 それぞれの会話の空所に入れる最も適切な選択肢を A ～ D の中から選べ。ただし、同じ選択肢が2箇所に入ることはない。

*Woman:* That'll be 3,500 yen. Do you have a Hokkai Point card?

*Man:* No, I don't. What is it?

*Woman:* It's our members' card. You can earn points to get discounts on our products and other rewards. ( 37 ) Otherwise you'll miss out on twelve points on this purchase!

*Man:* How much does the membership cost? Do I have to pay a lot every year?

*Woman:* No. ( 38 )

*Man:* That's good. Do I get anything else with the membership?

*Woman:* Yes! ( 39 ) You will also get a 300 yen discount on this purchase.

A. It's free of charge.

B. I guess I can't refuse.

C. Shall I issue you a card?

D. We have special members only discounts throughout the store on various products.

*Woman:* I was a passenger on the Rapid Express this morning. I forgot my jacket on the train!

*Man:* I see. You will have to fill in this form to claim the item you lost. ( 40 )

*Woman:* Yes. It's a new green down jacket.

*Man:* OK. ( 41 ) Can you tell me the time and which station you got on at?

*Woman:* I got on at Otaru at about 10 a.m. Do you think someone will find it and return it?

*Man:* I don't know. ( 42 )

*Woman:* Thank you.

A. Can you describe the jacket?

B. Which train were you on?

C. I'll let you know if we hear anything.

D. Come down to the office and see if you can identify it.



- 5 次の文章の空所に入れる文として最も適切なものを A ～ D の中から選べ。ただし、同じ文が2箇所に入ることはない。

In most countries of the world including Japan, children going to school every day is a familiar scene. ( 43 ) This is especially true for girls. One reason for this imbalance between genders is that, in many communities, males are more highly valued than females. In such communities, girls are expected to marry young and have children. ( 44 ) Thus, parents with little money to spare tend to send their sons to school but keep their daughters at home. They may believe that it would be a waste of money to pay for their daughters to attend school. However, educating girls today can help future generations. One reason is that schools can provide girls with life skills and knowledge about reproductive health. According to UNESCO data, if all girls in developing countries completed elementary school, child mortality would drop by 20%. In addition, maternal deaths would be reduced by almost 70%. ( 45 ) Every girl that receives an education is more likely to make education a priority for her children. For these reasons, ensuring a basic education for girls leads to positive change in the community.

- A. Another reason is that girls are the future mothers of any society.
- B. Education costs an average of \$1.25 a day per child in developing countries.
- C. In contrast, boys are seen as the future money earners.
- D. However, for more than 72 million children around the world, school is a luxury they cannot enjoy.

6

Read the following information and answer the questions.

(1部および工学部受験者のみ)

### Northern Lights Tour at Aurora Observation Centre

Whether legend, myth, or science, northern lights are a mystery, one that very few people have the chance to see with their own eyes. Bring your family to Aurora Observation Centre, a rustic observation center located two kilometers outside the city of Yellowknife.

DURATION	Three days
SEASONS	Fall (September~October), when the land and lakes are warm. Winter (November~March), when all is dark and frozen.
PRICES	<ul style="list-style-type: none"> <li>• \$1,276 (per adult)</li> <li>• \$842 (per child under 18 years old)</li> </ul> (flight to Yellowknife not included)
PAYMENT	Flexible payment options—credit card or PayPal. No booking or credit card fees.
SERVICES INCLUDED	Three northern lights excursions with guide Winter clothing package
ACCOMMODATIONS	Three nights in Yellowknife at the three-star Explorer Hotel
MEALS	Three breakfasts included Two locally-inspired dinners (Lunches not included)

#### Schedule

Day 1: Arrive in Yellowknife in the afternoon, and be taken to your hotel before a viewing of the northern lights at Aurora Observation Centre in the evening. As you listen to your guide telling you myths and tales from the Dene First Nations Tribe, stay warm in a teepee—a tent traditionally made of animal skins stretched on wooden poles—where hot drinks and a wood fire stove await you.

Day 2: Discover Yellowknife on your own, visiting sites including the Government Building and the Prince of Wales Northern Heritage Centre. Then, join us in the afternoon for a scenic drive through the Old Town and the Ice Road. After a hearty dinner, set off to Aurora Observation Centre once again for another aurora viewing experience and tales from the Dene Tribe.

Day 3: Spend one more relaxing day in Yellowknife on your own. After another hearty dinner, head back to Aurora Observation Centre for one last chance to take in the natural phenomenon and hear the wonderful and rich history of the Dene People.

For booking, go to [www.tourradar.com](http://www.tourradar.com) and fill out the online form. You can cancel at any time without extra costs.

46. What type of document is this?
- A. Newspaper article.
  - B. Business letter.
  - C. Office memo.
  - D. Brochure.
47. Where is the Observation Centre located?
- A. In downtown Yellowknife.
  - B. At the Explorer Hotel.
  - C. Outside the city.
  - D. At the Northern Heritage Centre.
48. When can visitors enjoy the northern lights?
- A. During three separate evenings.
  - B. Before every dinner.
  - C. As many times as they want.
  - D. On the second and third days only.
49. How many payment options are available for visitors?
- A. One.
  - B. Two.
  - C. Three.
  - D. Four.
50. Which of the following is not included in the price?
- A. Transportation to the Observation Centre.
  - B. Breakfast.
  - C. Extra winter clothes.
  - D. Food during midday.
51. What do visitors have to do before joining the tour?
- A. Travel to Yellowknife.
  - B. Make sure a guide is available.
  - C. Buy warm winter clothes.
  - D. Select a hotel in Yellowknife.

52. What can visitors do while watching the northern lights?
- A. Stay warm in their hotel.
  - B. Eat a hearty dinner.
  - C. Listen to some Dene stories.
  - D. Wear clothes made of animal skins.