

## UNIT 8

**Choose the correct word to complete each sentence.**

1. Some people are very careful about managing the \_\_\_\_\_ of meat to plant-based foods that they eat.
  - a. ratio
  - b. outcome
  - c. component
2. We have yet to fully understand the long-term \_\_\_\_\_ of how using AI will impact our health and lifestyle choices in the future.
  - a. restrictions
  - b. implications
  - c. components
3. \_\_\_\_\_ factors play a crucial role in determining one's potential for a long and healthy life.
  - a. Restriction
  - b. Contradictory
  - c. Genetic
4. While many factors contribute to living longer, the importance of a positive mindset should not be \_\_\_\_\_ in this pursuit of longevity.
  - a. dismissed
  - b. outnumbered
  - c. reconstructed
5. \_\_\_\_\_, there have been several theories about the secret to a long life, but nowadays we understand there are a combination of factors at play.
  - a. Historically
  - b. Contradictory
  - c. Genetically

## LEVEL 4 Assessment

**Read the pair of sentences and consider the meaning of the underlined words. Decide if the two sentences have the same or different meaning. Choose *Same* or *Different*.**

6. **A** The longevity of patients who contract this disease depends on a variety of factors.  
**B** There are a number of different elements that decide how long the patient will have the disease.
- a. Same  
b. Different
7. **A** Scientists are only just beginning to understand the mechanisms related to cellular aging.  
**B** There isn't a lot of knowledge of the processes involved when cells get older.
- a. Same  
b. Different
8. **A** The outcomes of the study showed there was a connection between regular exercise and increased longevity.  
**B** The goal of the research was to prove that exercise on a daily basis helped people live longer.
- a. Same  
b. Different
9. **A** Dietary restrictions can have both positive and negative effects.  
**B** There are good and bad results from eating what you want when you want.
- a. Same  
b. Different
10. **A** The contradictory advice from experts on how much coffee is healthy to drink has left people puzzled.  
**B** People are confused because different health experts give different recommendations for safe coffee consumption.
- a. Same  
b. Different

LEVEL 4 Assessment

**Match the words to the sentences.**

- |   |   |                       |
|---|---|-----------------------|
| 11. She sustained _____ injuries from the crash and was rushed to the emergency room.   | ● | ● a. private life     |
| 12. His job as a psychologist was demanding, but he tried not to allow his work life to encroach on his _____.                    | ● | ● b. life-threatening |
| 13. The math lesson incorporated _____ skills such as calculating grocery expenses and choosing the best life insurance policies. | ● | ● c. real-life        |

**Complete the sentences with the correct words.**

outnumber	outperform	output
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14. The athlete trained rigorously and managed to \_\_\_\_\_ his competitors, securing a well-deserved victory.
15. The factory increased its production efficiency, resulting in a higher \_\_\_\_\_ of goods to meet the growing demand.
16. In the boardroom, male executives still \_\_\_\_\_ their female counterparts, but the gender gap is slowly narrowing.

**Read the passage.**

**Beyond 100 (by Stephen S. Hall)**

Our genes harbor many secrets to a long and healthy life. And now scientists are beginning to uncover them.

**A** On a crisp January morning, with snow topping the distant Aspromonte mountains and oranges ripening on the nearby trees, Giuseppe Passarino guided his silver minivan up a curving mountain road into the hinterlands of Calabria, mainland Italy's southernmost region. As the road climbed through fruit and olive groves, Passarino—a geneticist at the University of Calabria—chatted with his colleague Maurizio Berardelli, a geriatrician. They were headed for the small village of Molochio, which had the distinction of numbering four centenarians—and four 99-year-olds—among its 2,000 inhabitants.

**B** Soon after, they found Salvatore Caruso warming his 106-year-old bones in front of a roaring fire in his home on the outskirts of the town. Known in local dialect as "U' Raggiuneri, the Accountant," Caruso was calmly

## LEVEL 4 Assessment

reading an article about the end of the world in an Italian version of a supermarket tabloid. A framed copy of his birth record, dated November 2, 1905, stood on the fireplace mantle.

- C** Caruso told the researchers he was in good health, and his memory seemed prodigiously intact. He recalled the death of his father in 1913, when Salvatore was a schoolboy; how his mother and brother had nearly died during the great influenza pandemic of 1918-19; how he'd been dismissed from his army unit in 1925 after accidentally falling and breaking his leg in two places. When Berardelli leaned forward and asked Caruso how he had achieved his remarkable longevity, the centenarian said with an impish smile, "*No Bacco, no tabacco, no Venere*—No drinking, no smoking, no women." He added that he'd eaten mostly figs and beans while growing up and hardly ever any red meat.
- D** Passarino and Berardelli heard much the same story from 103-year-old Domenico Romeo—who described his diet as "*poco, ma tutto*—a little bit, but of everything"—and 104-year-old Maria Rosa Caruso, who, despite failing health, regaled her visitors with a lively version of a song about the local patron saint. On the ride back to the laboratory in Cosenza, Berardelli remarked, "They often say they prefer to eat only fruits and vegetables."
- E** Although eating sparingly may have been less a choice than an involuntary circumstance of poverty in places like early 20th-century Calabria, decades of research have suggested that a severely restricted diet is connected to a long life span. Lately, however, this theory has fallen on hard scientific times. Several recent studies have undermined the link between longevity and caloric restriction.
- F** In any case, Passarino was more interested in the centenarians themselves than in what they had eaten during their lifetimes. In a field historically marred by exaggerated claims, scientists studying longevity have begun using powerful genomic technologies, basic molecular research, and—most importantly—data on small, genetically isolated communities of people to gain increased insight into the maladies of old age. In regions around the world, studies are turning up molecules and chemical pathways that may ultimately help everyone reach an advanced age in good, or even vibrant, health.
- G** In Calabria, the hunt for hidden molecules and mechanisms that confer longevity on people like Salvatore Caruso begins in places like the *Ufficio Anagrafe Stato Civile* (Civil Registry Office) in the medieval village of Luzzi. The office windows here offer stunning views of snow-covered mountains to the north, but to a population geneticist the truly breathtaking sights are hidden inside the tall file cabinets ringing the room, and on shelf after shelf of precious ledgers numbered by year—starting in 1866. Despite its well-earned reputation for chaos and disorganization, the Italian government—shortly after the unification of the country in 1861—ordered local officials to record the birth, marriage, and death of every citizen in each *comune*, or township.
- H** Since 1994, scientists at the University of Calabria have combed through these records in every one of Calabria's 409 *comuni* to compile an extraordinary survey. Coupling family histories with simple physiological measurements of frailty and the latest genomic technologies, they set out to address fundamental questions about longevity. How much of it is determined by genetics? How much by the environment? And how do these factors interact to promote longevity—or, conversely, to hasten the aging process? To answer all those questions, scientists must start with rock-solid demographic data.

LEVEL 4 Assessment

**Choose the correct answers.**

17. Which of the following would be an appropriate alternative title for this article?
  - a. The Diet of Longevity
  - b. Life in Calabria
  - c. Secrets to a Longer Life
  - d. The World's Oldest People
  
18. Which of the following is NOT true about Salvatore Caruso?
  - a. He didn't eat much red meat.
  - b. He lived in Molochio.
  - c. He served in the Italian army.
  - d. His parents both died before 1919.
  
19. Which of the following best describes Domenico Romeo's diet?
  - a. He usually had big meals.
  - b. He had a varied diet.
  - c. He never ate red meat.
  - d. He ate mostly figs and beans.
  
20. What is the main purpose of paragraph E?
  - a. To give reasons why their diets were restricted.
  - b. To show how there is a relationship between a restricted diet and longevity.
  - c. To explain that a restricted diet and longevity may not be strongly linked.
  - d. To give details about new research into longevity.
  
21. When did the registry office in Luzzi begin keeping extensive records as required by the Italian government?
  - a. 1861
  - b. 1866
  - c. before 1861
  - d. around 1994

**Read the passage.****Longevity and Laron Syndrome**

- A** To uncover the secrets of long life, researchers are increasingly turning to genetics for answers. One interesting genetic case study is Nicolas Añazco—known as *Pajarito*, or “Little Bird” in Spanish.
- B** In many ways, Little Bird is a typical teen. He plays video games and soccer. Living with his family in a four-room home in the rural uplands of Ecuador's El Oro Province at the foot of the Andes, he helps his father process the sugarcane that surrounds his house.
- C** Little Bird became grudgingly aware of the reason for his nickname when he was just six. He recalls meeting his classmates on his first day of school: “I realized that I was going to be smaller than them.” Much smaller, in fact, because of a rare mutation in one single gene. Today, aged 17, Little Bird looks like an eight-year-old and is only three feet nine inches (114 cm) tall. Little Bird’s condition, known as Laron syndrome, slows down growth. But it may also protect him from some of the serious diseases that typically ravage humans as they age.
- D** One afternoon, Little Bird and three other Laron syndrome men from the region agreed to an interview at the back of an appliance store, their feet dangling in child-sized shoes from their chairs. Joining Little Bird were Freddy Salazar, 39 years old and three feet ten inches (117 cm) tall, Victor Rivera, 23 years old and slightly taller than Salazar, and Luis Sanchez, the oldest member of the group at 43. When someone asked if the four men were aware of the latest scientific reports about their condition, the response was a chorus of high-pitched laughter. “We are laughing,” explained Sanchez, “because we know we are immune to cancer and diabetes.”
- E** That somewhat overstates the scientific results to date, but it does reflect a growing interest among researchers to investigate the genomes of unusually healthy or long-lived groups of people, whose isolation—geographical or cultural—makes it easier to find genetic clues to longevity, disease resistance, and good health at an advanced age.
- F** One such scientist is Little Bird's physician, Jaime Guevara. Fascinated by the region's “little people,” as they have been known since before their condition even had a name, he began to study them around 1987. After a quarter century of research, he identified about a hundred people with the Laron mutation scattered throughout the hills of southern Ecuador.
- G** Meche Romero Robles, a 40-year-old single mother, is also one of Guevara's patients. Just over four feet tall, Robles lives with her teenage daughter, Samantha, in a simple home. “Look at her!” Guevara cried, “She should have diabetes. Given her body mass index, she must have diabetes. But she doesn't.” Even to a nonmedical eye, Meche appeared overweight. Like so many little people, however, she remained free of diabetes. “I realized this in 1994,” Guevara said, “but no one would believe me.”
- H** That began to change in 2005, when Valter Longo, a cell biologist at the University of Southern California who studies aging, invited Guevara to the University of Southern California (USC) to describe his research. Longo

## LEVEL 4 Assessment

thought Guevara's patients might represent an experiment of nature—an isolated population with a condition that linked genetics to longevity.

- I** A decade earlier, Longo had begun to manipulate the genes of simple organisms like single-celled yeast, creating mutations that allowed them to live longer, and he wasn't the only one experimenting with these processes. In 1996 Andrzej Bartke, a scientist at Southern Illinois University, tinkered with mouse genes associated with growth. He showed—not surprisingly—that shutting down the growth hormone pathway resulted in smaller mice. What was surprising was that these smaller mice lived longer—about 40 percent longer—than normal mice. Could similar processes be at work in humans?
- J** Guevara and Longo began to collaborate in 2006. Guevara had found a homogeneous group in one geographic location with a known genetic mutation that seemed to block the development of diabetes and cancer in individuals. Within this Laron group, there were no cases of diabetes and only a single, nonlethal instance of cancer. In a control group of people the same age living in the same area, Guevara and Longo found that five percent developed diabetes and 20 percent died of cancer. Follow-up experiments conducted by Longo at USC showed that blood taken from the group with the genetic mutation seemed to protect human cells from laboratory-induced cancers. What was the magic ingredient in their blood?
- K** "Nothing," Longo says. Nothing? In fact, it was the absence of something—a hormone known as IGF-1. The blood was protective, Longo says, because it had unusually low levels of IGF-1, which plays an important role in childhood growth, but which has also been implicated as an accelerant of cancers and a powerful regulator of metabolism. Could controlling the presence of one hormone in human blood postpone the diseases of old age? It's probably not quite that simple, but IGF-1 keeps popping up in longevity research.

**Choose *True*, *False* or *Not Given*.**

22. Due to his genetic condition, Little Bird is unable to play sports or do physical work.
- True
  - False
  - Not Given
23. Victor Rivera is taller than Little Bird.
- True
  - False
  - Not Given
24. Laron syndrome is named after the scientist, Zvi Laron, who first studied it.
- True
  - False
  - Not Given

LEVEL 4 Assessment

25. Andrzej Bartke's research found a connection between growth hormones and longevity in mice.
  - a. True
  - b. False
  - c. Not Given
26. In the group of people with Loran syndrome studied by Guevara, none had developed cancer.
  - a. True
  - b. False
  - c. Not Given

**Read the statements. Choose *Answered* or *Not Answered*.**

27. What hormone is found in unusually low levels in the blood of people with Laron syndrome?
  - a. Answered
  - b. Not Answered
28. Are there any health conditions or diseases that people with Laron syndrome might be susceptible to?
  - a. Answered
  - b. Not Answered

**Choose the most suitable option to complete each sentence.**

29. As the evidence \_\_\_\_\_, Laron syndrome is caused by a recessive mutation in a single gene.
  - a. shows
  - b. showing
  - c. shows that
30. Longo \_\_\_\_\_ that Guevara's patients might represent an experiment of nature.
  - a. supports
  - b. suggests
  - c. undermines
31. The experiments Longo carried out at USC \_\_\_\_\_ the idea that genetic mutations can extend an organism's lifespan.
  - a. show
  - b. support
  - c. suggest



LEVEL 4 Assessment

32. The \_\_\_\_\_ of these findings is that controlling the presence of one hormone in human blood may postpone the diseases of old age.
- research
  - evidence
  - implication
33. The data released previously \_\_\_\_\_ that exposure to nature and green spaces was linked to better mental health.
- suggest
  - suggested
  - suggesting
34. The results of the \_\_\_\_\_ carried out last month showed that young people were increasingly turning their backs on brands that were not inclusive.
- survey
  - evidence
  - question

**Read each sentence. Decide whether the topic is suitable for an argumentative essay. Choose *Yes* or *No*.**

35. Sugar should be taxed at a higher rate than it currently is to combat the obesity crisis.
- Yes
  - No
36. Governments must halt genetic engineering until international laws are in place to control this field of medicine.
- Yes
  - No
37. Many people feel compulsory vaccination programs go against their individual freedoms.
- Yes
  - No
38. E-cigarettes are growing in popularity around the world.
- Yes
  - No

## LEVEL 4 Assessment

39. Animal testing is becoming much less common due to public outrage against the practice.
- a. Yes
  - b. No

**Read each sentence. Decide which supporting sentence best supports the argumentative position. Choose the correct answer.**

40. The government must aim to have all women give birth in hospitals by the end of this decade.
- a. Home births are a safe and empowering option for low-risk pregnancies.
  - b. Medical facilities offer immediate access to clinical interventions which can reduce complications.
41. Countries should ban animal experimentation for all products, including medicine and drugs.
- a. Advancements in alternative testing methods and improvements in technology are making it unnecessary to continue animal testing.
  - b. Animal testing has long been the safest way to ensure the safety and efficacy of new medicines.
42. The government should introduce a weight tax to cover the increased medical costs caused by the obesity crisis.
- a. Imposing higher taxes on obese individuals may lead to discrimination and stigmatization, and will have no effect on the complex issues surrounding weight management.
  - b. Higher taxes for obese individuals could incentivize healthier behavior and offset the additional healthcare costs associated with obesity-related diseases.
43. Combat sports like boxing should be banned because of the long-term health risks they pose.
- a. There is evidence that boxing has been a popular sport since the third millennium B.C.E..
  - b. Punches to the head are common in combat sports, and can lead to serious eye and brain injuries.
44. There should be mandatory physical education classes at least twice a week in schools.
- a. While implementing mandatory physical education in schools improves overall health, it can lead to injuries.
  - b. Regular sports in schools promotes a healthier lifestyle, reduces childhood obesity rates, and instills lifelong habits of regular exercise.

LEVEL 4 Assessment

**You are going to write an argumentative essay on the following topic.**

45. Write about one of these two topics.

**Topic 1:** The advertising of junk food on television and social media should be completely banned.

**Topic 2:** Body mass index (BMI) should not be used as a measure of health for young people.

**A. OUTLINE Plan an outline for your argumentative essay.**

Write your thesis statement supporting or arguing against the motion.

Take notes about the first argument supporting your thesis.

Take notes about the second argument supporting your thesis.

## LEVEL 4 Assessment

Take notes about the third argument supporting your thesis.

**B. Think of some words and phrases you can use in your argumentative essay. Write them in the box.**

The words and phrases below can be useful when writing an argumentative essay.

- *This essay argues that ...*
- *I disagree with ...*
- *I agree that ...*
- *According to ...*

**C. Write your argumentative essay based on your outline. Use the model to help you. Remember to use the vocabulary you wrote down.**

**Model:**

*In school, I was told that according to my body mass index (BMI), I was almost overweight. This was despite the fact that I ate healthily and exercised regularly. Still, I felt embarrassed and tried to lose weight. However, despite my best efforts, I failed. Many years later, I learned about BMI's unreliability. It is often misleading and should not be used for young people for two main reasons: it does not account for people's ethnic backgrounds, and it is particularly inaccurate for teens undergoing puberty.*

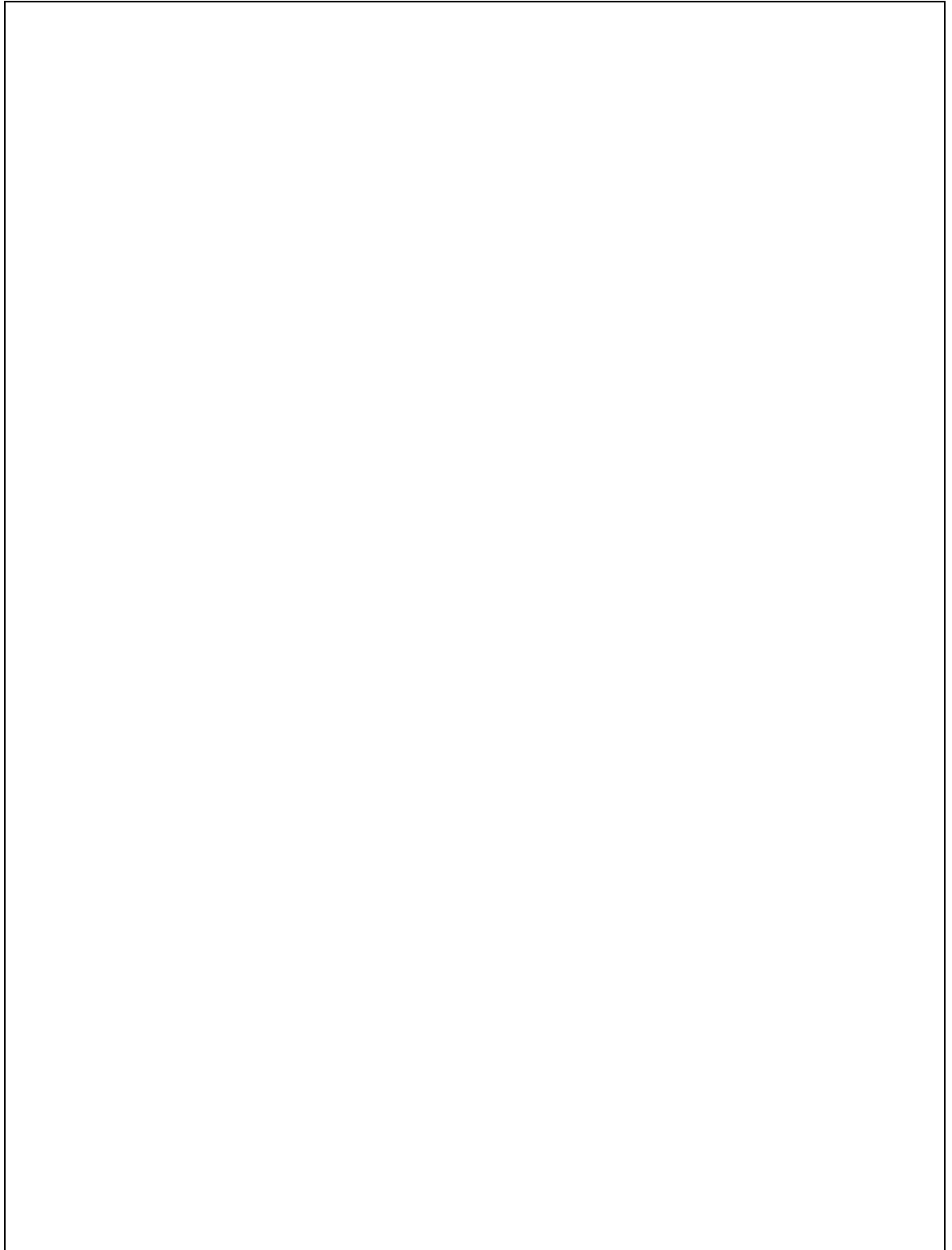
## LEVEL 4 Assessment

*First, BMI is not a reliable measure for people of different ethnic backgrounds. It was created primarily for white European adults and does not take into account the different body frames of other groups—particularly people of African or South Asian descent. While the BMI does seem to make health assessment easier and quicker, it is by no means a good enough indicator to be applied to people universally, regardless of ethnicity. It is a shortcut that can easily lead to wrong conclusions.*

*Second, BMI is especially unreliable for children undergoing puberty. During puberty, children of the same age with the same BMI can differ vastly in terms of muscle, bone, and fat levels. This in itself is proof of BMI's inaccuracy. Furthermore, children often gain weight just before a growth spurt, so a high BMI at certain times can be misleading. Puberty is a period of extensive and unpredictable physical change. BMI during this period is therefore not an indicator that can be trusted or relied upon.*

*BMI may be a quick and convenient indicator, but it falls short in terms of accuracy. It does not work well for different ethnic groups, and it can be misleading during puberty. I therefore feel strongly that it should not be used for children and teens. We need to employ better health assessment techniques, even if they are less convenient.*

LEVEL 4 Assessment



(12 points)