

UNIT 4- HEALTH SCIENCES



READING I- How Can You Boost Your Energy Levels?

PREVIEW THE READING

A- Quick Discussion



Discuss these questions with your classmates.

1. When do you feel like you have the most and least amounts of energy?
2. What kinds of things give you energy? What makes you feel tired?
3. Look at the photo. What are these people doing to energize themselves? Do you think they all have the same level of energy? Why or why not?

B- Preview What gives people more energy? Check (✓) what you think are the three best ways for people to increase their energy levels. What else might give people more energy?

- Eating some chocolate
- Running 10 kilometers
- Drinking a glass of water
- Doing the dishes
- Watching television before bed
- Taking an afternoon nap

C- Vocabulary Complete each sentence with a word or phrase from the box. You may need to change the form of the word or phrase to make the sentences grammatically correct.

alleviate(v.)
calorie (n.)
chronic (adj.)
conducive (adj.)

depletion (n.)
derive from (v. phr.)
fatigue (n.)
hydrated (adj.)

immune system (n.)
meditation (n.)
resilience(n.)
sluggish (adj.)

1. Eating too much food, particularly junk food, can make you feel _____ and have trouble concentrating.
2. Eating healthy food, getting plenty of exercise, and sleeping enough hours are all _____ to feeling more energetic and happy.
3. A good diet and plenty of rest can help _____ feelings of being tired all the time.
4. Energy _____ candy and chocolate is released quickly, and we often feel tired again soon.
5. Some people use _____ to boost their energy levels and maintain a feeling of calm and low stress.
6. Drinking enough water every day will keep you _____ and prevent excessive sleepiness.
7. Severe _____ can be caused by too much exercise or a poor diet, resulting in the desire to sleep all the time.
8. Stress can reduce the effectiveness of your _____ and make you feel tired.
9. My friend is tired all the time because he has a _____ disease that affects his energy levels.
10. People who develop _____ to anxiety and recover quickly from stress may also have better energy levels.
11. Working for long periods of time without a break can lead to energy _____ and poor performance.
12. According to government of Canada, an active 30-year-old man needs about 3,000 _____ in order to have enough energy for his daily tasks.

How Can You Boost Your Energy Levels?

1 Do you often feel tired and wish you could be more energetic and able to take better advantage of your time? The reasons you may feel tired and depleted of energy can vary from simple explanations, such as lack of sleep or dealing with stress at work, to much more complex ones, such as living with a **chronic** condition or following treatment for a chronic disease. While dealing with **fatigue** caused by a chronic condition may be more difficult, forming some good lifestyle habits can help you maximize your energy levels on a day-to-day basis.



To get more energy, integrate whole grains, nuts, fruit, and leafy greens into your diet.

1 Pay attention to diet

2 One of our main sources of energy is, of course, the food we eat. So, if we want to keep our energy levels up, we must eat healthfully and try to integrate the most nutritious foods into our diets. We measure the energy that we can **derive from** foods in **calories**. If we don't consume enough calories, our bodies may feel tired, as they don't have enough "fuel" to run on. At the same time, however, if we get too many calories, there's a system overload, and we may end up feeling **sluggish**. So, in order to feel fresh and ready for action, we must learn to maintain a balance in terms of our calorie intake.

3 What are some specific foods that you might want to add into your diet at a time when you feel tired and in urgent need of an energy boost? Harvard specialists advise going for foods "with a low glycemic index"—that is, whose sugar content is broken down by our bodies at a slow rate ("Nine Tips," 2018). This means that energy derived from these foods is released gradually, helping keep us alert for longer. Such foods include whole grains, nuts, and some fruits—particularly grapes, apples, oranges, peaches, pears, and grapefruit—and vegetables and legumes with a high fiber content, including peas, beans, and leafy greens.

4 In addition to food, what people drink, such as water and coffee, also affects energy levels. If you're not feeling at your best, it's important to make sure you stay **hydrated**. Fatigue can be a symptom of dehydration, so making sure that you drink enough water throughout the day could help **alleviate** the feeling of tiredness. However, for so many of us, coffee is the go-to solution when we don't feel as awake as we'd like. The authors of a Harvard Medical School report explain that caffeine—which naturally occurs in coffee, tea, and cocoa—can help improve concentration and render our brains more alert and receptive (Komaroff, 2016). Caffeine also increases your pulse, which may lend you more physical strength for a while. But, the authors caution, these effects may not be seen in habitual drinkers, whose bodies may have built up tolerance to this substance.

2 Do some light exercise

5 Sometimes, in the middle of the work day, I start to feel sluggish and my brain can "shut down." At those times, I find it useful to get up from my chair, stretch a little, walk around the office, and then continue work at my standing desk. A little movement helps revitalize me.

6 As specialists from the Harvard Medical School explain in their dedicated report (Komaroff, 2016), exercise stimulates your body and mind in some vital ways. First, they write, in any form of exercise, at the cellular level, more energy-producing units form in your muscles so that your body may sustain the activity. Exercise also "increases your body's oxygen-carrying capacity" and boosts circulation, so said oxygen will reach and "feed" all your body parts sooner. Moreover, it stimulates the release of stress hormones—in moderation—which make you feel more energized and alert.

7 "But what type of exercise should you do?" ask the report authors, who then go on to explain that, in short, anything will do—just as long as you engage in some kind of physical activity. "You don't have to spend a lot of time worrying about this. When it comes to exercise and energy, it's hard to go wrong—and you don't have to run for miles or work out to the point of exhaustion to start reaping benefits."

3 Put time aside for yoga and meditation

8 Practicing yoga and **meditation** might also help boost your energy levels. This is because these practices focus on techniques—such as mindful breathing—that aim to promote a state of calm. So, if your fatigue is due—at least in part—to increased stress, taking up yoga or meditation as a routine "self-care" approach can help you become more resistant to stressors.

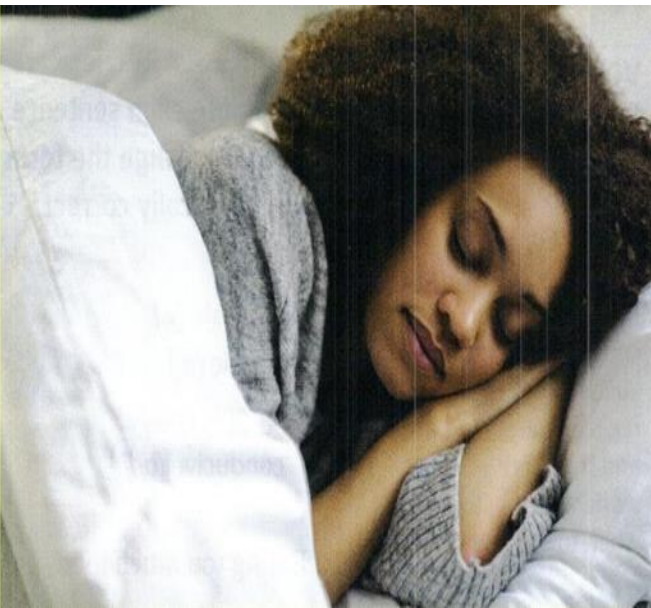
9 People who practice meditation and yoga often seem to have better **immune systems** and to have developed **resilience** in the face of stress and anxiety. Also, engaging in just 25 minutes of yoga or meditation—compared with 25 minutes of quiet reading—can boost people's moods, as well as their energy levels and executive function (Paddock, 2017). A review of studies investigating the health benefits of yoga also concluded that this practice can

improve resilience to stress in people working in fairly high-intensity domains, as well as reduce anxiety and improve the symptoms of depression (Field, 2016).

4 Learn to delegate tasks

10 We might feel stifled by our responsibilities—from the very small daily chores, such as doing the dishes, to the less mundane, such as a vital work project with many ramifications. However, if we don't find a decent strategy to redistribute some of these responsibilities, at least from time to time, it may lead to burnout and a constant sense of fatigue in our day-to-day lives, which is not at all **conducive** to productivity and happiness.

11 Research has shown that people who invest in services that allow them to stop worrying about some of the house chores that they dislike, so that they don't have to deal with the mental and physical overload, have a greater sense of overall well-being (Whillans et al., 2017). "[O]ur research suggests," explains Elizabeth Dunn, a professor in the Department of Psychology at the University of British Columbia in Vancouver, Canada, "people should [...] consider buying their way out of unpleasant experiences" (University of British Columbia, 2017).



5 Don't underestimate sleep

12 Finally, it's vital to make sure that you get enough good-quality sleep at night to prevent fatigue or recover from the effect of tiring or stressful activity throughout the day. Although this may be the most obvious advice, many of us often underestimate the impact that shortened sleeping time, or disrupted sleep, can have on our energy levels, health, and well-being, in general. Research has associated disrupted sleep with neurodegeneration (Musiek, et al., 2018), mental health problems (Franzen & Buysse, 2008), and increased predisposition to worry (Galbiati, et al., 2017). How much sleep we need largely depends on our age and some other factors. However, on average, adults should sleep for around seven to nine hours per night in order to feel refreshed.

13 The Centers for Disease Control and Prevention (CDC) suggest that, to get a good night's sleep, we should form a healthful routine. This includes going to bed at roughly the same time each night and getting up at roughly the same time every morning. They also advise avoiding exposure to bright screens—such as those of smartphones, laptops, or tablets—just before bed, as this interferes with your natural body clock, leading to a state of alertness that will keep you awake even if you are tired and would like to sleep.

14 In short, if you lack the energy that you think you should have, make sure that you familiarize yourself with your own needs and prioritize them. There are no shortcuts for keeping your energy resources well stocked. So, it's best to form healthful habits that will help you cope with stress and avoid energy **depletion**.

WORK WITH THE READING

A- Identify Circle the answer that best completes each statement.

1. The main source of people's energy is _____ .
- | | |
|---------------------------|-----------------------|
| a. the exercise they do | c. the sleep they get |
| b. the chores they finish | d. the food they eat |

2. Exercise stimulates your body and mind by _____.
 - a. relaxing your muscles and their energy-producing units
 - b. boosting blood circulation and the amount of available oxygen
 - c. releasing high levels of stress hormones
 - d. increasing your stress and anxiety
3. Burnout and feeling tired all the time can be the result of _____.
 - a. having too many chores or work projects
 - b. paying other people to do your little jobs around the house
 - c. buying your way out of unpleasant experiences
 - d. redistributing your main responsibilities
4. A healthy routine for getting a good night's sleep includes _____.
 - a. using a smartphone, laptop, or tablet to help you fall asleep
 - b. planning for at least six hours of sleep per night
 - c. going to bed and getting up around the same time every day
 - d. interfering with your natural body clock

B- Identify Correct these false statements with information from Reading 1. Write the number of the paragraph where the correct information is.

1. We need to eat as many calories as possible if we don't want to feel tired all of the time. (Paragraph:____)

2. When we feel tired, we should eat foods with a high glycemic index so that the sugar content is broken down quickly and ready to be used by our bodies. (Paragraph:____)

3. People who drink a lot of coffee are very sensitive to caffeine, and a small amount helps improve concentration and alertness. (Paragraph: ____)

4. If people want to feel energized by physical activity, they need to run very far or work out until they are tired. (Paragraph: ____)

5. Reading for 25 minutes is better than doing yoga for 25 minutes if you want to improve your mood, energy level, and ability to think clearly. (Paragraph: ____)

6. People who do their own chores have a greater sense of well-being compared to people who pay for services to do the chores they don't like. (Paragraph: ____)

7. Everyone needs the same amount of sleep each night if they want to feel refreshed. (Paragraph: ____)

8. Using a bright screen just before bed helps your natural body clock and creates a state of relaxation. (Paragraph: :____)

C- Explain Answer these questions to complete a set of notes based on information found in the reading.

Pay attention to diet

- 1) What happens if we don't eat enough calories?
- 2) What happens if we eat too many calories?
- 3) Why is hydration important?
- 4) How does drinking coffee affect people?

Do some light exercise

- 1) What does exercise produce in your muscles?
- 2) What does exercise improve your body's ability to do?
- 3) How do moderate amounts of stress hormones affect you?

Put time aside for yoga and meditation

- 1) How do yoga and meditation boost energy levels?
- 2) What can yoga or meditation do if you feel tired because of stress?
- 3) How can yoga help people with high-intensity jobs?

Learn to delegate tasks

- 1) What happens to people if they can't deal with their responsibilities?
- 2) What did Elizabeth Dunn say about improving a sense of well-being?

Don't underestimate sleep

- 1) Why is it important for people to get enough sleep?
- 2) What are some possible results from disrupted sleep?
- 3) What can healthful habits help you do?

D- Identify Complete this chart for Reading 1 with the missing cause or effect.

CAUSE	EFFECT
1. eat too many calories	system overload and sluggish feeling
2. dehydration	
3. caffeine in coffee, tea, and cocoa	
4.	temporary increase in physical strength
5.	increased circulation and oxygen-carrying capacity
6. techniques such as mindful breathing	
7. 25 minutes of yoga or meditation	
8.	burnout and constant fatigue
9. seven to nine hours of sleep	
10.	state of alertness and inability to sleep



WRITING I

GRAMMAR

Verbs of Cause and Effect

Writers use certain phrases to show the relationship between the causes of a problem and its effects. Look at the sentences below.



CAUSE	LINKING VERB OR PHRASE	EFFECT
Dehydration can	lead to cause result in bring about contribute to be a factor in be responsible for	fatigue.
EFFECT	LINKING VERB OR PHRASE	CAUSE
Fatigue can	be caused by be due to be the result of arise from develop from stem from be brought about by	dehydration.



A- Choose the correct linking word or phrase to complete the sentences.

- Deforestation **results in/ results from** animal extinction and loss of biodiversity.
- Demand for food and energy are expected to rise **is responsible for/due to** the increase in the world's population.
- Burning fossil fuels **leads to/arises from** an increase in CO₂ in the atmosphere.
- Flooding, heat waves and other extreme weather **bring about /are caused by** climate change.
- Reducing the amount of meat we eat may **be a factor in/ stem from** lower greenhouse gas emissions.
- Submerged islands could **be the result of/ cause** rising sea levels.

B- In these sentences, the cause is the subject. Complete the sentences with the correct form of the given key words. Add necessary prepositions.

- Tiredness and stress _____ many traffic accidents. (responsible)
- Greenhouse gases _____ global warming. (result)
- A good diet _____ excellent health. (contribute)
- Poverty _____ much of the crime in our society. (factor)
- Unfortunately, Eric's carelessness _____ his injury yesterday. (bring)
- The poor economy _____ the failure of the company last year. (lead)

C- In these sentences, the effect is the subject. Complete the sentences with the correct form of the given key words. Add necessary prepositions.

1. Sylvie's good health _____ her excellent eating habits. (due)
2. Last night, the hotel fire _____ an electrical problem. (cause)
3. My fight with my brother _____ a misunderstanding. (arise)
4. The high price of gas _____ a petroleum shortage last year. (bring about)
5. The success of his recent book _____ the action-packed plot. (develop)
6. Harry's love of history _____ a childhood trip to the museum. (stem)

D- Combine the phrases (cause, effect, and collocation) into one sentence. Change the verbs and nouns as necessary to create a grammatical sentence.

1. not get enough quality sleep / feel tired all the time / result from
Feeling tired all the time results from not getting enough quality sleep.
2. a sense of fatigue / not drink enough water throughout the day / can result from
3. poor time management / burnout and feeling tired all the time / may lead to
4. regular exercise/ positive changes in brain chemistry / can contribute to
5. a lack of daylight during winter / changes in the body's melatonin levels / may be caused by
6. drink a cup of coffee / feel more awake and alert / can result in

CAUSE AND EFFECT ESSAY

What is a Cause-and-Effect Essay?

A cause-effect essay tells how one event (the cause) leads to another event (the effect). The cause and effect essay explains what happens and why it happens. The essay explains the cause and effect and examines the connections between them. In this essay, writers focus on what causes something (why it happens) or what the effects are (the results). Your essay should be coherent. Some common principles of organization for the cause and effect essay are order of familiarity, order of interest and order of importance. Your essay should follow a logical pattern of organization.

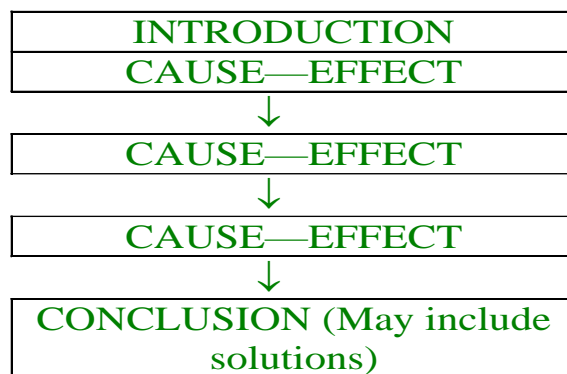
How is a Cause-Effect Essay Organized?

Block Organization

In block organization, you first discuss all the causes as a block in one, two, three, or more paragraphs (depending on the number of causes). Then you discuss all the effects together as a block. You can discuss either causes or effects first. Of course, you can also discuss only causes or only effects. In block organization, a short paragraph often separates one major section from another major section. This paragraph is called a transition paragraph. Its purpose is to conclude one section and introduce another section. You do not always have to write a transition paragraph.

Chain Organization

The other organizational pattern is **chain organization**. In this pattern, causes and effects are linked to each other in a chain. One event causes a second event, which in turn causes a third event, which in turn causes a fourth event, and so on. Each new cause and its effect are linked in a chain.



Strong Thesis Statement

A strong thesis statement for a cause-effect essay indicates whether the essay focuses on causes or on effects. Sometimes the thesis statement uses the words cause(s) or effects(s), but this is not necessary if either the cause or the effect is implied in the statement. In addition, a thesis statement sometimes includes a number, such as three causes or two effects, but this is also optional.

The thesis can be implied or stated.

For a focus-on-causes essay:

Implied Example: Young people choose to go to university for many reasons.

Stated Example: Young people choose to go to university for many reasons, such as moving away from home and a new life.

For a focus-on-effects essay:

Implied Example: Unemployment can have terrible effects on individuals.

Stated Example: Unemployment can have terrible effects on individuals, including financial and psychological difficulties.

	Example thesis statement
On causes	<p>Many students prefer staying in dormitories for three important reasons.</p> <p>The increase in obesity in the world is due to irregular lifestyle, cheap fast food, and stress.</p> <p>There are two main reasons why people travel; to see new places and to meet and make friends.</p>
On effects	<p>This essay will discuss the effects of watching too much TV on children's family life, interpersonal skills, and school life.</p> <p>The purpose of this essay is to discuss the physical, psychological, and economic effects of alcoholism.</p> <p>The purpose of this essay is to discuss the three main effects of entering a university which are missing old friends, learning how to survive during university, and developing responsible behavior which must accompany university studies.</p>
On Both Causes and Effects	<p>There are many causes of doing exercise and these causes result in many effects.</p>

Write a thesis statement for each topic. When you finish, compare your answers with a partner's.

1. the causes of shopping online

2. the effects of violent video games

3. the causes and effects of smoking



The following example is an outline for a **cause and effect essay** about fast food.

- **Introduction:** In the past, people in many countries used to eat healthy, freshly prepared food with their families at home.
Thesis statement: There are many reasons why this change has occurred, but this essay will also outline the serious effects of this move towards fast food on individuals and society.
- **1st body**
Topic Sentence: There are two main reasons for the popularity of fast food.
Supporting Ideas
the change in lifestyle
 - working long hours, shifts, or extended school days
 - women are working
 - do not have time to prepare foodAdvertising
 - all forms of media
 - the Internet and satellite television
 - new products and different kinds of fast food.
- **2nd body**
Topic Sentence: The relatively new eating habits can have some serious effects on people.
Supporting Ideas
health
 - becoming obese
 - less productive
 - have diseasethe loss of the family tradition of eating together.
economy
 - more expensive than cooking
 - franchises of foreign corporations
- **Concluding Sentence:** Although fast food is convenient and tastes very good, it can have serious health and social effects.

FAST FOOD: BEFORE AND AFTER

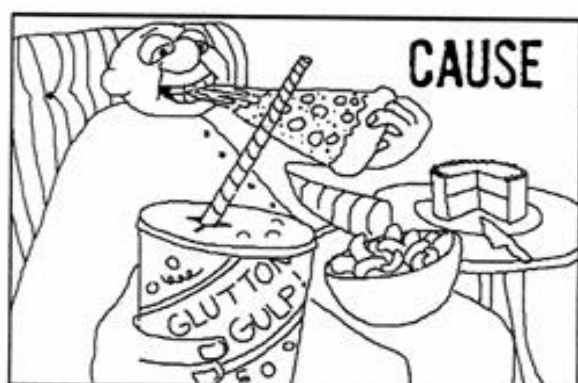
In the past, people in many countries used to *eat healthy, freshly prepared food* with their families at home. Today, **however**, many people, particularly young people, prefer to *eat fast food* such as *hamburgers, fried chicken, or pizza*. There are many causes of this change and these causes result in many serious effects on individuals and society.

There are two main reasons for the popularity of fast food. *One of the reasons* is the change in lifestyle. Many people in many countries are working long hours, shifts, or extended school days. **That's why**, they don't have time to *prepare good food*. Women are now working in developing countries, and *this can result in* the fact that they have less time to prepare *family meals*. *The second reason* is advertising. Today's free-market countries use all forms of media such as the Internet and satellite television, and people like to try new *products* and different kinds of *fast food*.

These relatively new eating habits can have some serious effects on people. *One effect* is on *health*. Many individuals are becoming *obese*. These people will be less productive and have conditions such as heart disease and diabetes. *Another result of fast food culture* is the loss of the family tradition of *eating together*. Children and adults rarely *eat together* now, and **thus** get less opportunity to talk. *A further effect* is on the *economy*. **Although** *fast food* is not very expensive, it is more expensive than *cooking* properly for yourself. Many of *the fast-food companies* are franchises of foreign corporations, so profits leave the country.

In conclusion, although fast food is convenient and tastes very good, it can have *serious health and social effects*. People should learn to choose *fast food* carefully and remember the pleasure of *eating good food* in good company.

(300 words)





The following example is an outline for a **cause essay** about the reasons for car accidents.

- **Introduction:** For many people, driving a vehicle is an everyday activity.
Thesis statement: The three main causes of car accidents are poorly trained drivers, distracted drivers, and impaired drivers.
- **1st body**
Topic Sentence: One cause of car accidents is poorly trained drivers.

Supporting Ideas
 - the rules drivers don't follow
 - the road signs drivers don't obey
- **2nd body**
Topic Sentence: Distracted drivers are another cause of car accidents.
Supporting Ideas
 - performing other tasks
 - talking on cell phones or putting on make up
- **3rd body**
Topic Sentence: A final cause of car accidents is impaired drivers
Supporting Ideas
 - the influence of alcohol
 - the influence of drugs
 - impair the driver
 - make the driver sleepy
- **Concluding Sentence:** In conclusion, accidents are caused by many things; however, three of the most significant causes are poorly trained drivers, distracted drivers, and impaired drivers.

CAR ACCIDENTS

For many people, *driving* a vehicle is an everyday activity. People rely on their *cars* to get to work, school, and other important places. **However**, *driving* can be *dangerous*, **and although** weather conditions can contribute to accidents, the behaviour of *drivers* is most often the *cause of accidents*. The three main causes of car accidents are poorly trained drivers, distracted drivers, and impaired drivers.

One cause of car accidents is poorly trained drivers. *Drivers* who don't follow the *rules* of the road can put themselves and others at risk. **For example**, *drivers* who exceed the *speed limit* will have a more difficult time stopping or turning **if** something, such as an animal, crosses their path. **In addition**, there are road signs that *drivers* need to recognize, understand, and *obey*, but *poorly trained drivers* can't recognize and *obey these rules* **and** this can *lead to* accidents. *For these reasons, poorly trained drivers can cause accidents.*

Distracted drivers are another cause of car accidents. *Driving* is a task that requires the driver's full attention, so performing other tasks **while** driving can *lead to* an *accident*. **For example**, some people talk on their cell phone or put on make-up, and **since** these activities often require the use of one hand, they take some concentration. **If** a *driver* is doing these things, he or she is not focused on the road. The *driver* then may, **for example**, not notice if a *car* has stopped in front of him or her and collide with that car.

Drivers should wait until they have reached their destination to perform other tasks, **as** such activities often *lead to accidents*.

A final cause of car accidents is impaired drivers. A driver's ability to drive a car is seriously lessened when he or she is under the influence of alcohol, **and** many accidents have been *caused by* people who were driving drunk. Driving while under the influence of drugs is **also** dangerous. Often illegal drugs impair a driver as much as alcohol. Some of these drugs can make the user sleepy, and this state will slow the driver's reaction time to things happening. All of these influences can certainly *lead to* car accidents.

In conclusion, accidents are caused by many things; however, three of the most significant causes are poorly trained drivers, distracted drivers, and impaired drivers. As long as these types of *drivers* remain on the road, *accidents* will happen because *driving* is difficult, and *drivers* should have a responsibility to *drive* with great care and attention.

(419 words)

GUIDED EXERCISE ON CAUSE&EFFECT ESSAY

Put the jumbled paragraphs in order to make a well-developed essay.

Giving with TOMS Shoes

A. _____ In many parts of the world, it is fairly common to see people, especially children, walking without shoes. However, there are many dangers to children when they do not wear shoes. In different parts of the world, many diseases, such as hookworm, can be contracted through the feet. Additionally, you can cut feet on rough terrain or broken glass in some cases, which can lead to infection and risk of death. Finally, some climates are quite cold and the lack of footwear can lead to illness. So, simply owning a pair of shoes helps to maintain a child's health.

B. _____ A second and perhaps more important effect of owning a pair of shoes involves education. In many countries around the world, schools are not free. Parents must pay school fees and provide their children with uniforms, including shoes, in order for them to attend school. In some countries, children are not permitted to go to school if they don't have shoes. Thus, an additional benefit to owning a pair of shoes is that a child will be able to go to school.

C. _____ In 2006, Blake Mycoskie was traveling in South America and noticed that many children there had no shoes. A few months later, TOMS shoes was born. Mycoskie founded TOMS as a for-profit company that donates shoes to people around the world. The approach he uses is simple. He calls it 'One for One'. This means that for every pair of shoes that you buy, TOMS will donate a pair of shoes to someone in need. His company has done very well, and as of 2013, TOMS had given away over 10 million pairs of shoes. Owning a pair of new shoes may not seem like a really big deal to most of us. However, in many poor parts of the world, it is a big deal. Owning shoes can have a great impact on people's health, education, and well-being.

D. _____ In conclusion, Mycoskie saw a need and established a company that is giving as much as it's getting in profits. So, when you purchase a pair of shoes from this company, you, too, are giving to the company. You're also getting back the satisfaction of knowing that someone else is benefiting in many ways from your purchase.

E._____ Finally, when children receive new pairs of shoes, it makes them feel better about themselves. In many cases, this may be the first pair of shoes that the child has ever owned. It may even be the first *new* clothing the child has ever owned. In either situation, this improves a child's self-esteem. Children are thrilled to be able to walk through their villages in their new shoes. An increase in self-esteem is something that is not even measurable.

READING II-

The Scientific Reasons You Feel More Tired During Winter



PREVIEW THE READING

A- Quick Discussion



Discuss these questions with your classmates.

1. Why do you think people feel tired?
2. Do you think people feel more or less tired in different seasons?

B- Preview What do you think the article will say about how winter affects people's energy levels?
Check your answer.

- People feel tired during winter because of the cold weather.
- People feel tired during winter because it is harder to travel around in snow.
- People feel tired during winter because of a lack of sunlight.

C- Vocabulary Here are some words and phrases from Reading 2. Complete each sentence with a word or phrase from the box. You may need to change the form of the word or phrase to make the sentence grammatically correct.

deficiency (n.)

dreary (adj.)

fortified (adj.)

hibernate (v.)

inflammation (n.)

it is possible to (phr.)

nutrient (n.)

optimal (adj.)

rampant (adj.)

sedentary (adj.)

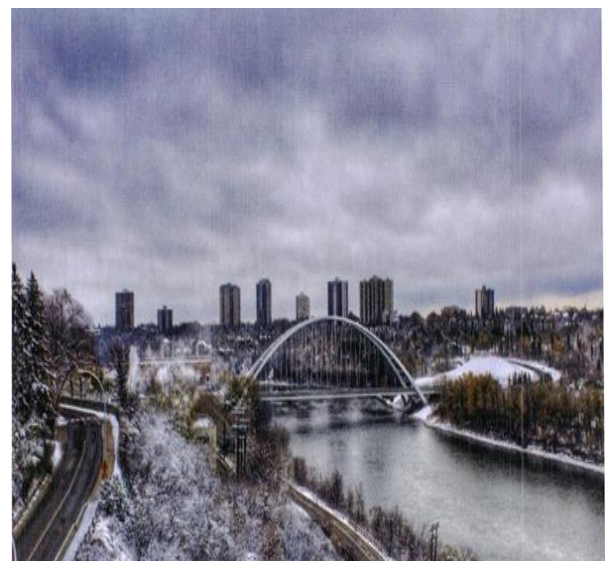
supplement (n.)

there are a number of (phr.)

- _____ things you can do to increase your energy levels during the winter, such as go outside in the sun, eat more fruits and vegetables, and start some light aerobic activity.
- When people don't get enough sunlight, they can suffer from vitamin D _____, which can make them feel tired after exercise.
- If you have a _____ lifestyle, you can gain more energy by getting some light exercise three days a week.
- To get more vitamin D, people can drink _____ beverages, such as cow's milk or soy milk.
- Vitamin D plays an important role in reducing _____, which can be the result of heavy exercise and injured muscles.
- Bears _____ during the winter because it is cold and there isn't much food for them to eat.
- Your body needs lots of _____ during the winter, so it is important to eat plenty of fruits and vegetables.
- _____ increase your levels of vitamin D by going for a walk outside, even on a cloudy day.
- During the winter, feelings of fatigue are _____ because of the dark weather and shorter days.
- People often feel less energetic on a _____ day with a dark sky and rain.
- If you don't have enough vitamin D in your diet, you can take a daily _____ in the form of a pill.
- If people have the _____ amounts of vitamin D, it is easier for them to recover from exercise.

THE SCIENTIFIC REASONS YOU FEEL MORE TIRED DURING WINTER (AND HOW TO COMBAT IT)

1 When the winter months hit, many of us feel the need to **hibernate**. Suddenly, getting out of bed in the morning is a Herculean task. Mid-day fatigue rises to another level. Going to the gym—a task that was easy during the summer and fall—now feels nearly impossible. Is this just your imagination? Probably not. Odds are it is winter-related fatigue. There are scientific reasons people feel more tired during winter than they do during other seasons. The good news is you can take steps to fight the fatigue and stay energetic, even during the darkest days of winter.



People living in northern latitudes are exposed to less daylight in winter.

Less Sun Makes Us More Sleepy

2 Stepping outside on a sunny day is one of life's simple pleasures. It's also something we don't get the chance to do very often during winter. For one, the days get shorter during winter. This is especially true for those living in northern cities. For example, take a city like Cleveland, Ohio. On June 21 (the summer solstice), the sun was in the sky for 15 hours, 10 minutes, and 21 seconds. On December 21 (the winter solstice), the sun was in the sky for 9 hours, 10 minutes, and 11 seconds. That's over six hours of less daylight.

3 While everyone enjoys a nice day, sunlight is closely tied to human biology. Melatonin is a hormone produced by the pineal gland inside the brain. Melatonin regulates sleep and wakefulness. When we're in the dark, our bodies produce more melatonin. Winter is a dark time, so our bodies produce more melatonin in response. This leads to excessive feelings of fatigue and tiredness. According to the Mayo Clinic, "the change in season can disrupt the balance of the body's level of melatonin, which plays a role in sleep patterns and mood" (Mayo Clinic Staff, 2018).

4 Sunlight is also our major source of vitamin D. Human skin creates significant amounts of vitamin D when it's exposed to sunlight. Those who live in northern latitudes tend to have lower vitamin D levels, especially during the winter months. When the weather is cold and the days are short, there are fewer opportunities to get outside. Vitamin D **deficiency** is **rampant** in our society, and not just in colder climates. A recent study found that more than one-third of the student-athlete population at the University of Southern California had low levels of vitamin D (Bachman, 2016).

5 Vitamin D has a huge impact on how we feel. It plays a role in bone health, cell growth, blood pressure, immune function, and reduction of **inflammation**. It also plays an important role in performance and recovery. "Vitamin D is so important for performance. We used to think it only impacted bone health, but more and more studies have shown that it acts like a hormone and actually has a role in muscle function. It's very important for athletes," says Dr. Maren Fragala, Director of Athlete Health and Human Performance for Quest Diagnostics.

6 Vitamin D has been found to impact performance in a variety of ways. A recent study conducted by Precision Nutrition found that when athletes entered a workout with "**optimal** serum vitamin D concentrations," they went on to recover faster and more efficiently (Koslo, n.d.). "More pre-exercise vitamin D meant less post-exercise muscle weakness and better recovery through the entire recovery process. Less pre-exercise vitamin D meant more weakness and worse recovery," the study's authors wrote.

7 A different study, published in the journal PLoS One, found that vitamin D levels were strongly correlated with the performance of professional soccer players (Koundourakis et al., 2014). "Findings suggest that vitamin D levels are associated with the ergonometric evaluation of muscle strength [...] sprinting capacity and VO2 max in professional soccer players," the authors wrote. Low levels of vitamin D increase fatigue and make recovery take longer. No wonder getting to the gym on a regular basis feels so difficult during winter!

Fighting Winter Fatigue

8 **There are a number of** simple steps you can take to boost your energy during the cold, **dreary** months. Getting enough vitamin D is a great start. How much vitamin D do you actually need? The Institute of Medicine recommends 600 International Units (IU) per day for most adults, but many sports dietitians recommend higher amounts for athletes. A recent article from The Wall Street Journal states that "some sports dietitians encourage athletes to get 1,000 to 2,000 IU [of vitamin D] daily" (Bachman, 2016).

9 Sunlight is obviously the best option, but getting enough vitamin D from sunlight is especially tough during winter. According to the National Institute of Health (2016), skin exposed to sunlight through a window does not produce vitamin D. That means you have to actually go outside to collect vitamin D from sunlight. This might sound tough during winter, given that the days are short and the weather is nasty. However, your skin does receive vitamin D even on cloudy days—just not as much as it would on a day with blue skies. If you are able to go for a walk or jog outside a few times a week, that should help.

10 **It is also possible to** get vitamin D from your diet, but relatively few foods contain a significant amount. Examples of foods high in vitamin D include egg yolks, fatty fish, and **fortified** products like cereals and milk.

11 Since adequate amounts of vitamin D can be hard to come by, many take it in the form of a supplement. If you go that route, select a vitamin D3 **supplement**, since that form most closely approximates the vitamin D naturally produced by the body.

12 Besides vitamin D, regular exercise is a surefire way to boost energy levels. This might sound counterintuitive, but research backs it up. A study from the University of Georgia found that **sedentary** adults who engaged in as little as 20 minutes of low-to-moderate aerobic exercise three days a week for six weeks experienced a significant uptick in their overall energy levels (Parker-Pope, 2008). I get that you might not want to drive to the gym in a blizzard and knock out a 60-minute workout. But doing something always beats doing nothing. Winter is a perfect time to use convenient at-home workouts such as yoga.

13 Diet is another important factor. It often feels easier to eat fruits and vegetables during the summer months, but winter is when your body really craves its **nutrients**. Keep your plates colorful and include a variety of produce to help keep your energy levels high.



14 Light therapy lamps (or boxes) are another option. "A light therapy box mimics outdoor light. Researchers believe this type of light causes a chemical change in the brain that lifts your mood and eases other symptoms of seasonal affective disorder," writes the Mayo Clinic (Mayo Clinic Staff, 2016). For people curious about trying light therapy, Amazon offers a wide variety of such products for under \$100. If you're interested in learning more, the Mayo Clinic has an informative page on the topic.

WORK WITH THE READING

A- Categorize Read the statements related to the main ideas in Reading 2. Write *T* (true) or *F* (false).

Then correct any false statements.

- _____ 1. People have more energy when their bodies produce more melatonin during the winter.
- _____ 2. People who live in northern latitudes typically have higher levels of vitamin D during the winter months.
- _____ 3. Having higher levels of vitamin D before exercising helps people have less muscle weakness and better recovery from their workouts.
- _____ 4. Your skin can't produce vitamin D if you are outside on a cloudy day during the winter.

- _____ 5. People can get vitamin D from foods such as egg yolks, fatty fish, fortified cereals, and fortified milk.
- _____ 6. Light therapy lamps are similar to outdoor light, and they can cheer people up during the winter.

B- Identify Write the number of the paragraph in Reading 2 where each detail can be found.

MAIN IDEA	DETAILS	PARAGRAPH
Lack of sunlight causes fatigue	a. Lower amounts of vitamin D can causes fatigue result in muscle weakness and difficulty recovering from exercise.	
	b. The pineal gland produces more melatonin during the winter.	
	c. In northern cities, the days are shorter during the winter.	
	d. People in northern areas usually have lower levels of vitamin D.	
	e. Professional soccer players with higher levels of vitamin D have better performance.	
	f. Vitamin D can act as a hormone and help muscles function.	

C- Identify Use this chart to record notes on the final part of Reading 2, "Fighting Winter Fatigue." Write only the most important details.

MAIN IDEAS	DETAILS
1. Getting vitamin D is harder in the winter (Paragraph 9)	- - -
2. Other sources of vitamin D (Paragraphs 10 & 11)	- -
3. Other ways to boost energy levels in the winter (Paragraphs 12, 13 & 14)	- - -

D- Identify Scan Reading 2 for statistical information. Answer the questions.

1. In Cleveland, how many hours of daylight are there on the summer solstice?
2. In Cleveland, how many hours of daylight are there on the winter solstice?
3. How much vitamin D should most adults have per day?
4. How much vitamin D should athletes have per day?
5. According to a study from the University of Georgia, how much exercise should sedentary adults do to increase their overall energy levels?
6. How much do most light therapy lamps or boxes cost?

E- Explain Based on the information in Reading 2, what answers can you infer to the following questions?

1. Why is it harder for people to go to the gym during the winter?

2. Compared to Cleveland, how much daylight is there in Edmonton, a city 600 kilometers north of the U.S. border, on the summer and winter solstices?

3. Why do athletes need more vitamin D than the average person?

4. Why can't people get vitamin D from sunlight through a window?

5. Why do companies fortify products such as cereals and milk with vitamin D?

6. Why does eating a wide variety of produce help keep your energy levels high?

VOCABULARY SKILL Adjective/Verb + preposition collocations

Some adjectives and verbs are often followed by certain prepositions. These common word combinations are called **collocations**. Being familiar with these patterns can increase your accuracy as you write and speed up your reading comprehension. These charts show some common collocations found in Readings 1 and 2.

Adjective + preposition

<i>Adjective</i>	<i>Preposition</i>	<i>Example</i>
depleted	of	People who feel depleted of energy can try drinking a cup of coffee to wake themselves up.
conductive	to	Doing too much work is not conductive to feeling happy and energized.
ready	for	If you eat a good diet and get plenty of sleep, you'll be ready for your day's activities when you wake up.
curious	about	Mark was curious about light therapy as a cure for his seasonal affective disorder.

Verb + preposition

<i>Verb</i>	<i>Preposition</i>	<i>Example</i>
derive	from	The energy we derive from food is measured in calories.
depend	on	The ideal amount of sleep for people depends on someone's age as well as other factors.

worry	about	Some people worry about the food they eat and its effect on their energy levels.
correlate	with	High levels of vitamin D correlated with better performance for professional soccer players

Complete each sentence with the appropriate preposition.

1. Eating whole grains and vegetables can help you feel alert and ready _____ more active tasks.
2. Fatigue can be caused _____ a chronic condition that is difficult to cure.
3. Jonathan engages _____ 30 minutes of yoga every day, and it helps him feel good.
4. If I quit drinking coffee, I'm worried _____ feeling sleepy at work.
5. Too much melatonin in the body leads _____ a general feeling of tiredness.
6. Watching videos on your smartphone interferes _____ your ability to sleep well.



WRITING II

GRAMMAR

Cause and Effect Connectors

Cause and effect connectors show the exact relationship between your ideas and give your writing coherence.

The **coordinating conjunction** *so* follows the cause and is connected to the effect in a sentence. It does not usually start a sentence in formal academic writing.

Some people do not get enough exercise, **so** they suffer from low energy levels.

The **subordinators** *because, due to the fact that, as, owing to the fact that and since* connect to the cause in a sentence. They are used in dependent (adverbial) clauses. Notice the use of the comma when the dependent clause comes first.

Some people have low energy **because** they do not get enough exercise.

I have low energy levels **due to the fact that** I don't eat enough complex carbohydrates.

Since you feel so tired, you should stay home and rest.

The **transitions** *as a consequence, as a result, because of this, consequently, for this/that reason, thus, hence and therefore* all follow the cause and are connected to the effect.

Some people do not get enough exercise. **Consequently**, they suffer from low energy levels.

Some people do not drink enough water; **for this reason**, they feel tired during the day.

A- Draw an arrow from each cause to its effect.

Cause and Effect

1. She feels tired every day.		She's not getting enough sleep.
2. I feel energetic while I work.		I drink coffee in the morning.
3. Some people eat too many processed and refined foods with a high glycemic index.		Some people suffer from low energy levels and fatigue.
4. There isn't much daylight during winter.		People's bodies produce less melatonin and vitamin D.
5. Habitual coffee drinkers build up tolerance to caffeine.		Caffeine may not help people who drink a lot of coffee to concentrate.
6. He feels burned out and tired all the time.		He is overwhelmed by his responsibilities because he has no one to help him.
7. Marta has a strong immune system.		Marta practices yoga and meditation regularly.
8. Joe always sees problems as opportunities for learning.		He rarely feels depressed or frustrated.

B- Rewrite the sentences in Activity A using these connectors. Change nouns to pronouns as needed to make your sentences sound natural.

1. for this reason
2. because
3. therefore
4. due to the fact that
5. because of this
6. as a consequence
7. since
8. so

GUIDED EXERCISE ON CAUSE&EFFECT ESSAY

Read the essay and match the statements so that they fit in the paragraphs.

Why are Cities Becoming Overcrowded?

The fact that the world's cities are getting more and more crowded is well-known. Cities such as Tokyo, Sao Paolo, Bombay and Shanghai are now considered 'mega-cities', because of their enormous size and huge populations.

1 _____.

2 _____. As a country develops, its cities become the engines of development, thus jobs are available in these areas. Frankfurt, Istanbul, Bombay and Sao Paolo are all the economic centers of their countries. For example, Tokyo was the motor for Japan's rapid economic development in the 1960's and 70's; as a result, its population increased rapidly. People moved to Tokyo because they could find employment and establish economic security for themselves and their families there.

3 _____. Thousands of people migrate to the cities not only for jobs but also for educational and personal reasons. The better universities are always located in big cities and this attracts thousands of students every year, and students stay on and work in the city after they graduate. Moreover, young people will move to the city as the villages and rural areas are more tradition oriented. Therefore, young people believe this is an obstacle to their personal freedom.

4 _____. People will always move to the areas which provide opportunity and to the places which can give them the freedom they desire.

A. In conclusion, economic and cultural factors are the major causes of huge urban population.

B. Second, another factor in the huge increase in urban populations is the socio-cultural factor.

C. There are two main reasons why these and other cities are becoming so crowded; one economic, the other socio-cultural.

D. First, the primary cause of cities becoming so crowded is economic.

SAMPLE STUDENT ESSAY

Young Adults in Charity Organisations

Today, charity activities in various fields are organized in many parts of the world. Thousands of people, voluntarily participate in these events. They carry out their ~~help~~ **organizations** for the benefit of society ~~or different causes~~. Young people as well as old ones attend in these organisations. There are many reasons why young adults attend ~~in it~~ **charities** and these causes result in some effects.

There are four reasons why young people participate in charity events. One of the causes is desire to help. Some young people have a strong relevance to animals and they do whatever **is** needed to make them live a more comfortable life. On the other hand, some of them are susceptible to diseases and they help sick people as long as they can. The second cause is socializing. Young adults have the opportunity to meet new people thanks to charity events. In this way, they expand their group of friends. ~~The~~ another reason is career. Young people add the charity activities on their CVs and thus, they increase their job opportunities because many firms care about ~~the~~ voluntary work ~~which is made with voluntarily~~. The last cause is self-improvement. Young adults want to enhance themselves as much as they can before starting job. That's why, they take part in the charity events.

There are some effects ~~why~~ **of** young **adults' participation** in charity organisations. One effect is sense of responsibility. Thanks to some meetings which are organized, some events and tasks which are assigned, almost many of the young people become more responsible. Being more responsible affect them in positive way. The second **effect** (**result/ outcome**) is spending effective time. Young adults ~~evaluate~~ spend their times positively by working for these events. ~~The~~ another effect is being active in a team. Adopting ~~in~~ **to** teamwork is significant in many issues such as business life and many people are not good at achieving this. Therefore, charity events contribute to improve ~~this~~ **these** aspects. The last effect is development of skills. As a result of attending these organisations, young adults discover their talents or have the opportunity to develop their existing skills.

In conclusion, to contribute the field of interest, to meet new people, to increase job possibilities and to support self-improvements are the major causes ~~of~~ attending **for young adults to take part in** charity events. To ~~evaluate~~ spend time ~~correctly~~ **effectively**, to be able to be more responsible, to discover their talents and to be able to work in a team are the main effects of their participation in charity events.



WRITING TASK 4 : Write a well-organized cause and effect essay about one of the topics below:

1. *Some people are called “energy suckers”. What are the effects of such people on their environment?*
2. *Why do some people constantly have low mood?*
3. *Individuals suffer from sleeping disorders at times. What are some effects of this situation?*
4. *People’s moods and energy levels vary depending on the season. What are the causes of this change and how does it affect their lives?*

EDIT- Complete the self-assessment checklist before you hand in your essay.

SELF-ASSESSMENT	Yes	No
Does the essay include an introductory paragraph, two / three body paragraphs, and a concluding paragraph?		
Does the essay start with an introductory paragraph with a hook and give important background information regarding the topic?		
Is there a clear thesis statement?		
Do the body paragraphs provide details and / or examples?		
Does the concluding paragraph summarize the information you have put in the essay?		
Does the essay include cause and effect verbs, collocations and transitions?		
Does the essay include vocabulary from the unit?		
Did you check your essay for punctuation, spelling, and grammar?		

