

Name:

Class:

Date:

Read the passage and answer the following question(s).

A Cool Process

1

In workout facilities all across the country, professional athletes are taking their training regimens to an all new low—a low that refers to temperature: the athletes are spending time in a capsule the size of an old fashioned phone booth where the temperature is –166 degrees Fahrenheit. The practice is called Whole Body Cryotherapy (WBC), and many athletes are eager to get onboard. They want to see if the promises are real: reduction in muscle inflammation after a hard workout, reduced healing time for injuries, and a quicker return to intense training.

2

The first experiments with WBC began in Japan in 1978. There, a doctor used cold-air exposure to treat some of his patients with rheumatoid arthritis, a disease that results in painful, swollen joints. The doctor found that his patients improved. He also found that during the cryotherapy process, the patients experienced a release of endorphins, a chemical in the body that blocks pain and elevates mood. His patients achieved lower pain levels and happier states of mind. Doctors and other professionals around the world began to conduct their own experiments with WBC.

3

Today, WBC consists of a sophisticated machine and a simple process. The patient puts on a bathing suit, dry socks, and a pair of thick gloves, and steps into the WBC chamber. Then he or she stands still for two and a half to three minutes while sub-zero air cooled by liquid nitrogen blows into the chamber, chilling the skin temperature to 30 degrees F. During this time, the person's blood circulates normally but begins to be drawn toward the core of the body where it becomes enriched with oxygen, enzymes, and nutrients. When the person steps out of the chamber, the skin rapidly returns to its original temperature, and the nutrient-rich blood travels first to any places in the body where there is soreness or injury. According to a SportsMed 2010 professional journal article, WBC has a positive effect on reducing inflammation and promoting recovery.

4

Participants in WBC report a positive experience. "At first I kind of freaked out because it was so cold," laughed an athlete from Dallas who tried WBC for a chronic injury. "As soon as I got out, though, I felt great. After several weeks of doing WBC twice a week, I am no longer in pain!"

5

Though positive stories abound, WBC has some critics. Though the reduced inflammation effect has been proven, there still is not a clear connection to the repair of body tissues, such as muscles and tendons. In other words, just because the swelling goes down does not mean that the tissue is healed and ready for another workout. Others say that there is no reason to spend money on cryotherapy chamber visits when the same effect can be reached through ice packs or ice baths. The cryotherapy experts counter that WBC is faster and more effective than traditional icing. The entire process takes no more than three minutes and lowers the skin temperature more than an ice bath does. Additionally, it is easier to regulate the temperature to which the body is exposed with a WBC chamber.

6

For now, the procedure is gaining in popularity, not just among professional athletes but also among amateurs and people who seek alternative methods to treat pain. Medical literature shows support for the process, and further studies to support the process are ongoing. Any process that gives competitors a mental and physical edge without doing harm is beneficial or—as those in the industry like to call it—cool.

Question #1**Why does the author mention critics of WBC in paragraph 5?**

- A) to emphasize the disadvantages of WBC
- B) to show a need for improving WBC
- C) to present a balanced opinion on WBC
- D) to discredit the critics of WBC

Read the passage and answer the following question(s).

Alfred Nobel's Explosive Idea

A History of the Nobel Prize

1

Since 1901, Nobel Prizes have been awarded each year to people around the world for outstanding achievements in physics, chemistry, physiology/medicine, literature, and peace. That the prizes are awarded internationally in those fields is not surprising. After all, the prizes' benefactor, the scientist Alfred Nobel, considered himself a "world citizen" and held each of those subjects dear to his heart. What is ironic, however, is that a Nobel Prize is awarded each year for fostering peace, as during his lifetime Alfred Nobel earned his fortune by inventing a substance that fostered destruction.

2

Nobel was born in Stockholm, Sweden, in 1833. He was raised and educated mostly in St. Petersburg, Russia, where his engineer/inventor father had moved the family to run a construction and munitions (arms) firms. The success of those businesses meant Nobel's father could educate his children with private tutors. The children's instruction was focused on science and languages. Alfred Nobel was soon fluent in Swedish, Russian, German, French, and English and became enthralled with the subjects of physics and chemistry. He also loved English literature and would go on to write poetry for the rest of his life.

3

Nobel's father also thought his introspective and studious son should "get out more," so he sent him to Sweden, Germany, France, and the United States to further his studies in chemical engineering. In Paris, Alfred Nobel met Ascanio Sobrero, who had recently invented nitroglycerine. Nitroglycerine was a highly explosive liquid much more powerful than gunpowder but also so volatile that it was considered to have no good use. It was unstable and prone to explode at any given moment, making it useless to the construction and drilling firms that needed it most.

4

At his father's firm in St. Petersburg, Alfred experimented with different ways to turn nitroglycerine into a less volatile and more commercially viable explosive. Ultimately he discovered that mixing it with kieselguhr (a soft rock also called "diatomaceous earth") turned nitroglycerine from a liquid into a paste. This paste could be formed into rods which could be inserted into small drilling holes, meaning the explosive could finally be controlled and could be safely used in the fields of construction, drilling, and mining. Nobel patented the concoction in 1867, under the name "dynamite." He subsequently also invented a blasting cap used to detonate dynamite.

5

Dynamite and detonator caps sold well, and Nobel was soon exporting them all over Europe, to Australia, and to the United States. The success of his business meant Nobel eventually opened nearly a hundred laboratories and factories in some twenty countries, including Sweden, Scotland, Germany, and Italy. He also founded a number of companies that remain vital components of the world economy even today. Throughout his life, Nobel continued to study explosives and create

new chemical inventions, including artificial silk and synthetic rubber and leather. By the time of his death in 1896, Alfred Nobel had been awarded more than 350 patents in electrochemistry, biology, physiology, and optics.

6

Nobel received a wake-up call about his possible legacy when his obituary was accidentally published while he was still alive. That obituary noted Alfred Nobel's invention of dynamite and called him a "merchant of death." Nobel had always considered himself a pacifist and never considered dynamite a military explosive, but the obituary made him question how he might be remembered. Soon thereafter, Nobel rewrote his will to use a large portion of his massive fortune to establish the Nobel Prizes. He left some 31 million Swedish kroner for the prizes, an amount that in modern times would equal some 250 million American dollars. Although all of the prizes bring their recipients fame and prestige, it is the Nobel Peace Prize—given for fostering peace in the world—that is perhaps the most well-known, and of which Alfred Nobel would be most proud.

Question #2

Why might the author have included the fact that Nobel wrote poetry throughout his life?

- A) to support the idea that Nobel was more than a scientist
- B) to explain the existence of a Nobel prize in literature
- C) to describe the extent of Nobel's education
- D) to challenge the idea that Nobel's was a legacy of destruction