FOCUS: Identifying correct paraphrases of information from a longer passage.

Continue

DIRECTIONS: Read the passage and then answer the question that follows.

Continue

DNA Fingerprinting

TOEFL iBT® Online Prep Course | Activity 3 | Reading

Reading > Lesson 5: Sentence Restatement Questions > Exercise 5.2

DIRECTIONS: Read the passage and then answer the question that follows.

Continue

The invention of DNA sequencing has affected society in many ways, few more dramatic than those stemming from the development of DNA fingerprinting. DNA fingerprinting arose from the discovery in 1984 that human genes contain short, repeating sequences of noncoding DNA, called short tandem repeat (STR) loci. Furthermore, the STR loci are slightly different for every individual (except identical twins). By sequencing these loci, a pattern unique to each person can be obtained.

Perhaps the most common and well-publicized use of DNA fingerprinting is that carried out by crime laboratories to link suspects to biological evidence--blood, hair, skin, semen, or even items of clothing--found at a crime scene. Thousands of court cases have now been decided based on DNA evidence.

For use in criminal cases, **forensic** laboratories in the United States have agreed on 13 core STR loci that are most accurate for identification of an individual. Based on these 13 loci, a Combined DNA Index System (CODIS) has been established to serve as a registry of convicted offenders. If the **profile** of sequences from a known individual and the profile from DNA obtained at a crime scene match, the probability is approximately 82 billion to 1 that the DNA is from the same individual. In paternity cases, where the DNA of father and offspring are related but not fully identical, the identity of the father can be established with a probability of 100,000 to 1. Even after several generations have passed, paternity can still be implied by DNA analysis of the Y chromosome of direct male-line descendants.

Among its many other applications, DNA fingerprinting is widely used for the diagnosis of genetic disorders, both prenatally and in newborns. Furthermore, by studying the DNA fingerprints of relatives with a history of some particular disorder, it is possible to identify DNA patterns associated with the disease and perhaps obtain clues for eventual cure. In addition, the U.S. Department of Defense now requires blood and **saliva** samples from all military personnel; the samples are stored, and DNA is extracted should the need for identification of a **casualty** arise.

Review | Continue

1 Which of the sentences below best expresses the essential information in the **highlighted** sentence in the passage? *Incorrect* choices change the meaning in important ways or leave out essential information.

○ Locating DNA patterns in a genetic disorder can help researchers develop a cure, identify people who may be affected by the disease, and learn about similar disorders.

○ The history of a genetic disorder may be determined by a careful DNA analysis, which considers the patterns of DNA in a disease as well as the DNA fingerprints of family.

○ DNA fingerprints are useful in uncovering the causes and effects of a number of genetic disorders, including those that are linked to diseases and their possible cures.

○ The likelihood of finding a cure for a genetic disorder is increased by examining genetic information of affected family members and discovering DNA profiles of the disorder.