English for Biomedical Science
READING TASK (Exam Type Multiple Matching: Gap Filling)

Read the text about a recent study on how technology can help diagnose and manage respiratory disease. Parts of the text have been removed. Choose the correct part (A-I) for each gap (1-7). There are two extra parts that you should not use. Write your answers in the spaces provided.

NEW TECHNOLOGY TO HELP DIAGNOSE AND MANAGE RESPIRATORY DISEASE

Monash University researchers in Australia have developed radical non-invasive technology that can be used to diagnose respiratory lung diseases, such as cystic fibrosis and lung cancer, (1) _____.

Researchers have for the first time taken technology usually confined to high-tech synchrotron facilities into a common laboratory setting, and applied new four-dimensional X-ray velocity (XV Technology) imaging to provide (2) _____ .

The study, led by Dr. Rhiannon Murrie from the Department of Mechanical and Aerospace Engineering at Monash University, shows the likely impact this technology has in (3) _____ through non-invasive and non-terminal means.

The technology also has the potential to see (4) _____ .

The study was published in *Scientific Reports* in January 2020.

"The early diagnosis and ongoing monitoring of genetic and chronic lung diseases, such as cystic fibrosis, asthma and lung cancer, is currently hampered by (5) _____," Dr. Murrie said.

"Since pulmonary function tests are measured at the mouth, these tests are unable to localise where in the lung any change in function originates. Additionally, CT scans, while providing quality 3D images, cannot image the lung while it is breathing, which means (6) _____."

Research by Dr. Murrie and the multi-disciplinary collaboration of physicists, engineers, biologists and clinicians are changing this approach to the diagnosis and treatment of lung diseases, by determining (7) _____, acquired through X-ray technology at 30 frames per second. A comparison of a cystic fibrosis mouse model against a healthy control mouse allowed researchers to observe a dramatic reduction in lung aeration in the left lung of the diseased mouse largely due to an obstructed airway path. Researchers were able to pinpoint the exact locations where lung deficiencies were present and the location of the obstruction causing the restricted airflow.

The successful trial opens up avenues for respiratory diseases to be diagnosed, treated and managed earlier than current technology allows and at a lower radiation dose than current CT scanning.

Adapted from https://globalhealthnewswire.com/2020/02/12/new-technology-to-help-diagnose-and-manage-respiratory-diseases/

A. whether treatments for respiratory illnesses are working much earlier
B. the functional lung movement and airflow in live mice

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C. the movement of air through the lungs in real-time
D. and potentially fast-track treatments for patients
E. the inability to capture the spatial distribution of lung function in a breathing lung
F. respiratory disease detection, monitoring and treatment
G. airflow through the airways and into the lung tissue cannot be measured
H. offering potential for faster and more accurate diagnoses
I. high-definition and sensitive real-time images of airflow through the lungs in live organisms

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