

**Question 24** (5 marks)

Design an experiment that tests the effect of opening a window on the blood oxygen saturation level of the people in a room.

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Independent variable	Opening / Closing of the window
Control	Use another room with all windows closed <del>Keep the number of people in the room to be the same</del> while there are people inside the room.
Variables to be kept constant and justification for keeping each constant.	<p>Variable 1: The number of people in the room must be kept constant.              Justification: Blood oxygen saturation level is affected by the number as the rate of decrease in oxygen in the room is quickened if there are more people in the room, slowed if there are less people in the room.</p> <p>Variable 2: <del>Only one window is opened, and other windows must be kept closed.</del>              Justification: Because it is testing the effect of opening only one window to the saturation level, if all other windows are opened, then the effect <del>can</del> can NOT be seen as the oxygen level in the room is constantly high due to the plentiful supply of oxygen from outside, hence that effect of one window is negligible so detect.</p>
Technology used to measure oxygen saturation in blood	<p>Pulse Oximetry</p> <p>a light is shone on a finger (for example), it detects the amount of light passing through the finger as it implies the amount of oxygen that is carried by haemoglobin in the blood.</p>