Spot Robot

Why in News

Recently, researchers from Boston Dynamics, of **Massachusetts Institute of Technology** (MIT - USA) have developed a robot, called **'Spot'.**

They have planned to use it for patients with **Covid-19** symptoms.

Key Points

- **Features:**
  - The robot is controlled by a **handheld device.**
  - It can **walk** on four legs, similarly to a dog, **climbs stairs** and can **traverse rough terrain** with ease and **small enough to be used indoors.**
  - It can **measure skin temperature, breathing rate, pulse rate, and blood oxygen saturation** in healthy patients, **from 2 metres away.**

    It has **four cameras** — one infrared, three monochrome.

- **Working:**
  - **Body Temperature:** The infrared camera measures skin temperature on the face.

    An algorithm then correlates the facial skin temperature with core body temperature.
  - **Breathing Rate:** When a patient wearing a mask breathes, their breath changes the temperature of the mask.

    The infrared camera measures this temperature change, enabling researchers to calculate the breathing rate.
  - **Pulse Rate & Oxygen Level:** When haemoglobin binds to oxygen and flows through blood vessels, it results in slight changes in colour.
    - These changes are measured with the help of the three monochrome cameras, which filter lights of three different wavelengths.
    - Using these measurements, the algorithm calculates pulse rate and blood oxygen saturation.
- **Benefit:**
  - The robot can be deployed in areas where suspected cases of Covid-19 assemble. Healthcare workers can avoid exposing themselves to risk, by manoeuvring the robot to wherever patients are sitting.
  - The robot can also carry a tablet that allows doctors to ask patients about their symptoms without being in the same room.

Source: IE