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Researchers link skin hardness with body temperature

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A group of researchers at the Korea Advanced Institute of Science and Technology (KAIST), South Korea, has found that human body temperature can be more accurately estimated when skin hardness is taken into consideration.

Under the same temperature and humidity, human thermal status may vary due to individual body constitution and climatic environment. Skin temperature and sweat rate fall short of providing an exact estimation of human thermal comfort. An additional indicator is required for enhancing the accuracy and reliability of estimation.

The research team has found out that skin hardness is an additional, independent physiological sign to assess human thermal status more accurately. When people feel hot or cold, arrector pili muscles connected to hair follicles contract and expand. This results in changes in skin hardness, which is measurable. The team has conducted human experiments and verified that skin hardness is effective and independent from the two conventional physiological measurements.

The team intends to develop a sensor that detects skin hardness and applies it to cognitive air-conditioning and heating systems that better interact with humans than existing systems.