

Elevated Body Temperature (EBT) – What is it?

Human body temperature varies from individual to individual. It also varies for each individual. Body temperature is not static.

Body temperature is dependent on the time of day. When you sleep, your body tends to cool. After you wake, and throughout the day your body will tend to warm.

If you were just active, you will have a higher body temperature. Exercise increases internal temperature.

Food and drink can alter body temperature. Alcohol tends to decrease your core temperature.

People of different ages will have different temperatures. Children and babies tend to have higher average temperatures.

Spot/type of measurement can change the measurement result.

EBT (Elevated Body Temperature) is an acronym used in the screening of individuals for fevers.

What is average core body temperature?

Most Americans understand that average body temperature is 98.6 °F. This is a good rule of thumb. Body temperature is usually between 97-99 °F. Of course, there are outliers which are much higher or lower, but this is a typical range in which most people would fall.

Can Forehead Temperature (FT) be converted to core body temperature?

No, it cannot. There is no scientific equation that describes this relationship. Human beings are too variable for a standard equation of that magnitude.

However, clinically precise measurements are not necessary to detect an individual with an EBT. If there is an individual with an illness that causes them a fever, they will experience a rise in core body temperature. FT will rise as well. If you can detect an above average FT, you can likely detect an individual with EBT.

A small scale Transcat study found that individuals will have a center forehead surface temperature under 94.0 °F if they are not experiencing elevated body temperature (N=10). Participants of this study had an average core body temperature of 98.1 °F (measured with an in-ear tympanic thermometer).

When does someone have an EBT? How can I detect it?

Clinically speaking, an adult has an EBT when their core temperature exceeds 100.4 °F. Please refer to proper medical literature for exact guidance on any temperature values.

The only way in which you can precisely determine an individual's elevated body temperature is to measure their temperature with a clinical medical device.

EBT can however be detected during a screening process using a handheld Infrared thermometer.

Why would I want to screen EBT from the forehead with a non-contact IR Thermometer?

It is a non-contact process.

It is a quick measurement.

Instantaneous results.

What is the downside of EBT screening with a non-contact IR Thermometer?

- It is not a precise measurement.
- This is not a clinical device.
- Can generate EBT false positives.

How do these handheld IR Forehead Thermometers measure body temperature, and how do I use them?

These types of devices are typically meant to measure the center of your forehead. Always refer to the literature included with your device for exact guidance.

Point the thermometer at the desired area of the forehead and press the measurement button. The thermometer will display a value. Always repeat the measurement if the result seems suspicious.

When initiating the measurement, the device will measure the surface temperature of the skin. This surface measurement will be adjusted by the device to a 'body' temperature. This 'body' temperature is what the device will display. FT will be lower than core body temperature, so the correction will add several degrees.

The device will use an algorithm to do this forehead-to-body adjustment. Different manufacturers and devices will use different algorithms to make these corrections. It is impossible to know every algorithm for every device.

How do I interpret my Transcat Data Report?

Transcat is using a Traceable Calibration Standard to simulate what we think would represent the forehead of a person with an average core body temperature (98.6 °F) who has a high-side of average FT (94.0 °F).

Your thermometer was tested against this simulated forehead temperature. Based on the measurement that it displays we will suggest you manually offset the reading in your head during use, or we will program the offset into your device if capable. We will indicate what service we have performed.

It is up to you to determine the EBT threshold in which many thermometers allow you to program as an alarm. An auditory, or visual alert from the instrument will indicate to the user that a measurement exceeds the alarm.

An individual screened at or above your alarm temperature would be someone who needs further testing with a clinical thermometer for a more precise temperature measurement.

For more information, please contact us at 800.828.1470 or email us at sales@transcat.com. To view our selection of COVID temperature products, <https://www.transcat.com/products/safety/covid-19-response-equipment>

