

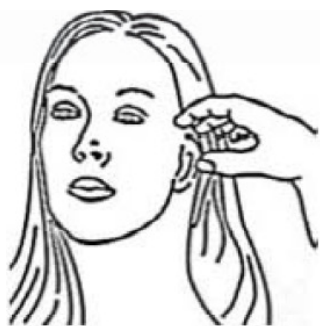
Temporal Artery Thermometry (TAT)

A Did You Know Poster by Diane L Carroll, PhD, RN, and Donna Furlong, RN

BODY TEMPERATURE MEASUREMENT IS AN ESSENTIAL COMPONENT OF MONITORING AND EVALUATING HOSPITALIZED PATIENTS.

- The temporal artery thermometer (TAT) is an infrared device designed for non-invasive assessment of body temperature by scanning the temporal artery.
- The 'gold' standard is to compare the TAT to the Pulmonary Artery Catheter thermometer (PAT), which measures core temperature.
- Accuracy: Research has demonstrated that the TAT is accurate within .1 to .6°F less than the PAT in those with normal temperatures and fevers.^{1,2,4,5} This is within acceptable clinical standards of less than .9°F.³
- Precision: The TAT is precise in 20 percent of the TAT measurements, a rate similar to 19 percent in the oral thermometer.^{2,6}
- In 2004, the TAT was selected as the standard thermometer for adult inpatients at the MGH.
- At MGH, the TAT is set to ARTERIAL or CORE mode, so a normal temperature is 97.4 -100.1°F.
- TAT is set to CORE temperature; therefore results are **NOT** comparable to an oral temperature and are **NOT** interchangeable with oral temperatures.
- Precision of the TAT is driven by proper technique.

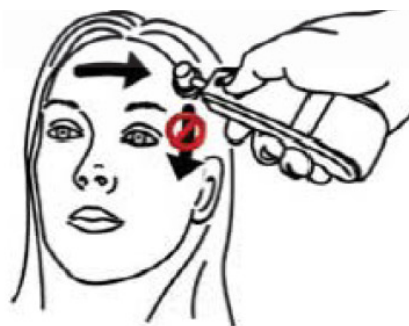
PROPER TECHNIQUE FOR TAKING TEMPERATURE WITH TAT



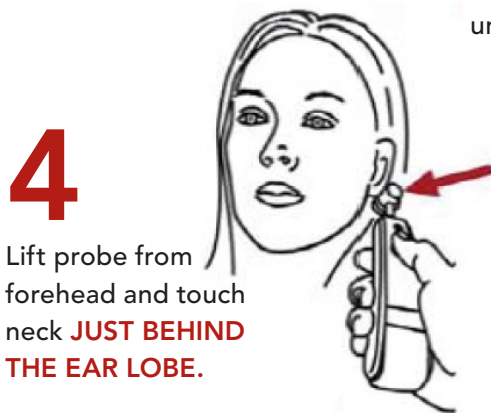
1 Brush hair away if covering the forehead or ear.



2 Place probe **FLUSH** on forehead, depress button and **KEEP DEPRESSED** until you are done.



3 Slide **STRAIGHT** across forehead, to the temporal area **NOT** down the side of the face.



4 Lift probe from forehead and touch neck **JUST BEHIND THE EAR LOBE.**



5 Remove, read and record temperature.

PROPER TECHNIQUE IS REQUIRED FOR PRECISE MEASUREMENT OF BODY TEMPERATURE.

Key Points

- Dirty lens will cause lower temperature readings. (See **CLEANING**).²
- Measure only on exposed skin. Brush hair away from forehead and behind the ear to allow skin to equilibrate to ambient room temperature.
- Scan slowly.

Alternative Sites

Other sites that can be used are:

- Femoral artery – slowly slide the probe across the groin.
- Lateral thoracic artery – slowly scan side-to-side in the area midway between the axilla and the nipple.
- Axilla – insert probe in area of axilla for 2-3 seconds.

CLEANING

The TAT is an optical instrument. Like a camera or eye glasses, a dirty lens will distort the view. If the thermometer is unable to see the heat clearly, it will be unable to measure it accurately, resulting in low readings.

HOW TO CLEAN

1. Hold upside-down to prevent excess moisture from entering the sensor area. If it becomes too wet, you will be unable to take a temperature until it dries.
2. Use a cotton tipped q-tip dampened with alcohol or use an alcohol swab to surround the q-tip.
3. Swirl the q-tip deep into the center of the probe and let dry.
4. TAT needs to be cleaned at least weekly and between patients.⁶



DEFINITIONS

Accuracy: the degree to which an instrument measures the real value. This is assessed by comparing the instrument results to the 'gold' standard. For example, the temperature from thermometer on the pulmonary artery catheter is considered the 'gold' standard for core body temperature.⁷

Precision: the degree to which repeated measurements under unchanged conditions show the same result.

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