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4DET-306 Temporal Thermometer Measurement Tips and Hints

- All body site temperatures are not the same. The temperature taken at different sites on the body will vary significantly.
  - The average normal oral temperature is 98.6°F (37°C).
  - A rectal temperature is 0.5°F (0.3°C) to 1.0°F (0.6°C) higher than an oral temperature.
  - An ear (Tympanic) temperature is 0.5°C (0.3°C) to 1.0°F (0.6°C) higher than an oral temperature.
  - An armpit (axillary) temperature is usually 0.5°F (0.3°C) to 1.0°F (0.6°C) lower than an oral temperature.
  - A forehead (temporal) temperature is usually 0.5°F (0.3°C) to 1.0°F (0.6°C) lower than an oral temperature.
- When comparing temperature taken with different thermometers at different sites it is important to start with the most accurate oral temperature that can be achieved. Fast read digital thermometers use a method called “peak hold” that is often less accurate than a digital thermometer that need to be held in the mouth for 60 seconds or more. It is best to correlate other types of temperature taking to a baseline oral temperature taken with accurate oral thermometers, (those without the “peak hold” function).

- The manufacturer’s instructions should be followed to achieve the best results. The following precautions should be considered while using the 4DET-306 Temporal Thermometer.

- The 4DET-306 should be acclimated in the test environment for at least 30 minutes. If stored in a place where temperatures are significantly different, move to testing location for 30 minutes prior to use.
- The patient should be in the same room as the thermometer for at least 10 minutes before taking temperatures.
- The skin on the forehead should be clean and free of cosmetics and/or oils. Wait at least 10 minutes after washing before taking temperatures.
- Do not take temperatures over scar tissue, open sores or abrasions.
- Do not take temperatures while perspiring or over sweating skin.
- Do not take temperatures outdoors.
- Maintain a distance of approximately 1” (2-3 cm) from the skin for the best results. Distances greater than 1-1/5” (3cm) will not return accurate measurements.
- Hold the thermometer steady while taking temperatures. Do not move around on the forehead.
- Keep the lens of the sensor clean. Use a cotton swap moistened with alcohol (70% isopropyl) and gently clean the lens area and allow to air dry. Wait 10 minutes after cleaning lens before taking temperatures.

❖ Checking the temporal thermometer.

- The 4DET is calibrated initially when manufactured. If the thermometer is used according to the instructions included with the thermometer and these tips and hints are followed, periodic readjustments are not required. However, the manufacturer recommends checking the calibration every two years or whenever clinical accuracy of the thermometer is in question. This calibration check can be performed by returning the thermometer to Cooper-Atkins.

- The function of the thermometer can be validated by the user, using the following process. This check does not replace or represent a calibration of the thermometer. It is provided as a means for the user to validate the proper operation of the thermometer within a reasonable expectation of accuracy. A digital oral thermometer will be required!

Warm Water Test (option 1)

Step 1: Fill a glass cup with warm water (about 100°F/40°C). Note: the glass thickness should be similar to the one shown in Picture 1.

Picture 1

Step 2: Insert the oral thermometer in the water as shown in Picture 1.

Step 3: Switch on the oral thermometer and wait for the measurement reading. In Picture 1, it shows 36.35°C (97.43°F).

Step 4: Set the 4DET-306 thermometer to Object mode. The house symbol will be showed on the display.

Step 5: Hold the 4DET-306 thermometer about ½" (1cm) from glass and test the water temperature as shown in Picture 3. Note: the test location of the 4DET-306 thermometer should be close to the steel tip of the oral thermometer.

Picture 3

Cold Water Test (Option 2)

Temperature can also be validated using a crushed ice slurry. Try to add as much ice as possible. When properly prepared, as pictured below in Picture 4, the surface of the ice slurry can be measured as shown in Picture 5. When testing the Ice slurry, the surface should be measured without touching the ice and maintaining approximately 1” (2 to 3 cm) measurement distance.

Picture 4

Picture 5