

RC008

MedeScan



Touchless Thermometer

For customer inquires please write to:
info@medescan.com.au or call **1300 736 330**

Please go to www.medescan.com.au
For the latest copy of our User Manual.

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Introduction

The Medescan Touchless Thermometer has been developed using the latest in infrared technology. This technology allows the user to take a patient's temperature via the temporal artery (TA), at a distance of about 5 centimetres from the forehead.

Precise, instantaneous and without physical contact, the Medescan Touchless Thermometer limits the spread of germs, and is the most suitable system for no risk temperature measurement. Additionally, it has been demonstrated that this method of TS temperature measurement is more precise than tympanic thermometry (ear thermometer), and better tolerated than rectal thermometry (1).

However, as with any type of thermometer, it is essential to utilise the Medescan Touchless Thermometer properly in order to obtain reliable and stable results.

You are therefore advised to read this entire instruction manual as well as all safety precautions carefully before use.

(1) Greenes D, Fleisher G, Accuracy of a Noninvasive Temporal Artery Thermometer for Use in Infants, Arch Paediatric Adolescent Medicine 2001; 155:376.

It is essential to use the Medescan Touchless Thermometer in the way it was intended. You are therefore advised to read this instruction manual and the safety precautions carefully before use.

Utilising the Medescan Touchless Thermometer in any way other than depicted in this manual may void the warranty of your unit.

Features

1. The Medescan Touchless Thermometer is specifically designed to take the body temperature of humans regardless of room temperature.
2. The unit can scan temperatures reliably in less than 1 second due to the unique infrared detection system.
3. The unit memory can hold the last 32 temperature readings.
4. The unit's backlit LCD digital screen makes the results easy to read.
5. The LCD display will change colour to RED as well as an audible alarm will sound when normal temperature is exceeded.
6. Temperature can be displayed in either Celsius or Fahrenheit.
7. The unit is small, convenient and easy to use.
8. The device measures body, ambient room and surface temperature at the touch of a button.
9. The device comes with a luxurious carry pouch
10. The device runs on standard AA batteries, also supplied.

Safety Precautions

1. Follow the maintenance advice stipulated in instructions.
2. For professional or personal use.
3. Must only be used for the purposes described in the instructions.
4. Optimal performance occurs between 15°C - 32°C (60°F - 90°F); do not expose to extreme temperature conditions.
5. Keep in a clean, dry area.
6. Do not expose this device to electric shocks.
7. Functionality decreases when relative humidity is higher than 85%.
8. The protective glass over the lens is fragile; handle with care.
9. Do not touch the glass of the infrared lens with bare fingers.
10. Clean the glass with a cotton swab, lightly moistened with rubbing alcohol.
11. Do not expose the thermometer to Extreme sunlight or water.
12. Take care not to drop the device.
13. Device is not waterproof. Submerging device will void warranty.
14. Device should not be utilised in the presence of flammable anaesthetic mixtures, or in the presence of Nitrous Oxide.
15. Should a problem occur with your device, please contact your retailer; do not attempt to repair this device yourself.

Initial Setup Instructions

1. Remove the Medescan Touchless Thermometer, Velour Bag and Batteries from the packaging
2. Insert the batteries by gently removing the rear battery cover and correctly placing the "AA" batteries provided. (See Picture below)
3. Gently replace the battery cover to its original position.
4. The calibration of the Medescan Touchless Thermometer is factory-set, and should only be recalibrated if the device's accuracy is in question. The calibration should be checked in the medical setting in which it will be used. Please note, depending on various skin types and thickness, there may be temperature differences.
5. If a dramatic change in ambient room temperature occurs wait 10-15 minutes so the unit can become acclimated to the new room temperature.



Gently slide the cover down to access the battery compartment

Battery Cover

Instructions

1. For optimal results, allow the unit to acclimatise to the ambient room temperature for 10-15 minutes before the first usage of the day.
2. Before taking an individual's temperature, make sure to remove hair and wipe perspiration from the forehead.
3. Avoid any drafts from nasal specs, air conditioning etc...
4. Aim at the FOREHEAD, above the right eye, holding the unit approximately one inch (2.5 cm) from the body. Press the Scan button to measure temperature. Results will be displayed in less than one second.
5. Whenever testing a new person, especially a child under the age of 2, it is a good idea to do a test on the three hot zones (A, B & C as per photograph below). The zone which yields the highest temperature should be used as a regular test zone for most accurate results. The hot zone test should be repeated every 3-6 months.
6. As with all Infrared thermometers, it is quite normal, especially when testing young infants, to see varying temperature readings. In this case, always note the highest reading obtained.



The reliability of the measurements cannot be guaranteed if the temperature is measured from parts of the body that are not recommended (Hot zones A, B & C or behind the earlobes).



Know your Thermometer



Choosing the Correct Mode

Setting the mode

1. Press Mode button, and the screen will display: Body...°C
2. Press again and the screen will display: Surface Temp...°C
3. Press again and the screen will display: Room...°C

Note: The thermometer default is set to BODY mode

Setting the temperature format

Press the °C/°F button to transfer between Celsius and Fahrenheit

Accessing temperatures stored in memory

Press Mem (Memory) button, to display the last temperature.

To access stored scans (the last 32 scans are available), press “MEM” button, each time the “MEM” button is pressed the unit will scroll back to the previous measurement.

To exit the Memory function do not press any buttons on the device for 5 seconds.

Important!

1. In order to get an accurate BODY temperature, it is important that the thermometer is set to BODY mode.
2. Utilising SURFACE or ROOM modes on the thermometer will result in an inaccurate core body temperature reading on a patient.
3. Likewise, if taking a surface temperature of an object or liquid, be sure to set the thermometer to SURFACE Mode.
4. For an accurate room temperature reading, the thermometer must be set to ROOM mode.

Recalibrating your Thermometer

The Medescan Touchless Thermometer is factory-set. Depending on various skin types and thickness, there may be temperature differences.

The F4 function will allow unit recalibration. To recalibrate, measure an individual's temperature using a conventional thermometer and measure it concurrently using the Medescan Touchless Thermometer. If there is a difference between the two readings, recalibrate Medescan Touchless Thermometer.

Instructions for recalibration:

1. Press the "MODE" and "°C/°F" buttons at the same time for 3 seconds. The screen will then display: "F4"
2. Press "Mode" to increase 0.1°C, press " °C/°F " to reduce 0.1°C.
3. Press "MEM" button to save the setting.
4. In the cases of seasonal or environmental changes a verification and adjustment should be carried out.

How The Medescan Touchless Thermometer Works

All objects - solids, liquid or gas - emit energy by radiation. The intensity of this energy depends on the temperature of the object.

The Medescan Touchless Thermometer is able to measure the temperature of your body by measuring the energy emitted by your body.

An external temperature probe on this device, which analyses and registers ambient temperature, takes this measurement, the temperature is then displayed on the digital screen.

When the user aims the thermometer at the patient's forehead, above the right eye, this activates the infrared radiation sensor. The temperature measurement is taken instantly by detection of the infrared heat generated by arterial blood flow. Body heat can therefore be measured without any interference from the heat of the surrounding environment.

The different Methods of Temperature Measurement

Core Temperature

Core temperature is the most precise measurement and involves measuring the temperature in the pulmonary artery by means of a catheter equipped with a thermal probe, which can read the temperature in situ. The same method is employed for probes measuring the esophageal temperature. However, such invasive temperature measurement methods require specific equipment and expertise.

Rectal Thermometry

Rectal temperature adjusts slowly in comparison to the evolution of the body's internal temperature. It has been demonstrated that rectal temperature remains raised long after the internal temperature of the patient has started to drop and vice versa. Furthermore, rectal perforations have been known to occur as a result of this method and without appropriate sterilization techniques, rectal thermometry can spread germs often found in feces.

Oral Thermometry

Oral temperature is easily influenced by recent ingestion of food or drinks and by breathing through the mouth. To measure oral temperature, the mouth must remain closed and tongue lowered for three to four minutes, which is a difficult task for young children to accomplish.

Axillary (armpit) temperature

Although it may be easy to measure axillary temperature, it has been proven that it does not provide an accurate measurement of the child's internal temperature. To take this type of temperature, the thermometer must be wedged tightly over the axillary artery.

Tympanic thermometry

In order to obtain a precise temperature reading, good command of the measurement technique is required. The thermometer probe must be placed as close as possible to the warmest part of the external ear canal. An incorrectly placed probe could lead to a false temperature reading.

Advantages Temporal Artery (TA) Temperature

Infrared arterial temperature can be measured using a device placed on the forehead, in the temporal artery region. It has been demonstrated that this relatively new method of measuring temperature is more precise than tympanic thermometry and better tolerated than rectal thermometry.

The Medescan Touchless Thermometer has been designed to produce an instant forehead temperature reading without any contact with the temporal artery. As this artery is quite close to the surface skin and therefore accessible and given the blood flow is permanent and regular; it allows precise measurement of the temperature. This artery is linked to the heart by carotid artery, which is directly linked to the aorta. It forms part of the main trunk of the arterial system. The efficiency, speed and comfort of taking a temperature from this area make it ideal compared with other temperature measurement methods.

Normal Temperatures According to Measurement Method

Measurement Method	Normal Temp °F	Normal Temp °C
Rectal	97.9 °F - 100.4 °F	36.6 °C - 38.0 °C
Oral	95.0 °F - 99.5 °F	35.5 °C - 37.5 °C
Axillary	94.5 °F - 99.1 °F	34.7 °C - 37.3 °C
Auricular	96.4 °F - 100.4 °F	35.8 °C - 38 °C
Temporal	96.4 °F - 100.0 °F	35.8 °C - 37.8 °C

The temperature of the human body varies throughout the day. It can also be influenced by numerous external factors such as age, sex, type and thickness of skin etc...

Medescan Temperature Alert

High Temperature Alert / Alarm

The factory default alert for the High Temperature Alert / Alarm is set at 38°C for the Body setting. In the event a temperature is scanned at 38°C or above, the device will beep five times, and the LCD screen will change to Red colour to alert the user.

Battery Low Voltage Detection

If the battery voltage is low, the Medescan Touchless Thermometer LCD screen will display the word “Battery”. The battery must be replaced immediately to maintain optimal performance.

Three Colour Back-lit Display in “Body” Mode

Green: ≤ 37.3 °C

Orange: 37.4 °C To 37.9 °C

Red: ≥ 38.0 °C

Normal Temperatures According to Age

Age	Normal Temp °F	Normal Temp °C
0-2 years	97.5 °F - 100.4 °F	36.4 °C - 38.0 °C
3-10 years	97.0 °F - 100.0 °F	36.1 °C - 37.8 °C
11-65 years	96.6 °F - 99.7 °F	35.9 °C - 37.6 °C
> 65 years	96.4 °F - 99.5 °F	35.8 °C - 37.5 °C

Technical Specifications

1. **Clinical Accuracy:** Meets ASTM E1965-98 standards for Infrared Thermometers
2. **Normal conditions of use**
 - Operating temperature: 50°F - 140°F (10°C - 40°C)
3. **Humidity rate:** 85%
4. **Power:** DC 3V (2 AA batteries).
5. **Size:** 155x 90 x 40 mm - 6.1 x 3.5 x 1.6 in (L x W x H)
6. **Unit Weight:** 176g
7. **Temperature display resolution:** 0.1° F (0.1°C)
8. **Measuring range:**
 - In Body Mode: 90°F - 109°F (32°C - 42.9°C)
 - In Surface Temp Mode: 32°F - 244.4°F (0°C - 118°C)
9. **Precision:**
 - From 96.8°F - 102.2°F (36°C - 39°C)
 - From 102.2°F - 109.2°F (39°C - 42.9°C) = +/- 0.3°F
10. **Consumption:** 100mW
11. **Measuring Distance:** 1 in - 2 in (2.5 cm - 5 cm)
12. **Automatic stop:** 5 sec.
13. **Response Time:** Approximately 0.5 second
14. **Warranty:** 1 Year Replacement Warranty
15. **Longevity:** 40 000 Readings

Maintenance of your Thermometer

1. The protective glass over the sensor lens is the most important (and most fragile) part of the thermometer. Take care when using, storing, or cleaning.
2. Clean the protective glass over the sensor lens with cotton fabric dampened with water or a 70% alcohol solution.
3. Remove the batteries when thermometer is not in use for an extended period of time.
4. Do not expose the thermometer to water or excessive sunlight.
5. Product to be used indoors only.
6. Impact may damage the product.

Troubleshooting

If you have problems while using your thermometer, please refer to this guide to help resolve the problem. If the problem persists, please contact our customer service department at: 1300 736 330.

THE SCREEN DISPLAYS TEMPERATURE LOWER THAN 89.6°F (32°C):

To take the body temperature, press the Mode button and set the reading to “Body.” If the device is set to the “Surface Temp” mode, the 89.6°F (32°C) temperature displayed is showing the external temperature of your body, rather than the internal.

QUESTIONABLE MEASUREMENTS OR IMPROBABLE DISPARITY BETWEEN SUBJECTS

Be sure to avoid any drafts (from nasal specs, air conditioning, etc...). Allow a 1 minute interval between measurements and be sure to let device acclimatise for 10-15 minutes if there is any significant changes in ambient temperature.

THE SCREEN DISPLAYS THE MESSAGE HI

When using the Medescan Touchless Thermometer, the message HI can show on the screen. In this case, the temperature reading is above the measurement range selected, either above 109°F (42.9°C) in “Body” mode or above 244.4°F (118°C) in “Surface Temp” mode.

THE SCREEN DISPLAYS THE MESSAGE LO

When using the Medescan Touchless Thermometer, the message LO can show on the screen. In this case, the temperature analysed is under the measuring range selected, either less than 90°F (32°C) in “Body” mode or less than 32°F (0°C) in “Surface Temp” mode.

Reasons for LO message Display	Advice
Temperature reading hampered by hair or perspiration.	Make sure there is no obstruction or dampness prior to taking temperature
Temperature hampered by an air draft or dramatic change in ambient temperature.	Make sure there is no air blowing in the area of use; this could affect the infrared reading.
Temperature readings are too close together, and the thermometer did not have time to reboot.	If LO message persists, pause for a minimum of 15 seconds between readings; a oneminute pause is recommended.
The measuring distance is too wide	The recommended measurement distance is 2 in (5cm)



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