

## YOUR QUICK GUIDE FOR YOUR NEW DIGITAL THERMOMETER

MODEL: ZR-P100+

### Methods of measuring temperature

It is important to remember that the body temperature reading depends on the site where it is measured, for this reason, the measurement site must always be specified in order to ensure that a correct temperature reading is recorded.

#### In the rectum (rectal measurement)

This is the most accurate method from a medical point of view, because it comes closest to the core body temperature. The thermometer tip is inserted carefully into the rectum to a maximum of 2cm (3/4 inch).

The usual measuring time is approximately **9 to 11 seconds**.

#### Under the arm (axillary measurement)

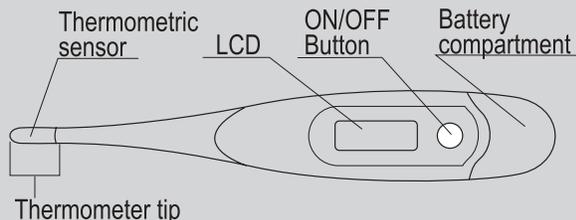
Placing the thermometer in the armpit provides a measurement of surface temperature that can fluctuate by around 0.5 °C to 1.5 °C (0.9 °F to 2.7 °F) from rectal temperature readings in adults. The usual measuring time for this method is approximately **23 to 29 seconds**. It should be noted that an exact reading won't be obtained if, for example, the armpit temperature is lower than normal (the armpit temperature has been cooled down). In this case, we recommend extending the measuring time by around 5 minutes in order to obtain the most precise possible reading that corresponds as closely as possible to the core body temperature.

#### In the mouth (oral measurement)

There are different heat zones in the mouth. As a general rule, the oral temperature is 0.3 °C to 0.8 °C (0.5 °F to 1.4 °F) lower than the rectal temperature. To ensure that reading is as accurate as possible, place the thermometer tip to the left or right of the root of the tongue. The thermometer tip must have constant contact with the tissue during the reading and be placed under the tongue in one of the two heat pockets at the back. Keep the mouth closed during the reading and breathe evenly through the nose. Do not eat or drink anything before the measurement as this will give you an inaccurate temperature reading.

The usual measuring time is approximately **15 to 19 seconds**.

**Note:** We strongly recommend the rectal method as the most accurate method for identifying the basal temperature and advise you to extend the measuring time by 3 minutes after the beep.



### AGE GUIDELINES

The best type of thermometer – or the best place to insert the thermometer, in some cases – depends on your child's age.

- **Birth to 6 months.** Use a regular digital thermometer to take a rectal temperature. New research suggests that a temporal artery thermometer might also provide accurate readings in newborns.
- **6 months to 4 years.** In this age range you can use a digital thermometer to take a rectal or an armpit temperature. If you use another type of thermometer to take a young child's temperature and you're in doubt about the results, take a rectal temperature. (We suggest you have at least two on hand and mark them appropriately).
- **4 years and older.** By age 4, most kids can hold a digital thermometer under the tongue for the short time it takes to get an oral temperature reading. You can also use a digital thermometer to take an armpit temperature, or use a temporal artery thermometer or a digital ear thermometer.

### TOP TIPS

- **Take your families temperature** when they are well at morning, during the day and at night to know their "average normal temperature".
- **Listen carefully...** The beep is high pitched but not too loud so it won't wake your sleeping baby and the unit is enclosed to ensure it's waterproof.
- **Digital thermometers** are generally considered safer to use than traditional mercury thermometers because mercury is a toxic substance. Digital thermometers are now very affordable. Digital thermometers are designed to beep after they sense that the registered temperature is not going to rise any further.





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### What Affects the Test

- Inaccurate temperature readings can be caused by:
- Not keeping your mouth closed around the thermometer when taking an oral temperature.
- Not leaving a thermometer in place long enough before reading it.
- Not putting the proper thermometer in the right place.
- Not following the instructions for proper use that come with the thermometer.
- A weak or dead thermometer battery.
- Taking an oral temperature within 20 minutes after smoking or drinking a hot or cold liquid.
- Taking a temperature by any method within an hour of exercising vigorously or taking a hot bath.
- Environment/Room temperature.
- Time of day (body temperature is different morning, day and night).
- Repeated temperature taking, as the unit will start to warm from your hand/body.



### Fever Temperatures: Accuracy and Comparison

You can take a temperature using the mouth (oral), anus (rectal), armpit(axillary), or ear (tympanic). But the temperature readings vary depending on which one you use, and you need an accurate body temperature to determine if a fever is present.

**Medical research hasn't determined an exact correlation between oral, rectal, ear, armpit, and forehead temperature measurements. Generally, the correlation of temperature results are as follows:**

- The average normal oral temperature is 98.6°F (37°C).
- A rectal temperature is 0.5°F (0.3°C) to 1°F (0.6°C) higher than an oral temperature.
- An ear (tympanic) temperature is 0.5°F (0.3°C) to 1°F (0.6°C) higher than an oral temperature.
- An armpit (axillary) temperature is usually 0.5°F (0.3°C) to 1°F (0.6°C) lower than an oral temperature.
- A forehead (temporal) scanner is usually 0.5°F (0.3°C) to 1°F (0.6°C) lower than an oral temperature.

#### It is important to remember:

- Rectal temperatures are generally thought to be the most accurate for checking a young child's temperature.
- The manufacturer of the temperature device you use, such as an ear or forehead thermometer, provides information on how to use it. Be sure to read and follow the instructions to obtain an accurate temperature. The information may also include how the results of the device correlate with the results from other methods of taking a temperature.
- Plastic strip thermometers have some uses, but they aren't recommended for general home use. Unlike oral, rectal, and ear thermometers, plastic strip thermometers measure skin temperature, not body temperature.
- When you talk with your doctor about your temperature, be sure to say what method was used to take the temperature.

#### Temperature comparison table

The temperature comparison table will give you the range of temperature correlation with the different methods used to take a temperature. For information about taking accurate temperatures in infants and children, see the topic Body Temperature.

##### To use the table:

- Find the method that you used to take a temperature.
- Find the correct temperature range.
- Look for the temperature range of the other methods that correlates to the method you used. For example:
- If your 2-year-old child's oral temperature is 101°F (38.3°C), his or her rectal or ear temperature may be about 102°F (38.9°C). Remember, a child has a fever when his or her temperature is 100.4°F (38°C) or higher, measured rectally.
- If your axillary temperature is 100°F (37.8°C), your oral temperature is about 101°F (38.3°C).

Comparison of temperatures in Fahrenheit by method

Axillary/Forehead (°F)	Oral (°F)	Rectal/Ear (°F)
98.4-99.3	99.5-99.9	100.4-101
99.4-101.1	100-101.5	101.1-102.4
101.2-102	101.6-102.4	102.5-103.5
102.1-103.1	102.5-103.5	103.6-104.6
103.2-104	103.6-104.6	104.7-105.6

Comparison of temperatures in Centigrade by method

Axillary/Forehead (°C)	Oral (°C)	Rectal/Ear (°C)
36.9-37.4	37.5-37.7	38-38.3
37.5-38.4	37.8-38.5	38.4-39.1
38.5-38.9	38.6-39.1	39.2-39.7
39-39.5	39.2-39.7	39.8-40.3
39.6-40	39.8-40.3	40.4-40.9