


# HALOCHOSCOPE



**This week's question:**

**A child is running a fever on *Shabbos*. The doctor has instructed them to keep track of his fever, and to bring him if it goes too high. Is it preferable to take his temperature using a mercury thermometer, which is hard to find? May they use a digital thermometer?**

**The issues:**

- A) *Choleh*, an ill person on *Shabbos*
- B) *Medidah*, measuring on *Shabbos*
- C) The issues with types of thermometers

## A) *Cholim* on *Shabbos*

*Pikuach nefesh*, effort to save a life, is permitted on *Shabbos*. The nature of this dispensation is debated by the poskim. We follow the view that it is overridden but not suspended. Therefore, one should avoid desecrating *Shabbos* whenever possible. All restrictions (including most Scriptural prohibitions) are suspended when treating a *choleh sheyaish bo sakana*, a dangerously ill person. This includes the critically and seriously ill, as well as conditions that will lead to this state if not treated, such as chronic conditions of the heart blood and sugar. The main basis for this suspension is that the Torah would prefer that one *Shabbos* be violated in order that many others will be observed by the patient. In addition, the Torah says that one should live by the *mitzvos*, rather than die by them. [The three cardinal sins are the exception to this.]

There is a hierarchy of severity of illness, ranging from *maichush be'alma*, minor complaints, to *choleh sheyaish bo sakana*. For minor complaints all restrictions apply. When a limb or organ is in danger, that will not necessarily affect the rest of the system, it is called *sakanas aiver*. Many restrictions are lifted for this level of danger. A patient so sick that he needs to lie down, or in pain all over his body, is considered *choleh she'ain bo sakanah*, non-dangerously ill. Many restrictions are lifted for these moderately ill people. No Scriptural *melacha* may be violated. Rabbinical prohibitions are kept as much as possible; violations can be limited by doing them in unusual fashion. The most common approach for *choleh she'ain bo sakanah* is to ask a gentile to do the *melacha*, which is otherwise Rabbinically forbidden. A *choleh bechol gufo*, systemically ill, is basically a *choleh she'ain bo sakanah*. Fever is considered at least *ain bo sakanah*.

A child is always considered *choleh she'ain bo sakanah*. Firstly, the child might be constitutionally weak. Secondly, we have mentioned that preventing the symptoms from progressing is also permitted. Anytime until maturity, a particular child might be weak. A baby is considered even more of a *choleh*. A newborn is considered *yesh bo sakanah*. A baby with a fever is automatically considered a high level *choleh*. [See References in Halochoscope I:20 II:40, etc (Sh Ar OC 328-330) especially *Shabbos* 141b, Poskim. Sh

Ar OC 328:17, commentaries (Dirshu 61). Chazon Ish OC:59:3-4 etc. Minchas Yitzchok I:78. Kitzur Hilchos Shabbos 44:17-18.]

### **B) Medidah**

*Mekach umemkar*, commercial activity, is forbidden on *Shabbos* for two reasons. It could lead to writing, which is forbidden Scripturally. It is also *uvda dechol*, mundane activity not in the spirit of *Shabbos*. This is restricted based on a reference in the Navi Yeshaya to behaving differently on *Shabbos*. Included in the larger ordinance forbidding *mekach umemkar* are many specific activities usually associated with it, including *medidah*, measuring. Taking temperature is a relatively new kind of measuring, that was never really practiced in the past. It is also hard to connect it to the original prohibition against measuring based on *mekach umemkar*.

Measuring for the sake of a *mitzvah* is permitted. Thus, measuring the space of an opening to determine whether defilement by a corpse can pass through it (relevant to *kohanim*), or measuring a *mikvah* is permitted. One may measure a *kiddush* cup, for those who wish to fulfill the *mitzvah* with exactly the minimum amount of wine. By the same reasoning, when it is permitted to take medicine, one may measure the dosage. Therefore, one may also measure temperature of a person who thinks he might be ill, and certainly someone who is already ill.

It should be noted that the original ordinance was made due to appearances. The onlooker will think that the person making the measurement is engaged in commerce. Mitigating circumstances are relied on for an in-built leniency. A customer may approach the merchant at home, but not in his place of business. The merchant may use his measuring utensils, but not measure exactly, and pour into the vessels of the customer. They may not use language that indicates a transaction. This also means that measuring temperature of an ill person would not be included in the ordinance. It so happens that body thermometers are not considered fully accurate, due to a number of variables. However, as we have mentioned, this is not a wholesale permit to take temperature of anyone, since the poskim have determined that any measuring in the normal fashion, using measuring utensils, is forbidden. In addition, as we shall see, there could be other issues involved. [See Shabbos 148a-b 157a-b Beitzta 39a, Poskim. Tur Sh Ar OC 306:6-7 (Dirshu 30) 323:1-4, commentaries. Igros Moshe OC:I:128. Shmiras Shabbos Kehilchasa 40:n3. Kitzur Hilchos Shabbos 44:19.]

### **C) Thermometers**

Thermometers themselves work in various different ways. Using them can involve some sort of *melacha*. Since we have mentioned that *Shabbos* is not overridden, but suspended for *pikuach nefesh*, one must try to minimize *chilul Shabbos* without risking any danger to life. For *choleh she'ain bo sakanah* one should avoid Scriptural *melacha*. Rabbinical violations can be eliminated as much as possible. As we have mentioned, our case could be considered somewhat more serious. We might be discussing some sort of *sakanah*. Nonetheless, if there is a choice, which of the thermometers is best to use.

The most popular thermometer was a mercury bulb with a calibrated tube attached. Mercury is liquid at a relatively low temperature. It can expand when heated by body temperature, and will expand more if the person has a higher temperature than normal.

This type of thermometer has been discontinued in many places, due to the toxicity of the mercury. After taking the temperature, the mercury stays up the tube until it is shaken down vigorously. This leads to breakage, allowing mercury fumes to escape. However, it is still considered the most accurate thermometer, and is therefore available in limited situations, with extra precautions. The *melacha* involved here would be heating the metal. This is considered *bishul*, cooking, by some poskim. Even if the metal is not melted, the poskim are concerned with this *melacha*. However, there is no restriction on holding a piece of metal, such as a fork, in one's hand, thereby warming it. The issue is changing the consistency of the metal in a way that it makes a difference. It could be argued that this is an issue with regard to a mercury thermometer. A second issue arises with regard to shaking the thermometer down. This could be considered *tikun kli*, fixing something. The counter-argument is that this is the type of utensil that is used normally this way. The Talmud discusses a bed or lamp made of parts that are assembled and dismantled all the time. This is like using a bottle cap.

A similar type of thermometer uses colored liquid, usually alcohol, that also expands with heat. This is less accurate than mercury, but much safer and easier to read. The only issue with *bishul* could arise if we consider its expansion a low temperature type of cooking. The Talmud discusses whether materials that are not heated to *yad soledes bo*, the temperature usually associated with cooking, are considered cooked. In this case, the intention is to alter the material somewhat so that it will expand in a measurable way. Nonetheless, we follow the view that warming liquids is permitted as long as one does not place them where they can reach *yad soledes bo*. We may assume that the alcohol thermometer is less serious than the mercury thermometer in this respect.

Plastic strip thermometers contain chemicals that warm up and change color or glow when they reach certain temperatures. These are lined up and covered by a stencil or even just glow. The strip is placed on the forehead. These are easier to use, but are not as reliable. The *Shabbos* issue would be the stenciled letters that are exposed and whether temporary color changes involve *tzovaia*, dyeing. Many poskim permit using photo-sensitive glasses. The change is its normal use, is temporary, and the item changes back to its original state by itself. The lettering is very temporary, and is simply 'uncovered'. The poskim discuss this, and come to the conclusion that it is permitted for a *choleh*.

Nowadays, digital thermometers have been perfected enough to be used regularly. While their accuracy is not the same as the bulb thermometers, they are relied on to make basic determinations. They work by using thermistors to measure the amount of heat passing through a semiconductor type material. Based on the heat, the thermistor is more or less resistant. This can be measured and then displayed digitally. The semiconductor material is not visibly altered physically. Therefore, there is no issue of *bishul*.

However, there is an issue of using electricity. The entire concept is to measure the flow of electricity. Use of electricity on *Shabbos* is forbidden. If a bulb is ignited, this involves *havarah*, burning. This only applies to appliances using incandescent light. Thermometers use other types of display. Electricity when it does not produce light is also forbidden. The actual prohibitions involved are the subject of major debate between the poskim of recent times. Some consider it a Scriptural *melacha*. This would either be

*boneh*, building, or *tikun kli* or *makeh bepatish*, finishing the manufacture process of a utensil. *Boneh* applies even to a tiny improvement in a building. Therefore, if a switch is turned on, completing the circuitry, the house is more functional. The argument against this is that it is made this way, similar to opening or closing a door. An additional type of *boneh* is suggested: the wire is made complete by being used in the way it was intended from Creation. This is considered a novel idea. In addition, the question is whether this could also apply to a portable utensils, and to battery power. *Tikun kli* is based on similar ideas, in addition to the fact that an appliance cannot be used until it is turned on. The counter-arguments are the same. Many poskim take this view into account. Others say that some form of Rabbinical *havarah* is involved. Some say that the metal is heated a little bit, but that this is usually unwanted. In our case, this could change, since there is a need for the heat. However, the material is not metal, or at least not in pure state. Nonetheless, turning the thermometer on and off, and using it raise these issues.

A second issue arises with regard to the display. It seems to involve writing. True Scriptural writing or leaving any impression must be permanent. Temporary writing is also forbidden, Rabbinically. Electronic displays do not leave a temporary impression either. They last as long as there is a supply of electricity. They merely project an image or shadow, like moving a stencil in front of a candle. Thus, the poskim debate whether they can be considered writing Rabbinically either. In this context, the display could still involve some form of *uvdin dechol*, mundane non-*Shabbos* activity. [See Meorai Aish (new ed.). Summary in Encyclopedia Talmudis, Chashmal. Igros Moshe OC:III:45. Tzitz Eliezer XVI:30 -31. Halochoscope II:4 24 III:1 X:14 XVII:4 etc.]

In conclusion, the least problematic thermometer is the forehead strip. If the doctor is satisfied with using it, this is preferred. The same would seem to apply to an alcohol thermometer, if it is available. All others involve some issue. A mercury thermometer involves heating metal, a possible Scriptural issue. In addition, it is considered unsafe. A digital thermometer does not involve this Scriptural issue, but the electricity raises possible Scriptural issues, depending on which view is followed. It also could raise Rabbinical writing issues. Since many poskim do not consider this type of electricity usage a Scriptural *melacha*, and this writing might not even be restricted Rabbinically, this would be preferred over a mercury thermometer.

**On the parsha ..** ... There [at Marah, Hashem] gave [Yisroel] *chok* .. [15:25] .. such as *Shabbos* .. [Rashi] And [Hashem] said: If you will listen .. and you will observe [Hashem's] *chukim* [i.e. *Shabbos*], all the illnesses that I placed in Egypt I shall not place upon you, for I am Hashem, your Healer. [15:26] If there will be no illness, why is there a need for a doctor? If you do indeed violate it, I will heal you! [see Rashi, commentaries] Perhaps there is another meaning. What is the connection to Marah and *Shabbos*? *Pikuach nefesh* suspends *Shabbos*, but does not override it. Therefore, if one must do *melacha* to heal the sick, he will be violating *Shabbos*. Hashem says, “if you work on observing *Shabbos*, then I will make sure that you will not need to violate it for the *choleh*. Rather I will heal him.”

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