

**BAR-ILAN UNIVERSITY**

**Laceration Management  
on Shabbat and Holidays**

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# Abstract

One of the most common treatments for significant skin lacerations is closing of the wound by artificially bringing both edges of the wound closer together. Wound closure is typically performed by approximating the edges of the wound through specially designed thread and needle or through a special type of staples. Alternatively, it is sometimes sufficient to glue the edges of the wound together with tissue-adhesive glue or adhesive tape. Connecting the edges of the wound enables the skin to naturally heal, after which the artificial material (i.e., sutures, staples or adhesive tape) can be removed. It is important that the healing of the skin is successful for both medical reasons (e.g., preventing bleeding and infection) and aesthetic reasons (minimizing the chances of prominent scars).

In the past there was medical consensus that primary closure of the skin must take place within a short period after the laceration occurs, such that if it takes place on Shabbat, it will often not be possible to postpone treatment until after Shabbat. A significant dilemma was created for observant Jews, since the actual closure of the wound, as well as some of the accompanying activity, may involve violation of the laws of Shabbat (*chilul Shabbat*). In addition, travelling to a medical center often constitutes *chilul Shabbat*, e.g., by driving. Still, if in fact closing the wound can prevent infection, it may be important to close the wound as soon as possible, even

on Shabbat. Additionally, wounds on Shabbat often create a lot of anxiety for patients and their families due to the possible aesthetic consequences of a laceration, especially if it is in a highly noticeable location, such as the face. The same dilemma is of course relevant to Yom Tov as well.

The main thesis of this paper is that recent scientific and medical developments have not only improved the medical aspect of laceration treatment but have also reduced the conflict between “best medical practice” and the observance of Shabbat and Yom Tov. This is for two unrelated reasons:

**A. The period within which the wound ought to be closed (known as the “Golden Period”):**

By tracing the history of the “Golden Period” concept in medical literature, it becomes apparent that the period has grown longer and longer, to the point that, as a definite, limited time period, it has almost ceased to exist. For approximately a century, beginning in 1898, it was commonly believed that a laceration must be closed within several hours of its occurrence. The first developments in expanding the medical understanding of the Golden Period began in 1988, when a paper concluded that wounds can be closed up to 19 hours after occurrence, with no specific, identifiable limit for head wounds. The second development came after a set of papers were published between 1992 and 2014, concluding that there is no proof

for the actual existence of a Golden Period with regard to any laceration, regardless of location (provided the wound is not infected or unusually complicated). In light of this research, which has influenced contemporary medical practice, it would seem that there is no longer a need to receive immediate medical treatment when one incurs a non-complex wound.

Beyond the significance of this change for regular medical management, it also has repercussions for wounds that occur on Shabbat. If it is in fact possible to wait up to 19 hours before closing a wound which is not infected or complex (as the 1988 study concluded), the question of treatment on Shabbat is considerably less relevant, at least with regard to these wounds. Only one who is wounded on the evening of Shabbat may have to seek treatment on Shabbat.

Moreover, according to the papers published between 1992 and 2014 (and, according to the 1988 study, with regard to a head or neck wound), it seems there is no need whatsoever to urgently close a non-infected, non-complex wound, and therefore there is never a need to close such wounds on Shabbat and Yom Tov. It is possible to prevent infection by washing the wound and cleaning it with running water soon after the laceration occurs, bandaging the wound to keep it sterile, and using local antibiotics. The actual closure of the wound can take place after Shabbat.

## **B. The technique used to close the wound:**

Even if closing a wound becomes necessary on Shabbat, there are new techniques for closing wounds that are less problematic for Shabbat than traditional methods are.

For thousands of years, the only method available to close an open wound was to sew its edges together with sutures, which, according to many halakhic authorities, involves Torah (Biblically derived) prohibitions. The possible prohibitions contemporary halakhic authorities have considered with regard to stitching a wound on Shabbat are as follows: sewing, *makeh be-patish* (the act of completing), building, and tying (occurs when tying the end of the thread). There are many questions with which these halakhic authorities dealt that would influence the severity of the prohibition: Does the prohibition of sewing apply to the human body? Is this type of sewing considered sewing which is sustained for a long period? Is the knot at the end of the thread considered a long-term knot? Is it possible that this type of sewing is halakhically categorized as building or *makeh be-patish*? In any event, according to those who are of the opinion that stitching a wound on Shabbat constitutes a Torah prohibition, it is only possible to allow such a procedure in a life threatening situation.

In the last few decades, other methods of wound closure have been developed, the primary of which is the use of tissue adhesives. Once this method

became common, halakhic authorities began to consider whether or not this method may be used on Shabbat. According to most opinions, this type of closure does not involve Torah prohibitions, mainly because it does not resemble the Shabbat prohibition of sewing, it is clearly temporary, and it does not involve tying. It is therefore permitted on Shabbat for medical purposes.

For wounds which are actually treatable by this method, it is the preferred method on Shabbat, from a halakhic point of view, since traditional stitching is prohibited according to Torah law, according to some halakhic authorities. However, this method is only appropriate for a small range of wounds. Many wounds can still only be treated by sutures.

In recent years there have been various studies, examining the possibility of healing wounds by LTB - Laser assisted Tissue Bonding. These studies are still in their initial stages and it's too early to determine whether these innovative techniques will be appropriate for medical purposes in the future. If they are in fact implemented, this will significantly advance the field of wound closure, especially if it will become possible to close wounds that currently cannot be closed by existing adhesion methods.

The studies focused on two main sub categories:

A. PTB- Photochemical Tissue Bonding:

This tissue fusion technique is performed by creating a chemical reaction. A specific material which responds to light of a specific wavelength is injected into the wound. When light is projected upon this material it deteriorates and causes a molecular reaction which creates connections among collagen particles.

#### B. Photothermal Tissue Bonding:

These methods are performed by utilizing heat. This can be done using one of two techniques:

##### 1. LTW - Laser Tissue Welding:

This technique involves the closure of wounds by applying heat to both sides of the wound which results in the fusing of tissue.

##### 2. LTS - Laser Tissue Soldering:

This technique involves spreading "biological glue", made of protein, on the wound and then applying heat to the glue by means of a laser. The glue hardens on the wound and the two parts of the wound are combined. This allows the tissue to continue its natural fusion process.

If these experimental methods do in fact become mainstream medical practices, it may become permissible to close almost any wound on Shabbat since these methods involve only rabbinic prohibitions which may be relieved for medical purposes. It is true these methods include additional prohibitions such as the use of



laser as well as prohibitions related to the impact of the laser on the adhesive material. However, most halakhic authorities are of the opinion that these prohibitions too are of rabbinic nature. Therefore, this method is preferable when compared to using sutures and can therefore be performed, if necessary, on Shabbat.

In light of the above, it seems clear that recent scientific advancement with regard to the closure of wounds not only allows for better medical treatment but also lessens and sometimes even eliminates the tension between observing Shabbat and Yom Tov and achieving an optimal medical and aesthetic outcome for a skin laceration.