

## The Psychological Impact of Scars in Children, Part II

*The emotional and mental issues that a child can have about a scar are far-reaching and variable. This three-part series of articles will examine the psychological impact of scars in children from a variety of medical problems. The first part of this series focused on scars from dermatologic conditions; this second installment will focus on scars from burns.*



A number of different events can lead to burns in children that leave scars, including a house fire, a kitchen accident or an extremely hot bath. Although any event that causes a scar in a child can be distressing, burns are especially troubling, because the incident that leaves the scar is always traumatic and often associated with other issues, including the death or injury of a close family member, guilt for the parent or caregiver and more. Physical deformity from the scar that affects quality of life and the child's ability to have normal physical function can also play a role in the child's well being.

“In addressing the many, many factors that play into a child's psychological or psycho-emotional distress about the [burn] scar, certainly, the event can have a lot to do with it,” explains Catherine E. Ruiz, MA, OTR, MSJ, CAPS, an occupational therapist in the Burn Unit at Saint Barnabas Medical Center in Livingston, NJ. “I've been at this for a long time — 24 years — and I'm still surprised by the circumstances of accidents and everything that plays into that, because the event can certainly represent some issues that can color the response to the scars, psycho-emotionally, later.”

While dermatologists may not be in the standard lineup of healthcare professionals who treat pediatric patients with burn scars, the specialty does have the potential to be of significant help. Dermatologists and reconstructive and cosmetic surgeons within the specialty can improve the physical look and feel of the scar, which, in turn, often leads to an improvement in the child's psychological state. Scar repair is the primary resource dermatologists can offer these patients, but other involvement — including assistance with psychological issues and the ability to recognize if referral to a psychologist or psychiatrist may be necessary — are also valuable ways dermatology professionals can be a unique part of these children's healthcare teams.

### The Physical Impact of a Burn

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Burns are classified by severity into first, second and third degrees; the degree of the burn indicates which levels of the skin are affected. First-degree burns only affect the epidermis, second-degree burns reach the epidermis and the dermis, and third-degree burns induce damage or destruction through the fullest depth of the skin and underlying tissues. With third-degree burns, bone, muscle and fat may also be affected, and the injury itself is not typically painful, because nerve endings have been destroyed.

First-degree epidermal burns are the only ones that do not leave scars.<sup>4</sup> In addition, second- and third-degree burns often cover a larger total body surface area (TBSA), which lengthens the healing process and the likelihood of severe scarring.<sup>5</sup> A more serious burn covering greater TBSA will lead to the most severe scars, and, often, the most significant psychological impact. Complications that result from a decrease in the normal functions of the skin, such as thermoregulation and the development of cancers at the burn site, have been reported.<sup>5</sup> Contractures, which can significantly limit a child's range of movement, may also become an issue in post-burn recovery.<sup>4,6</sup>

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These factors can significantly impact a child's feelings about the appearance of their scars and the

comorbid psychological issues.

“In terms of the complexity of the burn scar, certainly, the degree to which it may hypertrophy and form contractures that may restrict movement are certainly issues that cause children to suffer emotional distress,” explains Ms. Ruiz. “Those are things that make a child stand out, especially if there’s difficulty with mobility, even to the point of requiring assistive devices like wheelchairs, especially around their peers.”

## **Complex Psychological Issues**

The ways in which a burn impact a child mentally and emotionally are very variable and dependent, often, on many of the factors described above: scarring, TBSA, medical complications of the burn in addition to scarring, and mobility issues. Often, one or more of these issues can be present in the same patient.

There are other factors, too, that may impact the child’s psychological state. One study of the psychological problems in burn survivors found that, in addition to the psychical disfigurement of a burn scar, pre-existing depression or other psychological comorbidities, such as anxiety, and the pain from treatment of the burn can lead to greater psychological issues.<sup>5</sup> Post-traumatic stress disorder is a common concern.<sup>5</sup>

“With kids, one of the conditions we see in patients after these severe burn and traumatic injuries is post-traumatic stress disorder,” explains Jill Waibel, MD, medical director of the Miami Dermatology and Laser Institute in Miami, FL. “They’re not just feeling the pain of the treatment — they feel the pain from the actual injury.”

## **Psychological Variables: The Return to School and the Impact of Age**

The recovery process after a burn includes the initial hospital stay, ongoing treatments like skin grafts or laser surgery, rehabilitation — including physical, occupational and, sometimes, speech therapy — and adjustment to the survivor’s new identity.<sup>7</sup> The process can be lengthy, even continuing for several years, which increases the negative psychological impact that the burn can have; the physical reminder of scars further compounds this issue, especially if they are hypertrophic, cover a large TBSA or result in contractures.<sup>4,6-9</sup>

“The length of the healing process, the time away from family and peers and the change in the child’s typical role — being in school, playing with friends — certainly is very challenging for a child psycho-emotionally,” Ms. Ruiz explains.

For children with burn scars, a significant step in the recovery process is the return to school. This step presents a number of psychological issues for the child burn survivor: questions from peers and adults, the need for help with any mobility issues and the inability to convey complete facial expressions if the scars affect the face.<sup>10,11</sup> Bullying can also be an issue.<sup>11</sup>

The age of the child can have a significant impact on how the return to school goes.<sup>10</sup> Particularly for adolescents, who are already dealing with puberty and the coming-of-age process, comments of peers and any problems that arise can exacerbate negative psychological issues.

“In childhood, especially in adolescence, that’s certainly a time when they don’t want to stand out,” Ms. Ruiz explains. “If the injury has resulted in visible scars, that sort of puts them in the limelight, puts the focus on them, and that creates problems. And then, for kids who have so-called hidden burns, on parts of the body that can usually be covered with clothing, it comes time for physical education or something, and there may be an issue where those areas suddenly become visible because they have to change into gym clothes.”

For younger children, it is difficult to have one-on-one consultations about his or her desires and wishes about burn scar treatment and repair, according to Dr. Waibel, but, for adolescents, such discussions can reveal important information.

“With teenagers, it gets more complicated, and that would be the time where you ask the parent if you can just talk to the child individually,” she says. “I had a 14-year-old girl, and her mom said, ‘We want to do everything,’ and I could just see in the girl’s eyes that she was wondering, ‘Do I have to do that?’ ... You have to make sure you don’t put the child in a mental situation where they feel uncomfortable or

overwhelmed or overloaded. They have to be part of the medical decision-making process.”

## **Treatment of Burn Scars**

Dermatologists can have a significantly positive impact on a child’s psychological well being through their ability to lessen the visibility and restrictive nature of burn scars.

“The dermatologist can help the child understand that it gets better — the scar may not be all gone, but it gets better,” explains Kenneth Beer, MD, a volunteer clinical instructor in dermatology at the University of Miami, a consulting associate in the department of medicine at Duke University and director of the Cosmetic Bootcamp meeting who is also in private practice in West Palm Beach, FL. “As the dermatologist provides the child with treatment, if the child sees an improvement, he or she will feel much better.”

Scar massage, compression garments, topical silicone, steroid injections and surgery are treatments dermatologists can offer patients who wish to decrease the appearance of a burn scar.<sup>8</sup> Laser technology is increasingly becoming a widespread, effective treatment as well.<sup>12-14</sup>

“The treatments involve a variety of interventions, from pretty standard things like intralesional kenalog injections and cortisone injections to treatment with pulsed dye lasers,” Dr. Beer explains. “One of the newer modalities that has been used is the fractional lasers to treat burn scars, and we think that there are a few mechanisms of action. We think, whether it’s the CO2 or the erbium, that the fractional laser breaks up the scar, so that’s pretty good, but, also, it stimulates a remodeling of the collagen, and it’s probably the remodeling of the collagen that really helps.”

Dr. Waibel has treated numerous burn survivors, adults and children alike, with lasers for scars, and the results have been very successful.

“Fractional ablative lasers have become an amazing tool for correcting both the aesthetic and functionality issues presented by serious burn scars,” she says, adding that the laser treatments have been especially effective for large TBSA and in the early stages of scarring, in combination with steroid treatments.<sup>14</sup>

The healthcare professionals who treat these patients see a direct correlation between burn scar repair in children and an improvement in related psychological issues.

“It’s amazing when these kids who are horrifically disfigured really start to come out,” Dr. Beer explains, in reference to the results after burn scar repair with lasers and other treatment tools. “It’s really impressive.”