

# A New Paradigm for Trauma and Burn Wound Therapy

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## Background

A 2021 press release from the American College of Surgeons notes that we are experiencing a national surge in injuries, including a significant increase in gunshot wounds. Our trauma center has felt this sharp increase including three recent gunshot wounds in children under the age of nine. Two of these incidents were fatal, but fortunately the third victim survived. We present her case along with other complex patients to illustrate advances in trauma and burn wound therapy using Hypochlorous Acid Preserved Wound Cleanser\* (HAPWOC). The cleanser has a pH that is conducive for wound healing and is non-cytotoxic.

## Purpose

We report our experience using HAPWOC with and without negative pressure wound therapy with instillation (NPWT-i) on a variety of traumatic and burn wounds. Our intent is to validate use of this therapy for healing these complex wounds.

## Methods

We utilized HAPWOC in combination with NPWT-i and HAPWOC wet to dry gauze. We present six case outcomes in patients aged from 32 months to 75 years. The injuries include a gunshot wound, blast injury, motorcycle crash, crush injury, motor vehicle crash, and an industrial pressure washer injury. The NPWT-i settings ranged from pressures of -50 to -150 mmHg, soak phases ranging from 5 to 10 minutes, and instillation cycles of either 2 or 3 ½ hours. The HAPWOC gauze soaks were changed twice daily.

## Results

Of the 6 patients presented, 5 have complete closure. Four closures were by split thickness skin grafting, one closed by secondary intention, and one will receive a rotational flap. Four of these patients have discharged to home.

## Conclusions

In our experience, trauma and burn wounds benefit from the use of HAPWOC. We find this therapy effective in healing complex wounds when used in conjunction with NPWT-i and also when HAPWOC is used in wet to dry gauze dressings.

## Gunshot wound to abdomen 32-month-old pediatric



**August 19:** Incision failure from tissue swelling and tension after resuscitation



**August 25:** Debridement exposes fascial closure and non-viable tissue. Gauze with HAPWOC initiated



**September 13:** NPWT-i initiated with HAPWOC and grey foam with through holes



**September 16:** Necrotic tissue eliminated. Wound bed healing and ready for grafting

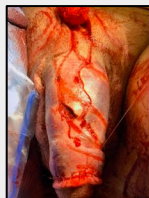


**October 6:** Skin graft and patient ready for discharge

## Industrial pressure washer injury to groin



**September 30:** Groin injuries from high pressure Industrial power washer



**September 30:** Urology repairs wounds to penile shaft. Thigh wound debrided



**October 4:** NPWT-i with HAPWOC applied to thigh and pelvic wounds



**October 18:** Discharged to home

## Motorcycle crash injury: thigh impaled by kickstand and full thickness burn



**September 29:** Thigh impaled with motorcycle kickstand. Bilateral puncture injuries and burns to lower extremities



**September 29:** NPWT-i with HAPWOC applied to superior inner thigh wound



**October 4:** Posterior burn debrided. Skin graft placed



**December 21:** Outpatient clinic visit for follow up