



Spray Polyurethane Foam Splint: FastCast™

Status

US Patents:

No. 9,427,489

issued on August 30,
2016;

No. 10,350,103

issued on July 16,
2019

Title: *Spray Polyurethane Foam Splint*

Inventor:

Dr. Kevin D Martin

The Army is seeking a partner interested in commercializing this technology.

The Technology:

Orthopedic injuries, such as bone fractures, that occur in military combat or emergency situations often require prompt medical attention and stabilization to avoid further damage to the injured extremity. However, in these types of settings, it is difficult to provide prompt and efficient medical treatment that can address the residual effects of the injury, such as swelling and blood loss while simultaneously stabilizing the injured limb. Current techniques require multiple steps with multiple components, thereby prolonging pain, swelling, and potential secondary injury. Additionally, a high level of training is required to administer existing techniques which could pose problems when time is of the essence.

In response, a novel technique has been created for splinting and casting injuries in emergency settings with a one-step process. The spray polyurethane foam is applied directly to the skin to create a contoured cast in minutes. Pressure is evenly distributed throughout the immobilized limb to minimize pain, blood-loss, and potential secondary injury. Additionally, any needed access ports are easily formed.

Application:

This technology could be used extensively in emergency clinical care situations and as a new value-added component of first aid kits to have on hand during any activities where splinting or stabilization of extremities may be required.

Benefits:

- Can be applied directly to the skin, in position, without the need for extensive training
- Contours to the injured extremity in a one-step process
- Utilizes waterproof, fire retardant material
- Eco-friendly “green” formulations are possible
- Can be used for limb or spinal immobilization
- Radiolucent, thereby enabling imaging of the injured limb
- Commercial sources of spray polyurethane foam are readily available
- Product packaging is lightweight and compact



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