Chrisofix® Rib Splint - Evidence at a Glance

Clinical Need: A Gap in Rib Fracture Care

In traditional clinical practice, no evidence-based conservative protocol exists for treating rib fractures beyond analgesia and rest. Recovery is slow, painful, and often complicated by impaired breathing. Conventional circumferential rib belts restrict chest expansion and may increase the risk of atelectasis and pneumonia, leaving a significant unmet clinical need for safe, effective external stabilisation.

The Solution: External Rib Stabilisation

The Swiss-designed and patented Chrisofix® Rib Splint stabilises fractured or cracked rib segments, reduces painful micromovements, and supports effective breathing mechanics. It is mouldable directly to the patient's chest, lightweight, breathable, water - resistant, and can be worn comfortably for 7–10 days, covering the most painful phase after injury.

Peer-Reviewed Clinical Evidence

A prospective clinical study evaluating the Chrisofix® Rib Splint was published in Injury (Elsevier) in August 2025, one of the world's leading trauma and orthopaedic journals (Injury 56, 112675). The study included patients with ≥3 rib fractures and compared 14 treated patients with 20 controls, followed over a 3-month period.

Key Clinical Outcomes

- Faster pain reduction during recovery period
- Shorter hospital stay (2.0 vs 2.7 days)
- Significantly fewer complications, especially atelectasis
- Improved breathing mechanics and earlier mobilisation

These outcomes confirm the device as a non-invasive, cost-effective component of multimodal rib-fracture management.

Safety, Quality & Regulatory Compliance

The Chrisofix® Rib Splint is a fully commercialised Class I medical device with full EU MDR compliance and FDA device listing. Production is performed exclusively in ISO 13485-certified facility, ensuring strict quality control, traceability, and safety throughout the manufacturing process.

Swiss Expertise & Corporate Background

Behind the device stands Chrisofix AG, a Swiss medical technology company (chrisofix.com) with over three decades of expertise in mouldable memory-metal orthoses. Chrisofix® designs patient-centric, clinically validated devices that are easy to apply and widely used across multiple fields of medicine.

Faster Recovery | Immediate pain reduction | Improved breathing | Shorter hospital stay | Increased quality of life | Cost-efficient solution

CHRISOFIX AG
Püntenstrasse 35
8185 Winkel
UID: CHE-108.526.594 MWST
SWITZERLAND

CHRISOFIX®

Chrisofix® Rib Splint: From Pain and Risk to Support and Recovery in Rib Fractures

In traditional clinical care, there is no established treatment protocol for rib fractures beyond analgesia and rest, despite the condition often causing significant pain and prolonged recovery. Healing is typically slow and uncomfortable, as patients struggle with every breath and movement. Conventional circumferential rib belts - which fully encircle the chest restrict breathing and can increase the risk of complications, including atelectasis and pneumonia. This lack of effective, evidence-based conservative treatment highlights the unmet clinical need that the Chrisofix® Rib Splint addresses.

The Swiss-developed and patented Chrisofix® Rib Splint is designed to stabilise fractured or cracked rib segments, reduce painful micromovements, facilitate breathing and effective respiratory mechanics, and ultimately speed up recovery.

Faster Recovery | Immediate pain reduction | Improved breathing | Shorter hospital stay | Increased quality of life | Cost-efficient solution

CHRISOFIX®

Regulatory Compliance, Quality Assurance and Corporate Background

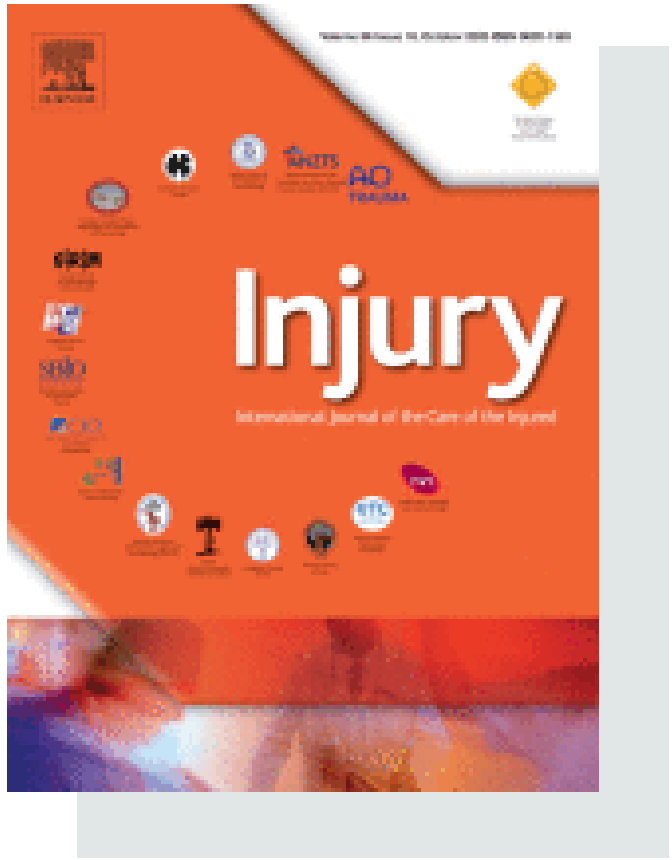
The Chrisofix® Rib Splint is a fully commercialised Class I medical device, registered and approved under all required international regulatory frameworks, including full EU MDR compliance and FDA device listing. The product is manufactured exclusively in a ISO 13485 - certified facility, ensuring stringent quality management, consistent production, complete traceability and robust documentation throughout the entire manufacturing process. These regulatory safeguards highlight the device's exceptional safety, reliability, and performance integrity, giving healthcare professionals confidence that the Chrisofix® Rib Splint meets the highest standards of modern medical technology and patient protection.

Behind the product stands Chrisofix AG, a Swiss medical device company (chrisofix.com) specialising in innovative, mouldable external orthoses developed using proprietary memory-metal technology. With more than three decades of expertise in orthopaedic support solutions - all designed in Switzerland and manufactured under strict quality control - Chrisofix® has established a strong reputation for creating patient-centric, clinically validated, and easy-to-apply devices that support recovery across multiple fields of medicine. This corporate foundation reinforces the trustworthiness and long-term reliability of the Chrisofix® Rib Splint in everyday clinical practice.

Peer - Reviewed Clinical Evidence Published in a Leading Trauma Journal

A prospective clinical study evaluating the effectiveness of the Chrisofix® external chest wall fixator (Chrisofix® Rib Splint) was published in Injury (Elsevier)—one of the most respected international journals in trauma and orthopaedic research—in August 2025 (Injury 56, 112675). This peer-reviewed publication provides strong, high-quality evidence supporting the clinical value of external rib fixation as an integral component of multimodal rib-fracture management, an area where treatment options have historically been limited.

The study was conducted across several thoracic surgery departments in Turkey and included patients with three or more traumatic rib fractures, representing a clinically severe patient population. A total of 14 patients were treated using the Chrisofix® Rib Splint and compared with a control group of 20 patients receiving standard care only. All participants were closely monitored over a three-month follow-up period, allowing for a robust assessment of both short-term recovery and longer-term clinical outcomes.



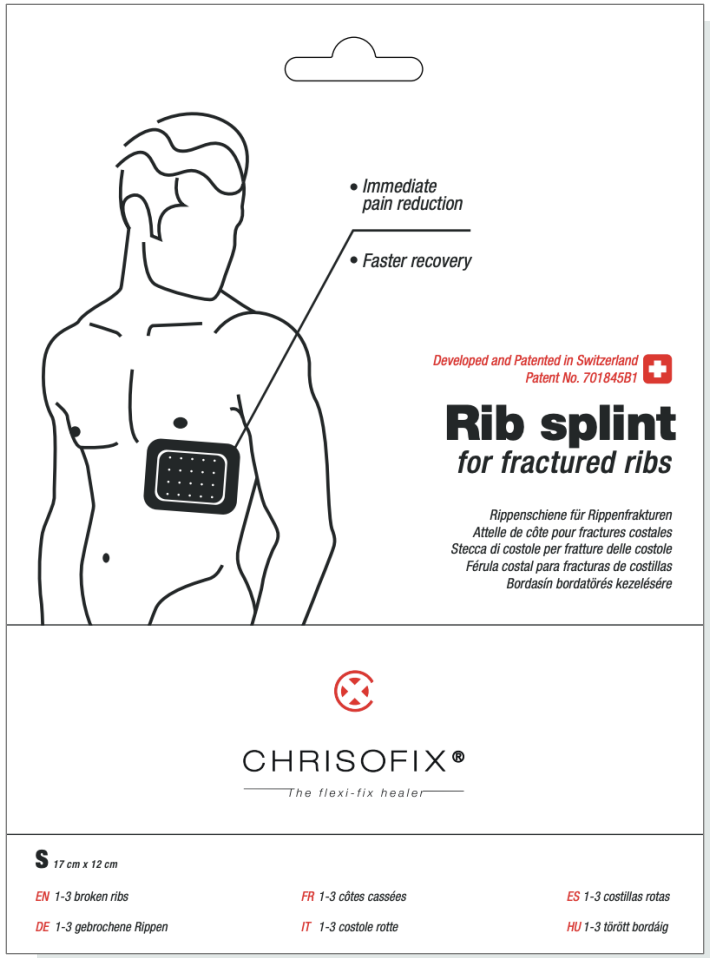
Faster Recovery
Immediate pain reduction
Improved breathing
Shorter hospital stay
Increased quality of life
Cost-efficient solution

CHRISOFIX®

Chrisofix® Rib Splint – Clinical Evidence Summary

Clinical Significance

The study demonstrates that the Chrisofix® Rib Splint provides effective chest wall stabilization, reduces painful micro-movement of fractured ribs, improves breathing mechanics, and accelerates recovery. These outcomes support its role as a non - invasive, cost-effective addition to multimodal rib fracture management, aligning with international trauma guidelines advocating improved respiratory function and early mobilization.

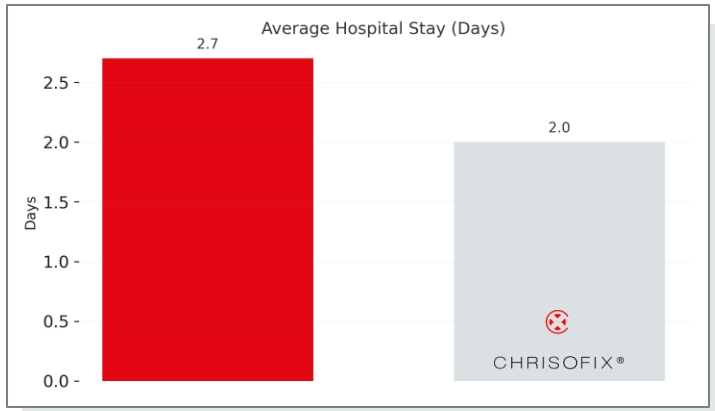


Why This Matters?

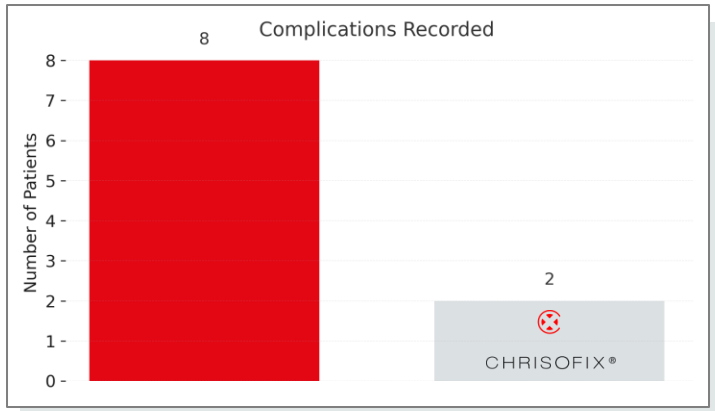
Rib fractures are common and often lead to severe pain, impaired ventilation, and complications such as pneumonia or atelectasis. The published data validate that the Chrisofix® Rib Splint can meaningfully improve patient outcomes, reduce hospitalization time, and lower complication rates — making it a valuable innovation in trauma care.

Clinical Evidence Summary: hospitalization time and complications

Faster recovery with fewer risks: the **Chrisofix® Rib Splint** reduces hospital stay while significantly lowering complication rates.



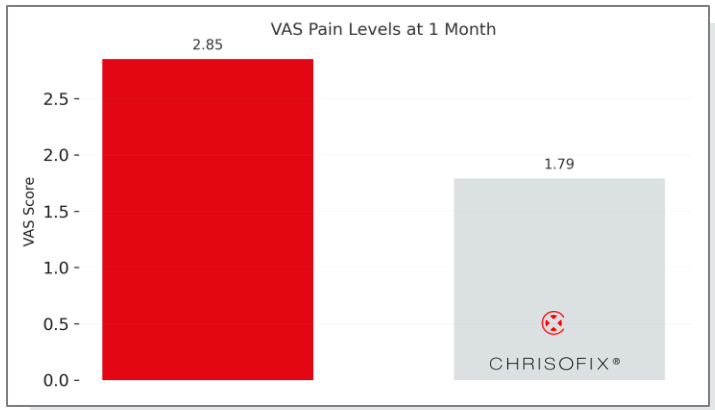
Patients treated with the **Chrisofix® Rib Splint** were discharged significantly earlier, demonstrating the device's positive impact on the efficiency of recovery. Improved respiratory mechanics and faster mobilization reduce the need for extended inpatient observation. Shorter hospital stays translate into lower healthcare costs, increased bed availability, and more streamlined trauma-care pathways. This makes the **Chrisofix® Rib Splint** both a clinically effective and economically attractive solution in rib-fracture management.



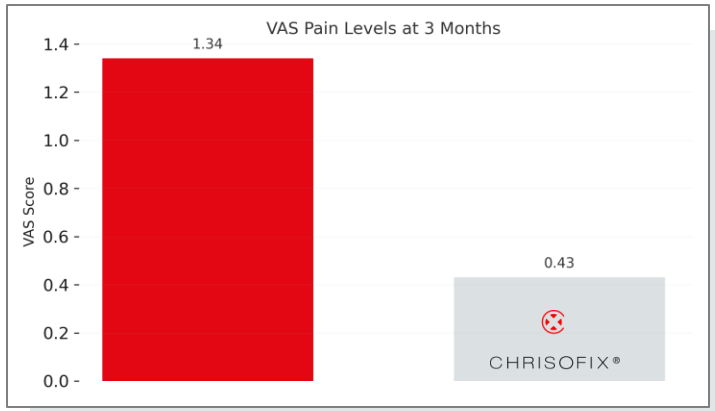
The group treated with the **Chrisofix® Rib Splint** experienced fewer complications, including a notably lower incidence of atelectasis—one of the most common and preventable issues following rib fractures. By supporting deeper breathing and more effective coughing, the splint promotes better pulmonary hygiene and reduces the risk of secondary respiratory problems. Fewer complications mean reduced need for additional interventions, imaging, or prolonged care. These findings reinforce the Chrisofix® Rib Splint as a valuable tool for enhancing patient safety and postoperative stability.

Clinical Evidence Summary: faster pain reduction

Faster pain reduction through immediate rib stabilization

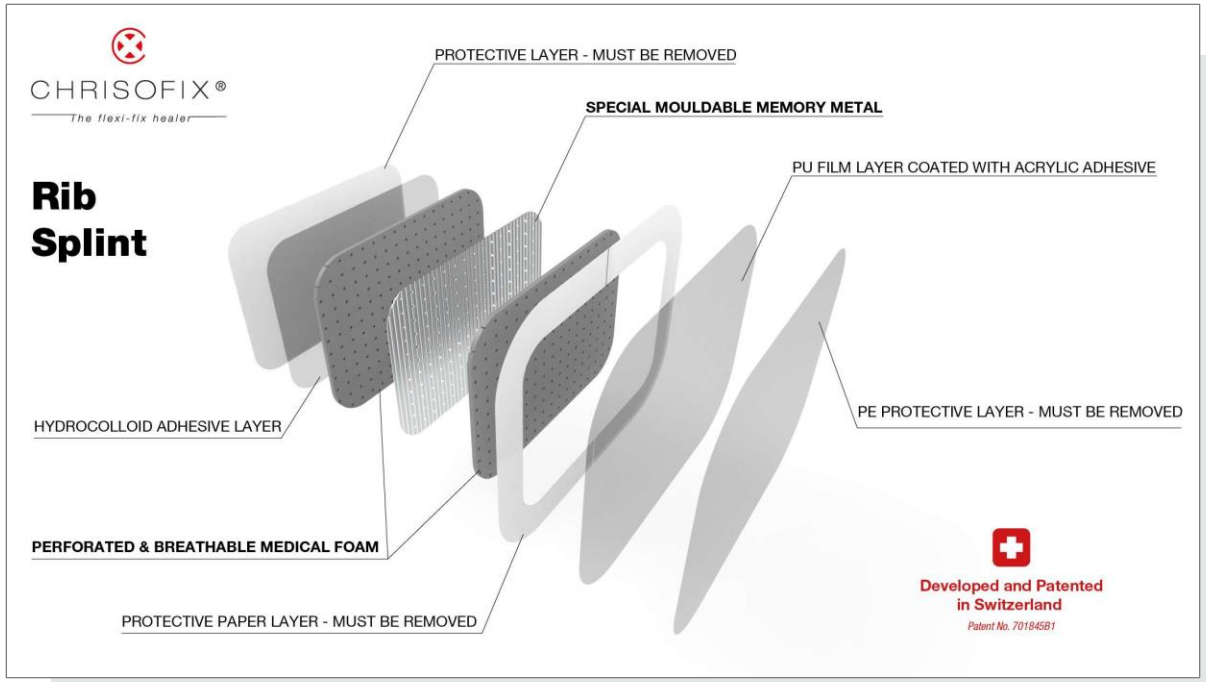


The first-month follow-up shows a clear reduction in pain among patients treated with the Chrisofix® Rib Splint compared with standard care alone. By stabilizing the injured rib segment and reducing micro-movement, the splint enables patients to breathe more freely and participate earlier in physiotherapy. Lower pain levels directly support recovery, mobility, and overall comfort during the critical early healing phase. These measurable improvements highlight the Chrisofix® Rib Splint as an effective component of multimodal pain management.



At three months, patients treated with the Chrisofix® Rib Splint reported markedly lower residual pain, indicating a smoother and more complete long-term recovery. Better early stabilization appears to reduce chronic discomfort and minimize lingering symptoms. For healthcare providers, this translates into reduced follow-up burden and improved long-term patient outcomes. The Chrisofix® Rib Splint supports not only short-term pain reduction but also high-quality, sustained healing.

Chrisofix® Rib Splint – Material structure



The Chrisofix® Rib Splint is engineered using a multi - layered, medical-grade structure designed to optimise stability, comfort, breathability, and skin adherence. Each layer fulfils a specific function, working together to provide effective chest wall support while remaining lightweight and patient-friendly. The splint can be easily moulded and shaped directly to the patient's chest, ensuring precise anatomical fit and optimal stabilization even on curved or asymmetrical surfaces. Thanks to its robust yet breathable construction, the device can be comfortably worn for 7–10 days, covering the most painful and functionally limiting period after a rib fracture without the need for multiple replacements. Its special perforated design provides continuous ventilation while maintaining full water resistance, allowing patients to shower and perform daily hygiene without compromising adhesion or device performance.

Chrisofix® Rib Splint – How to use it?

For detailed guidance on indications, application steps, and proper use of the Chrisofix® Rib Splint, please refer to our short instructional video.

Faster Recovery | Immediate pain reduction | Improved breathing | Shorter hospital stay | Increased quality of life | Cost-efficient solution

CHRISOFIX®

Chrisofix® Rib Splint – using the splint

Márta Vécsei, Physiotherapist

As a physiotherapist I encounter many types of injuries and bone fractures. With almost all types of fractures it can be said that the use of a brace or a cast greatly relieves the patient, and hastens recovery by keeping the injured bone segments in place. With rib fractures however, there hasn't been a brace that aids recovery or alleviates pain, and grants support for day to day routine movements to recommend to our patients. A few weeks ago I also broke my rib after a fall and can only now experience just how many problems I have to face. I was almost completely unable to move my torso or neck, I couldn't even lift my arms, bent at the elbow, more than 90°, nor lean forward; deep breaths (like yawning), coughing, sneezing, even blowing my nose caused a great deal of pain. A colleague of mine had heard of the Chrisofix® Rib Splint , which had already gained traction abroad in its use for nondisplaced rib fractures. Application of the Chrisofix® Rib Splint is simple, there is a comprehensive guide that helps patients with this process. I was a little worried about how I would sleep in the brace and how much the adhesive would irritate my skin. To my surprise it did not hinder my sleep at all, and, though sensitive to begin with, my skin didn't redden or itch because of it.

It remained fixed on my chest for 10 days, even with the summer heat and multiple showers daily, the adhesive held fast and dried on my skin quickly with a simple wipe. It afforded tremendous help in my daily movements, it gave support and reduced pain, but limited my movements when needed. The pain I had while coughing or sneezing almost completely dissipated; I could breathe more deeply, more freely, which is exactly what I had been missing since the start of my injury. As a professional, I am 100% satisfied with the product, with its quality and functionality. But having experienced its efficiency firsthand makes me recommend it even more wholeheartedly to everyone!