CHEST ORTHOSIS
FOR FRACTURED RIBS

IMMEDIATE PAIN REDUCTION (p<0.05)

Chrisofix®

- Accelerated recovery of respiratory functions (p<0.01)
- Shorter hospitalisation (p<0.001)
- Reduced risk of pneumonia
- Breathable and waterproof

EU patent: 087 46 07
US patent: 6,039,706
The effect of Chrisofix Chest Orthosis® / Rib-Secure in rib fracture patients

The Chrisofix Chest Orthosis® (rib splint / rib secure) is an effective and easy to use device for the treatment of rib fractures. It quickly reduces pain and increases the forced vital capacity (FVC). It decreases the paradoxical thoracic movement, if present, and reduces the risk of late complications. The rib splint is easy to apply securely in the correct position on fractured site. The Chest Orthosis is also comfortable to wear, hypoallergenic and X-ray transparent.

Rib fractures can disrupt the static of the chest wall, reduces the respiratory area, and thus causes restrictive and later obstructive breathing difficulties with unforeseeable consequences due to the increase of bronchial excretion. The principle of the Chest Orthosis is to immobilize the affected area. This is analogous to the reflex-like action of the patients who try to decrease the pain by pressing their hand on the injury site.

To prove the assumed positive effect of the chest orthosis in rib fracture patients, two multi centre clinical studies have been performed and published. These were presented at the 7th European Trauma Congress in Ljubljana during 2006 and published in the Proceeding Reprints are available. The following summarizes their findings;

![Graph showing FVC changes over time after admission](image)

In the second report (Mészáros, T., et al.: Use of chest orthosis can significantly shorten the hospitalisation of rib fracture patients, GS14C0261, p.: 279–282) two from each other independently performed controlled clinical studies were evaluated. In these two studies, 30 and 42 patients with 2-7 fractured ribs were evaluated. The first study included randomly selected 14 splinted and 16 control patients. The second one referred to a single-blind placebo controlled retrospective investigation on 26 Chrisofix-splinted and 16 sham-treated patients.

Chrisofix Chest Orthosis® was applied on the day of trauma. Painkiller, per os administrated expectorant, and physiotherapy ("breathing in a bag") belonged to the treatment strategy of both groups. Patients only without complications were discharged from the hospital if the fracture caused pain had been effectively reduced and had not caused any remarkable respiratory troubles.

There were no significant differences noted as to the age, sex or number of fractured ribs in any of the studied group including controls. The control group received the same treatment therapy as the Chrisofix treated patients. In both studies, a comparison to the control group showed a significant difference (p<0.05) in the duration of hospital stay (6.75 vs. 4.21 and 6.9 vs. 4.8 days respectively). The conclusion of both studies (metaanalysis) showed that the Chrisofix-treated patients spend on average 2.2 fewer days hospitalized, than the controls (p=0.0004). Thus, the studies have also demonstrated, that the use of the Chrisofix Chest Orthosis® is a cost effective treatment for rib fractures.

The Chrisofix Chest Orthosis® (rib splint / rib-secure) is available in two different sizes:

<table>
<thead>
<tr>
<th>Size</th>
<th>Dimensions</th>
<th>Art. Nr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>small</td>
<td>(17 x 12 cm)</td>
<td>604 (126 101)</td>
</tr>
<tr>
<td>large</td>
<td>(17 x 17 cm)</td>
<td>608 (126 101)</td>
</tr>
</tbody>
</table>

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