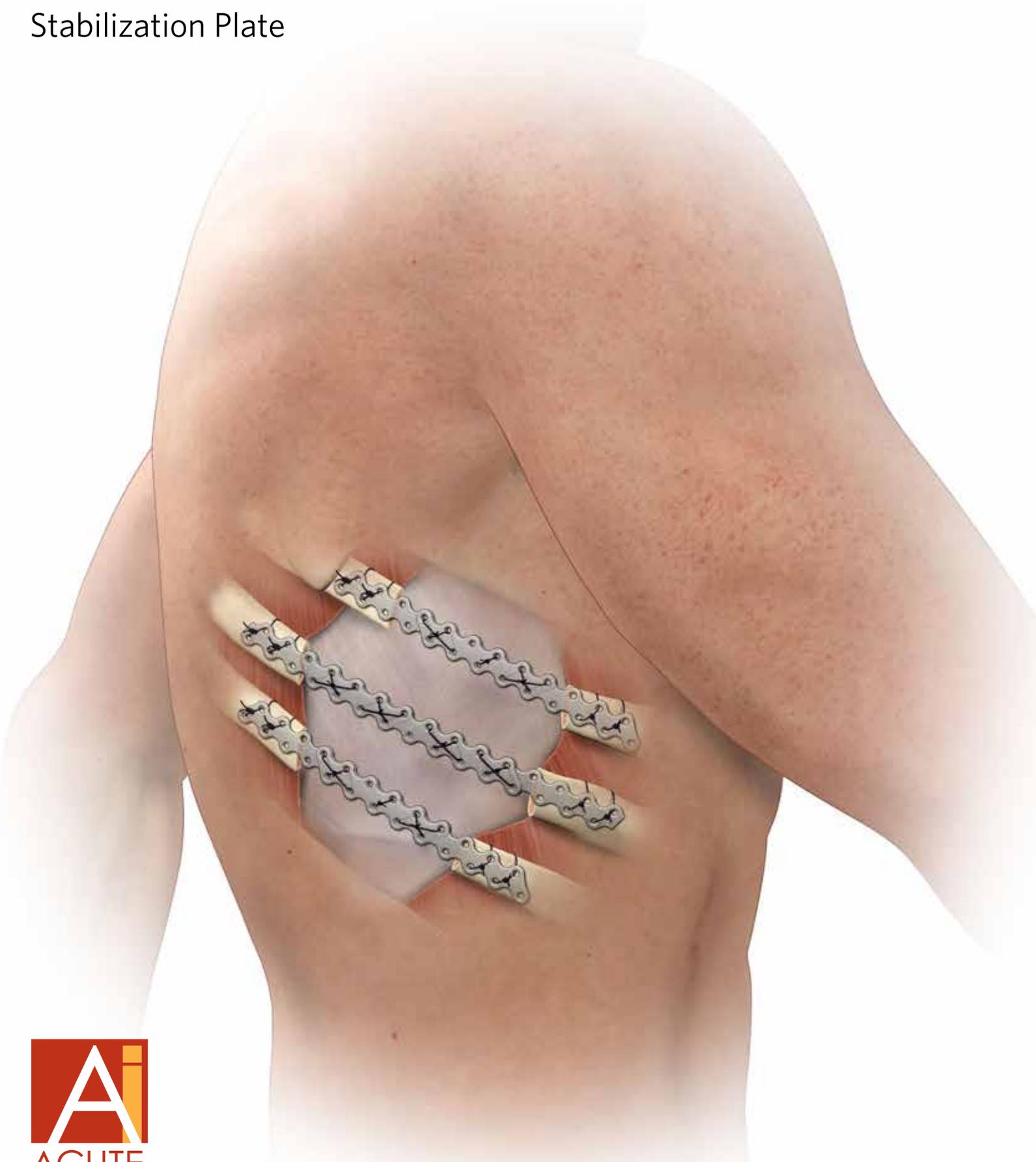


# BioBridge<sup>®</sup>

Resorbable Chest Wall  
Stabilization Plate



Innovative Solutions for Challenging Thoracic Procedures

BioBridge® is a versatile, non-permanent solution for chest wall stabilization. It was specifically designed to offer strength that exceeds typical chest wall loading and a resorption time that outlasts typical bone healing time.



### VERSATILE SOLUTION

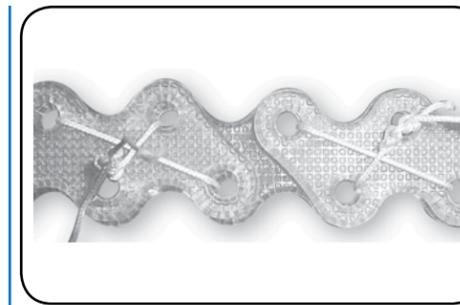
- Osteotomy stabilization
- Chest wall reconstruction
- Costochondral junction repair
- Pectus repair

### SUTURE PATTERNS

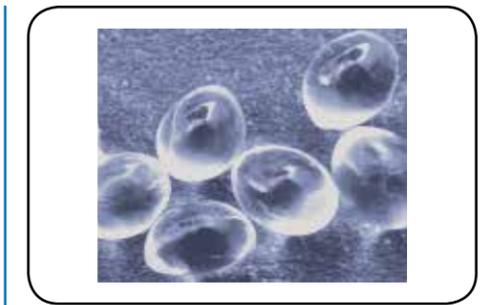
- Simple interrupted
- Figure-of-eight
- Compression

### PLATE ATTRIBUTES

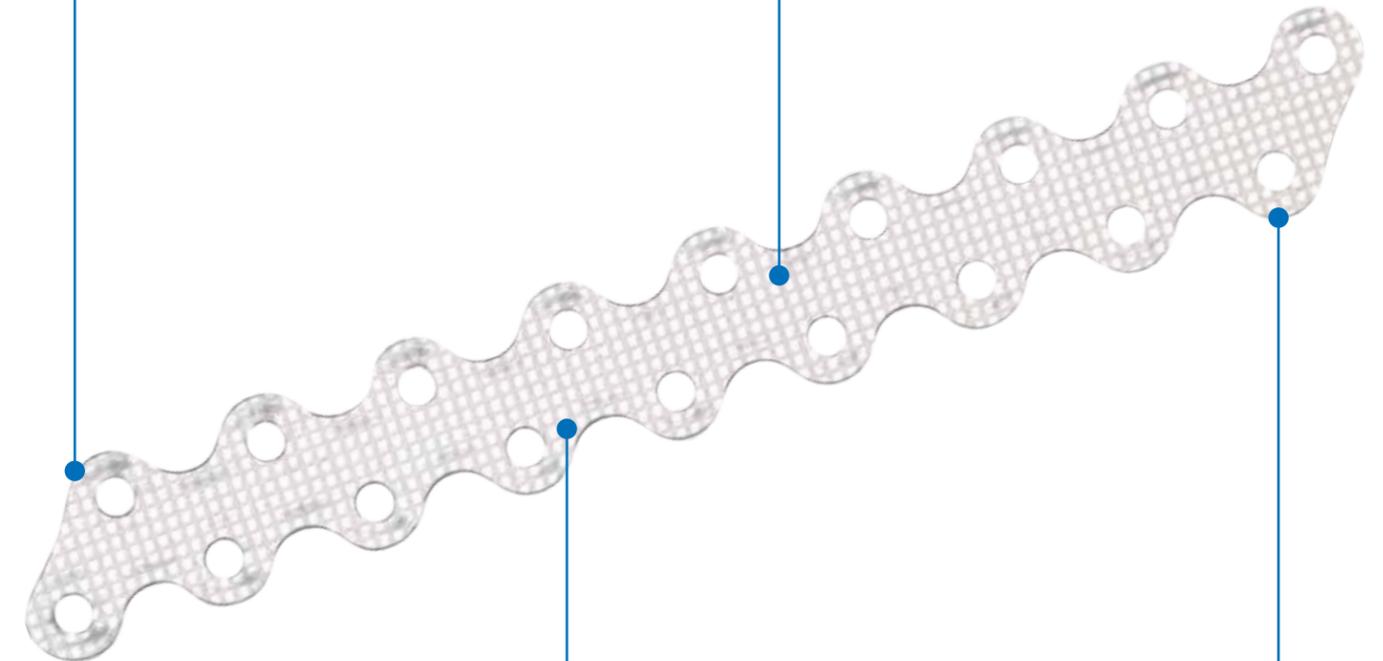
- Sterile packed
- Non-permanent
- Customizable



Stackable



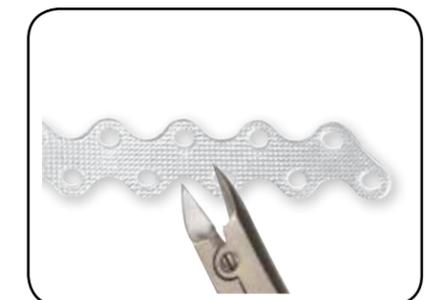
Resorbable



Flexible and Moldable



Trimable



## VERSATILE SOLUTION

### Costochondral Junction Repair

Fractured cartilage caused by trauma or during a thoracotomy can be challenging to repair and require extended healing time. Immobilizing the fracture with BioBridge to add stability and compression may help to reduce pain associated with movement, healing time, and non-union formation.

### Chest Wall Reconstruction

BioBridge can be used for chest wall reconstruction which provides long-term chest wall stability through bone healing and/or soft tissue scarring.

Reconstruction may be indicated due to chest wall tumors (benign and malignant), radiation necrosis, contiguous lung or breast cancer and lung/chest wall infections<sup>2,4</sup> and trauma. A detailed overview of the technique "Chest Wall Reconstruction Using Biomaterials" can be found at [www.acuteinnovations.com](http://www.acuteinnovations.com).

### Pectus Repair

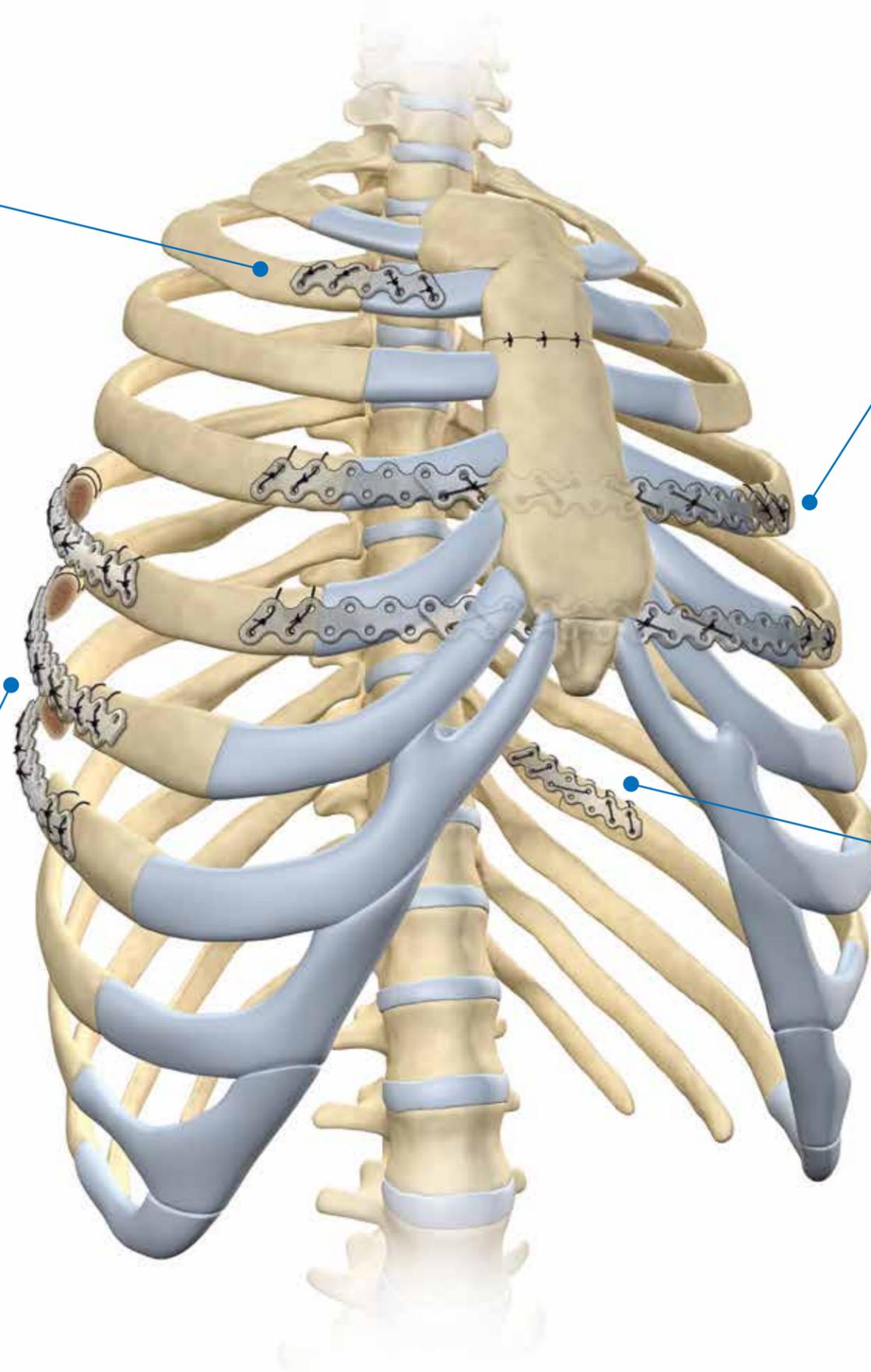
During a modified Ravitch procedure, BioBridge can be used as a non-permanent strut instead of using suture alone.

This technique provides added support to the elevated sternum, with the goal of reducing recurrence of the pectus deformity. For precise technique information please visit [www.acuteinnovations.com](http://www.acuteinnovations.com) to download a copy of "Open Pectus Repair - BioBridge Sternal Support".

### Osteotomy Stabilization

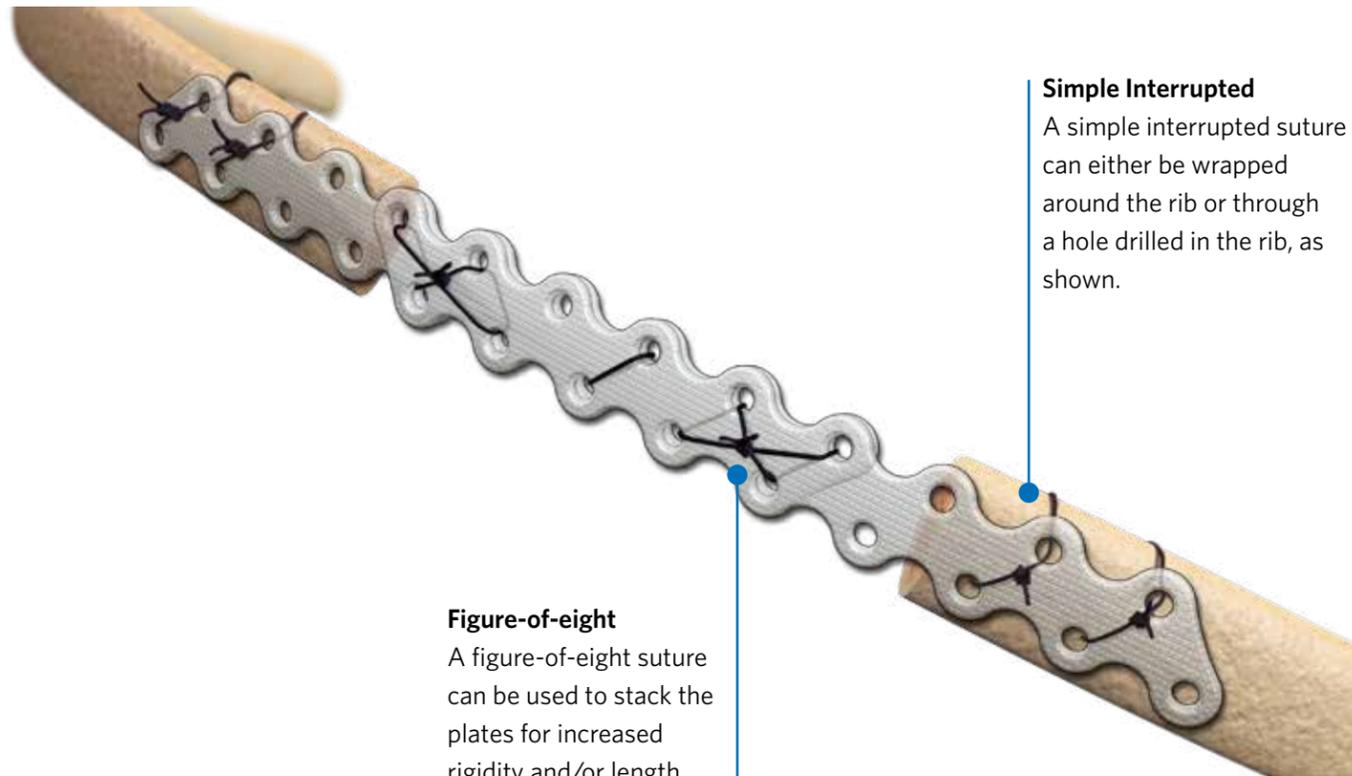
An osteotomy or iatrogenic fracture of the ribs during thoracotomy has been associated with post thoracotomy pain<sup>3</sup>.

BioBridge is ideal for internal stabilization of these types of fractures, if a non-permanent solution is desired.



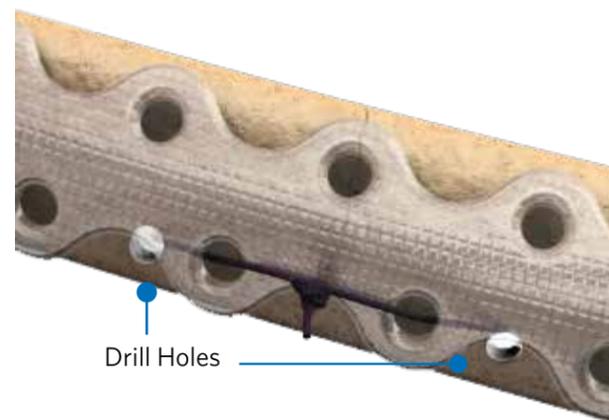
## SUTURE PATTERNS

Non-absorbable sutures, like braided polyester or nylon sutures (USP sizes 0 to 5), are recommended for use with BioBridge.



**Simple Interrupted**  
A simple interrupted suture can either be wrapped around the rib or through a hole drilled in the rib, as shown.

**Figure-of-eight**  
A figure-of-eight suture can be used to stack the plates for increased rigidity and/or length.



Drill Holes

### Compression

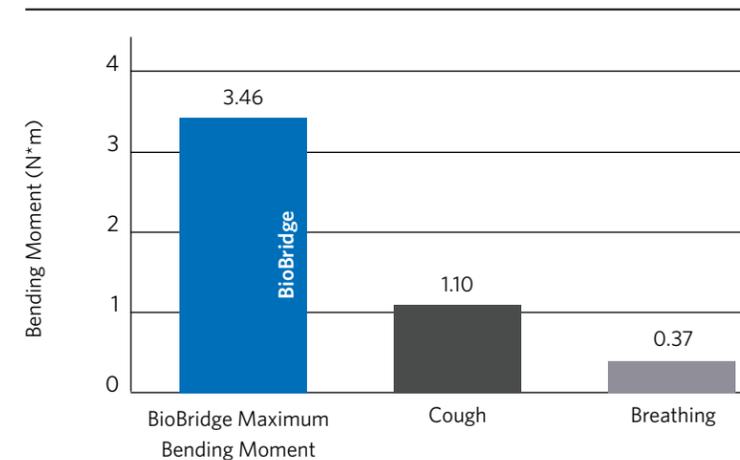
A compression suture may be added by drilling holes off-centered from the holes on the plate.

## PLATE ATTRIBUTES

BioBridge® is non-permanent, versatile, and customizable:

- Sterile and single-packed
- 110mm x 14mm x 1.8mm
- 70:30 L/DL-lactide blend
- Maintains strength and stability for up to six months
- Fully resorbed within 18-24 months through hydrolysis
- Textured for easy handling and visibility
- Can be cut or molded to match the rib curvature
- Plates can be stacked for increased rigidity and/or length

### Bending Strength<sup>1,5,6,7</sup>



BioBridge was specifically designed to withstand the forces of the chest wall while providing semi-rigid fixation, thus promoting bone regeneration. A lab test has shown that the strength of the BioBridge plate exceeds biological approximations of rib loading in coughing and breathing.

1. Data on file at Acute Innovations®.
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3. Little AG, Merrill WH. *Complications in cardiothoracic surgery: avoidance and treatment.* 2nd ed. West Sussex, UK: Wiley-Blackwell. 2010;25-26.
4. Martini N, Huvos AG, Burt ME, Heelan RT, Bains MS, McCormack PM, Rusch VW, Weber M, Downey RJ, Ginsberg RJ. Predictors of survival in malignant tumors of the sternum. *J Thorac Cardiovasc Surg.* 1996;111:96-106.
5. Pai S, Dunn RM, Babbitt R, Strom HM, Lalikos JF, Pins GD, Billiar KL. Characterization of forces on the sternal midline following median sternotomy in a porcine model. *J Biomech Eng.* 2008.130:051004.1-7
6. Wilson TA, Legrand A, Gevenois PA, De Troyer A. Respiratory effects of the external and internal intercostal muscles in humans. *J Physiol.* 2001;530.2:319-330.
7. Wilson TA, Rehder K, Kraye S, Hoffman EA, Whitney CG, Rodarte JR. Geometry and respiratory displacement of human ribs. *J Appl Physiol.* 1987;62.5:1872-1877.



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