

**MARKET OVERVIEW**

**Sternal Closure Market Overview**

- ▶ The global sternal closure systems market was estimated at USD 1.7 billion in 2020 and is expected to grow at a CAGR of 5.6% from 2021 to 2028.
- ▶ The growing geriatric population is considered to be the primary growth drivers for sternal closure systems.
- ▶ Over 700,000 open-heart surgeries requiring mid-line sternotomies are performed in the United States each year according to the American Heart Association.
- ▶ PEEK-OPTIMA™ based devices are projected to be the fastest growing segment of the sternal closure market, with several devices already on the market

**Problem to solve:**

- ▶ Cerclage wires have been the standard of care for sternotomies but can result in loosening and patient discomfort when coughing.
- ▶ Poor bone quality in geriatric patients can also result in wire cut through and instability post operatively.
- ▶ Studies have shown rigid fixation results in better outcomes compared to standard cerclage wires.

**MATERIAL BENEFITS**

**Material Benefits of PEEK-OPTIMA™ Natural<sup>1</sup>**

- ▶ Stiffness similar to bone
- ▶ Radiolucency and artifact-free imaging
- ▶ Strong, durable and highly resistance to creep and fatigue
- ▶ Design flexibility, precision machining, injection molding
- ▶ Long clinical history in Spine, CMF and Sports Medicine applications

**20+** Years of Clinical History

**500+** Devices Cleared

**>15M** Devices Implanted

**Potential benefits compared to metal<sup>2</sup>**

- ▶ Reduced stress at the bone-implant interface reduced cut through and device failure<sup>2,4</sup>
- ▶ Better fusion healing assessment on radiograph<sup>5</sup>
- ▶ CT and MRI compatible<sup>5</sup>
- ▶ Easier insertion<sup>3</sup>
- ▶ Easier revision, can be cut or burred easily<sup>4</sup>
- ▶ Lower risk of glove puncture compared to wires
- ▶ Flexibility and ease of handling<sup>3,4</sup>
- ▶ Continuous compression<sup>2,4</sup>

**APPLICATION EXAMPLES**



STERNFix™: PEEK-OPTIMA™ Carbon Fibre Reinforced Sternal Fixation system. © NEOS Surgery 2022.

**KEY BENEFITS COMPARED TO WIRE:**  
Continuous sternal compression, reduced risk of bone cut-through, lower risk of glove puncture and easy to use



Valkyrie™ PEEK-OPTIMA™ Sternal Fixation plate system. © Able Medical 2022.

**KEY BENEFITS COMPARED TO METAL PLATES:**  
Fast emergent re-entry, patient-specific contouring, improved visibility post-operatively with no imaging artifacts



**Invibio Ltd.**

Technology Centre,  
Hillhouse International  
Thornton Cleveleys,  
Lancashire FY5 4QD  
United Kingdom

Tel: +44 (0) 1253 898000  
FAX: +44 (0) 1253 898001

**Invibio Ltd.**

300 Conshohocken State Rd  
West Conshohocken, PA USA

866-INVIBIO (468 4246)  
Tel: +484 342 6004  
FAX: +484 342 6005

**For further information call us toll free at 866-INVIBIO or +44 (0)1253 898000, or please visit our website at:**

**► [Invibio.com](https://www.invibio.com)**

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