Titanium fixation

**Universal Neuro III**
The Universal Neuro III neatly contains a comprehensive selection of low-profile plates, skull base plates, screws, dynamic mesh, pre-formed mesh, and the instrumentation (including the ergonomic screwdriver handle) needed to fixate cranial reconstruction.

**Lower profile plates**
- 0.4mm profile height allows for rigid fixation with decreased palpability
- 25% deeper countersink* for a more flush plate/screw construct
- Select plates feature break-off tabs for easy handling and identification
- Comprehensive selection of plates including “dog-bone,” gap, and box plates along with various sizes of burr hole covers and shunt options

**Skull base plates**
- 20% thinner plates* with deeper countersink, broader bars, and smoother geometry
- The addition of dedicated skull base plates may make reconstruction of unique cranial approach quicker and more efficient through minimal plate modification

**AXS - Axial stability screw**
- Enhanced pick-up minimizes complications in loaded screwdriver hand-off from tech to surgeon, with optimized self-retention for reliable transport into OR field¹
- Self-centering feature facilitates off-axis insertion¹
- Optimized self-drilling screws¹
- Low profile heights of plate (0.4mm) and screw together: .45mm (3mm), .55mm (4mm), and .65mm (5mm)
Bone cements

DirectInject
DirectInject is the first and only on-demand, self-setting, HA cement. It is intended to repair neurosurgical burr holes, contiguous craniotomy cuts and other cranial defects not intrinsic to the stability of the bony structure.

Unique Features:
- No manual mixing
- Dual interval implantation due to second mixing cannula
- Consistent viscosity
- Fast setting
- Isothermic
- Osteoconductive
- Excellent wet field characteristics

HydroSet
The Universal HydroSet is a self-setting, HA cement intended for use in the repair of neurosurgical burr holes, contiguous craniotomy cuts and other cranial defects as well as in the augmentation or restoration of bony contour in the craniofacial skeleton.

Unique Features:
- Fast-setting
- Osteoconductive
- Isothermic
- Injectable or manual implantation
- Excellent wet field characteristics
We offer a comprehensive portfolio for your cranial reconstruction needs: PEEK, MEDPOR and PMMA.

**PEEK**

PEEK customized implants offer a strong alloplastic material with multiple fit options to accommodate the needs of both you and your patient. A PEEK CCI comes in two different kit configurations, Complex or Priority, based on both customer preference and complexity of implant design. A PEEK Complex kit comes with one non-sterile PEEK implant, a non-sterile Host Bone Model to represent the patient’s defect, and the design proposal with imbedded 3D views of the implant. A PEEK Priority kit includes both one non-sterile implant and the design proposal however omits the Host Bone Model.

**Unique features:**
- Precise fit: Designed and manufactured to produce a “drop-in fit”
- Customizable suture/drainage hole design with option for 1-6 pairs or full pattern suture hole implant
- Thickness: Implant wall thickness provided in either 3.3, 4, 5, or 6mm to cater to patient-specific needs
- Implant material and strength: Alloplastic material with the strongest yield strength within the CCI product portfolio

**PEEK Priority**

PEEK Priority implants are intended to be designed, manufactured and shipped to your facility within 5 standard business days. Implants can be ordered under this option depending on complexity and/or the patient’s defect.

**MEDPOR**

MEDPOR is a biocompatible, porous polyethylene material indicated for augmentation and/or restoration of bony and/or soft tissue deformities. The interconnecting, omni-directional pore structure may allow for fibrovascular ingrowth and integration of the patient’s soft tissue. The MEDPOR kit comes with 2 sterile MEDPOR implants, a sterile host bone model to represent the patient’s defect, and the design proposal with imbedded 3D views of the implant.

**Unique features:**
- Precise fit into voids by either a flange, inlay, or multi-piece design
  - Flanged designs allow for fixation directly into the flange, while inlays require plates and screws.
- Onlay indication to allow for enhanced functional and cosmetic outcomes for partial bone defects
- Single stage
  - Patient needs are addressed in one surgery
  - A predictive/virtual craniotomy is made with correspondence from the surgeon to the design engineer in a “design session”
  - The CCI is designed to that virtual resection, with additional views and warnings included in the design proposal
- Easy intraoperative modification with scalpel

**Pterional PLUS**

Traditional methods for cranial reconstruction do not account for post surgical hard and soft tissue atrophy that occurs over time, leading to persistent temporal hollowing (PTH). PTH causes drastically altered appearances and could possibly cause patients to seek revision surgery for an improved quality of life.
DuraMatrix

DuraMatrix-Onlay Plus
DuraMatrix-Onlay Plus is derived from purified Type 1, bovine Achilles tendon. It is intended for use as a dura substitute for the repair of dura mater. Exclusive non-porous layer provides additional leakage resistance.

50x<sup>7,8,9</sup>
lower liquid permeability rate than DuraGen Plus

DuraMatrix Suturable
DuraMatrix Suturable is a collagen dura membrane from purified Type 1 intact bovine dermis tissue.

74.8%<sup>7,9</sup>
greater suture pullout strength than Durepair

DuraMatrix-Onlay
DuraMatrix-Onlay is a purified, Type 1 collagen membrane derived from bovine Achilles tendon. DuraMatrix-Onlay has a thickness of 0.6mm, similar to that of the native dura.
**MEDPOR**

MEDPOR biocompatible high-density porous polyethylene implants provide surgeons with an expansive range of options for reconstruction and augmentation. The interconnecting, omni-directional pore structure may allow for fibrovascular in-growth and integration of the patient's tissue.\[^{10}\]

MEDPOR is easy to work with. The material can be trimmed with a blade in the sterile field, carved and feathered intra-operatively for an excellent final fit.

**Cranial hemisphere**

The MEDPOR cranial hemisphere for large cranial defects provides surgeons with an off-the-shelf alternative to customized implants, complex grafts, and other implant materials. The implant shape approximates the contour of the half cranium.

**TSI**

The MEDPOR TSI is designed to repair the sellar floor.

**TITAN implants**

Combines high-density polyethylene and titanium mesh in a single implant for increased flexibility, shape retention, radiographic visualization and strength.\[^{10}\]

**Pterional**

The MEDPOR pterional implant is designed to correct temporal hollowing.
2D mesh
Dynamic mesh has optimized properties to facilitate controlled, three-dimensional contouring while maintaining adequate rigidity for bone defects of varies sizes and locations. Dynamic mesh can be shaped to fit most three-dimensional bone surfaces without unwanted wrinkled or overlapped areas.

**Unique features:**
- Standard
  - Gold - 0.6mm profile height
  - Blue - 0.3mm profile height
  - Green - 0.8mm profile height
- Dedicated screw holes for many options in screw place
- Countersink capabilities allow for lower screw-to-mesh profile height
- MR conditional allows diagnostics after implantation

Hybrid mesh

**Unique features:**
- New 0.3mm Hybrid mesh - 3x stronger than 0.3mm Dynamic mesh
- MR conditional - allows diagnostics after implantation

3D mesh

**Unique features:**
- Countersink - designed to reduce palpability
- Increased stiffness, for increased patient protection, compared to 2D mesh
- Used for open defects up to 70mm and muscle attachment (the 1.0mm can cover a max opening of approximately 114mm x 164mm)
- Pre-formed can minimize bending to fit patient
- MR conditional allows diagnostics after implantation
A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery. The information presented is intended to demonstrate the breadth of Stryker product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets.

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DuraGen is a registered trademark of Integra Lifesciences Corporation.
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DuraMatrix, DuraMatrix-Onlay and DuraMatrix-Onlay PLUS are manufactured by Collagen Matrix, Inc., Oakland, New Jersey USA.

* When compared to Stryker Universal Neuro II System Implants
  1 Stryker Test Reports T12269 and T13137
  2 Stryker Test Reports T12441 and T12446

References:
1. Product performance references: K172572 - Performance Testing, End User Test
4. HydroSet IFU
7. In vitro data on file at Collagen Matrix, Inc.
11: Internal testing TI4282
12. TI4579 Mesh Upgrade 3D Mesh Impression Test with Maximum Defect
13. TI4580 Mesh Upgrade 3D Mesh Impression Test with 70mm Defect