

# Aesculap<sup>®</sup> ABC2

Anterior Cervical Plating System



Aesculap Spine

# Aesculap® ABC2



# Advanced Biomechanical Concept

## Cervical Plating

Anterior cervical fusion was first performed by Bailey and Badgley, Smith and Robinson, and Cloward in the 1950s. Despite minor technical differences, poor clinical results were noticed which called for new fixation systems.

Anterior cervical plating systems were designed to augment spinal stability and to reduce graft-related surgical complications until bony fusion occurs.

From this need for increased stability and improved clinical outcomes, different designs of plates like constrained, semi-constrained and dynamic plating systems have emerged. They coexist legitimately, but in addition to an augmented stability, technically advanced and fully dynamic plates like ABC2 show noteworthy advantages.

ABC2 allows for translation and rotation at the plate-screw interface and locks the screw within the plate. Thereby preventing back-out while allowing screw angle variation and screw sliding. Most importantly, the construct facilitates load sharing and avoids stress shielding of the graft by allowing the screws to translate axially. Better graft loading, in turn results in faster fusion and consequently fewer complications.

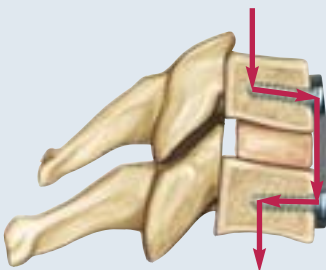
Recently, Pitzen et al. compared the implant complications and speed of fusion in both rigid and dynamic plates and conclude that dynamic plates should be considered to be the preferred treatment option.<sup>1</sup>

<sup>1</sup>Pitzen T, Chrobok J, Štulic J, Ruffing S, Drumm J, Sova L, Kučera R, Vyskočil T, Steudel W. Implant complications, fusion, loss of lordosis, and outcome after anterior cervical plating with dynamic or rigid plates: two-year results of a multi-centric, randomized, controlled study. *Spine* 2009; 34(7), 641-646.

## Principles of Dynamic Osteosynthesis

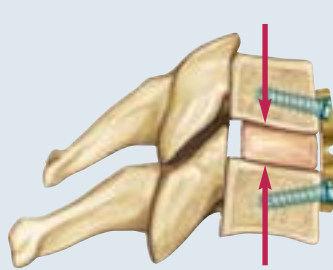
### Stress shielding

*Loading forces applied with constrained (rigid) construct*

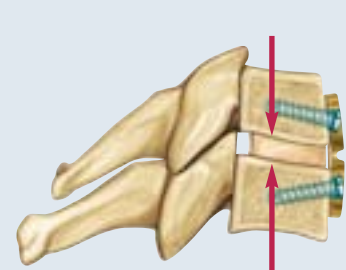


### Load sharing

*Loading forces applied with dynamic construct before settling*



*Loading forces applied with dynamic construct after settling*



**Wolff's Law (Julius Wolff, 1836–1902) states that:**

**"Every change in the function of a bone is followed by definitive changes in its internal architecture and secondary alterations in its external confirmation."**

This means that osseous tissues remodel in direct response to the stresses placed upon them. The ABC2 dynamic system is designed to take full advantage of this principle. It avoids stress shielding and allows for full load sharing resulting in a faster and more substantial fusion.

# Aesculap<sup>®</sup> ABC2

## Features of the ABC2 System



### Intelligent Implant Design

- Fully dynamic system addressing "Wolff's Law"
- Implant design allows screw angulation of +/- 35° in the vertical axis and +/- 8° in the medial/lateral direction
- Plate marking to give orientation for the plate size
- Pre-lordosed plates respect the cervical anatomy
- Plate contouring possible for the individual patient

### Fully Dynamic System

- Dynamic screw/plate interface allows graft settling and load sharing
- Faster fusion due to load sharing<sup>1</sup>
- Earlier and more substantial graft incorporation

<sup>1</sup>Pitzen T, Chrobok J, Štulic J, Ruffing S, Drumm J, Sova L, Kučera R, Vyskočil T, Steudel W. Implant complications, fusion, loss of lordosis, and outcome after anterior cervical plating with dynamic or rigid plates: two-year results of a multi-centric, randomized, controlled study. Spine 2009; 34(7), 641-646.



### Unique Self-locking Mechanism

- "Zero-step" automatic locking screws
- Spring-loaded locking mechanism integrated
- Time saving and safe procedure

### Wide Range of Implants

- Adequate selection of sizes presenting the right implant to fit the patient
- ABC E-Plate for addressing adjacent segment disease
- Cranial and caudal extension possible, may be fused without having to remove the primary plate

# Aesculap® ABC2

## Proven Success



Preoperative



Discharge

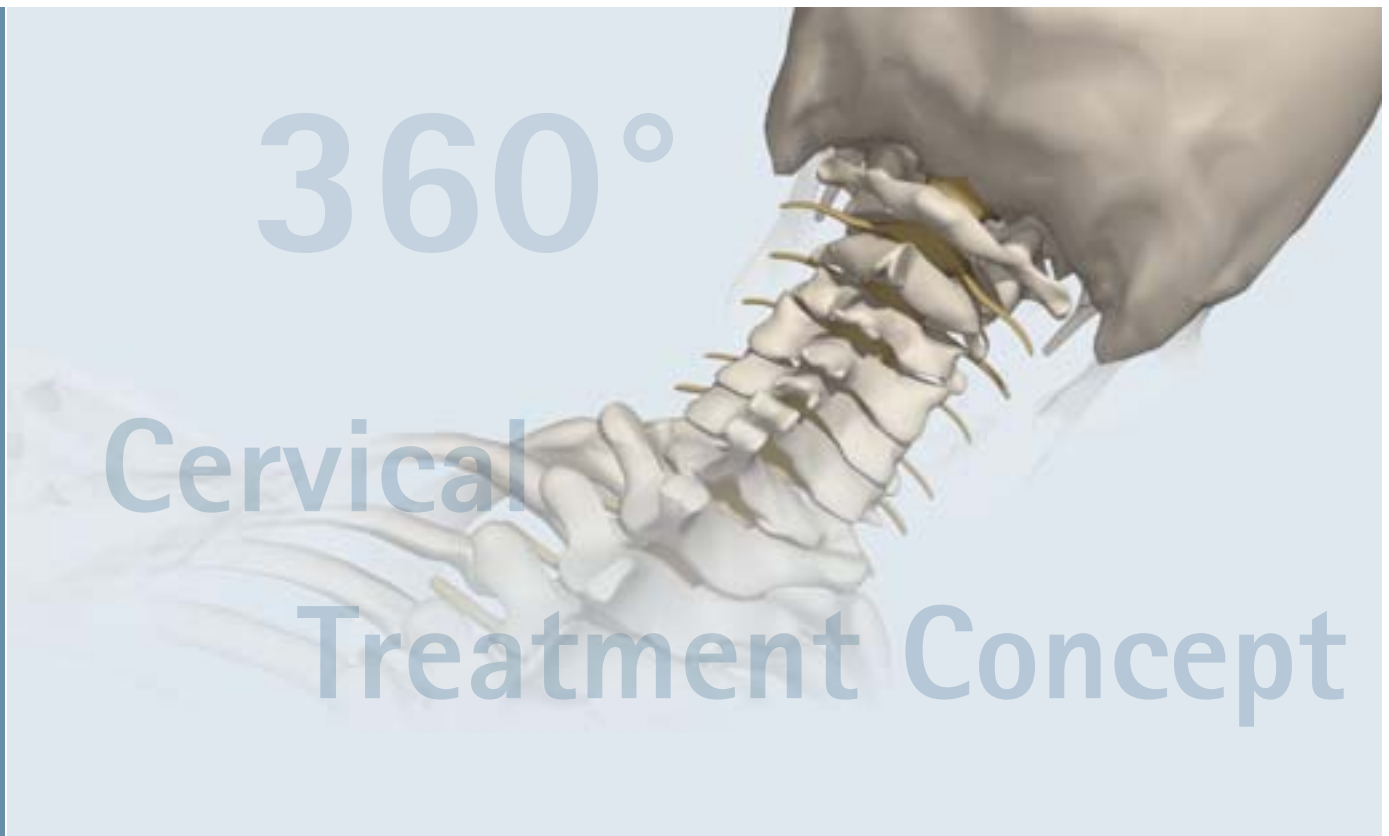





6 Months Postoperative

- ABC2 has been successfully used to treat more than 50,000 patients.
- ABC2 is based on long-term experience as Aesculap pioneered cervical plating systems by developing the Caspar Plate in the early 1980s.
- Recently, Pitzen et al. concluded that dynamic plate designs provide less implant complications and a faster fusion of the cervical spine compared with rigid plate designs.<sup>1</sup>
- With the ABC2 self-locking screws, plate alignment marking, corpectomy plates and thought-out instrumentation, the ABC2 system combines easy handling with complete clinical solutions.
- The 360° cervical treatment concept with ABC2, S<sup>4</sup> Cervical and CeSpace offers one-stop fulfilment for a successful fusion, proven in thousands of surgeries.

<sup>1</sup>Pitzen T, Chrobok J, Štulic J, Ruffing S, Drumm J, Sova L, Kučera R, Vyskočil T, Steudel W. Implant complications, fusion, loss of lordosis, and outcome after anterior cervical plating with dynamic or rigid plates: two-year results of a multi-centric, randomized, controlled study. Spine 2009; 34(7), 641-646.

## 360° Cervical Treatment Concept



ABC2	CeSpace	S <sup>4</sup> Cervical
 <p data-bbox="156 1832 432 1899"><b>Anterior Cervical Plating System</b></p> <ul data-bbox="156 1937 470 2033" style="list-style-type: none"><li>■ Fully dynamic system</li><li>■ Unique self-locking screws</li><li>■ Excellent clinical results</li></ul>	 <p data-bbox="561 1832 863 1899"><b>Anterior Cervical Interbody Fusion System</b></p> <ul data-bbox="561 1937 837 2033" style="list-style-type: none"><li>■ Two materials</li><li>■ Optimized contact area</li><li>■ Wide size range</li></ul>	 <p data-bbox="1008 1832 1310 1899"><b>Posterior Occipital Cervical Thoracic Fixation System</b></p> <ul data-bbox="1008 1937 1444 2072" style="list-style-type: none"><li>■ Multiple screw and connector options</li><li>■ Small implants with wide screw angle</li><li>■ Possibility to connect with S<sup>4</sup> thoracolumbar system</li></ul>

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