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# Instructions for Use SYNCAGE™ EVOLUTION

This instruction for use is not intended for  
distribution in the USA.

# Instructions for Use

## SYNCAGE™ EVOLUTION

Please read these instructions for use, the Synthes brochure "Important Information" and the corresponding surgical techniques carefully before use. Ensure that you are familiar with the appropriate surgical technique.

### Material

Material:	Standard:
PEEK	ASTM F 2026
Tantalum	ISO 13782 / ASTM F 560

### Intended use

SYNCAGE EVOLUTION is an implant and instrument system for anterior lumbar interbody fusion (ALIF) for skeletally mature patients. It is intended to replace lumbar interbody discs and to fuse adjacent vertebral bodies at vertebral levels L1-S1 following anterior lumbar discectomy for reduction and stabilization of the lumbar spine.

### Indications

Lumbar and lumbosacral pathologies for which segmental spondylolysis is indicated, for example:

- Degenerative disc diseases and spinal instabilities
- Revision procedures for post-discectomy syndrome
- Pseudoarthrosis or failed spondylolysis
- Degenerative spondylolisthesis
- Isthmic spondylolisthesis

### Note:

The SYNCAGE EVOLUTION Spacer must be applied in combination with supplemental fixation, e.g. DePuy Synthes supplemental fixation.

### Contraindications

- Vertebral body fractures
- Spinal tumours
- Serious Spinal instabilities
- Primary Spinal deformities
- Osteoporosis
- Infection

### Potential Risks

As with all major surgical procedures, risks, side effects and adverse events can occur. While many possible reactions may occur, some of the most common may include:

Problems resulting from anesthesia and patient positioning (e.g. nausea, vomiting, dental injuries, neurological impairments, etc.), thrombosis, embolism, infection, excessive bleeding, iatrogenic neural and vascular injury, damage to soft tissues incl. swelling, abnormal scar formation, functional impairment of the musculoskeletal system, Complex regional pain syndrome (CRPS), allergy/hypersensitivity reactions, side effects associated with implant or hardware loosening, malunion, non-union, ongoing pain; damage to adjacent bones (e.g. subsidence), discs (e.g. adjacent level degeneration), or soft tissue, dural tear or spinal fluid leak; spinal cord compression and/or contusion, partial displacement of the graft, vertebral angulation.

### Sterile device

**STERILE R** Sterilized using irradiation

Store implants in their original protective packaging, and do not remove them from the packaging until immediately before use.

Prior to use, check the product expiration date and verify the integrity of the sterile packaging. Do not use, if the package is damaged.



Do not re-sterilize

### Single-use device



Do not re-use

Products intended for single-use must not be re-used.

Re-use or reprocessing (e.g. cleaning and re-sterilization) may compromise the structural integrity of the device and/or lead to device failure which may result in patient injury, illness or death.

Furthermore, reuse or reprocessing of single-use devices may create a risk of contamination e.g. due to the transmission of infectious material from one patient to another. This could result in injury or death of the patient or user.

Contaminated implants must not be reprocessed. Any Synthes implant that has been contaminated by blood, tissue, and/or bodily fluids/matter should never be used again and should be handled according to hospital protocol. Even though they may appear undamaged, the implants may have small defects and internal stress patterns that may cause material fatigue.

### Precautions

When using ALIF cages patient clinical outcome can be influenced by the following:

- Severe, endocrine-induced bone diseases (e.g. hyperparathyroidism)
- Current therapy with steroids and with drugs, which intervene in calcium metabolism (e.g. calcitonin)
- Severe, poorly controlled diabetes (diabetes mellitus) with bad wound healing tendencies
- Immunosuppressive therapy
- Poor bone quality, osteoporotic bone
- excessive patient loading beyond design limits (i.e. trauma, obesity)
- age of the patient
- poor nutritional status

The general risks associated with surgery are not described in these instructions for use. For more information, please refer to the Synthes brochure "Important Information".

### Warnings

ALIF approach holds specific risks: excessive blood loss due to damage to large blood vessels (quoted rates in the medical literature put this risk at 1% to 15%); for males, another risk unique to this approach is that approaching the L5-S1 (lumbar segment 5 and sacral segment 1): retrograde ejaculation.

It is strongly advised that SYNCAGE EVOLUTION is implanted only by operating surgeons who are familiar with the general problems of spinal surgery and who are able to master the product-specific surgical techniques. Implantation is to take place with the instructions for the recommended surgical procedure. The surgeon is responsible for ensuring that the operation is carried out properly.

The manufacturer is not responsible for any complications arising from incorrect diagnosis, choice of incorrect implant, incorrectly combined implant components and/or operating techniques, the limitations of treatment methods, or inadequate asepsis.

### Combination of medical devices

Synthes has not tested compatibility with devices provided by other manufacturers and assumes no liability in such instances.

### Magnetic Resonance environment

MR Conditional:

Non-clinical testing of the worst-case scenario has demonstrated that the implants of the SYNCAGE EVOLUTION system are MR conditional. These articles can be scanned safely under the following conditions:

- Static magnetic field of 1.5 Tesla and 3.0 Tesla.
- Spatial gradient field of 300 mT/cm (3000 Gauss/cm).
- Maximum whole body averaged specific absorption rate (SAR) of 4 W/kg for 15 minutes of scanning.

Based on non-clinical testing, the SYNCAGE EVOLUTION implant with standard screws will produce a temperature rise not greater than 3.8°C at a maximum whole body averaged specific absorption rate (SAR) of 4 W/kg, as assessed by calorimetry for 15 minutes of MR scanning in a 1.5 Tesla and 3.0 Tesla MR scanner.

MR Imaging quality may be compromised if the area of interest is in the exact same area or relatively close to the position of the SYNCAGE EVOLUTION device.

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