

## AO-GO Contributors:

### Core Team:

Hans-Jörg Meisel,  
Zorica Buser, Amit Jain,  
Yabin Wu, Nancy Santesso

### Topic Lead:

Jacobus J Arts,  
Viswanadha Arun-Kumar,  
Juan P. Cabrera, Stipe Corluka,  
Andreas K. Demetriades,  
Waeel O. Hamouda,  
Patrick C. Hsieh, Amit Jain,  
Christopher T. Martin,  
Sathish Muthu,  
Ricardo Rodrigues-Pinto,  
Gianluca Vadalà,  
Pieter-Paul A. Vergroeseng

### Guideline Development Panel:

Sashin Ahuja, Samuel K. Cho,  
Ashish D Diwan,  
Mohammad El-Sharkawi,  
Tamás Fekete, Gabriel Liu,  
Zhuojing Luo, Luca Papavero,  
Peter G. Passias, K. Daniel Riew,  
Daisuke Sakai, John H. Shin,  
Veranis Sotiris, Yu Sun,  
Emiliano Vialle, Jeffrey C. Wang,  
Kota Watanabe, S. Tim Yoon,  
Atiq Uz Zaman

### Systematic Review

#### Participants:

Aidin Abedi, Neha Agarwal,  
Luca Ambrosio, Jacobus J Arts,  
Viswanadha Arun-Kumar,  
Jacob Babu, Caitlin Bakker,  
Samuel Broida, Zorica Buser,  
Juan P. Cabrera,  
Charles André Carazzo,  
Miguel Cartagena,  
Andrew S. Chung,

Michael J. Collins, Stipe Corluka,  
Sergio De Salvatore,  
Andreas K. Demetriades,  
Moritz Deml, Vincenzo Denaro,  
Suraj Dhanjani, Sara E. Diniz,  
Mohammad El-Sharkawi,  
Nida Fatima, Waeel O. Hamouda,  
Andrew Harris,  
Anne-Katrin Hickmann,  
Thomay-Claire Ayala Hoelen,  
Jim Hoffmanna,  
Kenneth Holton,  
Patrick C. Hsieh, Amit Jain,  
Sandro Krieg, Oscar Krol,  
Ronit Kulkarni, Paul A. Lender,  
Arjan Loenen,  
Francisco Verdu Lopez,  
Christopher T. Martin,  
Georgios Mavrovounis,  
Hans Jörg Meisel,  
Mohamed Mesregah,  
Sathish Muthu,  
Peter G. Passias,  
Nikhil Ponugoti,  
Steven M. Presciutti,  
Bangping Qian,  
Robert Ravinsky,  
Guillermo A. Ricciardib,  
Daniel K. Riew,  
Ricardo Rodrigues-Pinto,  
Navraj S. Sagoo, John Shin,  
Kyaw Min Soe,  
Gianluca Vadalà, Sotiris Veranis,  
Pieter-Paul A. Vergroeseng,  
Vibhu Krishnan Vishwanathan,  
Jeffrey C. Wang, Kota Watanabe,  
Paul C. Willems, Yabin Wu,  
S. Tim Yoon, Ratko Yuracc

### External Reviewers/

#### Observers:

Mauro Alini, Miranda van Hooff

- AO-GO was developed by an international consortium of over 70 surgeons and researchers with expertise in degenerative spine diseases.
- AO-GO is the first evidence-based guideline to provide recommendations for the use of osteobiologics in ACDF.
- Systematic reviews were conducted for each topic in the guideline and the evidence gathered was used to generate the recommendations. These reviews have been published separately.
- Due to the low or very-low levels of evidence currently available in the literature, all recommendations provided are conditional.

An additional summary of evidence for each recommendation can be found in the published guideline: **AO-GO Study group.** AO Spine Guideline for the Use of Osteobiologics (AO-GO) in Anterior Cervical Discectomy and Fusion for Spinal Degenerative Cases. Global Spine Journal. 2024. Month; Vol. 14(2S).

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Quick guide to:

**AO-GO**

by AO Spine Knowledge  
Forum Degenerative

AO Spine, Clavadelerstrasse 8,  
CH-7270 Davos, Switzerland

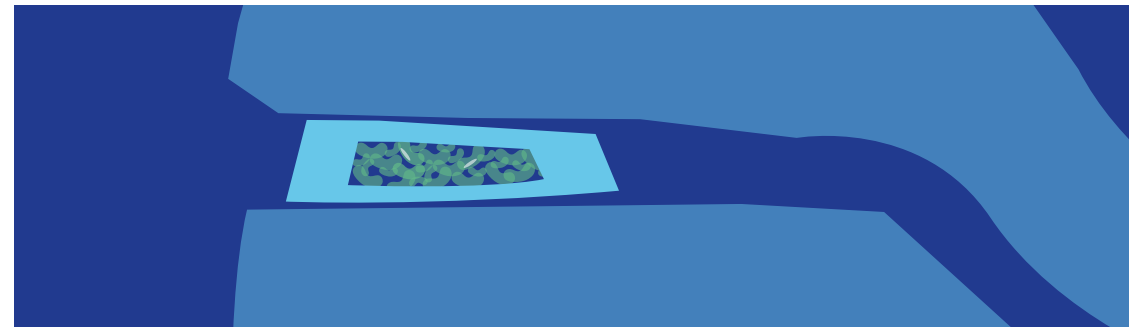
Phone +41 81 414 21 11  
info@aospine.org

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The AO Spine Guideline for the use  
of Osteobiologics in Anterior Cervical  
Discectomy and Fusion (ACDF) for  
Spinal Degenerative Cases

## Osteobiologics in Spine Surgery:

Key topics and conditional recommendations from the AO Spine Guideline



### Autograft versus cage with osteobiologic

In primary ACDF surgery for degenerative conditions, we suggest that either structural iliac crest autograft, or a cage with an osteobiologic (such as tricalcium phosphate, demineralised bone matrix, hydroxyapatite, or allograft) can be used with similar outcomes.

**Remarks:** This recommendation applies to the use of different cages such as PEEK or titanium, but does not address the use of morselized autograft (bone dust) in a cage. The choice of iliac crest autograft or cage plus osteobiologic may be dependent on availability, current costs and resources, which may vary with the institution and clinical situation (such as in patients with comorbidities). However, there is little to guide the use of autograft, cage, or osteobiologic based on comorbidities. It is important to discuss donor site morbidity with patients when using autograft.

### Allograft versus cage with osteobiologic

In primary ACDF surgery for degenerative conditions, we suggest either allograft or a cage with an osteobiologic depending on factors such as availability, costs, and resources.

**Remarks:** Because of the lack of evidence for differences in benefits, other factors will play a greater role in choice of allograft or cage. Factors may vary based on availability of allograft, with the institution and clinical situation (such as in patients with comorbidities). However, there is little to guide the use of allograft, cage, or osteobiologic based on comorbidities.

### Use of Bone Morphogenetic Protein (BMP)

When using a cage with osteobiologic in ACDF surgery, we suggest osteobiologics other than BMP in common clinical situations.

**Remarks:** There may be clinical situations where BMP may be a reasonable choice. However, given the potential increase in harms, close monitoring for anterior soft tissue complications (such as dysphagia) is warranted when used.

### Single or multi-level surgery

We suggest that an osteobiologic can be used in single or multi-level primary ACDF surgery for degenerative conditions.

**Remarks:** Surgeons may decide to use osteobiologics in single or multi-level fusion based on clinical situation. The choice of osteobiologic may be dependent on factors such as availability, institution, and clinical situation.

### ACDF – Cervical Total Disc Replacement (TDR) hybrid construct surgery

In ACDF – TDR hybrid construct surgery for degenerative conditions, we suggest for the fusion level using either structural iliac crest autograft or allograft or a cage with osteobiologic (such as demineralised bone matrix, bovine bone or BMP) to achieve similar outcomes.

**Remarks:** The choice of iliac crest autograft or allograft or osteobiologics may be dependent on availability, current costs and resources which may vary with the institution and clinical situation (such as in patients with comorbidities). However, there is little to guide their use based on comorbidities.

### Revision surgery

No recommendation was made for the use of osteobiologics in revision surgery because no evidence was identified.