

Rib graft

Rib Graft

Definition: A rib graft refers to the use of autologous rib bone harvested from the patient to serve as an **osseous graft** in reconstructive or fusion surgeries, particularly in spinal and occipitocervical procedures.

□ Common Indications

- Occipitocervical fusion (OCF) in pediatric and adult patients
 - Atlantoaxial instability
 - Thoracic and lumbar spinal reconstruction
 - Skull base reconstructions
 - Revision surgery where iliac crest is not viable or previously harvested
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□ Advantages

- **Autologous:** No risk of immune rejection
 - Readily accessible during the same operative session
 - Often sufficient in length and contour for spinal alignment
 - Avoids donor site morbidity associated with iliac crest
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⚠ Limitations

- Resorption risk in young children
 - May not provide immediate biomechanical stability
 - Postoperative pain at harvest site
 - Limited quantity compared to iliac crest or fibular grafts
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□ Clinical Notes

- Rib grafts can be contoured and shaped to bridge the occiput and cervical spine in OCF.
- New radiographic grading scales are being developed to assess fusion success with rib grafts, independent of graft type or fixation technique.
- Often used with posterior instrumentation (e.g., rods and screws).

▣ Histological Properties

- Corticocancellous structure
- Osteoconductive, potentially osteoinductive when fresh
- Gradual incorporation over weeks to months

▣ Example Study

[JNS Pediatr 2025](#): *Autologous rib graft augmentation for occipitocervical fusion in pediatric patients and a novel radiographic grading scale* Shahin MN et al. demonstrated that rib grafts provide adequate fusion substrate in pediatric OCF when assessed with a technique-independent grading scale.

Tags: rib graft, autograft, occipitocervical fusion, spinal reconstruction, pediatric spine, craniovertebral junction

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