

# 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.

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## □ 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).
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## ▣ 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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