

Cranioplasty infection risk factors

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The factors contributing to the high rate of [surgical site infection](#) (SSI) after cranioplasty are not well established.

Patients with multiple [wound healing risk factors](#) are at higher risk for [reoperation](#) ¹⁾.

Patients with craniosynostosis as a reason for [cranioplasty](#) have a higher risk of requiring revision or additional surgeries, regardless of the implant used ²⁾.

Diabetes, hepatic failure, and trauma are significant risk factors for [cranioplasty complications](#). There was no statistical difference in the incidence of complications between the use of autologous and artificial bones ³⁾

There were no differences in overall postoperative and post-discharge complication rates between the titanium mesh and PEEK. A history of VPS before cranioplasty was an independent risk factor for postoperative overall complications, and infection was a risk factor for implant failure. Finally, depression skull defects and titanium mesh implants increased the incidence of postoperative pneumocephalus ⁴⁾

Hydroxyapatite and acrylic were associated with reduced risk of all-cause explantation and explantation due to infection. Cranioplasty insertion at three to six months was associated with an increased risk of explantation due to infection ⁵⁾.

Thorough knowledge and understanding of [cranioplasty infection risk factors](#) may lead to surgical strategies and bundles, aiming to reduce infectious complications of cranioplasty. Finally, innovation in materials used for cranial repair should also aim to enhance the antimicrobial properties of these inert materials ⁶⁾.

The risk of complication is increased with bifrontal bone defects.

¹⁾

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