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Biomaterials for Surgery – Present and Future

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Abstract
In surgery, biomaterials are destinated to repair, replace or enhance various biological structures. Their expanding use has significantly improved surgical outcomes by reducing complications, accelerating healing, and restoring function. Modern surgery relies heavily on advanced biomaterials that can perform specific structural and biological tasks. The same holds true for eye surgery, which faces similar challenges. This narrative review synthesizes the current knowledge on biomaterials employed across surgery, with particular emphasis on their classification, biocompatibility, principal clinical applications across various surgical specialties, and recent progress toward bioactive, multifunctional, and
personalized solutions.
Keywords: biomaterials, clinical applications, surgery