# Gore-Tex

Gore-Tex is a waterproof, breathable fabric membrane and a registered trademark of W. L. Gore and Associates. Invented in 1969, Gore-Tex can repel liquid water while allowing water vapor to pass through and is designed to be a lightweight, waterproof fabric for all-weather use. It is composed of stretched polytetrafluoroethylene (PTFE), which is more commonly known by the generic trademark Teflon.

---

Gore-Tex is also used internally in medical applications, because it is nearly inert inside the body. Specifically, expanded polytetrafluoroethylene (E-PTFE) can undergo the form of a fabric-like mesh. Implementing and applying the mesh form in the medical field, is a promising type of technological material feature. In addition, the porosity of Gore-Tex permits the body's own tissue to grow through the material, integrating grafted material into the circulation system.

Gore-Tex is used in a wide variety of medical applications, including sutures, vascular grafts, heart patches, and synthetic knee ligaments, which have saved thousands of lives.

In the form of expanded polytetrafluoroethylene (E-PTFE), Gore-Tex has been shown to be a reliable synthetic, medical material in treating patients with nasal dorsal interruptions. In more recent observations, expanded polytetrafluoroethylene (E-PTFE) has recently been used as membrane implants for glaucoma surgery.

The “Gore-Tex” brand name was formerly used for industrial and medical products.

---

In the Yoshida Hospital, Kobe, 46 patients underwent brain tumor extirpation with duraplasty with an artificial dura substitute; Gore-Tex and SEAMDURA were used as the artificial dura substitutes. Patients with postoperative hemorrhage after brain tumor extirpation with duraplasty with an artificial dura substitute were retrospectively analyzed. Moreover, suture strength was compared experimentally between Gore-Tex and SEAMDURA.

In patients who underwent brain tumor extirpation with duraplasty with an artificial dura substitute, the rate of postoperative hemorrhage was 8.6%. Epidural and subdural hematomas were seen in four patients after tumor extirpation with duraplasty with SEAMDURA, but there were none with Gore-Tex. Exposure of the superior sagittal sinus at craniotomy, older age, and longer operative time were seen more frequently in patients with hematoma than in patients without hematoma. The strength of the suture point was significantly weaker with SEAMDURA than with Gore-Tex ($P = 0.00016$).

Postoperative epidural and subdural hematomas seem to be specific for SEAMDURA and may be caused by the weak suture strength of SEAMDURA. In cases of duraplasty, a nonabsorbable artificial dura substitute may be suitable [1)].

1)
Matsumoto H, Minami H, Yamaura I, Yoshida Y. Postoperative subdural hematoma with blood flow from an epidural hematoma through a tear at the suture point of an artificial dura substitute. Acta Neurochir (Wien). 2019 Apr;161(4):755-760. doi: 10.1007/s00701-019-03830-7. Epub 2019 Feb 14. PubMed PMID: 30762126.