

Technical Guidelines for Use of Geistlich Mucograft®

Based on several, independent clinical publications¹⁻⁸, discussions with pilot surgeons, and the consensus of more than 10 Geistlich Mucograft® Round Tables (2009–2011), the following technical guidelines should be considered when using Geistlich Mucograft®:

1. In general:

- > Geistlich Mucograft® is an alternative to autogenous grafts: The 3D-matrix can be used in recession coverage and in gain of keratinised tissue procedures in which either connective tissue grafts or free gingival grafts show predictability today. Patient selection criteria, patient compliance and surgical requirements, as with autogenous soft-tissue grafts, should be fulfilled.
- > Patient selection and compliance are of crucial importance for optimal clinical outcome. Patient expectations should be considered.
- > Geistlich Mucograft® is ready to use without need of pre-hydration or washing treatments.
- > Geistlich Mucograft® should be trimmed dry and precisely to the required size to avoid tension. For accurate trimming of Geistlich Mucograft®, the use of a template might be helpful.
- > Geistlich Mucograft® should be manipulated and applied in a dry state.
- > Orientation of Geistlich Mucograft®: The compact structure should face outwards and the spongy structure towards the bone and/or periosteum.
- > No compression of Geistlich Mucograft®: The 3D-matrix should remain uncompressed before, during and after surgery.
- > Immobilisation of Geistlich Mucograft®: After surgery Geistlich Mucograft® should be immobile, since stabilisation of the blood clot is important for wound healing.
- > No tension around Geistlich Mucograft®: Any tension of the soft tissues around Geistlich Mucograft® should be avoided. If possible, wider than normal flaps are recommended.
- > Post-surgical management: As with any regenerative site, caution must be exercised in post-operative care and during hygiene practices at or near the surgical site. For the first 4 weeks, no brushing or flossing at the gingival margin and no chewing of hard foods. For the first 6 months, do not probe or allow scaling and root planning of sites.

Geistlich Mucograft®



2. Gain of Keratinised Tissue

- › The maximum width of the band of keratinised tissue that can be obtained is genetically predetermined.
- › Pre-surgical situation: At the coronal margin and/or surrounding teeth or implant, a small band of keratinised tissue should be present that can provide the biological information to the regenerated soft tissue. With Geistlich Mucograft®, comparable results to autogenous graft are obtained if a band of at least 1 mm keratinised tissue is left.
- › Good access: A minimum vestibule depth should be available in posterior sites to allow surgery and tension free healing of the treated site.
- › Split-thickness flap: Geistlich Mucograft® should be applied on a periosteal bed since blood supply is important.
- › Open healing (onlay technique): The elevated flap may be excised or left without sutures at its base.
- › Geistlich Mucograft® should be sutured tension-free to the surrounding tissue and may be left exposed, without wound dressing. If suturing the apical part of Geistlich Mucograft® is required, sufficient vestibule depth should be available to allow tension free healing.
- › After gain of keratinised tissue with Geistlich Mucograft®, a minimum waiting period of 3 months is recommended if reopening of the site is necessary for further treatment.

3. Recession Coverage

- › In general, recession treatments of Miller Class I and II defects show much higher predictability and success rates than Miller Class III and IV defects.
- › Recession treatments of the maxilla often show better results than in the mandible due to the reduced muscular tension and adequate vestibulum depth of the maxilla.
- › The maximum recession coverage that can be achieved is biologically determined by the cemento-enamel junction.
- › Geistlich Mucograft® should remain completely submerged under the flap to avoid premature resorption of the collagen since blood supply is important.
- › The flap should be sutured tension-free.
- › Geistlich Mucograft® should not be compressed during or after surgery. Therefore avoid: suturing of Geistlich Mucograft® together with the flap, over-suturing of the flap, or post-surgical compression of the wound.
- › When using Geistlich Mucograft® in recession coverage, outcomes often improve for at least 6 months post-operative by a creeping effect. Frequently this positive creeping effect lasts to one year.
- › The application of Geistlich Mucograft® should be combined with coronally advanced flap (CAF) or coronally advanced tunnel technique.
- › When using the coronally advanced tunnel technique besides the general guidelines for recession coverage, following should be considered:
 - › Cutting, suturing and application in the dry state. During application, the matrix will rapidly be fully soaked with blood. Manipulation in wet state should be kept to a minimum.
 - › Pulling, not pushing of Geistlich Mucograft® into the tunnel.

¹ Sanz M, et al. J Clin Periodontol. 2009 Oct;36(10):868-76

² Miller PD Jr. Int J Periodontics Restorative Dent. 1985;5(2):8-13

³ McGuire MK & Scheyer ET. J Periodontol. 2010 Aug;81(8):1108-17

⁴ Konter U, et al. Deutsche Zahnärztliche Zeitschrift 2010;65:723-30

⁵ Herford AS, et al. J Oral Maxillofac Surg. 2010 Jul;68(7):1463-70

⁶ Ghanaati S, et al. Biomed Mater. 2011 Feb;6(1):015010

⁷ Cardaropoli D, et al. J Periodontol. 2011 Jul 1, *Epub*

⁸ Nevins M, et al. Int J Periodontics Restorative Dent. 2011 Jul-Aug;31(4):367-73