permamem®
HIGH-DENSITY
PTFE BARRIER MEMBRANE

non-resorbable
synthetic
biocompatible
Polytetrafluoroethylene (PTFE) – stable, inert and biocompatible

Polytetrafluoroethylene (PTFE) is a synthetic, chemically stable and biologically inert fluoropolymer. During polymerization the gaseous tetrafluoroethylene is transformed into the polymeric polytetrafluoroethylene by the help of catalysts creating one of the most vigorous chemical bonds. PTFE is able to resist biological (enzymatic) attack, does not stick and is biocompatible. It has been employed for more than 30 years for numerous medical applications, including sutures, arterial grafts, filters and catheters. In regenerative dentistry, PTFE membranes have come a long way since they were first introduced for Guided Tissue Regeneration in the form of expanded PTFE membranes. Nowadays, PTFE membranes are mainly used for Guided Bone Regeneration.

permamem®

-guided for open healing in socket/ridge preservation


permamem® is an exceptionally thin, non-resorbable, biologically inert and biocompatible membrane made of 100% high-density polytetrafluoroethylene (PTFE). permamem® maintains its structural integrity both during the initial implantation and over time. Due to its small pore size the membrane acts as an efficient barrier against bacterial and cellular penetration, and may therefore be left in place for open healing in certain indications. Due to its inertiess and denseness, adjacent tissue does not grow into the membrane. Therefore, the membrane may be easily removed after the healing time with a pair of tweezers in case of open healing. After removal of permamem®, the primary healing process and the reepithelialization of the regenerating soft tissue is completed within one month.

permamem® left in place for open healing, Dr. Paolo Di Capua, Tel Aviv, Israel

Barrier membranes in regenerative dental medicine

Guided Tissue- and Guided Bone Regeneration (GTR, GBR)

Guided Tissue- and Guided Bone Regeneration (GTR, GBR) are well-established techniques in modern dentistry to augment lost tissues around teeth and dental implants respectively. The concept of these methods is the placement of a barrier membrane between the soft tissue and residual bone in order to prevent the fast-proliferating epithelial cells from populating the bony defect and to provide space and time for the migration of slow-dividing osteogenic or periodontal ligament cells into the defect area.

In the course of the evolution of both techniques, different types of membranes have evolved. In particular, for the regeneration of defects outside the ridge contour, the use of a non-resorbable, volume stable membrane is recommended, because it offers a higher stability and superior space-maintaining properties compared to resorbable (collagen) membranes. In regenerative dental medicine, membranes made of polytetrafluoroethylene (PTFE) are the most commonly used non-resorbable barrier membranes.

permamem® – engineered for open healing in socket/ridge preservation

Open healing with permamem® in socket or ridge preservation enables maintenance of the soft tissue architecture and contours since no primary wound closure is required. Due to the missing flap closure, the mucogingival line will not be displaced and the attached/keratinized gingiva will be preserved. The non-surgical removal of the membrane after the healing time omits the need for big surgical incisions (vertical releasing incisions), thus improving aesthetics.
Properties

- 100% synthetic PTFE barrier membrane
- Ultra-thin (~0.08 mm)
- Impervious to bacteria due to dense structure
- Easily removable due to minimal tissue ingrowth into the surface structure
- No need for primary soft tissue closure
- Supports space maintenance (as compared to collagen membranes)
- Easy recovery thanks to blue color
- Rounded edges for minimal tissue trauma
- Easy fixation with sutures or pins
- Either side may be placed towards the defect site

**In vivo**
**pre-clinical data on permamem®**

**Proven biocompatibility**
**in a mouse model**

Dr. M. Barbeck, Berlin-Brandenburg Center for Regenerative Therapies, Charité –

University Medical Center, Berlin, and S. Stojanovic, Prof. Dr. S. Najman,

Faculty of Medicine, University of Nis, Serbia

The biocompatibility of permamem® was examined following subcutaneous implantation into mice. HE-staining of histological sections at 30 days show permamem® (PM) well integrated into the surrounding tissue (connective tissue, CT) pointing to an excellent biocompatibility. Only a thin layer (asterisks) of mononuclear cells (blue arrowheads) was found at the membrane surfaces indicating its non-inflammatory properties.

permamem® fulfills the requirements of biocompatibility according to EN ISO 10993-1 and EN ISO 7405. The membrane comes into contact with bone and soft tissue and is categorized as a medical device Class IIa according to Directive 93/42/EEC.

**Indications:**

**Implantology, Periodontology and Oral and CMF Surgery**

- Socket and ridge preservation (open healing)
- Horizontal/vertical ridge augmentation
- Fenestration and dehiscence defects
- Intraosseous defects (1 - 3 walls)
- Furcation defects (class I and II)
**CLINICAL APPLICATION** of permamem®

**CLINICAL CASE BY**
Dr. Rainer Rannula, Tallinn, Estonia

Socket preservation with permamem®

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**Clinical situation with broken tooth and bone dehiscence**

Socket covered with permamem® after application of collacone®

Clinical situation three weeks post-operative

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**OPPORTUNITY & REMOVAL**

Due to its small pore size permamem® acts as an efficient barrier against bacterial and cellular penetration, and may therefore be left in place for open healing in socket- and ridge preservation. The membrane should be removed after 3–4 weeks. This will provide sufficient time for the formation of the blood clot and a provisional matrix of woven bone in the alveole, which is the basis for the bony regeneration.

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**APPLICATION & FIXATION**

To ensure membrane stability and protection of the bone grafting material, permamem® should extend three to four millimeters beyond the margins of the bone defect after placement. A minimum distance of one millimeter to the adjacent teeth should be maintained. It is recommended to fix permamem® with sutures, screws or pins.
Product Specifications

permamem® is delivered sterile and is intended for single use only.

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Innovation. **360° Regeneration.** Aesthetics.

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