



DENTISTRY

Pericardial
membrane



The true pericardium of equine origin

THE PERFECT BALANCE BETWEEN NATURE AND BIOTECHNOLOGY

Heart® is a biological membrane obtained from authentic equine pericardium, the tissue that naturally surrounds and protects the heart. Thanks to Bioteck's exclusive enzymatic process, the pericardium is made biocompatible, preserving its natural three-dimensional structure and collagen component. The result is a thin membrane that is extraordinarily resistant to tension and can be easily fixed without compromising its structure using sutures or osteosynthesis devices. There are no differences between the two sides of the membrane, allowing for easy handling during surgical application.

Thanks to its excellent hydrophilicity, Heart® can be used either dry (for imbibition *in situ* with biological fluids) or after hydration with sterile saline solution, promoting rapid stabilisation and adhesion to tissues. It provides effective protection of the bone graft for a period of 3–4 months, while acting as an ideal substrate for tissue regeneration.

PROPERTIES



NATURAL MULTI-LAYER STRUCTURE



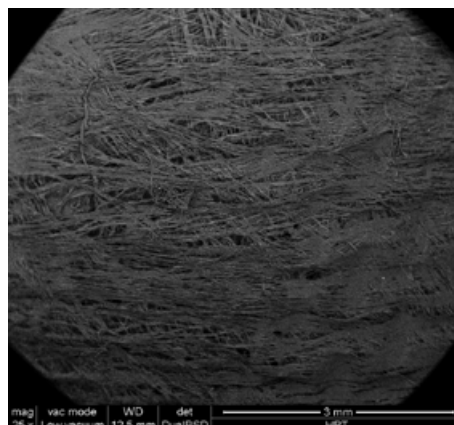
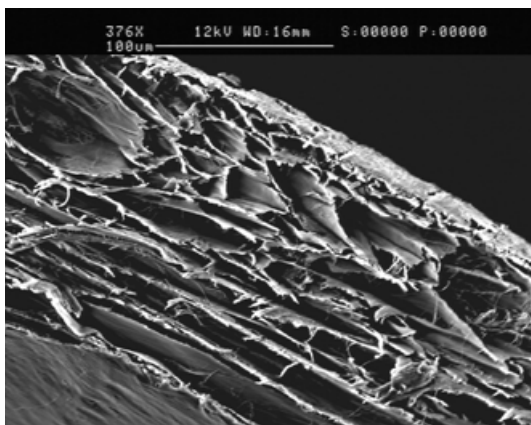
IDENTICAL SURFACES ON BOTH SIDES



REDUCED THICKNESS FOR EXCELLENT HYDROPHILICITY



HIGH TENSILE STRENGTH



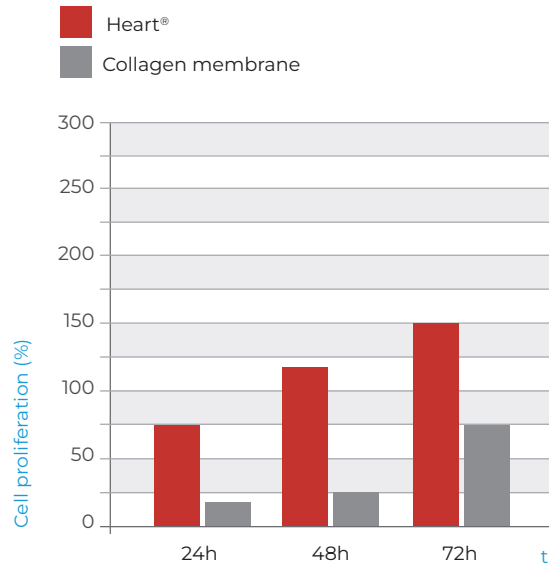
On the left, a scanning electron microscope image of the multi-layer internal structure of the Heart® membrane.

On the right, a scanning electron microscope image of the dense network of collagen fibres present on both sides of the Heart® membrane.

Scientific evidence

Supports tissue healing

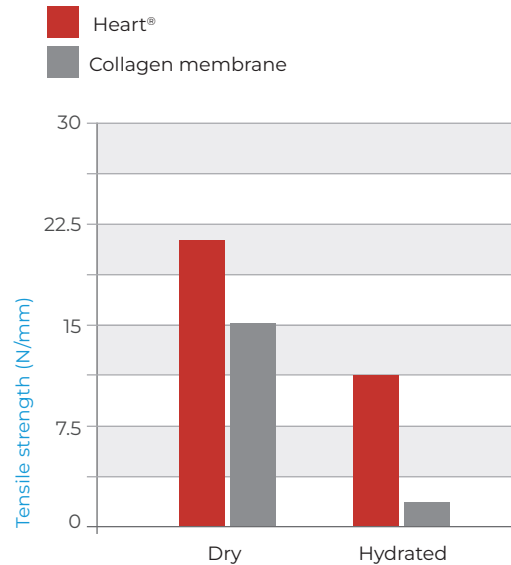
Thanks to its natural fibre structure, Heart® optimally supports the proliferation of cells in the tissues with which it comes into contact.



Adapted from Rodríguez Sánchez, M., 2024

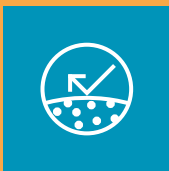
Tensile strength

Thanks to its mechanical properties, Heart® can be sutured and tensioned without risk of breakage.



Department of Mechanical and Industrial Engineering,
University of Brescia

THE BENEFITS OF HEART®



SUITABLE FOR MULTIPLE SURGERIES

With its protection time of 3-4 months, it can be used in all regenerative surgeries, from the simplest to the most complex.



VERSATILE

Its tensile strength characteristics allow the membrane to be fixed with osteosynthesis devices or sutures.



PROMOTES TISSUE HEALING

The collagen component in Heart® promotes natural healing of the patient's tissue.

WHEN TO USE



Heart® is the ideal solution for bone regeneration surgical procedures, usable alone or in combination with graft materials for GBR/GTR. Perfect for both immediate and two-stage procedures, it is suitable for all types of bone defects, even in the most complex cases.

THE RANGE HEART®



HEART®

HRT-003n	Pericardium Membrane - 1 membrane - 15 x 20 x 0.2 mm
HRT-005n	Pericardium Membrane - 1 membrane - 20 x 20 x 0.2 mm
HRT-001	Pericardium Membrane - 1 membrane - 30 x 25 x 0.2 mm
HRT-002	Pericardium Membrane - 1 membrane - 50 x 30 x 0.2 mm

Clinical cases

TREATMENT OF PERIODONTAL DEFECTS

Courtesy of Dr Francesco Bellucci - Avellino - Italy



A 10 mm defect on the palatal side of element 21.



The membrane, dry-shaped and then hydrated with sterile saline solution, is positioned to protect the bone graft.



The membrane is stabilised by suturing.



Vestibular aspect of element 21 at 3 years: the tissues appear intact and toned.

PERI-IMPLANT GBR - SINGLE ELEMENT

Courtesy of Dr Giacomo Tarquini - Rome - Italy



There is a severe bone defect measuring 10-12 mm in position 22. The preparation of the bone bed by perforation with an ultrasonic insert can be observed.



Application of heterologous bone graft paste and the Heart® membrane, previously dry-shaped to fit the neck of the implant.



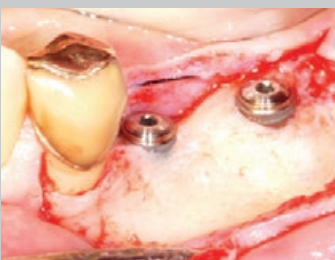
The membrane is hydrated in situ with the patient's blood. Thanks to its manageability, it is easily folded and fixed on the vestibular side with titanium pins.



Subsequent post-operative checks show optimal recovery of soft tissue aesthetics, with probing depths in the range of 2-3 mm on both the vestibular and palatal sides.

PERI-IMPLANT GBR - MULTIPLE ELEMENTS

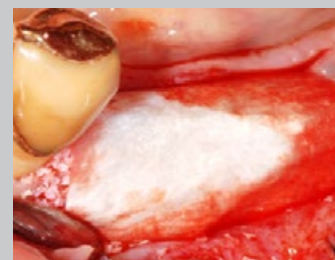
Courtesy of Dr Giuliano Garlini - Milan - Italy



Presence of a horizontal and vertical bone defect near the implants in positions 35-36.



Placement of heterologous bone graft of equine origin in granules.



The Heart® membrane is positioned to protect the graft. It will act as a barrier for a period of 3-4 months. Note the progressive imbition of the membrane with blood at the site due to its high hydrophilicity.



Radiographic follow-up with CBCT 6 months after surgery showing clear restoration of adequate bone volume, confirming bone regeneration at the implant site.



Go to active literature



BIOTECK®. INNOVATING BIOMATERIALS.

Bioteck® is an Italian company that has been producing bone substitutes and protective membranes and solution successfully used in orthopaedics, neurosurgery and oro-maxillo facial surgery since 1995.

Scientific research and innovation are the guiding principles that have enabled Bioteck® to patent new production processes and to create unique bio-materials of high quality in terms of performance level and safety guarantees. Materials now used in 72 countries worldwide.

At its multi-functional centre for research and development and thanks to state-of-the-art production processes, every day Bioteck® works to pursue its key objective: to innovate bio-materials.

WWW.BIOTECK.COM

BIOTECK ACADEMY. SCIENTIFIC COMMUNITY FOR THE CULTURE OF THE CONSCIOUS CHOICE.

Bioteck Academy is the innovative and unique scientific community which promotes the circulation and sharing of knowledge in the field of tissue regeneration applied to dentistry, maxillo-facial surgery, orthopaedics and neurosurgery.

Established as a hub for the clinical and scientific expertise focussed on by Bioteck® spanning twenty years of research, today it is an entity open to all professionals who decide to join and share their own surgical experience.

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BIOTECK®



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