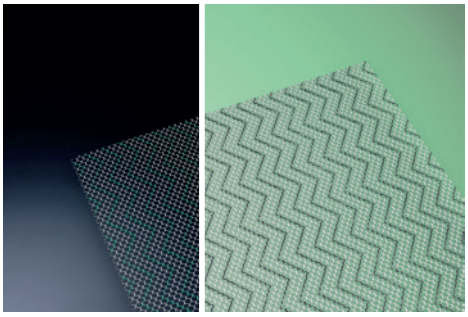
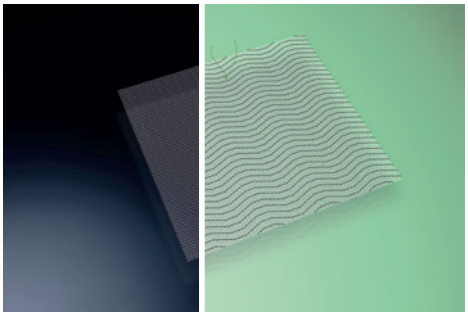
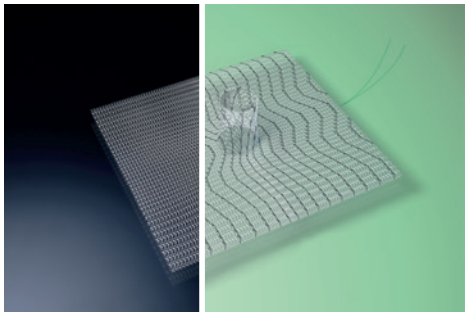
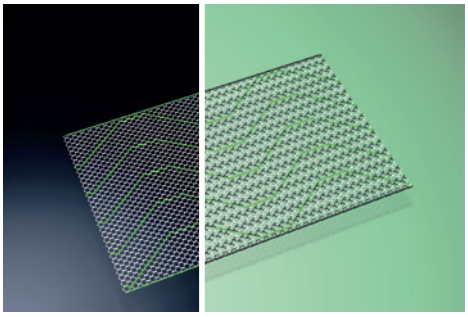
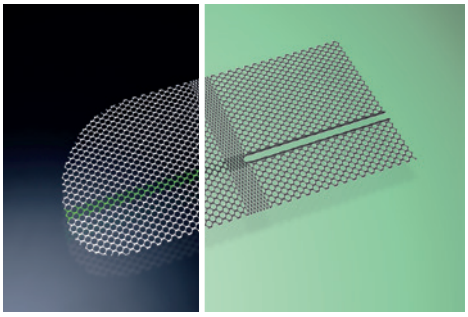
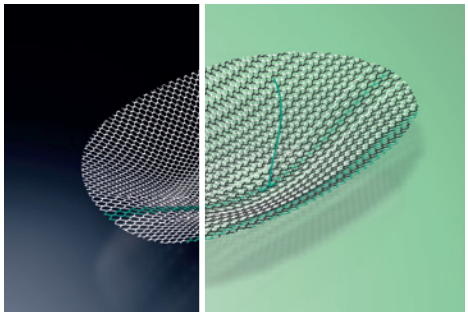
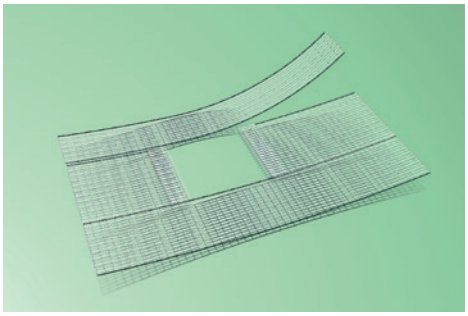
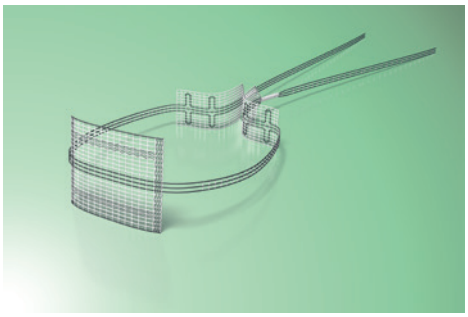








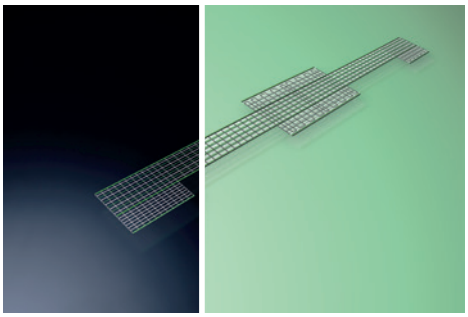
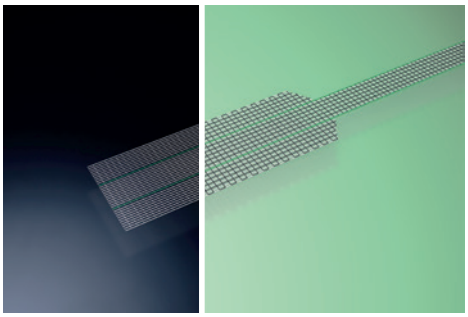
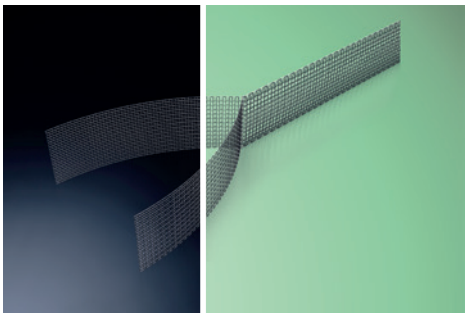
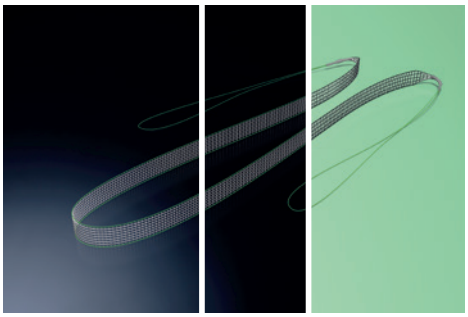
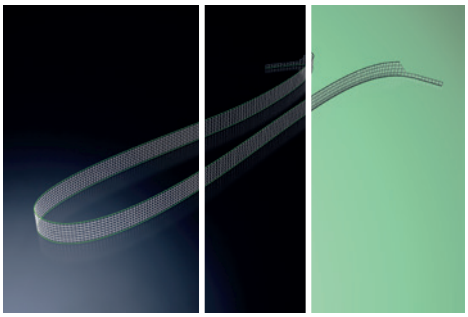
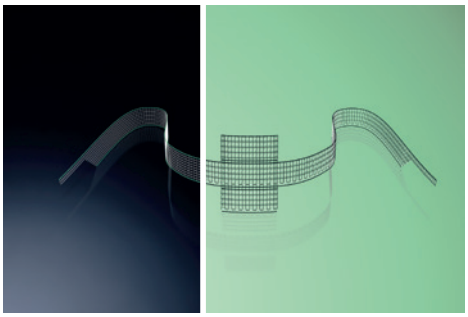
DynaMesh®

A Specific Solution for Every Indication



made
in
Germany

Tailored Implants
Made of **PVDF**

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Some of our devices may not be available in your country. Please contact your local distributor for more information.

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Profile and Competences



FEG Textiltechnik Forschungs- und Entwicklungsgesellschaft mbH (FEG) was established in Aachen in 1992 and since then has gained a reputation for exceptional innovations in the field of textile technology.

The company's dedicated and highly qualified staff, in-house research and development capacities as well as intelligent production facilities combine to make FEG today's leading manufacturer of textile surgical implants in Germany. Under the brand name **DynaMesh®**, an internationally protected trademark, FEG's award-winning implants are successfully marketed in numerous countries around the world.

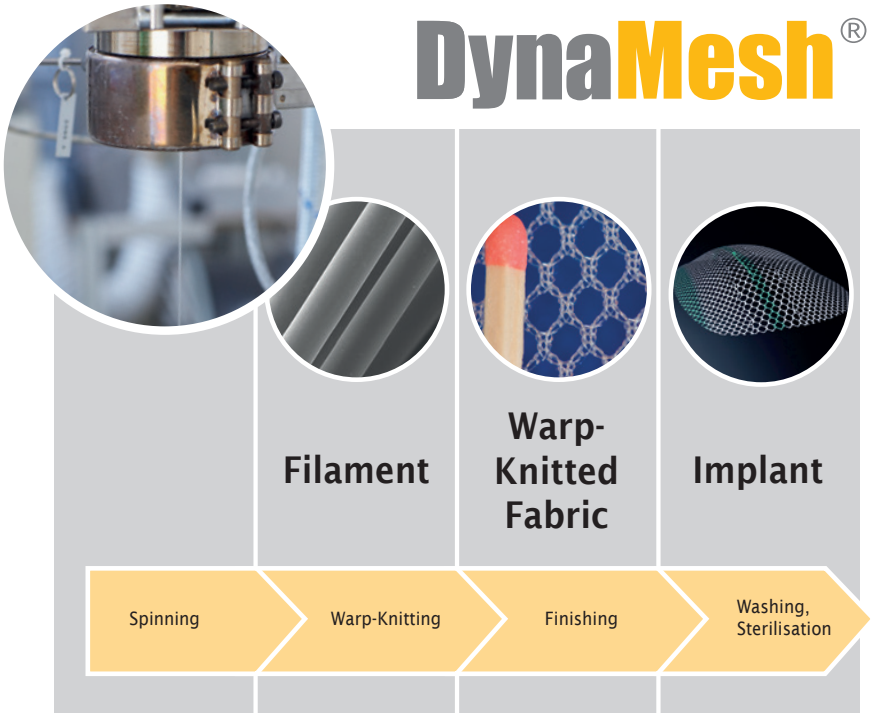
FEG strives to maintain the state of the art in patient comfort and surgical handling with high-quality devices through constant and close contact with major scientific, medical, and technical institutions. The sophisticated quality management system at FEG is fully certified to EN ISO 13485 for the manufacture of medical devices. All of FEG's products are CE approved (CE 0123) and are approved under relevant national regulations.

Focusing on its core competences and expertise in textile implants, FEG will continue to set technical benchmarks in the future.

DynaMesh®

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Implants 'Made in Germany'



From Thread to Implant:

Full quality control along the entire production chain.

Development and manufacturing in Aachen, Germany

made in Germany







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Milestones

1992 Founding of: FEG Textiltechnik

2003 Certification of: DynaMesh®

2011 Development of MRI visible technology



2014 New 4,200 m² offices & production plant



2020 Additional 600 m² production/storage capacity



Establishment of: LiSTO.academy

2024 Successful certification according to MDR Regulation (EU) 2017/745

EU MDR 2017/745 CERTIFIED

1994 Active in medical technology

2004 First implant for the surgical treatment of hernias

2005 First implant for the surgical treatment of female urinary incontinence

2006 First implant for the surgical treatment of female pelvic organ prolapse

2007 First implant for the surgical treatment of parastomal hernias

2008 First implant for the surgical treatment of male urinary incontinence

2016 First implant for the surgical treatment of hiatal hernias

Business Fields:

- Implants for the surgical treatment of:
  - Hernias
  - Female Pelvic Organ Prolapse
  - Female Urinary Incontinence
  - Male Urinary Incontinence
- Sales in over 50 countries
- More than 100 employees

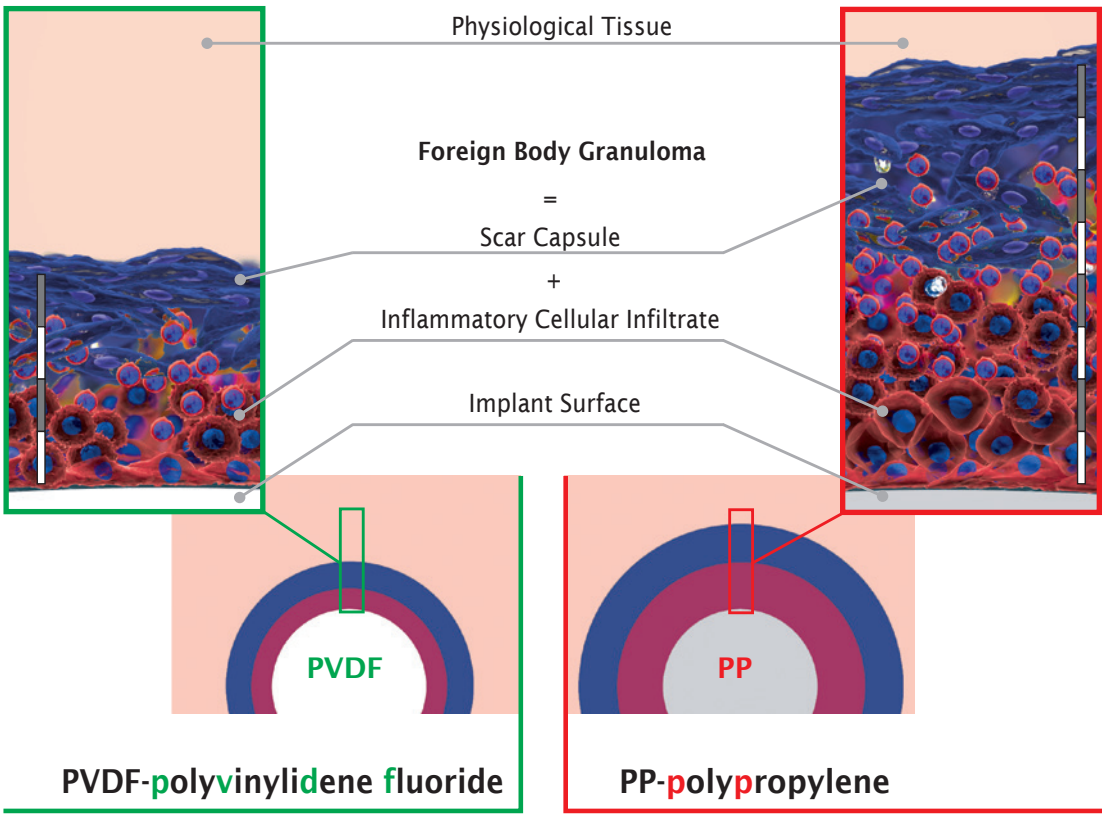
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Biocompatibility

All DynaMesh® implants are primarily made of PVDF. PVDF has good biocompatibility, reducing the foreign body reaction compared to other materials such as polypropylene. [1A, 2A, 4A, 68A, 100A, TR1]

Schematic Cross-Sectional View

A comparison of different granuloma thicknesses



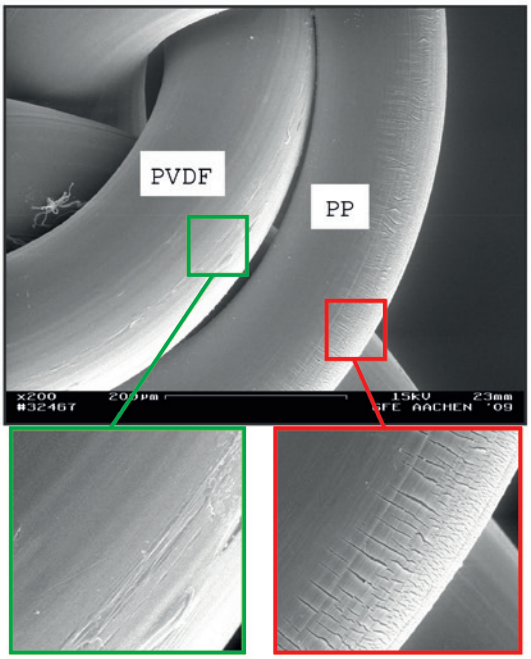
[#] Reference "#" (see "References")
[TR#] Internal test report (see "internal test report references")
Limitations "A" animal trial, "B" bench test, "VIT" in-vitro trial,
"P" published results based on the analysis of human mesh explants,
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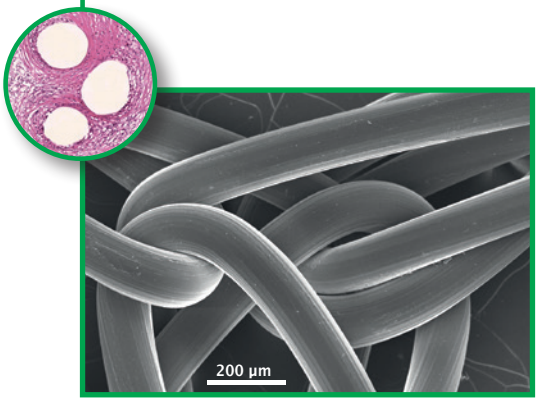
Ageing Resistance

PVDF has been used as a surgical suture material for many decades with great success, even in demanding areas of application such as ophthalmology and cardiology. [5, 91]

PVDF is known for its excellent long-term stability/ageing resistance compared to other materials such as polypropylene. [2A, 5VIT, 27A, 52VIT, 93A, 101P]

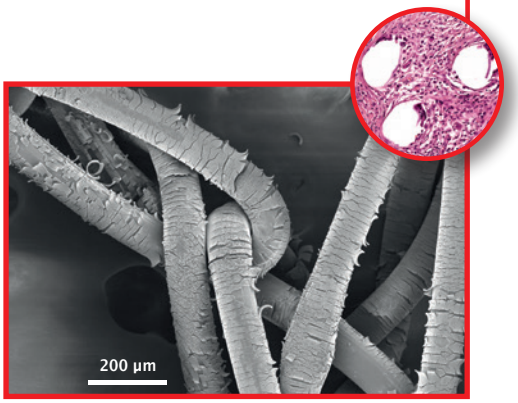


PVDF — Low degradation +



PVDF-polyvinylidene fluoride

− Substantial degradation — PP



PP-polypropylene

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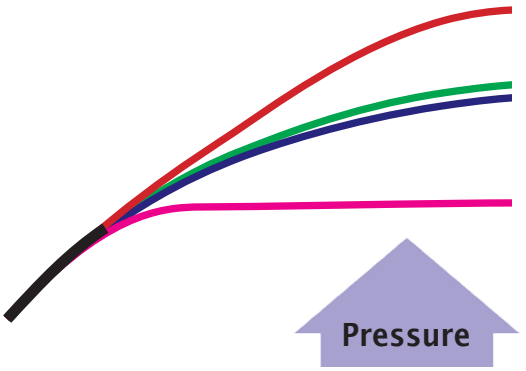
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Dynamometry

Textile implants can bridge and/or reinforce soft tissue or ligaments. Depending on the indication, they have to endure different forces. They also have to cushion different forces - including the extreme stresses associated with coughing, sneezing and laughing. What is needed, therefore, is an appropriate stability and elasticity.

Schematic representation of the behaviour of abdominal walls with different mesh implants under load

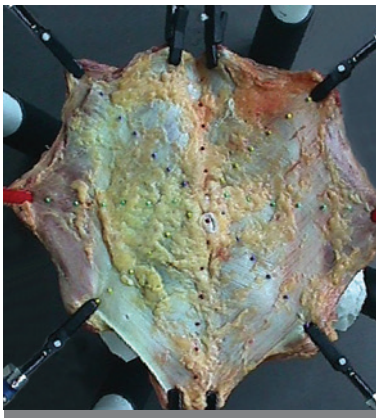


with implant that is too elastic

healthy abdominal wall without implant

with adapted stability and elasticity

with implant that is too stiff



Abdominal wall explant

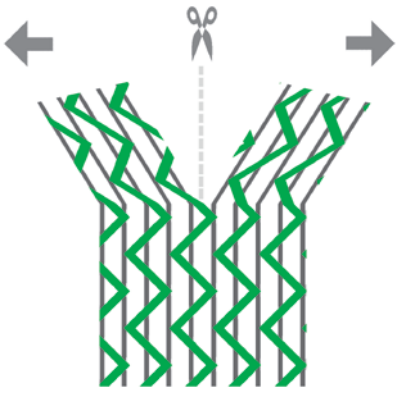
A study of explanted abdominal walls
(source: Aachen University Hospital, Germany)

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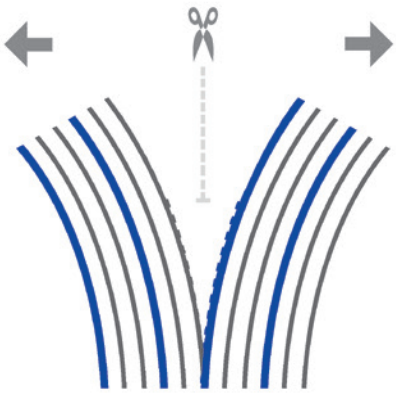
Tear Propagation Resistance

If a knitted fabric has an inappropriate structure, there is an increased risk of tearing or tear propagation after an initial cut. An inappropriate structure means that the individual thread systems are not sufficiently entangled. The failure mechanism here is the loss of stitch integrity, not the tearing of the threads.

The multiple meshing technique in the DynaMesh® warp-knitted structures reduces the risk of the so-called zipper effect [140, 141].



Structurally Stable Warp-Knitted Mesh Implant

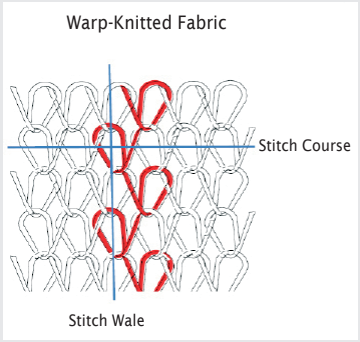


Structurally Unstable Mesh Implant

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DynaMesh® products are not woven or conventionally knitted, but warp-knitted*.
This technology makes it possible to make specific variations in the shape and structure of a textile implant, which means that we can construct features with different characteristics in different places within the structure. This allows implants to be precisely adapted to the specific indication.

***Warp-Knitted Fabric**
Warp-knitted fabrics are a type of knitted fabric. They are produced industrially on warp-knitting machines via stitch formation from thread systems.

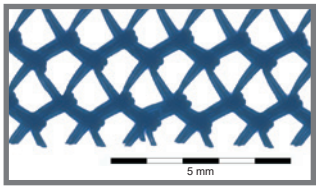


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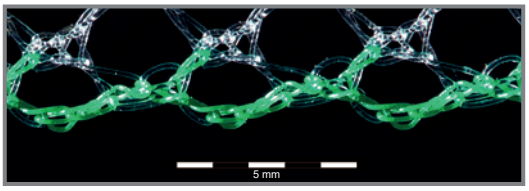
Smooth Warp-Knitted Selvedges

Most DynaMesh® implants are not simply cut from a flat piece of mesh.

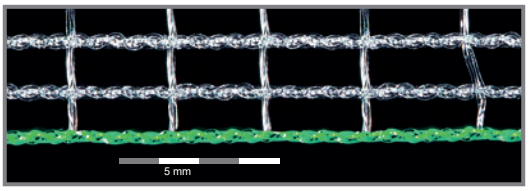
Special techniques used in our customised warp-knitting machines enable the production of smooth warp-knitted selvedges.



Conventional Mesh

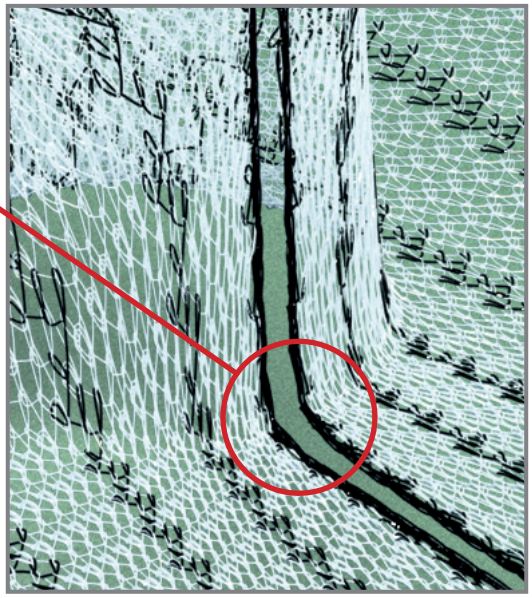


DynaMesh®-LICHTENSTEIN



DynaMesh®-SIS soft

Also in three-dimensionally shaped implants



DynaMesh®-IPST-R visible

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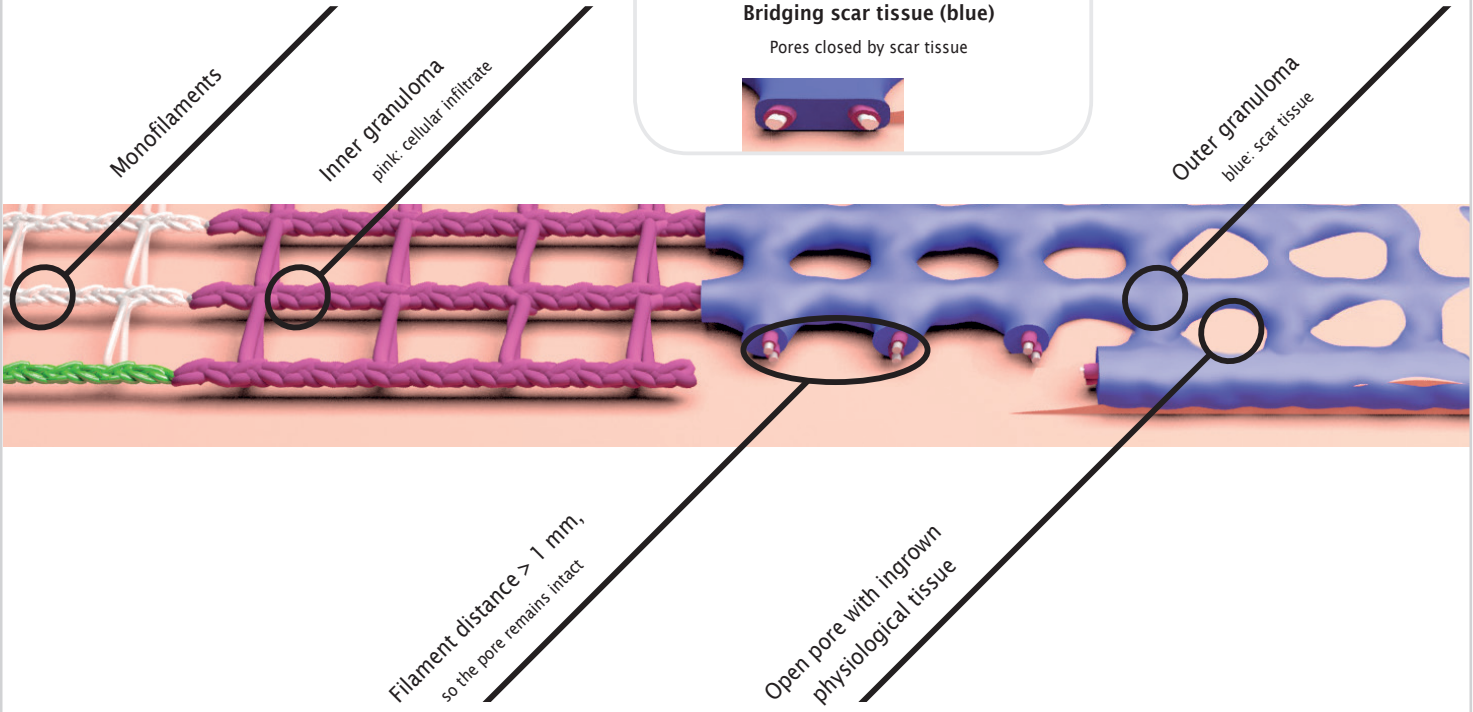
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Effective Porosity

During incorporation, the filaments are enclosed by an inner (pink) and outer (blue) granuloma. When the distance between adjacent filaments is too small, there is a risk of bridging scar tissue, resulting in a closed pore. Sufficiently large pores can reduce this risk [8P].

What is a sufficient distance between adjacent filaments? PP mesh implants should have a **filament distance of at least 1 mm** in all directions to avoid bridging (entire pore closed by scar tissue). A **filament distance of 0.6 mm** is sufficient for implants made of **PVDF** to keep the pores open [68A, 105A].

Schematic example of PP:
Filament distance < 1 mm
Bridging scar tissue (blue)
Pores closed by scar tissue



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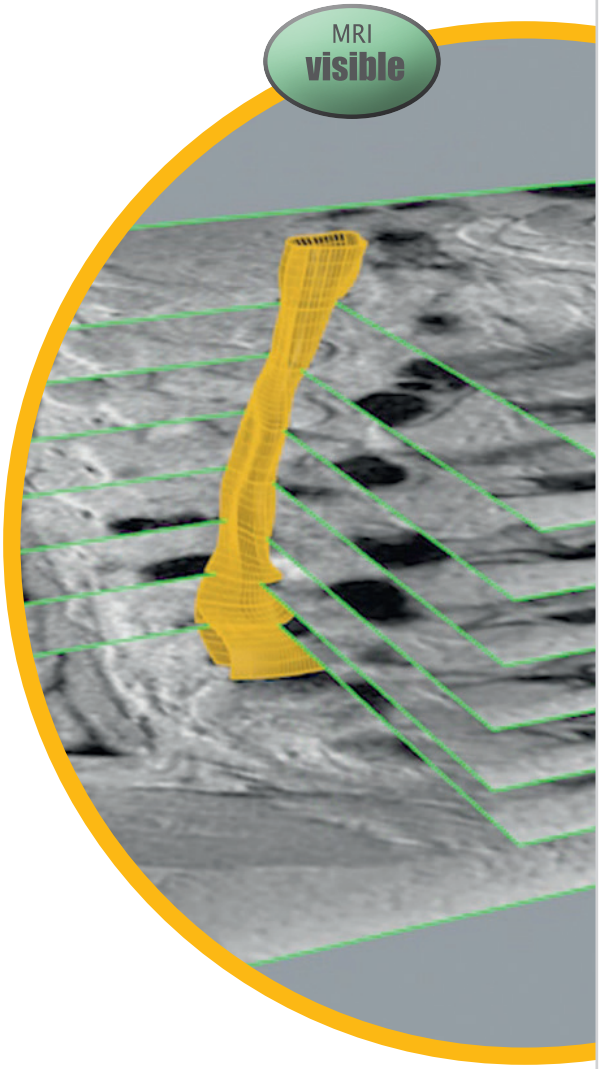
Textile porosity refers to the permeable component of a mesh implant **before** the body has reacted to it.

Effective porosity refers to the permeable component of a mesh implant **after** the body has reacted to it.

A mesh implant that only has pores < 1 mm (0% effective porosity) has a risk of excessive scar tissue formation.

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DynaMesh® visible



All DynaMesh® visible implants can be properly visualised in vivo using magnetic resonance imaging (MRI), facilitating analysis of correct surgical technique and mesh placement.
[7, 29A, 51, 54, 56, 62, 69-71, 76, 90, 115]

MRI sequences can be used to create three-dimensional reconstructions to check the position and condition of the mesh implant.

DynaMesh® visible is the world's first technology that enables non-invasive visualisation of textile implants in vivo.

The black coloured filaments contain a small proportion of triiron tetraoxide that is incorporated into the polymer matrix. This innovation has won an award from the German Federal Ministry of Education and Research (FKZ 01EZ0849).

Award-winner in the innovation competition hosted by the

Bundesministerium
für Bildung
und Forschung

The development was supported by the General Federal Ministry of Education and Research (FKZ 01EZ0849).

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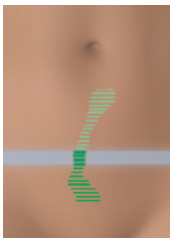
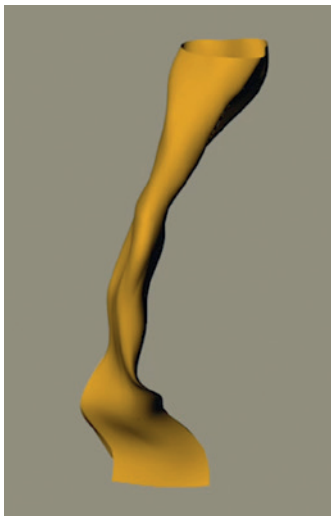
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DynaMesh® visible

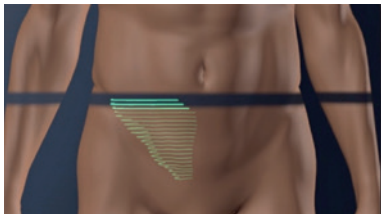
DynaMesh®-PRS visible

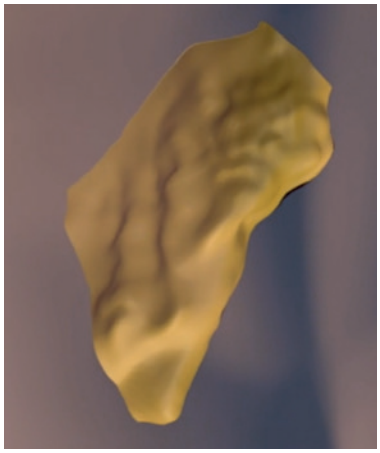
From magnetic resonance imaging to three-dimensional reconstruction

DynaMesh®-ENDOLAP visible

From magnetic resonance imaging to three-dimensional reconstruction



In MRI, the body part to be examined is scanned stepwise and captured as a sectional image sequence. Among other things, a three-dimensional reconstruction can be created from the sectional images.

DynaMesh® MRI - Animation: MRI Reconstruction with DynaMesh®-PRP visible *https://de.dyna-mesh.com/Vi069xx*	
DynaMesh® MRI - Animation: MRI Reconstruction with DynaMesh®-PRS visible *https://de.dyna-mesh.com/Vi067xx*	
DynaMesh®-ENDOLAP visible - Animation: MRI visible - 3D Implant Remodelling *https://de.dyna-mesh.com/Vi032xx*	

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