

BREAST

# TIGR<sup>®</sup> matrix

Improving Patient Care

 NOVUS SCIENTIFIC<sup>®</sup>



TIGR® Matrix Surgical Mesh

# **STRONG WHEN YOU NEED IT GONE WHEN YOU DON'T**

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The ideal matrix for Breast Reconstruction with implant

**TIGR**<sup>®</sup>matrix

**Long-term  
Resorbable**

**100%  
Synthetic**

**Untwisted  
Multifilament**

**OUR SOLUTION**  
TIGR<sup>®</sup> Matrix

## The Design

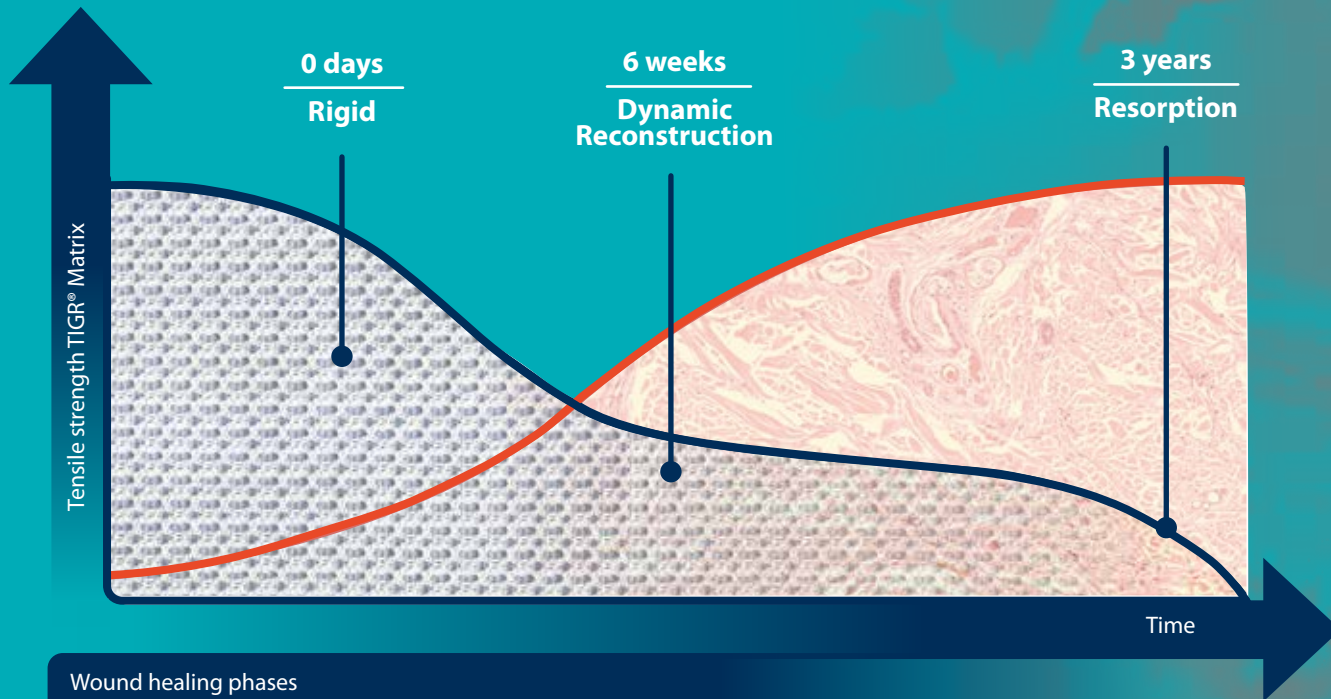
TIGR® Matrix Surgical Mesh is a resorbable surgical implant. It is made from two different synthetic polymer fibers that are knitted together to form a matrix.

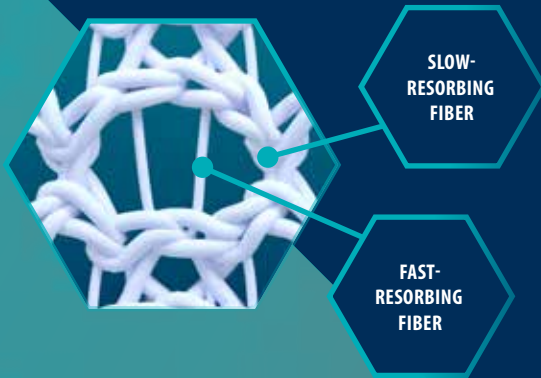
TIGR Matrix is characterized by long-term resorption and a dual stage degradation design that follows the natural wound healing and remodeling stages. Designed to allow the body to withstand the stresses after the matrix has been absorbed. The new connective tissue can then offer a long-term support.

The result is a surgical mesh that is easy to use for a variety of reconstructive surgery applications where a balance between mechanical support and degradation time is needed.

TIGR Matrix is made from materials that have been in clinical use since the 1970's and the product is supported by a growing body of peer-reviewed clinical evidence.

# Degradation and Healing stages





## THE MECHANISM

TIGR® Matrix

### Dynamic Reconstruction

TIGR Matrix is designed with a multistage resorbable mechanism, defined by two fibers having different degradation characteristics.

The warp-knitted untwisted multifilaments give a unique structure which together with a macroporosity design allow for good tissue integration. As the different fibers degrade, a gradual transfer of loads, from the mesh to the remodeling tissue occurs.

The result of this dynamic reconstruction is a more structured and hence stronger, connective tissue.

The fast-resorbing fiber, making up approximately 40% of the matrix by weight, is a copolymer of glycolide, lactide, and trimethylene carbonate. It loses its mechanical strength after 2 weeks and is fully absorbed after 4 months.

The slow-resorbing fiber, making up approximately 60% of the matrix by weight, is a copolymer of lactide and trimethylene carbonate. This fiber maintains its mechanical strength for 6 months and is absorbed after approximately 36 months.

## **Why Multifilament**

TIGR Matrix is a multifilament mesh making it more pliable and flexible with a greater tensile strength when compared with monofilament meshes, which have a less complex fabric structure.

These multifilament properties are transferred to TIGR Matrix giving it superior handling characteristics enabling it to adapt willingly to underlying structures.

### **Non-twisted multifilament and integration**

Untwisted allow integration of tissue not only through the open pores in the mesh but also in-between each fiber of the matrix.

### **Porosity in warp-knitted fabrics**

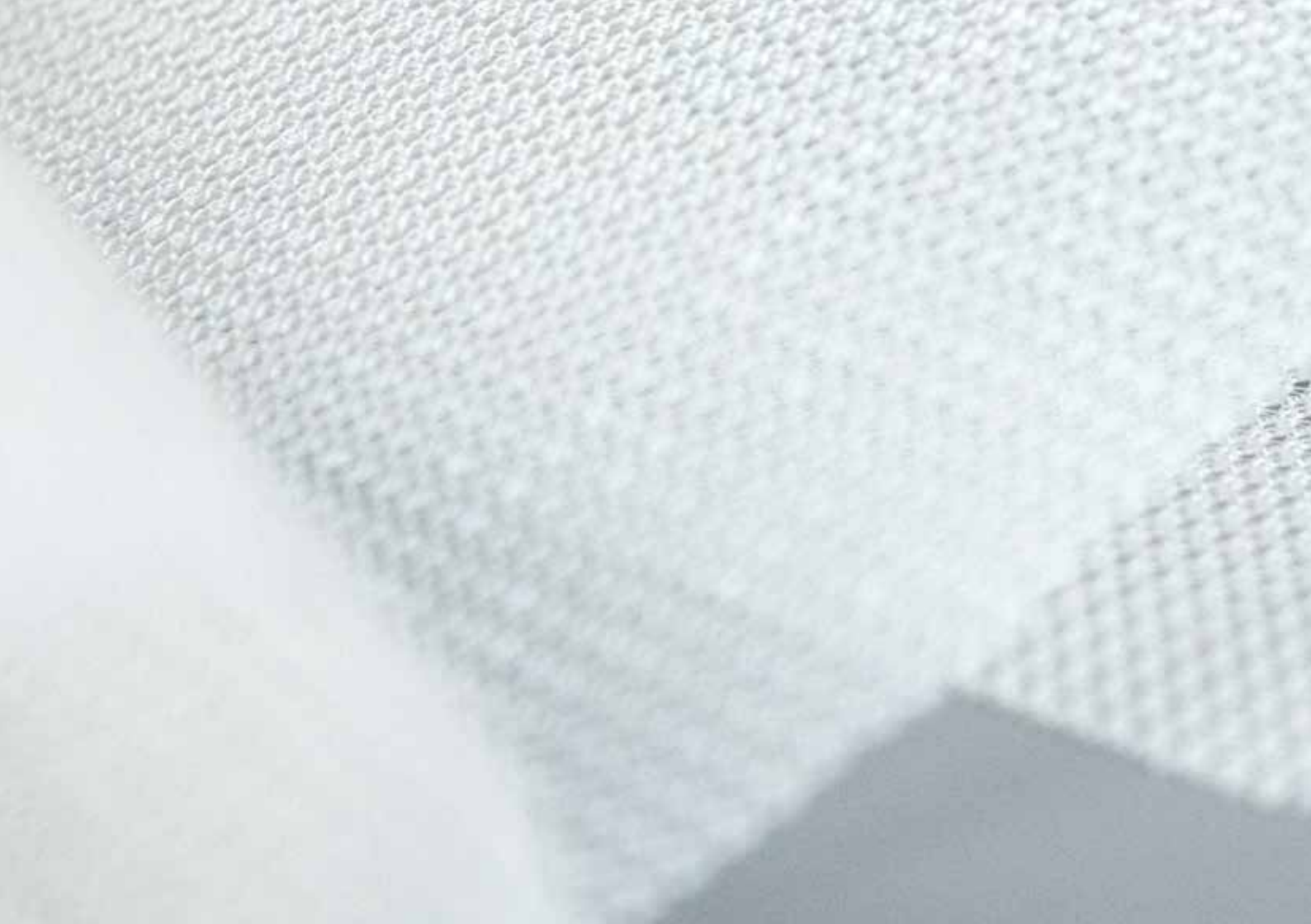
TIGR Matrix is made of warp-knitted multifilament fibers giving it its unique structure. The small space between fibers will rapidly absorb blood due to capillary forces and later widen to give place to new tissue and blood vessels.

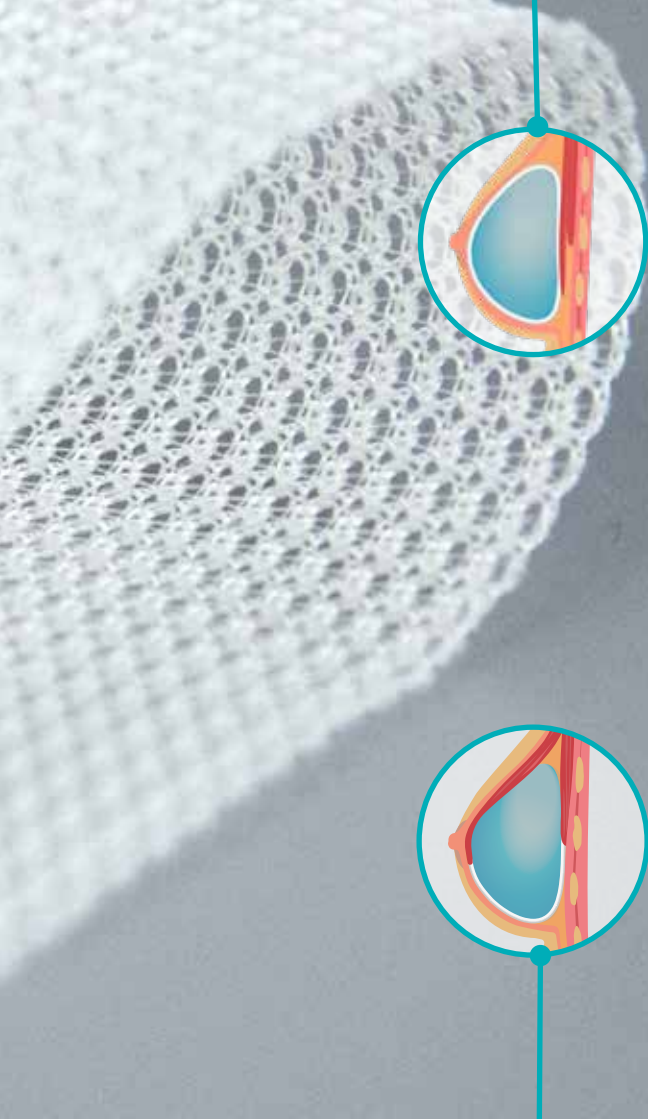


A close-up photograph of a surgical procedure on a dog's head. A red, porous, knitted mesh (WARP-KNITTED TIGR Matrix) is being applied to the skin. A pair of surgical forceps is visible, holding a suture thread that is being used to secure the mesh. The background is dark and out of focus, emphasizing the surgical site.

**WARP-KNITTED**  
TIGR® Matrix

Photo: ANDREAS LINDAHL, MD & PhD Caroviva clinic, Sweden





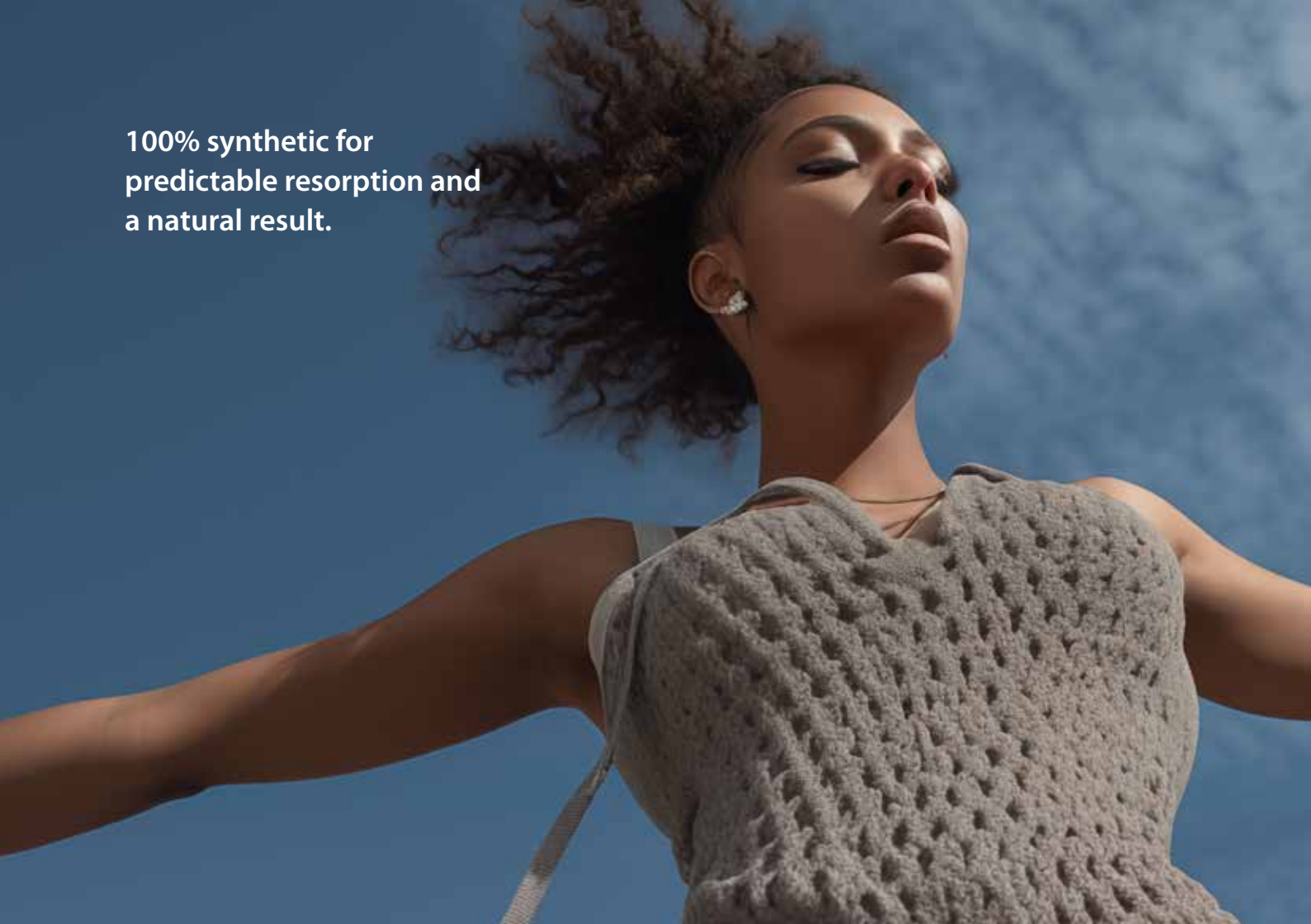
## Prepectoral

- An implant is placed above the pectoralis major muscle and TIGR Matrix supports and stabilizes the implant. TIGR Matrix promotes soft tissue repair and long-term support.
- Complete coverage or anterior coverage of the implant with TIGR Matrix is possible.
- The prepectoral procedure allows for better quality of life for the patient with less postoperative pain.
- Immediate reconstruction after a mastectomy is possible, allowing the patient to recover faster, have a better body image as well as obtaining satisfying aesthetic outcome.

## Submuscular

- Sub-pectoral breast reconstruction with TIGR matrix is also possible. Here the implant is placed partially under the pectoralis chest muscle. This method has the advantage of additional muscular protection against implant exposure or rippling. The lower and outer part of the implant is covered by the mesh to hold the implant in place. The upper pole of the implant is covered by the muscle. This type of reconstruction is often done in two stages with the use of a tissue expander to reach the desired volume. Subpectoral reconstructions have become less common in recent years. It is a more invasive procedure and patients may experience more discomfort.

**100% synthetic for  
predictable resorption and  
a natural result.**



## THE ALTERNATIVE

TIGR® Matrix

TIGR Matrix is a versatile alternative to other biosynthetic or biological materials.

It comes with long-term follow-up data and a low complication rate documented in peer reviewed literature.

# Comparing Complications of Biologic and Synthetic Mesh in Breast Reconstruction: A Systematic Review and Network Meta-Analysis

YOUNG-SOO CHOI, MD<sup>1</sup> ET AL.

<sup>1</sup>Department of Plastic and Reconstructive Surgery, Korea University Ansan Hospital, Ansan, Republic of Korea, Arch Plast Surg 2023;50:3–9.

**Seroma, Hematoma, Infection, Necrosis, Implant loss and Capsular Contracture were measured during this study with the following comments:**

- “In this study, compared with ADMs, synthetic meshes had low infection and seroma rates.”
- “Considering the low cost and satisfactory surgery results in retrospective and animal studies, absorbable synthetic meshes might be considered the gold standard method for the immediate breast reconstruction technique.”

**EVIDENCE WITH**  
TIGR<sup>®</sup> Matrix

# Clinical data Using TIGR® Matrix

Clinical data using TIGR® Matrix	Hallberg 49 pat. (2018)	Pompei 49 pat. (2017)	Sharma 105 pat. (2016)	Becker 62 pat. (2013)	Quinn* 121 pat. (2020)	Marthan** 195 pat. (2019)		Houvenaeghel (2022)		Wow 170 pat. (2022)
						145 sub-pec.	78 pre-pec.	218 sub-pec.	98 pre-pec.	
Average follow-up	17 Months	12 Months	18 Months	16 Months	23,6 Months	32 Months		12 Months		20 Months
Seroma	3.1%	3.3%	0%	1.8%	N/A <sup>a)</sup>	0.4%	3%	N/A <sup>a)</sup>	N/A <sup>a)</sup>	N/A***
Hematoma	1.5%	6.7%	0%	N/A	1%	5%	4%	3.7%	7%	1.7%
Infection	1.5%	1.7%	10.8%	3.6%	11%	7.6%	4%	2.2%	2%	4.3%
Flap necrosis	1.5%	5.0%	0%	1.8%	2%	1.4%	2.6%	0.5%	2.5%	3.3%
Implant loss	3.1%	None	6.7%	N/A	6%	10%	5%	6.4%	9.2%	8.1%

Capsular Contracture	Hallberg 49 pat.	Quinn* 121 pat.	Marthan** 195 pat.
No adjuvant radiotherapy	4.9%	6%	9% (154 breasts)
Adjuvant radiotherapy	N/A	N/A	51% (69 breasts)

Synthetic and ADM in the same patient Hansson 47 pat. (2020)	Seroma		Hematoma		Infection		Flap necrosis		TE/ Implant loss
	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1 & 2
Synthetic 24/23 pat.	8.3%	0%	4.2%	0%	0%	0%	0%	0%	2%
Biological 24/23 pat.	38%	0%	0%	0%	12.5%	4.3%	0%	0%	8.5%

\* In the skin-sparing mastectomy group

\*\* No exclusion criteria, high risk cancer

\*\*\* The level of seroma was two times higher in the subpectoral group

<sup>a)</sup> Seroma was not included in the results

Please check [www.novusscientific.com](http://www.novusscientific.com) for the latest publications on TIGR Matrix.

# TIGR<sup>®</sup>matrix

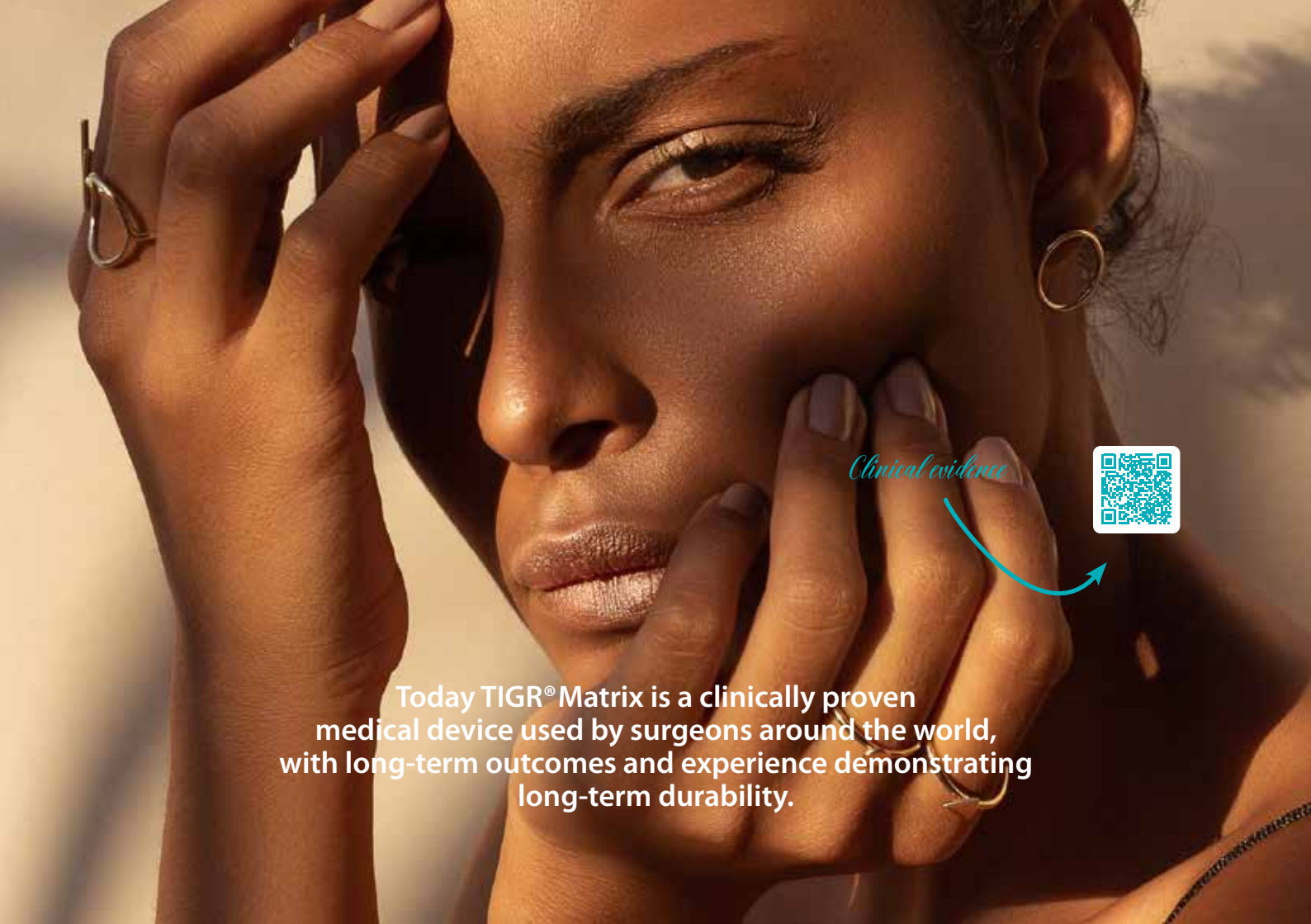
- 100% synthetic
- Non animal based
- Long-term resorbable
- Biocompatible
- Dual stage degradation
- Strong
- Multifilament
- Warp-knitted
- Untwisted fibers
- Macro-porosity design
- No preparation needed, no rinsing
- Pliable and easy to cut
- Cost effective



A close-up photograph of a white, fine-mesh fabric, likely a filter or screen. A prominent, irregular yellowish stain is visible on the lower right portion of the mesh. The background is blurred, showing more of the mesh structure.

## **REASONS TO USE**

TIGR® Matrix



*Clinical evidence*



Today TIGR® Matrix is a clinically proven medical device used by surgeons around the world, with long-term outcomes and experience demonstrating long-term durability.

Developed and produced in Sweden

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# TO ORDER

SIZE	REF. NO.
10 x 15 cm	NSTM1015E
15 x 20 cm	NSTM1520E
20 x 30 cm	NSTM2030E



Caution: Read instructions for use which accompany the product for indications, contraindications, warnings and precautions.  
TIGR® Matrix Surgical Mesh received 510(k) clearance by the FDA in 2010, carries the CE-mark since 2011,  
and is MDR approved under the new Medical Device Regulation EU 2017/745 (MDR) since 2021.