Peters SURGICAL

Absorbable Sutures

Time management in your hands

peters-surgical.com

Who **we are**

Open with Care. Close for Life.

At Peters Surgical, we aim to improve patient's quality of care by contributing to the success of surgical procedure. We develop high performance medical devices and dedicated services with and for surgical teams. **Customer Centric**, **Quality Obsessed** and **Responsibly Engaged** are our values to guide our teams all over the world.

With more than 765 employees, Peters Surgical is a European company founded in 1926. Present in more than 90 countries with major industrial sites in France, Germany, Algeria, Thailand and India, we design, manufacture and distribute speciality surgical medical devices focused to address the Cardiovascular, Digestive and Uro-Gynecology therapeutic needs. It's our pride that every second, one of our products is being used by a surgeon in the world.

We are currently the fastest growth 4th largest Surgical Suture company in the world and the Leader in haemostatic clips in Europe.

Open with Care. Close for Life. is our new motto. It reflects our dedication to patients, physicians and healthcare systems.

Key **numbers**

Innovation in our DNA

From R&D **to Open Innovation.**

Peters Surgical has a long history of innovation. With over 50 patents, a solid financial investment to support Innovations and a team of 10+ Engineers working every day to provide new technologies.

Innovation is definitely in our DNA.

Building scientific partnerships with the medical community.

Since the very beginning of the company, we have built a network of trust and created scientific partnerships with the medical community.
For years, we have been working in close collaboration with academic societies, prestigious Research hospitals, such as Hôpital Virtuel de Lorraine (Nancy) and CICE (Clermont-Ferrand).

As an agile company, we work in a collaborative and proactive mode with the all communities, creating an ecosystem that gathers healthcare professionals, research laboratories as well as start-ups.

Innovative and **High Performing**

Our Sutures portfolio designed to all your surgeries.

Absorbable Sutures for general surgeries

General surgery

OPTIME® R
PGA
Undyed

OPTIME®
PGA
Purple / Undyed

ADVANTIME®
PGA-CL
Purple / Undyed

MONOTIME®
PDO
Purple

Non-Absorbable Sutures for use in general soft tissue approximation/ligation* including use in cardiac, vascular, ophtalmic & general surgeries

Cardiovascular surgery

COROLENE®
Polypropylen
Blue / White

PREMIO®
PVDF
Blue-violet

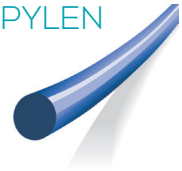
CARDIOXYL® CARDIOFLON® *Evolution*
Polyester
Green / Undyed

CARDIONYL®
Polyamide
Blue

ACIER®
Stainless steel

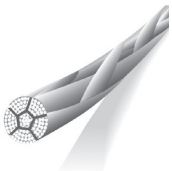
Ophthalmologic surgery

POLYPROPYLEN
Blue



NYLON
Polyamide 6.6
Black

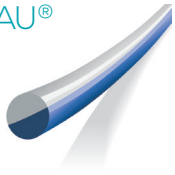
SILK
Black



SINUSORB® PGA
Absorbable suture

General surgery

FILAPEAU®
Polyamide
Dark blue / Undyed



POLYTRESSE®
Polyester
Green / Undyed

SILK
Black

*except ACIER (intended for use in thoracic and cardiothoracic surgery (sternum closure) and in orthopaedic surgery)
Carefully read the Instructions For Use of medical device (page 11) before use.

Why choose absorbable thread?

Absorbable sutures are chosen **when the thread's removal isn't required**, and may, therefore, **save clinic time** and **reduce patient anxiety postoperatively**.[1]

Absorbable sutures do not increase the risk of skin wound dehiscence, rather leads to a **reduced risk of wound break-down** compared to non-absorbable sutures.[2]

Technically, absorbables threads must keep a resistance to hold the wound securely until the tissue has healed sufficiently.[3]

Then absorbable sutures must loss completely its strength and be eliminated by the body metabolism or the knot fall outside the body (if use in surface).[3]

ABSORBABLE SUTURES are characterised by:

The time of Total Loss of Resistance: For which a ligature fulfils its role ofmaintaining the edges of a wound (the resistance of the thread is close to zero).[3]

The complete Absorption time: Period for complete degradation and complete elimination of the suture from the body.[3]

Peters Surgical **Absorbable Sutures**

Time management in your hands.

Fast Braided

OPTIME® R

RESISTANCE*
~14 DAYS

ABSORPTION**
42 DAYS

SURGERIES
General surgery
Stomatologic
Episiotomies
Circumcisions
Ophthalmologic

Medium Braided

OPTIME®

RESISTANCE*
28-35 DAYS

ABSORPTION**
60-90 DAYS

SURGERIES
General surgery
Digestive
Gynecological
Urological
Orthopedic
Ophthalmologic
Dental

Medium Monofilament

ADVANTIME®

RESISTANCE*
21-28 DAYS

ABSORPTION**
90-120 DAYS

SURGERIES
Digestive
Gynecological
Urological
Aesthetic
Intradermal surgery

Slow Monofilament

MONOTIME®

RESISTANCE*
~60 DAYS

ABSORPTION**
180-210 DAYS

SURGERIES
General surgery
Pediatric cardiovascular & vascular
Digestive

* Time of total loss of Resistance / ** The complete resorption time

1. RK Kundra, S Newman, A Saithna, AC Lewis, S Srinivasan, K Srinivasan. Absorbable or non-absorbable sutures ? A prospective, randomised evaluation of aesthetic outcomes in patients undergoing elective day-case hand and wrist surgery. Ann R Coll Surg Engl 2010; 92: 665–667
2. Sajid MS, McFall MR, Whitehouse PA, Sains PS. Systematic review of absorbable vs non-absorbable sutures used for the closure of surgical incisions. World J Gastrointest Surg 2014; 6(12): 241-247
3. Internal Data: R&D Test Report RDE-1940 Rev01. In vitro and in vivo resorption profiles on OPTIME®, 2021

OPTIME® R

Fast absorbable synthetic braid - Polyglycolic Acid (PGA)

Solution for short-term support and rapid absorption.

FAST ABSORPTION

Due to a lower molecular weight o PGA that allows a **rapid absorption complete at 42 days.**[2]

GOOD KNOT HOLDING & FLEXIBILITY

Thanks to fine and tight braid structure with a **better knot tensile strength** on all the diameters.[1]

GOOD TOLERANCE FOR THE TISSUE

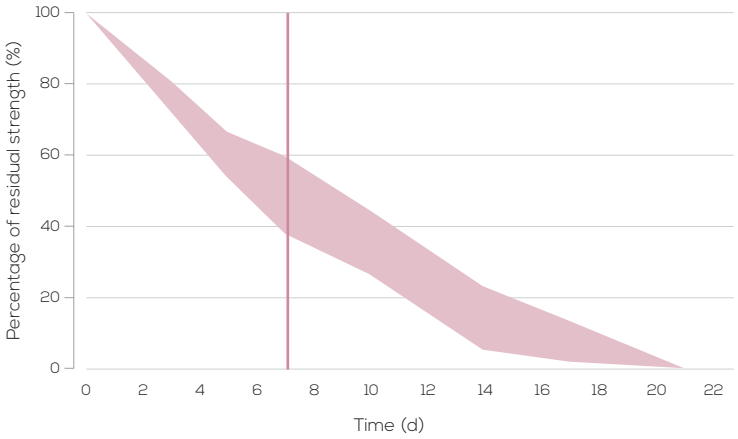
Minimal inflammatory reaction in the tissue.[2]

Intended use

- **General** surgery (skin and musocal injuries, particularly in pediatric surgery)
- **Stomatologic** surgery
- **Episiotomies** surgery
- **Circumcisions** surgery
- **Ophthalmologic** surgery (for conjunctival sutures)

Remaining approximately 40 % initial resistance *in vitro* after 7 days post-implantation.

Percentage of residual strength (%) over time on all diameters of OPTIME® R



Initial Resistance	Time of total loss of resistance	Absorption	Thread color	USP	Thread length	Montage	Needle Type	Needle curvature	Needle length
About 40% after 7 days post-implantation	~14 days	42 days	Undyed	USP 6/0 to USP 1	45 cm to 90 cm	With needle, single armed	Taper Taper Extrablack® Cutting Extracut® cutting Tapercutting KL	1/2 3/8 Straight	11 mm to 50 mm

1. Internal Data: R&D Test Report RDE-1851. In vitro and in vivo resorption profiles on OPTIME® R Gamma, 2021
2. IFU OPTIME® R NI-ET1201 V09

OPTIME®

Intermediate absorbable synthetic braid - Polyglycolic Acid (PGA)

Solution for mid-term approximation of tissue in general surgery.

GOOD KNOT HOLDING & FLEXIBILITY

Thanks to fine and tight braid structure with a **better knot tensile strength** on all the diameters.[1]

GOOD TOLERANCE FOR THE TISSUE

Minimal inflammatory reaction in the tissue.[2]

HIGH INITIAL STRENGH

More than 65% after 14 days post-implantation (in vivo).[2]

GREAT SLIDE TO GOOD KNOT DESCENT

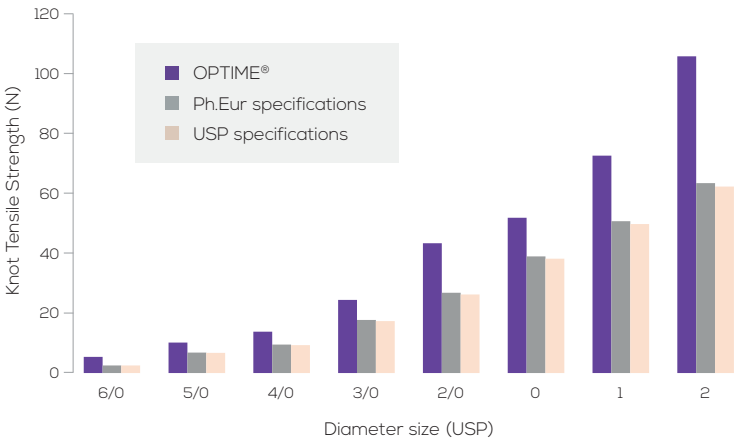
Glide improvement thanks to the coating of the thread.[2]

Intended use

- **Digestive** surgery
- **Gynecological** surgery
- **Urological** surgery
- **Orthopedic** surgery
- **Ophthalmologic** surgery
- **Dental** surgery **(OPTIME® Septodont)**

Knot Tensile Strength of OPTIME® significantly higher than the specifications of the European and American Pharmacopoeias on all the diameters.

Comparison: Knot Tensile Strength (N) of OPTIME® vs the Ph.EUR and USP specifications[1]



Initial Resistance	Time of total loss of resistance	Absorption	Thread color	USP	Thread length	Montage	Needle Type	Needle curvature	Needle length
Approximately 65% after 14 days post-implantation	28-35 days	60-90 days	Undyed or Purple	USP 6/0 to USP 2	45 cm to 250 cm	With or without needle, single or double armed, or loops.	Taper Taper Extrablack® Blunt Cutting Tapercutting KL	1/2 3/8 5/8 Straight	8 mm to 70 mm

1. Internal Data: NRD1908 V02 Physical and mechanical performance of OPTIME® suture, 2021
2. IFU OPTIME® NI-ET1200 V13

ADVANTIME®

Intermediate absorption monofilament - Poliglecaprone 25 (PGA-CL)

Solution for mid-term approximation of tissue in general surgery.

LESS TRAUMA & GREATER GLIDE

Better glide thanks to its monofilament structure, while reducing postoperative adhesions and granuloma formation.[3]

GOOD KNOT HOLDING

Knot tensile strength of ADVANTIME® is **significantly higher** than the Ph.EUR and USP specifications.

GOOD TOLERANCE FOR THE TISSUE

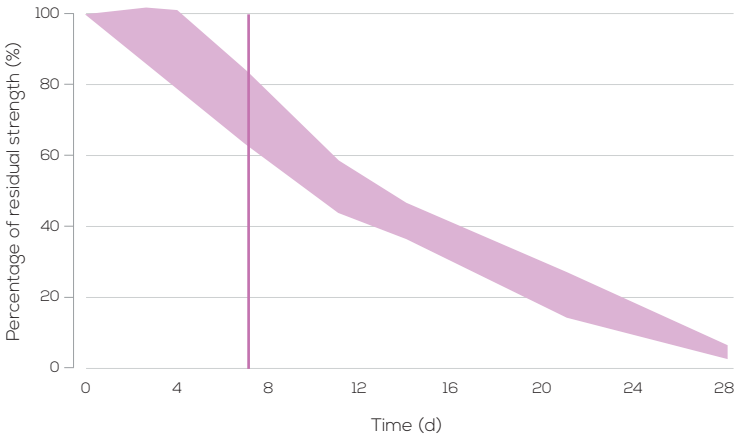
Minimal inflammatory reaction in the tissue.[2]

Intended use

- **Digestive** surgery
- **Gynaecological** surgery
- **Urological** surgery
- **Aesthetic** surgery
- **Intradermal** surgery (intradermal continuous suture)

Remaining greater than 55% initial resistance *in vivo* after 7 days post-implantation.

Percentage of residual strength (%) over time on all diameters of ADVANTIME®[4]



Initial Resistance	Time of total loss of resistance	Absorption	Thread color	USP	Thread length	Montage	Needle Type	Needle curvature	Needle length
Greater than 55% after 7 days post-implantation	21-28 days	90-120 days	Undyed or Purple	USP 6/0 to USP 1	45 cm to 110 cm	Single or double armed	Taper Cutting Tapercutting KL Extracut® cutting	1/2 3/8 5/8 Straight	10mm to 60mm

1. Internal Data: NRD1921 Physical and mechanical performance of ADVANTIME® suture, 2021
2. IFU ADVANTIME® NI-ET1217 V10
3. MAURER Jean-Noël, Thesis: Evaluation of the Sutures use for surgical ligation in CHRU Nancy, p.24, 2004
4. Internal data: R&D Test Report RDE-1853, In vitro and in vivo resorption profiles on ADVANTIME®, 2021

MONOTIME®

Slow absorbable monofilament - Polydioxanone (PDO)

Solution for long-term approximation of tissue (up to 6 weeks).

GOOD KNOT HOLDING

Knot tensile strength of are significantly higher than the Ph. EUR and USP specifications.[1]

GOOD TOLERANCE FOR THE TISSUE

Minimal inflammatory reaction in the tissue.[2]

HIGH STRENGH FOR LONG-TERM

Resistance up to 6 weeks for slow or delayed healing tissues.[2]

HOMOGENEOUS SLOW ABSORPTION

Homogeneous and regular absorption kinetics from the USP 7/0 to USP 2.[1]

Intended use

General surgery
when long time support is required (until six weeks)

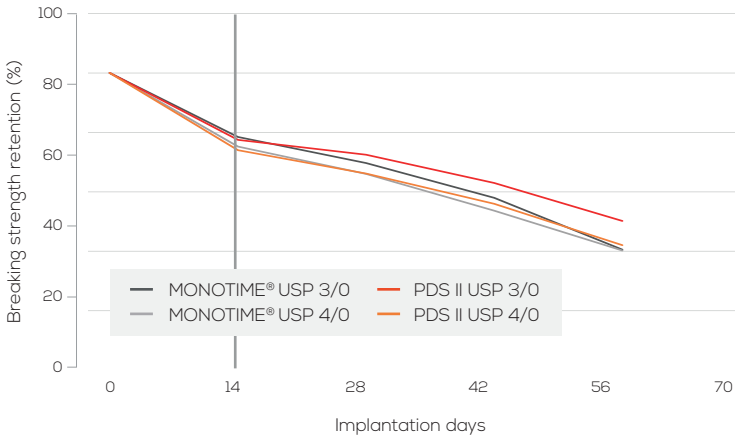
Pediatric surgery
(Cardiovascular & vascular surgery)

Digestive surgery

A similar resorption profile *in vivo* between MONOTIME® and PDS™ II (Ethicon)

75% of MONOTIME® original tensile strength is retained at 14 days post-implantation.

Comparison of the breaking strength retention (%) between MONOTIME® and PDS™ II[3]



Initial Resistance	Time of total loss of resistance	Absorption	Thread color	USP	Thread length	Montage	Needle type	Needle curvature	Needle length
75% after 14 days post-implantation	~60 days	180-210 days	Purple	USP 7/0 to USP 2	30 cm to 150 cm	Single or double armed, or loops	Taper Taper Extrablack® Cutting Tapercutting KL	1/2 3/8 Straight	6.4 mm to 60 mm

1. Internal Data: NRD1922 V01 Physical and mechanical performance of MONOTIME® suture, 2020
2. IFU MONOTIME® NI-ET1210 V09
3. Internal data: R&D Test Report RDE-1854 Rev01, In vitro and in vivo resorption profiles on MONOTIME®, 2021

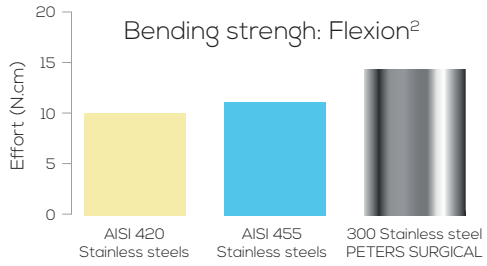
Peters Surgical **Needles**

The performances of a needle depend on:

- **Bending strengh:** the force necessary to bend a material until breaking point
- **Ductility:** the capacity of alloy to be bent without breaking
- **Penetration:** the needle pass through tissues easily, without tearing

HIGH BENDING STRENGTH & GOOD DUCTILITY

Needles made of state-of-the-art **300 stainless steel**.



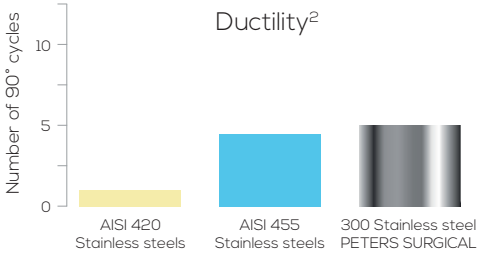
Results Wire sizes Ø 0.66 & 0.68 mm

Measurement of the useful strength for bending the needle to 90°

GOOD PENETRATION GUARANTED PASS AFTER PASS

Particularly sharp and tips design based on the particular tissue type where they are used.[1]

Silicone coating maintains the sharpness and consistency of penetration of the needle.[1]



Results Wire sizes Ø 0.66 & 0.68 mm

Estimating the ductility of the needle by measure of the number of round trips to 90° that the needle can make before breaking

A wide range according to different procedures

Round body and Square body

TAPER

Conventional needles

Indications: soft tissue approximation, peritoneum, digestive and urinary tract, heart, vessels, gynaecological tissue.

TAPER EXTRABLACK®

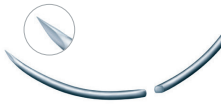
Black needles for lower reflectivity under OP light, higher contrast (light-dark) leading to better visibility

Indications: dental, oral mucosa surgery, laparoscopic procedures.

BLUNT

Blunt point does not cut into tissue

Indications: soft tissue, liver, kidney to prevents the risks of contamination per puncture.



TAPERCUTTING KL

3 belleved faces to better penetration than taper needle

Indications: cardiovascular surgery, calcified and sclerous tissues, synthetic prothesis.

Triangular body

CUTTING

Point with 3 cutting edges and triangular body provide better penetration

Indications: skin, abdominal wall, fibrous tissue and ligaments.

EXTRACUT® CUTTING

Cutting needle with precision point Design for ADVANTIME® undyed

Indications: skin closure by running intradermal sutures, subcutaneous tissue approximation, aesthetic surgery.

1. Miriam Byrne, MD, FRCS (Plast); and Al Aly, MD, FACS, Aesthetic Surgery Journal The Surgical Needle 2019, Vol 39(S2) S73–S77
2. Internal Data: R&D Report SPS009-0108EN, Study of the needles of cardiovascular sutures from PETERS SURGICAL

Packaging

Ensured sterility and sealing

Aluminium multilayers pouch ensures safe conservation.

Easy handling

2 step opening

1. External peel pouch

2. Aluminium tear pouch

Direct access to the needle

Need to remove carton support

INDICATIONS

OPTIME® Absorbable surgical suture, coated polyglycolic acid braid: The synthetic absorbable surgical sutures OPTIME® are indicated for use in general tissue approximation and/or ligation, including use in ophthalmic surgery.

OPTIME® ℛ Fast absorbable surgical suture, coated polyglycolic acid braid: The synthetic absorbable surgical sutures OPTIME® ℛ are indicated for use in soft tissue approximation, when short time wound support is acceptable and when rapid absorption is needed. They are indicated for general surgery in skin and mucous membrane closure, particularly in paediatric surgery, stomatology, episiotomies, circumcisions and in ophthalmic surgery for conjunctival sutures.

ADVANTIME® Absorbable surgical suture, poliglecaprone 25 monofilament: The synthetic absorbable surgical sutures ADVANTIME® are indicated for use in general soft tissue approximation and/or ligation where an absorbable suture is indicated.

MONOTIME® Absorbable surgical suture, poludioxanone monofilament: The synthetic absorbable surgical sutures MONOTIME® are indicated for use in general soft tissue approximation and/or ligation, particularly when long time support is required (until six weeks), including use in paediatric cardiovascular and vascular surgery, in peripheral vascular surgery, in ophthalmic surgery and in microsurgery.

SINUSORB® PGA, Absorbable surgical suture, polyglycolic coated braid or polyglycolic monofilament: The synthetic absorbable surgical sutures SINUSORB® PGA are indicated for use in general soft tissue approximation and/or ligation, including use in ophthalmic surgery; but not for use in cardiovascular and neurological surgery.

COROLENE® Non absorbable surgical suture, polypropylene monofilament: COROLENE® sutures are intended for use in general soft tissue approximation and/or ligation, including use in cardiovascular and vascular surgery, in ophthalmic surgery, in plastic surgery and in neurological surgery. COROLENE® sutures can be used for laparoscopic surgery and abdominal aorta surgery.

PREMIO® Non absorbable surgical suture, PVDF monofilament: PREMIO® sutures are intended for use in general soft tissue approximation and/or ligation, including use in cardiovascular, vascular and neurological surgery.

CARDIOXYL® Non absorbable surgical suture, coated polyester braid: CARDIOXYL® sutures are intended for use in general soft tissue approximation and/or ligation, including use in cardiovascular, vascular and ophthalmic surgeries.

CARDIOFLON® Evolution Non absorbable surgical suture, coated polyester braid: CARDIOFLON® Evolution sutures are intended for use in general soft tissue approximation and/or ligation, including use in cardiovascular, vascular and ophthalmic surgeries.

CARDIONYL® Non absorbable surgical suture, polyamide monofilament: CARDIONYL® sutures are intended for use in general soft tissue approximation and/or ligation, including use in cardiovascular, vascular, ophthalmic and neurological surgery.

ACIER Non absorbable surgical suture, stainless steel: ACIER sutures are intended for use in thoracic and cardiothoracic surgery (sternum closure) and in orthopaedic surgery.

POLYPROPYLEN, SOIE/SILK, NYLON sutures are intended for use in ophthalmic surgery.

FILAPEAU® Non absorbable surgical suture, polyamide monofilament: FILAPEAU® sutures are intended for use to suture superficial cutaneous skin and in plastic surgery.

POLYTRESSE® Non absorbable surgical suture, coated polyester braid: POLYTRESSE® sutures are intended for use in general soft tissue approximation and/or ligation, including use in orthopaedic surgery, in cardiovascular and vascular surgery and in ophthalmic surgery.

Medical devices class III, CE 0459. Manufacturer: Peters Surgical
Presentation dedicated to PETERS SURGICAL employees, distributors and healthcare professionals.

Carefully read the Instructions For Use of medical device before use.

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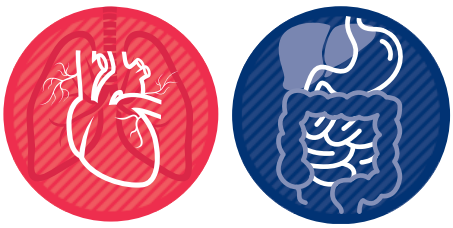

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