



# VPL SUTURES

Cost savings without compromise

# Why VPL Sutures?

## Reduce your cost, not your quality.

With over 20 years in the U.S. veterinary channel and building on the tradition of the over 100 year B. Braun legacy, we are able to provide cost savings over other manufacturers without compromising quality or clinical performance.

	VPL	Ethicon™	Covidien™
Absorbable Sutures	Monomend® ST	Vicryl®	Biosyn™
	Monomend® MT	Monocryl®	Biosyn™
	Monomend® MaX	PDS® II	Maxon™
	Polymend® MT	Vicryl®	Polysorb™ Dexon™
	Chromend™	Chromic Gut	Chromic Gut

## Products that meet your needs

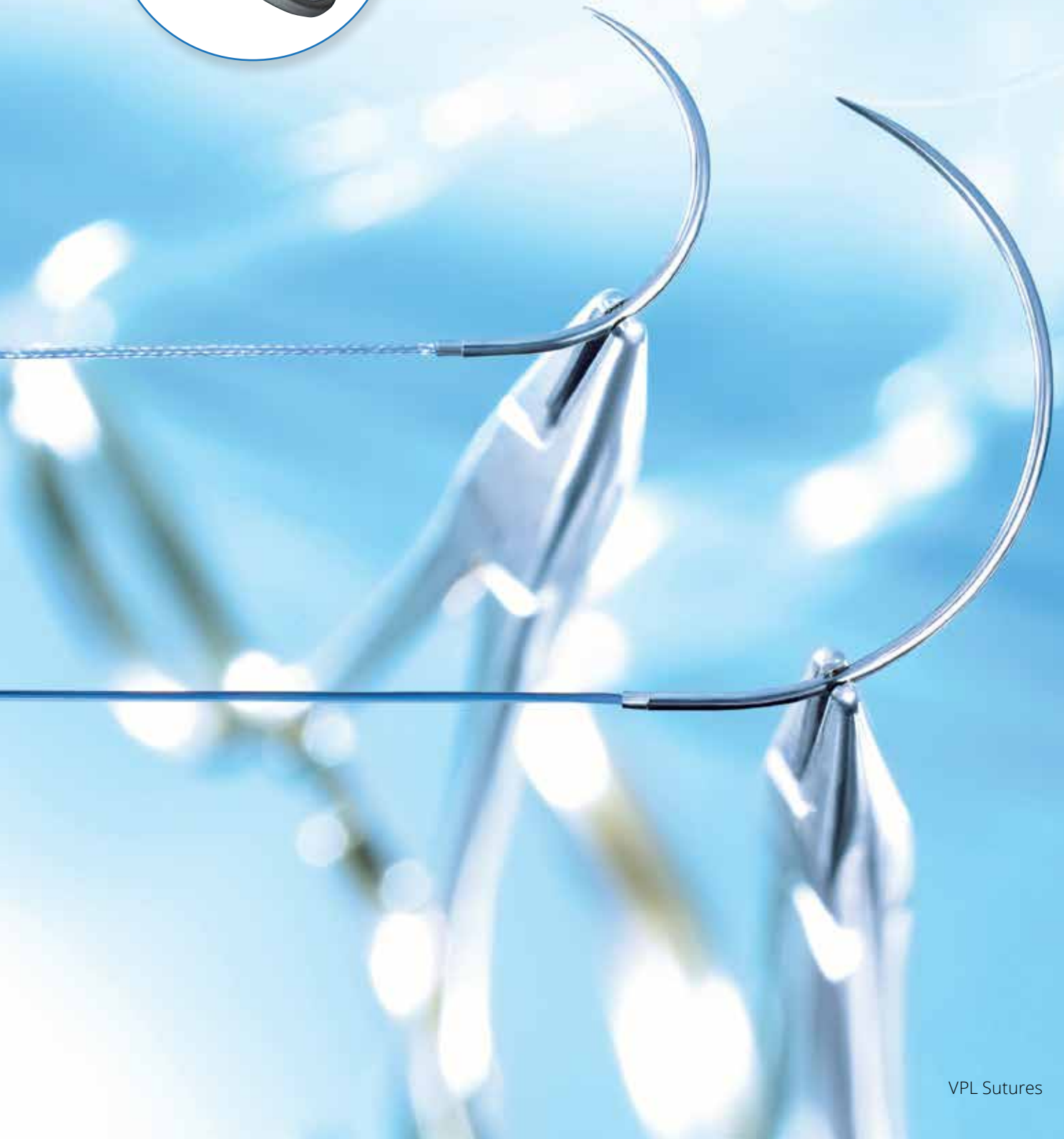
It's through our extensive experience in sutures that VPL is able to offer a comprehensive product line with over 100 different absorbable and non-absorbable sutures to meet the needs of different specialties and surgeries.

	VPL	Ethicon™	Covidien™
Non-Absorbable Sutures	PRO-STĀ®	Prolene®	Surgipro™ II
	NY-STĀ®	Ethilon®	Monosof™ Dermalon™











## A suture is only as good as the needle attached to it.

That's why VPL has a relentless pursuit of the perfect needle for each surgical application.






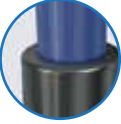

# Needle comparison

VPL Sutures feature six different types of needles.

Reverse cutting needles	Taper needles
<p><b>DSMP</b> Reverse cutting needle with micro-point</p> 	<p><b>HR</b> Taper needle</p>  
<p><b>DS</b> Reverse cutting needle</p> 	<p><b>HRs</b> Taper needle with heavy body</p>  
<p><b>HSs</b> Reverse cutting needle with heavy body</p> 	<p><b>Straight cutting needle</b></p> <p><b>GS</b> Straight cutting needle</p> 

## CV pass needles

- Excellent penetration
  - Taper point eases penetration with low trauma
  - Short cutting point improves penetration through calcified tissues with less force

- Fine needles
  - Provide up to 43% less cross-section surface for reduced tissue trauma and less bleeding
- Semi square body design
  - Improves bending strength resistance
  - Enhances stability in the needleholder

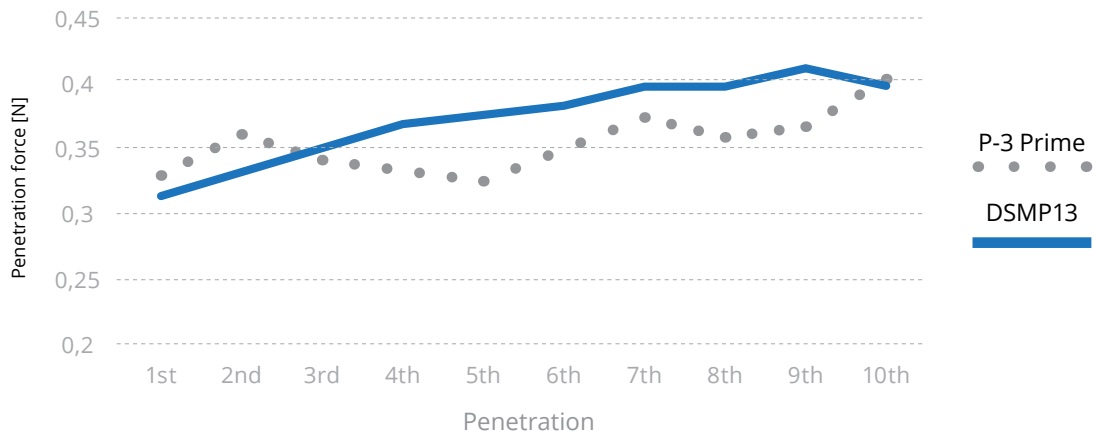
# Since time is trauma in surgery, it is imperative that you have a needle that stays sharp.

Recent laboratory tests have shown\* a significant difference in the quality of needles from VPL Sutures.

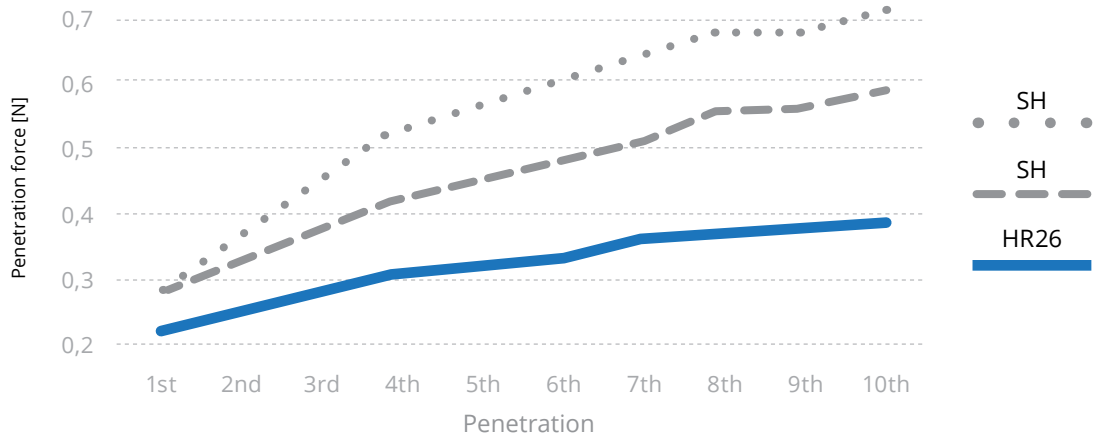
**RESULTS:** VPL's DSMP13, HR26, and HR26s needles had the lowest needle degradation and required less force for penetration versus the leading competitors P-3 Prime, SH, and CT-2 needles.

## Needle penetration test

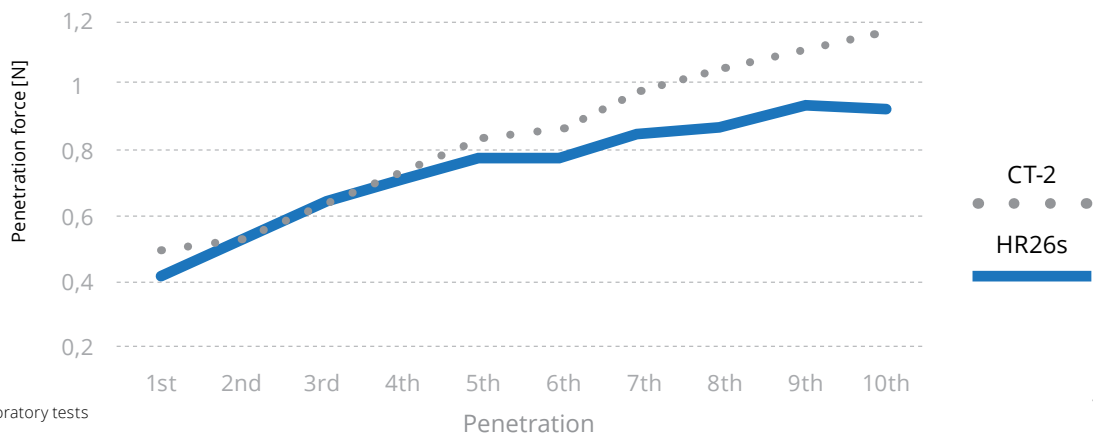
DSMP13 Vs. P-3 Prime reverse cutting needles (13mm)



HR26 Vs. SH taper needles (26mm)



HR26s Vs. CT-2 taper needles (26mm)



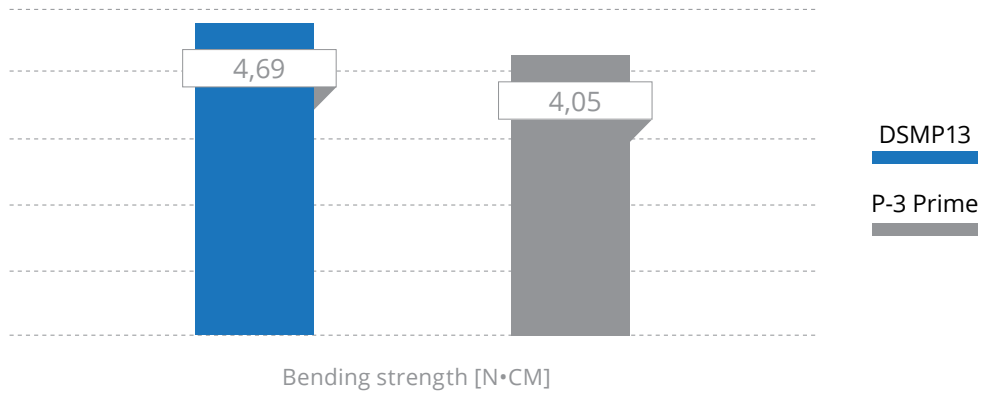
\*Data on file; internal laboratory tests

# Bending strength test

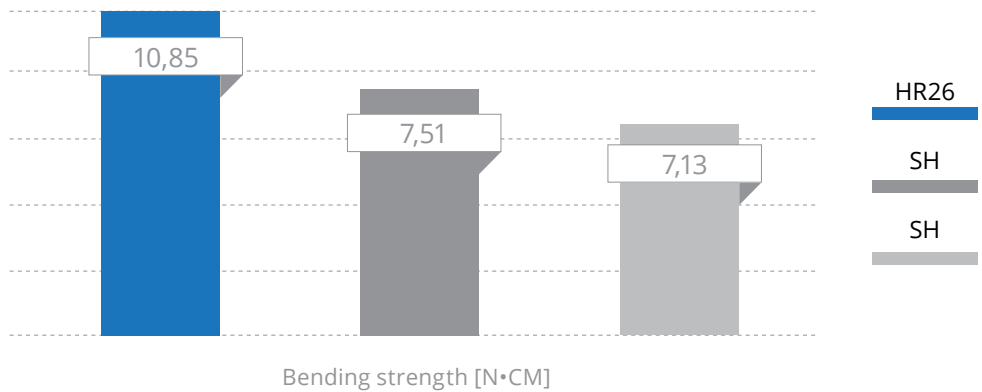
Recent laboratory tests\* have shown some VPL needles have the highest bending strength compared to leading competitors.

**RESULTS:** The leading competitor's P-3 Prime, SH, and CT-2 needles required less force to bend than VPL's DSMP13, HR26, and HR26s needles.

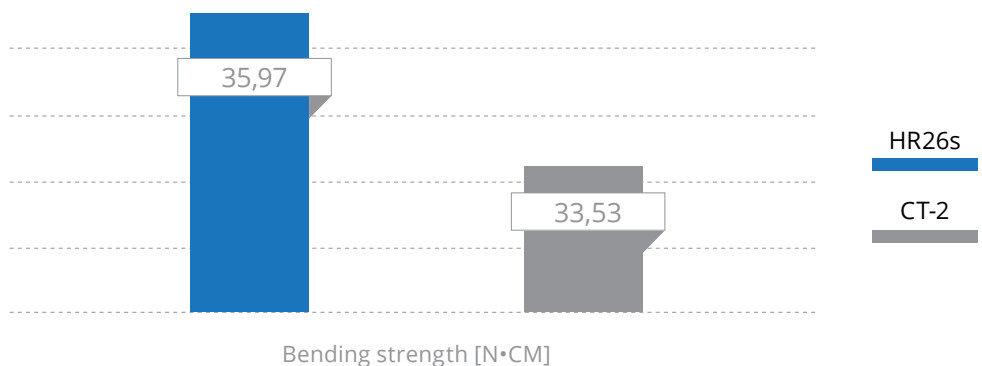
DSMP13 Vs. P-3 Prime reverse cutting needles (13 mm)



HR26 Vs. SH taper needles (26 mm)



















HR26s Vs. CT-2 taper needles (26 mm)

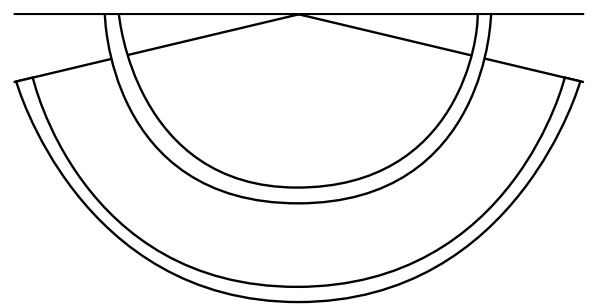


# Needle selection

Needle comparison chart and VPL needle selection

Reverse cutting-needle with Micro-point ▼					Taper-needle ●				
3/8 Circle	Needle Length	VPL Needle	Ethicon™	Covidien™	1/2 Circle	Needle Length	VPL Needle	Ethicon™	Covidien™
	11 mm	DSMP11	P-1	P-10		17 mm	HR17	RB-1	CV-23
	13 mm	DSMP13	P-3	P-13		22 mm	HR22	SH-1	CV-25
	16 mm	DSMP16	PS-3	P-11		26 mm	HR26	SH	V-20
	19 mm	DSMP19	PS-2	P-12		26 mm	HR26s	CT-2	GS-22
Reverse cutting-needle ▼					Straight cutting-needle ●				
	19 mm	DS19	FS-2	C-13		37 mm	HR37s	CT-1	GS-21
	24 mm	DS24	FS-1	C-14		48 mm	HR48	CTX	GS-25
	30 mm	DS30	FSL	C-16		60 mm	GS60	KS	SC-2
1/2 Circle	Needle Length	VPL Needle	Ethicon™	Covidien™					
	26 mm	HS26s	CP-2	GS-10					
	37 mm	HS37s	CP-1	GS-11					

VPL needle nomenclature
<b>Example:</b> HR26: 1/2 circle, round bodied, 26 mm long needle.
<b>Needle angle of curvature</b>
<b>H</b> 1/2 circle
<b>D</b> 3/8 circle
<b>G</b> straight
<b>Body type</b>
<b>R</b> Round bodied ●
<b>S</b> Reverse cutting needles ▼
<b>MP</b> Micro-Point ▼
<b>Needle length</b> Distance between the needle point and the needle end, measured alongside the needle in mm.
<b>Wire size</b>
<b>S</b> Heavy-bodied needle



H= 1/2

D= 3/8

G= Straight

# Monofilament for all indications

VPL Sutures are the only brand that provides the possibility of using a monofilament suture for all types of surgeries, from the beginning until the end of the procedure.

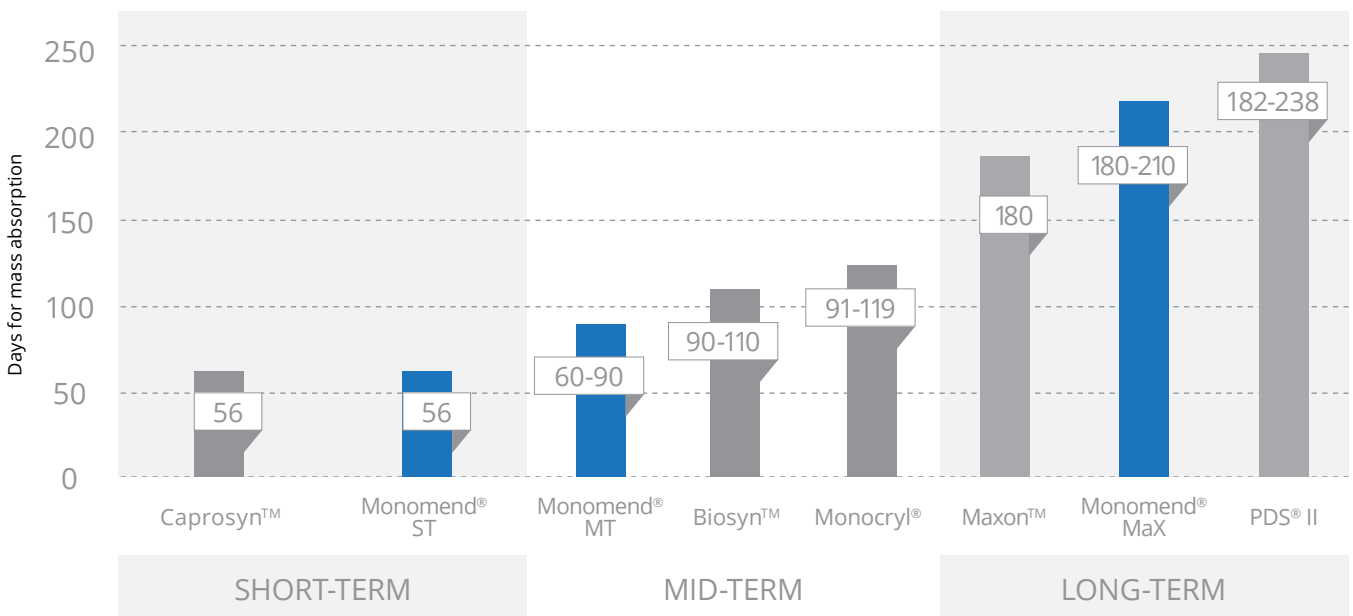
## The monofilament advantage

- Less infection<sup>1</sup> than multifilament sutures due to decreased bioadhesion and improvement in the ability of phagocytes to reach bacteria on or within the suture
- Improved wound healing due to the smooth passage through the tissue
- Secure knotting performance

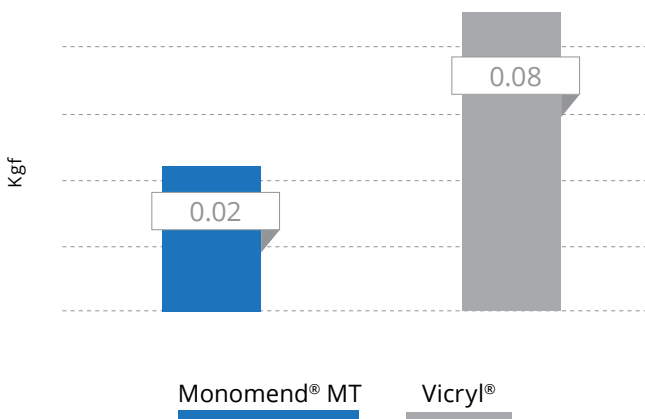
## Why use a faster absorbing suture?

Don't leave an unnecessary foreign material in your patients when you can use a faster absorbing suture. Our sutures are designed to absorb when wound healing is complete.

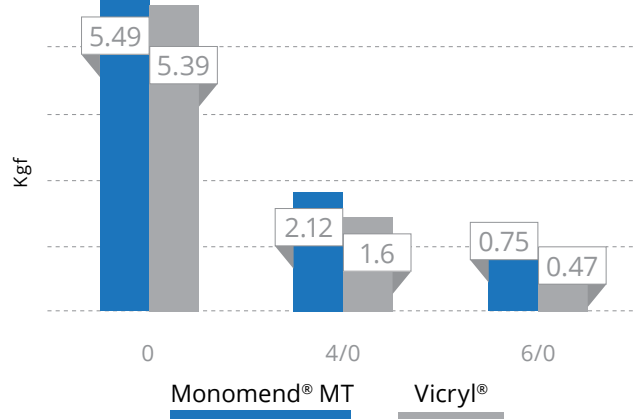
### In-Vivo Absorption Time\*



### Tissue Drag\*



### Knotting Security\*



<sup>1</sup> Data based on human study entitled Alexander JW, Solomkin JS, Edwards MJ. Updated Recommendations for Control of Surgical Site Infections. Annals of Surgery. 2011;253(6):1082-1093. \*Source: manufacturer websites and marketing collateral.



# Monomend® brand sutures

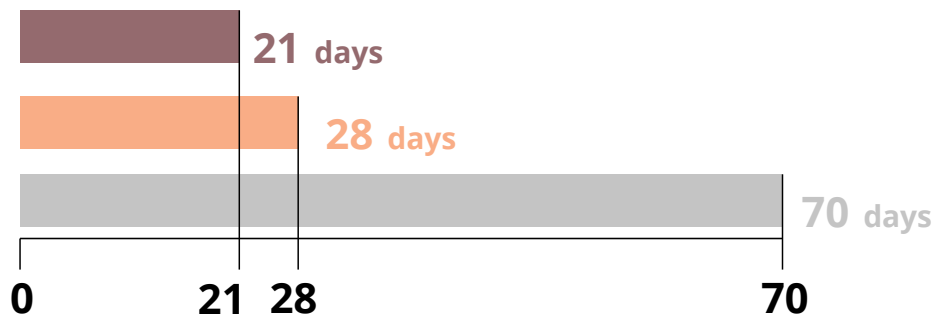
Monomend® brand sutures degrade to biocompatible products, reducing tissue reaction and resulting in a highly efficient mass absorption time. The Monomend® line includes short-term, mid-term and long-term suture options.

## Now available in racetrack packaging

The oval-shaped racetrack packaging ensures less memory. This innovative storage solution gives sutures fewer turns around the track, which allows for less memory and faster, more efficient wound closure.



## Days of wound support



## Mass absorption profile of Monomend® brand monofilament sutures

### Monomend® ST

Oral and mucosal tissues and surgeries requiring rapid absorption  
0% → 56 days

### Monomend® MT

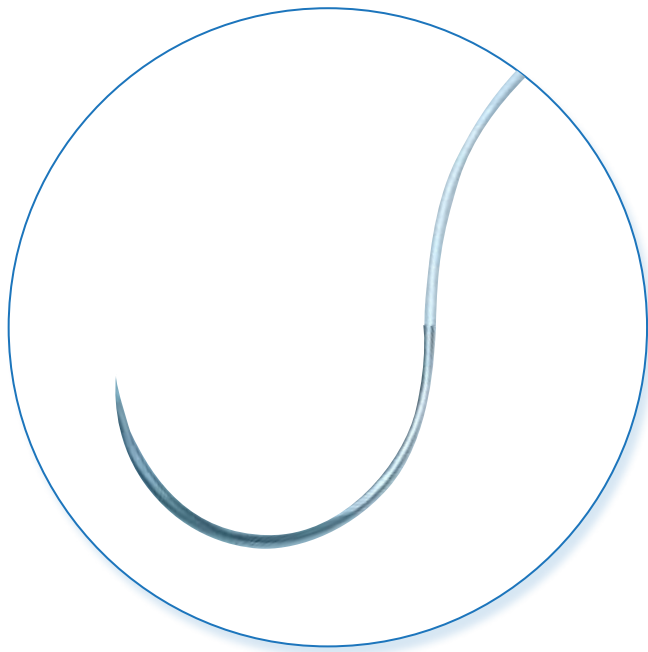
Subcutaneous, soft tissue  
0% → 60-90 days

### Monomend® MaX

Slow healing tissues and for tissues that have compromised wound healing  
0% → 180-210 days

# Monomend® ST

Monofilament suture with rapid absorption



**Monomend® ST** is a short-term absorbable monofilament suture for surgeries requiring rapid absorption.


Monomend® ST provides:

- High knot-pull tensile strength
- Low tissue drag for easy passage through the tissue
- Decreased risk of infection
- High tensile strength, covers healing process to avoid risk of complete dehiscence

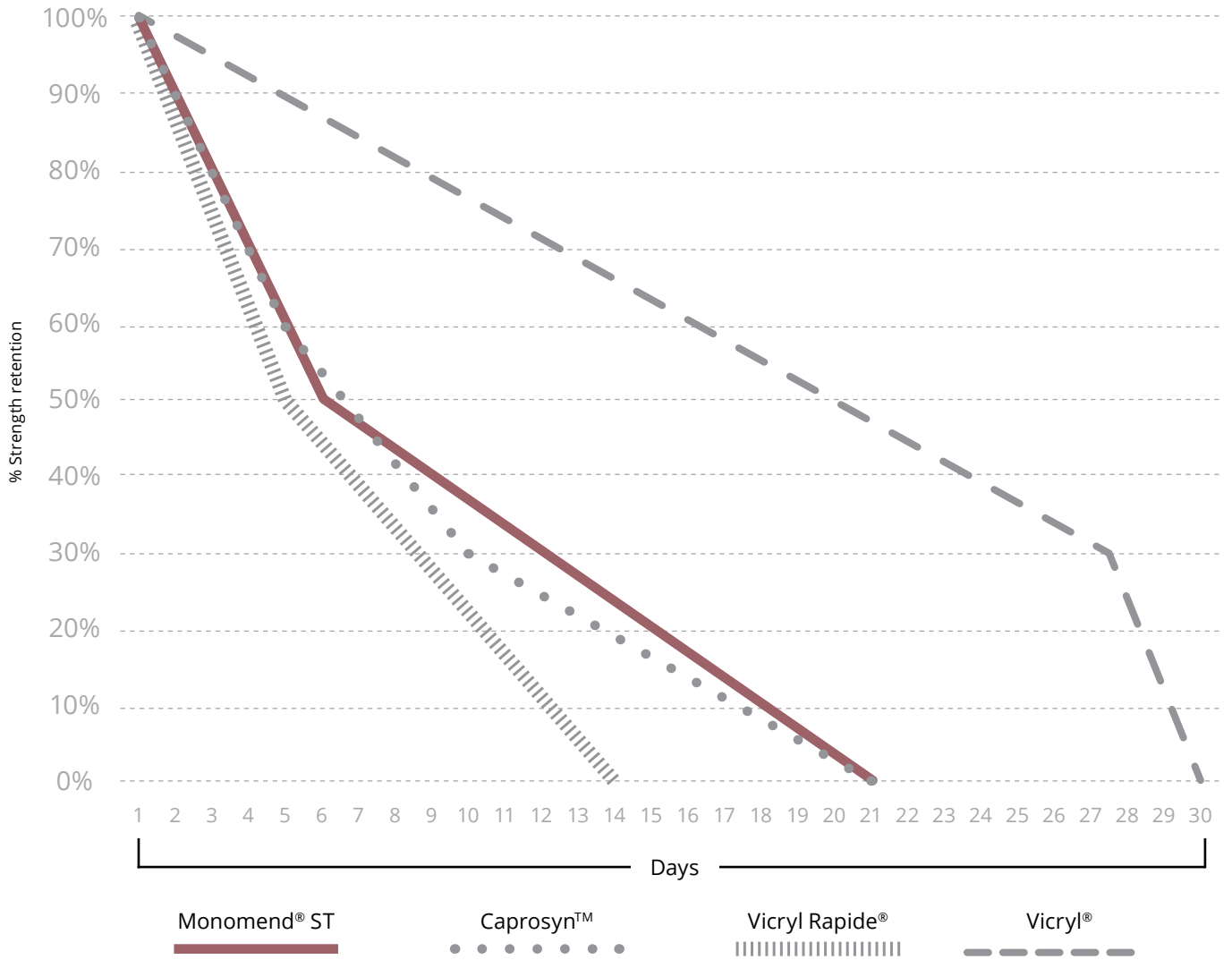
Indications:

- Mucosal sutures in facial and oral surgery
- Dermal sutures, particularly on young animals
- Urinary and gall bladder surgeries

## Product overview

Structure	Monofilament 
Color	Undyed
Chemical Composition	Glyconate
Coating	Uncoated
Origin	Synthetic
Sizes	USP 5/0 to USP 3/0
Mass Absorption	Complete mass absorption by day 56
Indications	Monomend® ST is a short-term absorbable monofilament suture for oral mucosal and surgical disciplines requiring rapid absorption.

### Tensile strength\*



### Mass absorption time\*

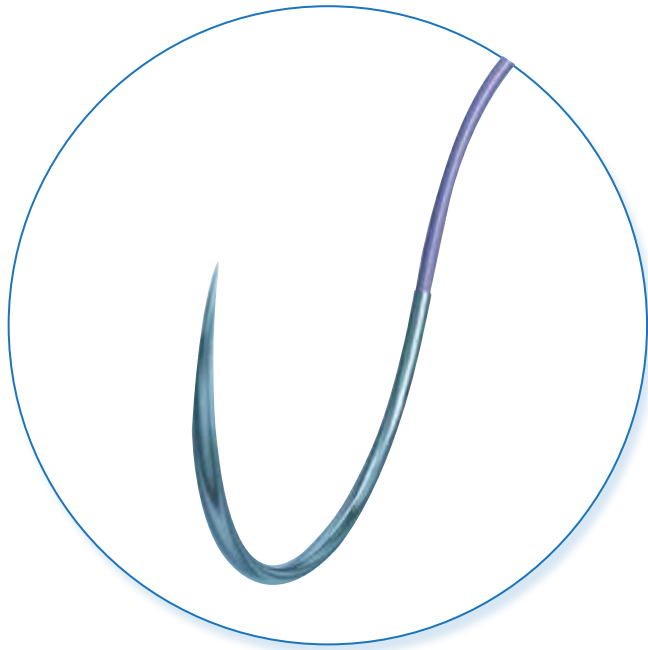
Vicryl Rapide®	Caprosyn™	Monomend® ST	Vicryl®
42 days	56 days	56 days	56-70 days

\*Data on file and Ethicon and Covidien marketing materials and websites as of October 10, 2016.

# Monomend® MT

The only true mid-term absorbable monofilament suture

**Monomend® MT** is an excellent mid-term absorbable monofilament suture developed with the surgeon in mind.




Monomend® MT provides:

- High knot-pull tensile strength, better than Monocryl® and Vicryl®
- Up to 35% less tissue drag than Monocryl® and 75% less than Vicryl® resulting in less tissue damage
- Decreased risk of infection
- Secure wound healing
- Maximized wound security throughout the critical wound healing phase
- Unique synthetic co-polymer for rapid mass absorption by hydrolysis in 60 to 90 days with very low tissue reaction

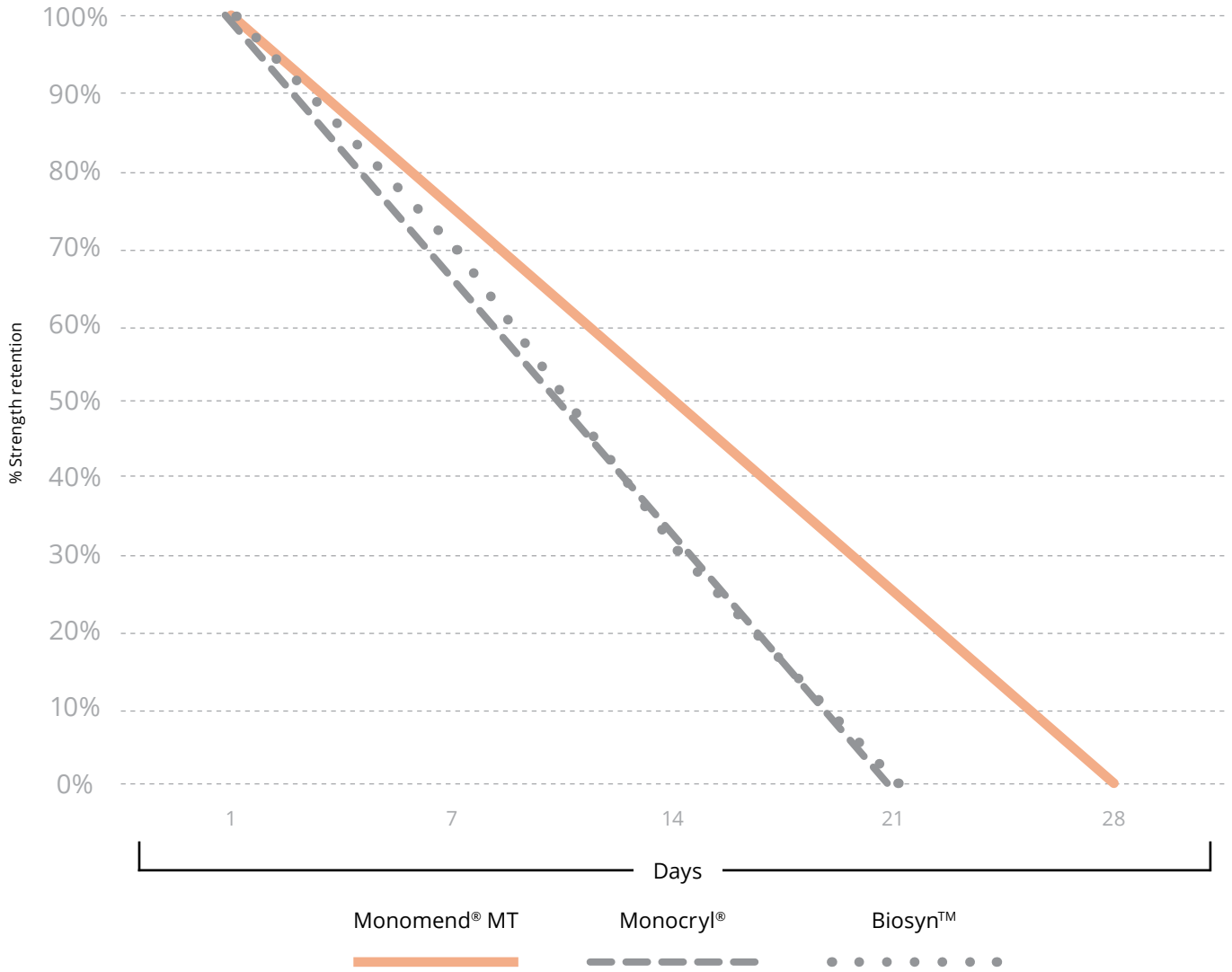
Indications:

- General closure
- Skin repairs
- Subcuticular closure
- Soft tissue including muscle, stomach, intestine, uterus, bladder and ligatures

## Product overview

Structure	Monofilament 
Color	Violet
Chemical Composition	Glyconate
Coating	Uncoated
Origin	Synthetic
Sizes	USP 5/0 to USP 1
Mass Absorption	Absorption by hydrolysis in 60-90 days
Indications	Monomend® MT is a mid-term absorbable monofilament suture indicated for use in general soft tissue approximation and/or ligation, but not for use in cardiovascular and neurological surgery.

## Tensile strength\*



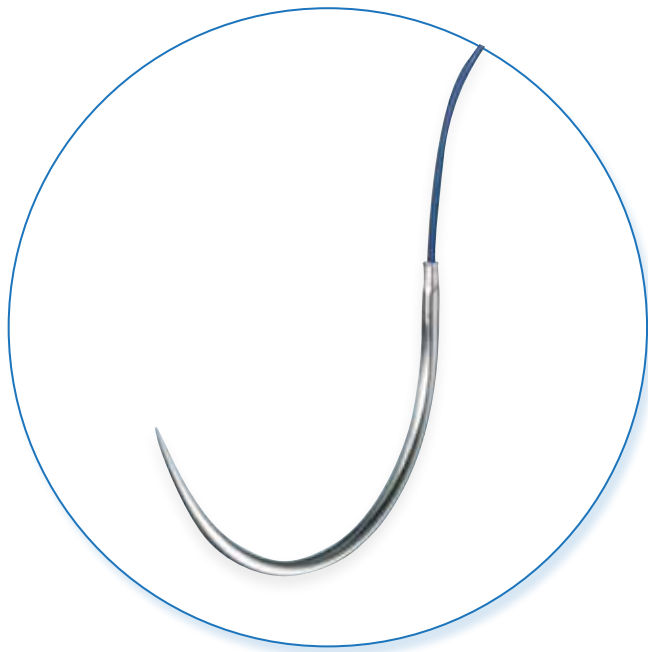
## Mass absorption time\*

Monomend® MT	Biosyn™	Monocryl®
60-90 days	90-110 days	91-119 days

\*Data on file and Ethicon and Covidien marketing materials and websites as of October 10, 2016.

# Monomend® MaX

Long-term absorbable monofilament suture



**Monomend® MaX** is a long-term synthetic monofilament suture ideal for cases where extended wound support of more than 4 weeks is desired.


Monomend® MaX provides:

- Smooth passage through tissue
- Reliable knot-pull and high knot tensile strength
- Decreased risk of infection
- Degradation profile adapted to the specific healing process of each tissue layer
- Low tissue reaction

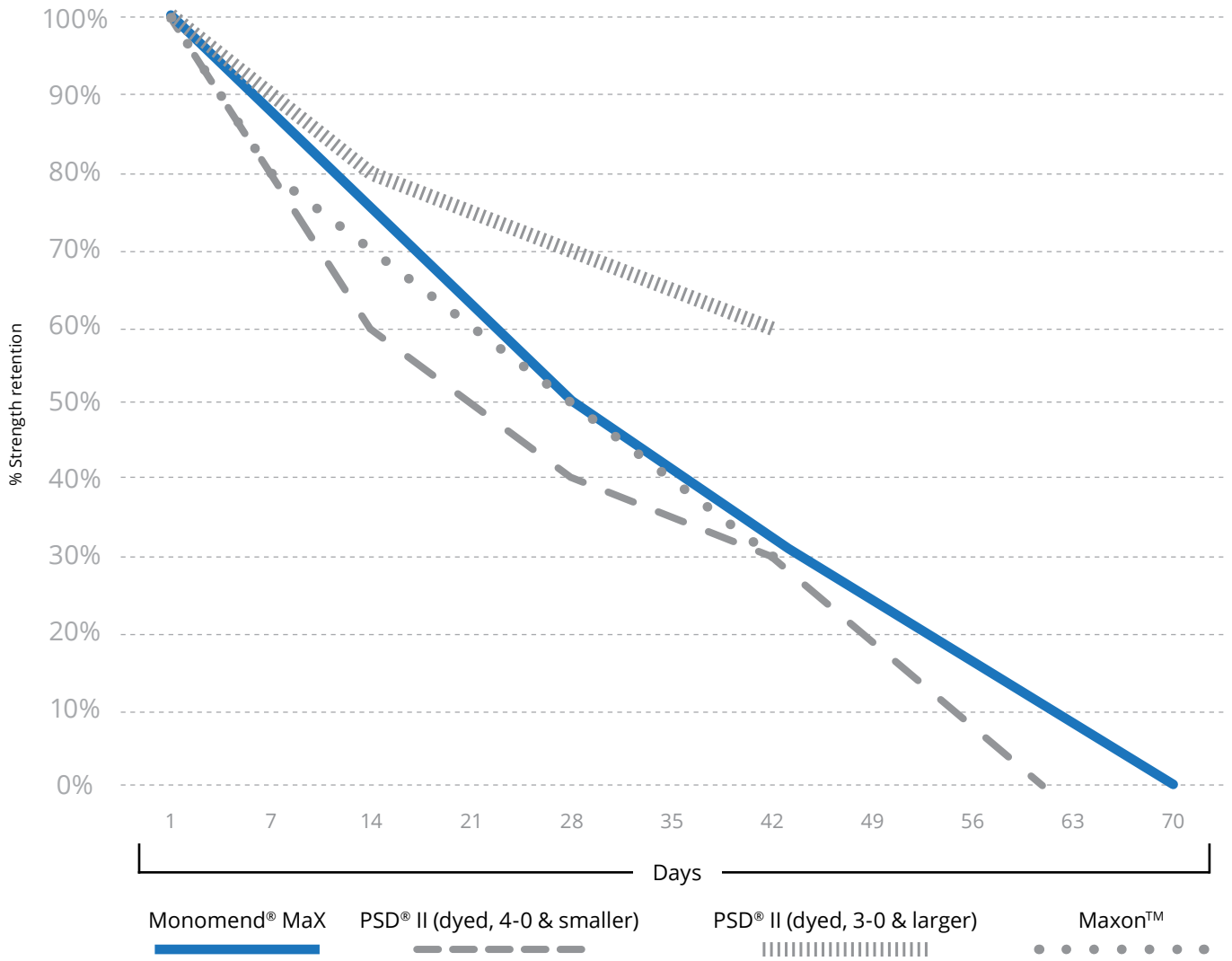
Indications:

- General closure
- Subcuticular closure
- Cardiovascular surgery
- Soft tissue, including muscle, stomach, intestine, uterus, bladder and ligatures

## Product overview

Structure	Monofilament 
Color	Violet
Chemical Composition	Poly-p-dioxanone
Coating	Uncoated
Origin	Synthetic
Sizes	USP 5/0 to USP 1
Mass Absorption	Absorption by hydrolysis in 180-210 days
Indications	Monomend® MaX is a long-term absorbable monofilament suture indicated for slow healing tissues that need extended support of more than 4 weeks for patients with compromised wound healing.

### Tensile strength\*



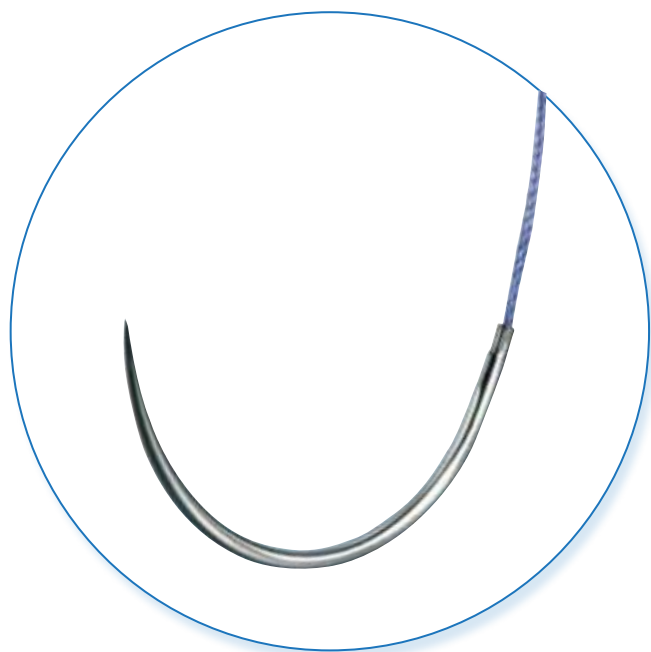
### Mass absorption time\*

Maxon™	Monomend® MaX	PDS® II
180 days	180-210 days	182-238 days

\*Data on file and Ethicon and Covidien marketing materials and websites as of October 10, 2016.

# Polymend® MT

Mid-term absorbable braided suture




**Polymend® MT** provides:

- Secure wound healing
- Exceptional knot characteristics
- High-performance needles
- Easy tissue passage and easy removal
- High pliability for easy suturing

Indications:

- General wound closure
- Subcuticular closure
- Abdominal muscle and fascia
- Ophthalmic surgery
- Orthopedic surgery
- Soft tissue including muscle, intestine, hernia, uterus, liver, bladder and ligatures
- Not recommended for infected wounds

## Product overview

Structure	Braided 
Color	Violet
Chemical Composition	Poly(glycolide-co-L-lactide 90/10)
Coating	Poly(glycolide-co-L-lactide 30/70) + Calcium stearate
Origin	Synthetic
Sizes	USP 5/0 to 1 USP
Mass Absorption	After 56-70 days
Indications	Polymend® MT is a mid-term absorbable braided suture for wound closure, orthopedic surgery and soft tissue repairs.



# Chromend™

Chromic absorbable surgical gut



**Chromend™** provides:

- High tensile strength
- Constant thread pliability
- Excellent handling features

Indications:

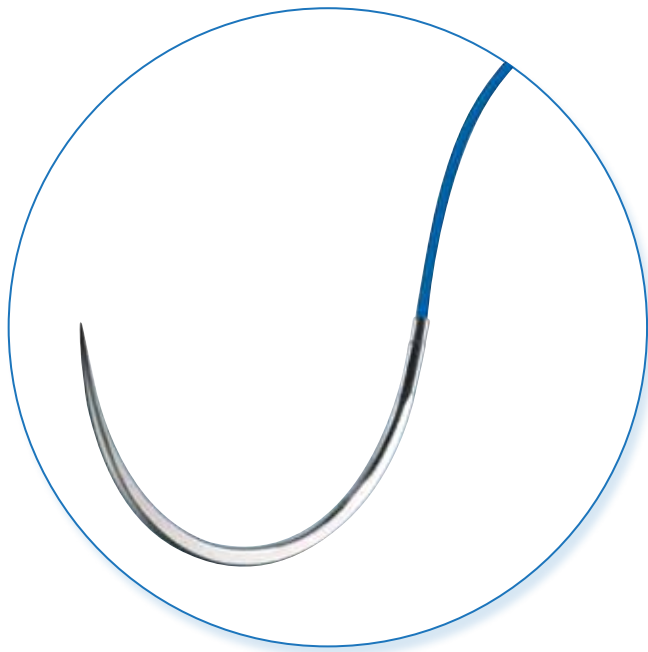
- Gastrointestinal
- Mucosa
- Dental
- Gynecology
- Subcutaneous skin closure

## Product overview

Structure	Twisted
Color	Undyed
Chemical Composition	Purified collagen treated with chromium salt
Coating	Uncoated
Origin	Natural
Sizes	USP 4/0 to 3 USP
Mass Absorption	After 90 days
Indications	Chromend™ is an absorbable surgical gut suture in a dry pack for use in general wound closure, subcuticular closure and soft tissue repairs.

# PRO-STĀ<sup>®</sup>

Non-absorbable polypropylene monofilament suture



## PRO-STĀ<sup>®</sup> provides:

- Smooth passage through tissue and easy removal
- Optimal elastic and elongation properties
- Minimized acute inflammatory reaction in tissues
- Unsurpassed strength
- Highly pliability for easy suturing

## Indications:

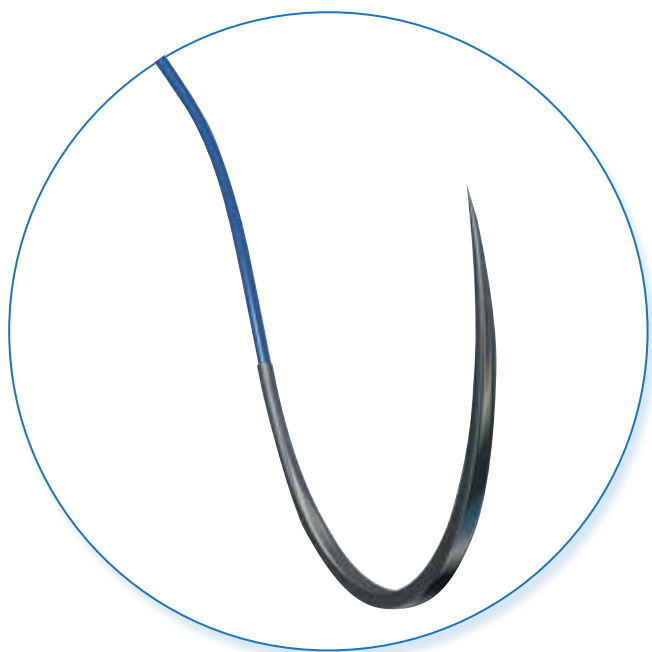
- General surgery
- Skin grafts
- Ear crops
- Cruciate ligament repair
- Hernia repair
- Cardiovascular surgery
- Ophthalmic surgery
- Intestinal anastomosis
- Soft tissue including intestine, tendons and ligaments

## Product overview

Structure	Monofilament
Color	Blue
Chemical Composition	Polypropylene
Coating	Uncoated
Origin	Synthetic
Sizes	USP 3/0
Mass Absorption	Non-absorbable
Indications	PRO-STĀ <sup>®</sup> is a non-absorbable monofilament suture intended for use in general surgery, ear crops and soft tissue repairs.

# NY-STĀ<sup>®</sup>

Non-absorbable nylon monofilament suture




NY-STĀ<sup>®</sup> provides:

- Low tissue drag
- Decreased risk of infection
- High knot-pull tension strength
- Excellent skin closure needles

Indications:

- General soft tissue
- Abdominal fascia
- Intestinal surgery
- Cruciate ligament repair
- Hernia repair

## Product overview

Structure	Monofilament 
Color	Black
Chemical Composition	Polyamide (Nylon)
Coating	Uncoated
Origin	Synthetic
Sizes	USP 4/0 to 2/0
Mass Absorption	Non-absorbable
Indications	NY-STĀ <sup>®</sup> is a non-absorbable nylon monofilament suture intended for use in general soft tissue approximation and/or ligation, including use in cardiovascular, ophthalmic and neurological procedures.

