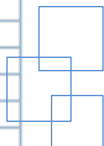


The Future of Fixation

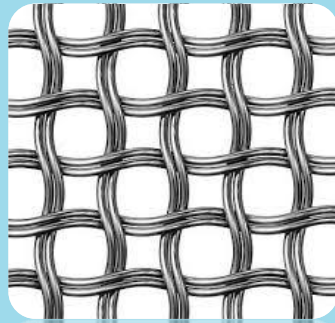
**Dr Timothy Low,
VP Medical Affairs , Asia Pacific
Covidien**



Overview



Addressing
the surgical
needs in
patients with
Hernia



Properties and
features of
Mesh

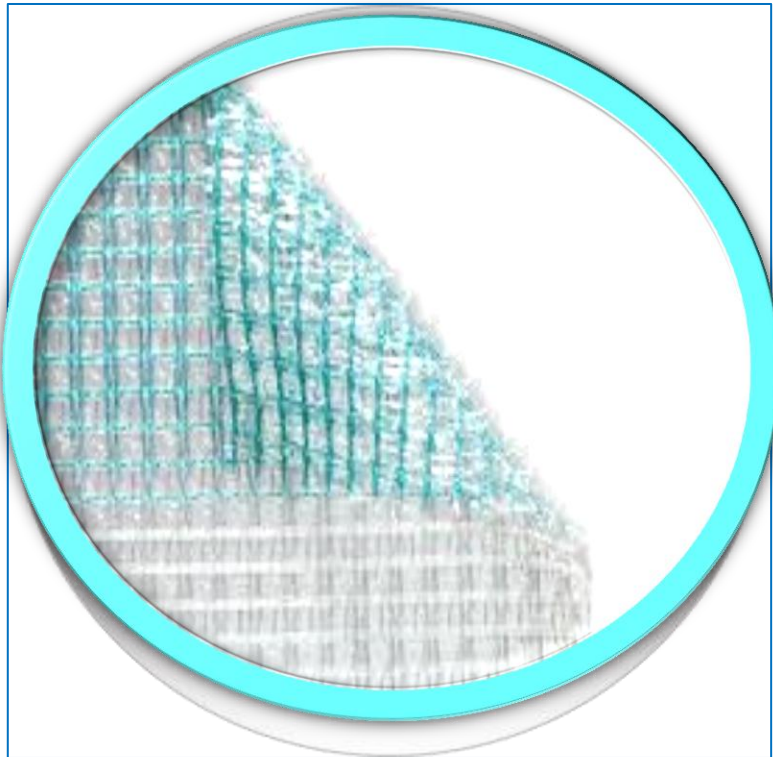


Complication
and
recurrence
rates



Clinical and
Technical
Performance

Laparoscopic (Lap) ProGrip



What is it

Why use it

How to use it

Outcomes of using it

What is Lap ProGrip?

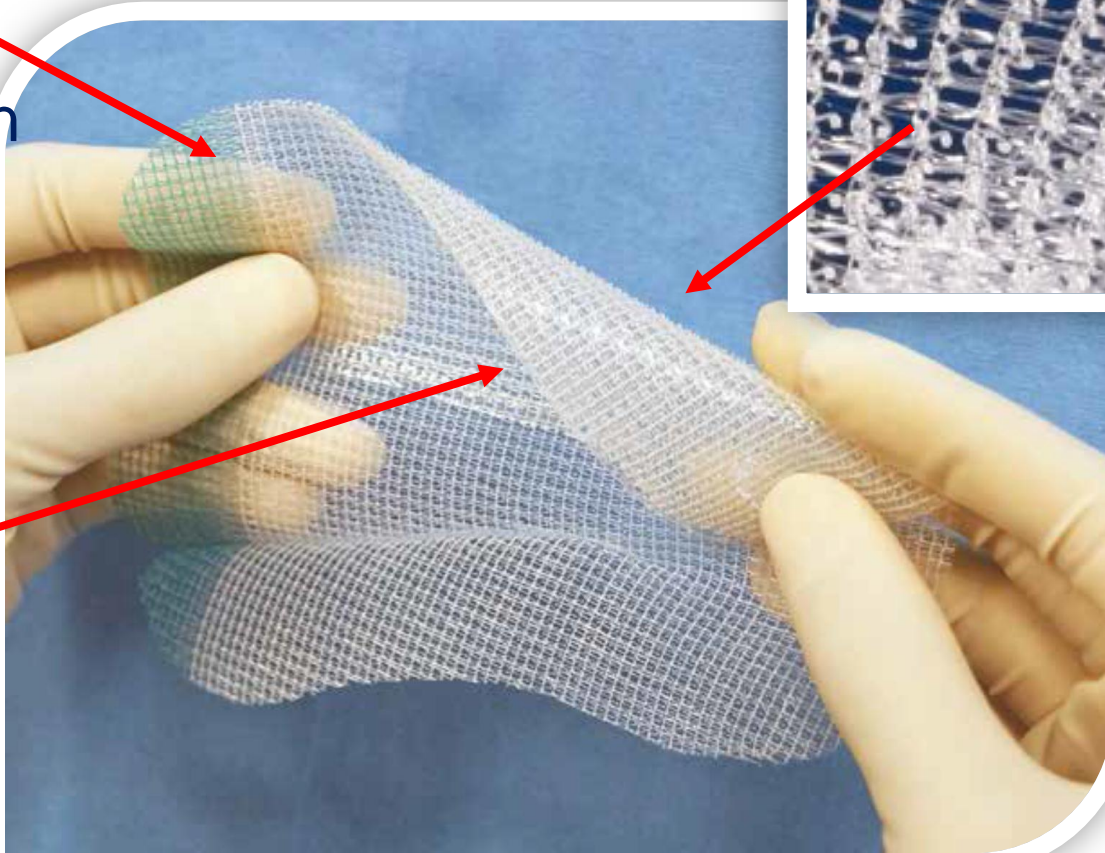


- Self-fixating lightweight macroporous mesh
- 49 g/m²; 1.8 x 1.8 mm pore size
- Monofilament Polyester. Hydrophilic.
- Poly-lactic acid (PLA) grips , one side
- Collagen film coating

Lap ProGrip

Green one
end for
orientation

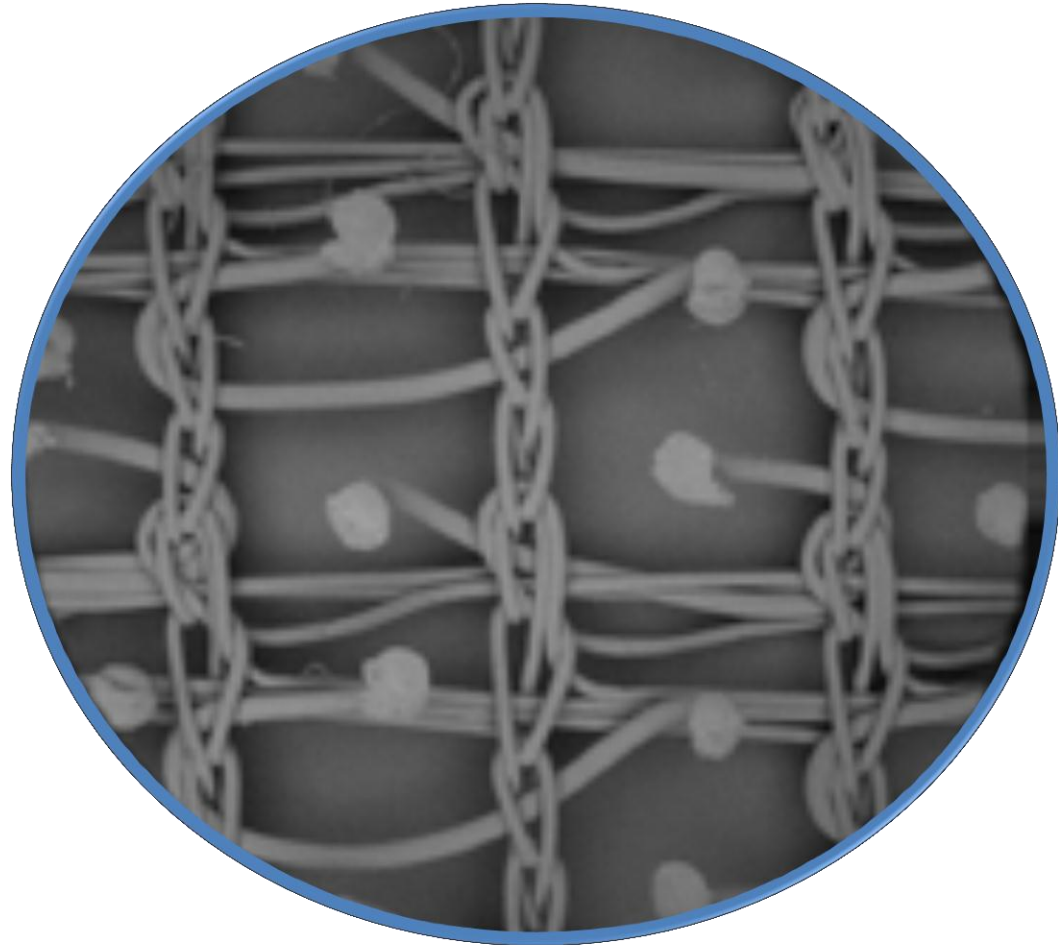
Micro-
thin
collagen
film
coating



PLA "hooks"
on posterior
side

Lap ProGrip

- Collagen film resorbs within a week
- Small “hooks” absorbable over 12-18 months...



Why Use It?

Avoids the need for
mesh fixation
e.g. tacks or glue or
sutures

How to Use It?

1 Usual dissection

2 Roll it carefully

3 Moisten to soften

4 Unroll carefully inside

5 Press into place



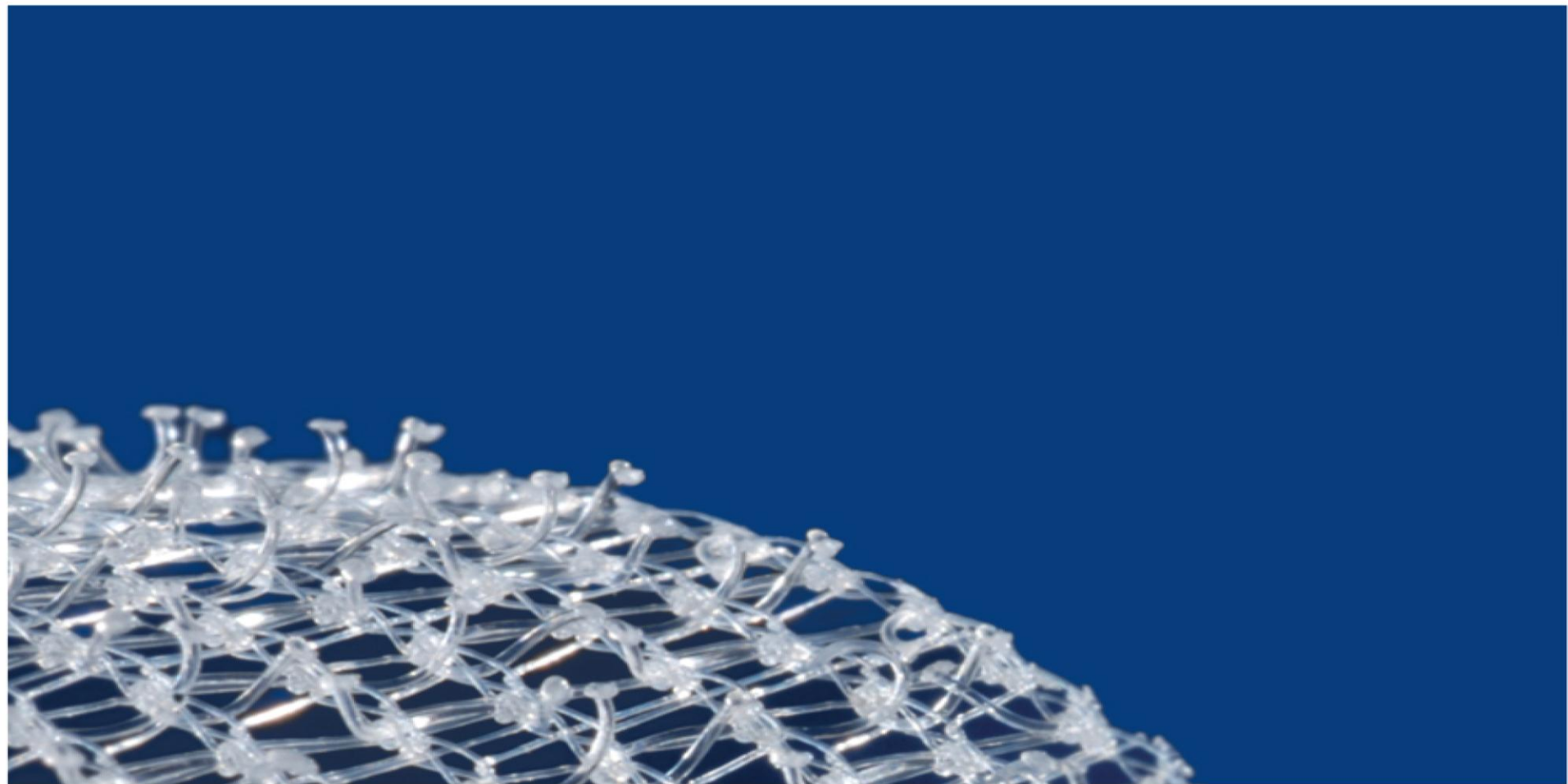
Video

External Views of

- Mesh
- PLA grips – “hooks”
- Absorbable
- Large-pore mesh finally



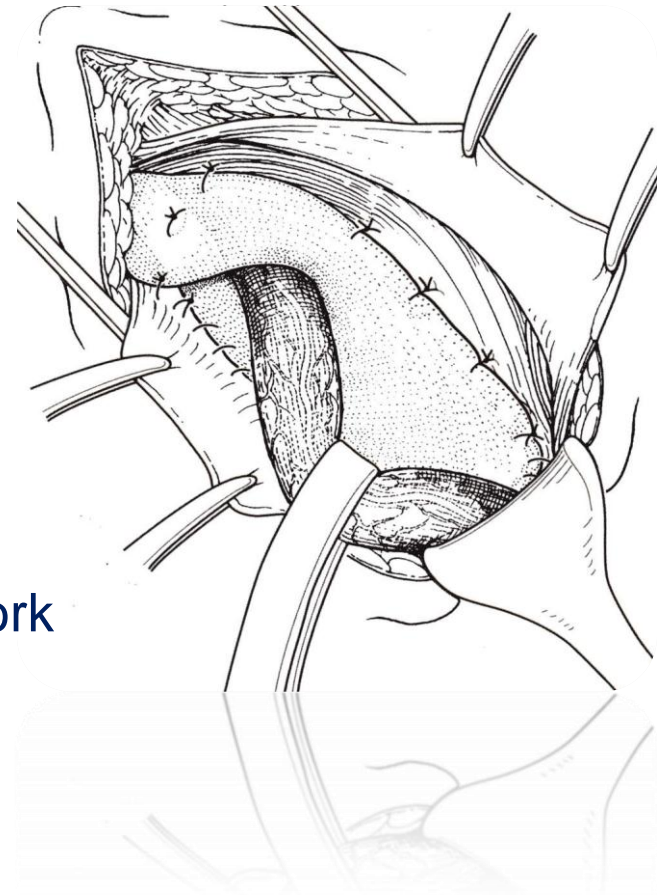
Lap ProGrip™ : Benefit of a Self-Fixating Mesh Current Efficacy and Safety



Lichtenstein Repair: Gold Standard

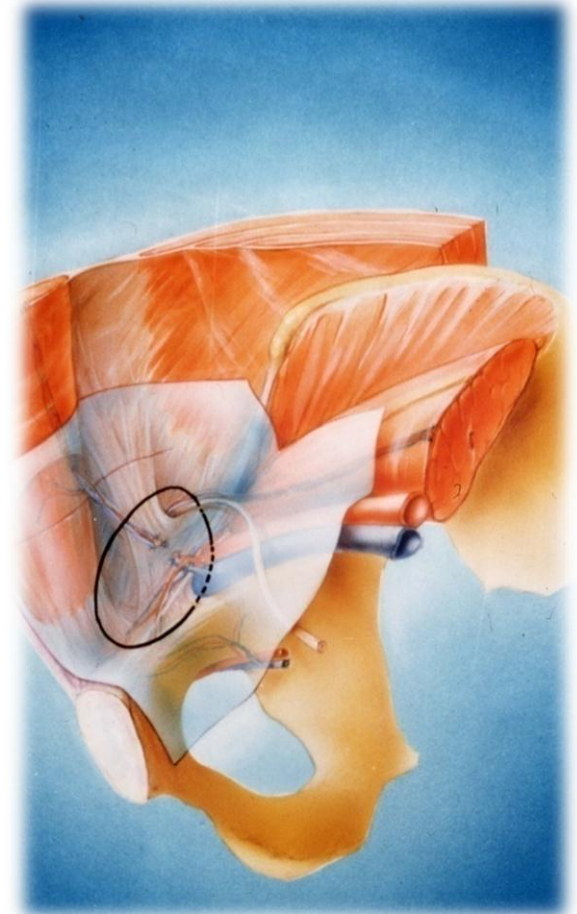
- Risk of recurrence at 5 years = 4%
(Danish Hernia Register, Bisgaard 2007)
- Risk of severe chronic pain at 3 years = 6%
(Swedish Hernia Register, Franneby 2006)
 - In 49% cases leads to depression
 - Half of those diagnosed have had time off work
 - A quarter have lost their jobs

Bisgaard. Br J Surg. 2007;94(8):1038-40.
Franneby. Ann Surg. 2006;244(2):212-9.



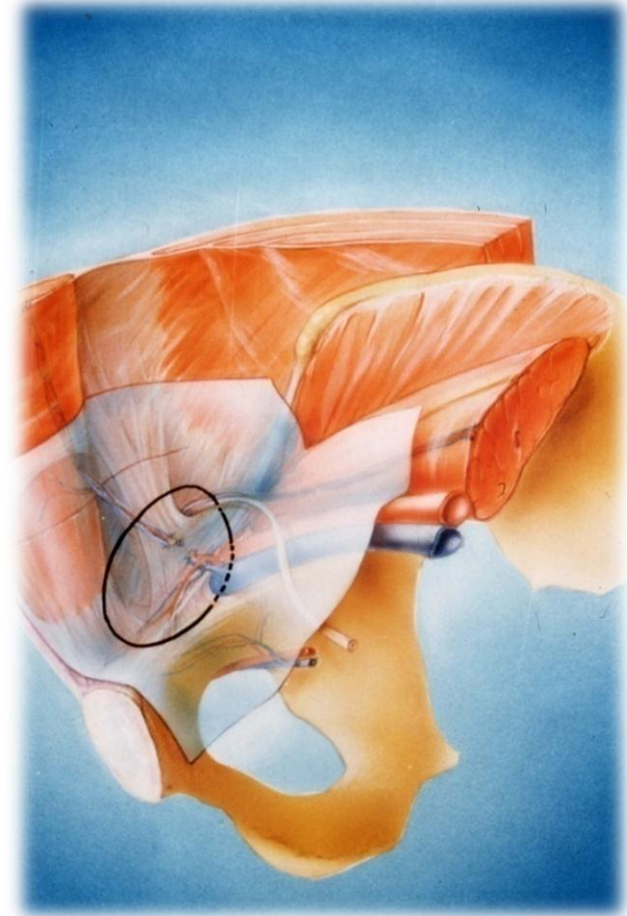
Possible Causes of Chronic Groin Pain

- ❖ Handling of cutaneous nerves
- ❖ Type of mesh used
- ❖ Suture fixation of prosthetic mesh



Possible Causes of Chronic Groin Pain

- Handling of Cutaneous Nerves:
 - Available evidence suggests that avoiding inguinal nerve injury may be the best preventive measure (Ferzli 2007)



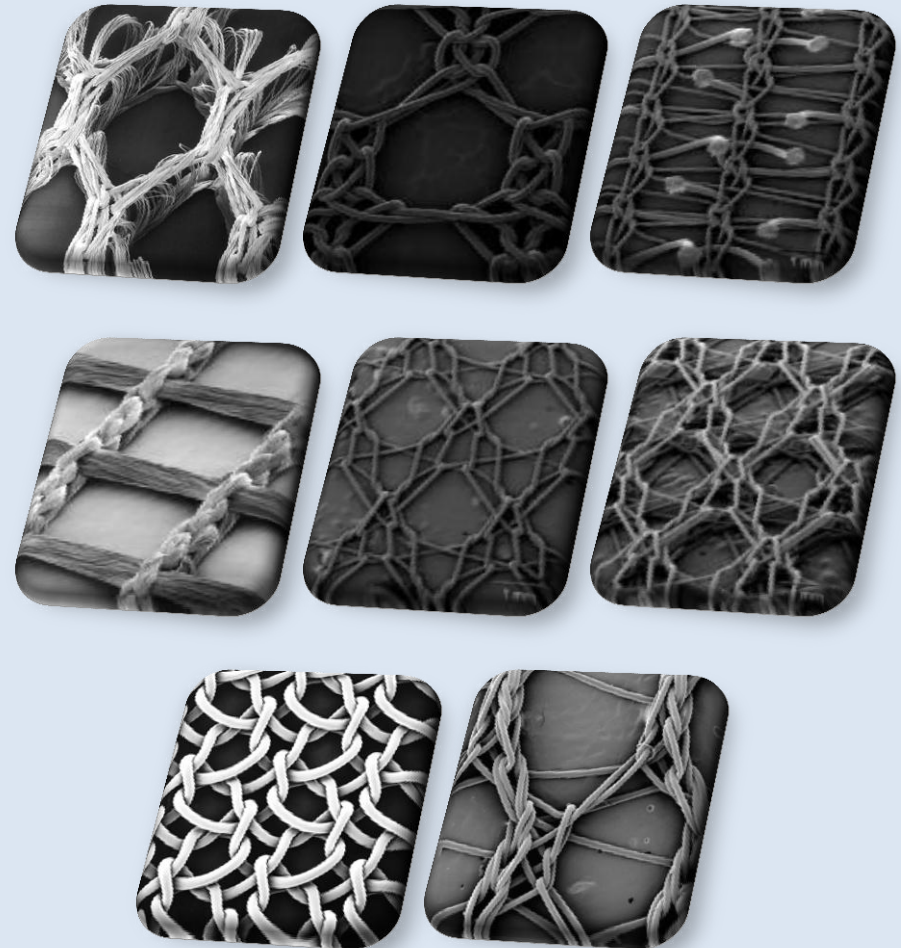
Ferzli. J Am Coll Surg. 2007;205(2):333-41.

Possible Causes of Chronic Groin Pain

- **Type of Mesh Used:**

Lightweight mesh is associated with less pain (feeling of a foreign body, pain on exercise, rising from lying to sitting)

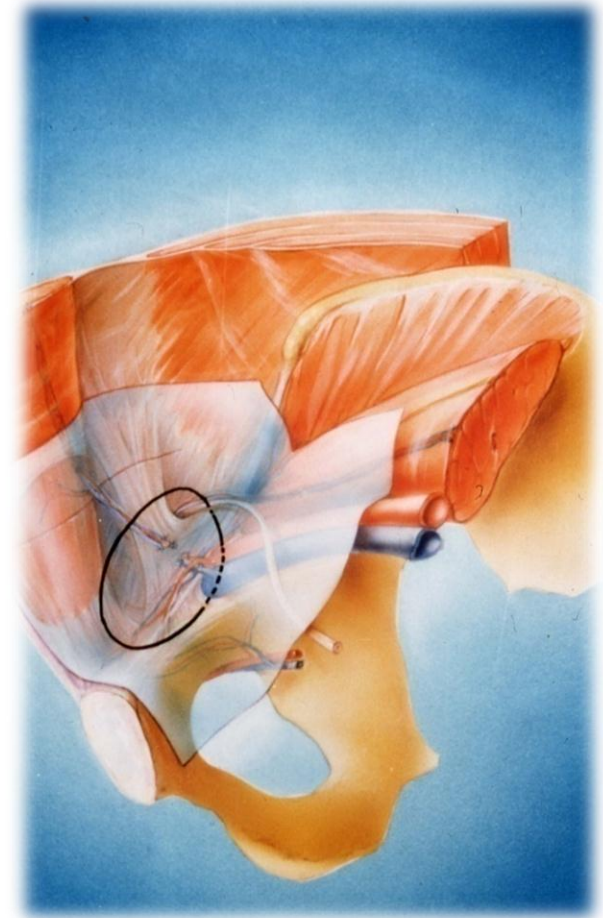
(Systematic review by Nienhuijs 2007)



Nienhuijs. Am J Surg. 2007;194(3):394-400.

Possible Causes of Chronic Groin Pain

- Suture Fixation of Mesh:
 - Nerve “entrapment” by suture is probably the most important cause of neuropathic pain
 - Reduced neuralgias (n=80) with fibrin glue fixation (Canonico 2005)



Canonico. Hernia. 2005;9(4):330-3.

Comparison of a New Self-Gripping Mesh with Other Fixation Methods in a Rat Model (Hollinsky 2009)

- At 5 days mesh is not integrated and liable to movement
- Strength of incorporation at 5 days:

	Strength of Incorporation (N/cm ²)
ProGrip	3.2
Staples	2.7
Fibrin glue	0.9



Hollinsky. J Am Coll Surg. 2009;208:1107–1114.

Conclusions on ProGrip Technology

- ProGrip demonstrates stronger strength of incorporation in muscle tissue compared with other fixation systems (Hollinsky *et al* 2009)
- Surgery duration is shorter with ProGrip (Kingsnorth [submitted] and Chastan 2009)
- The ProGrip technology does not cause damage to the surrounding tissues (Kolbe *et al* 2009)
- Beneficial effect of the self-fixating mesh on pain score (Kapischke *et al* 2010 and Kingsnorth *et al* [submitted])

Chastan. *Hernia*. 2009;13(2):137-42.

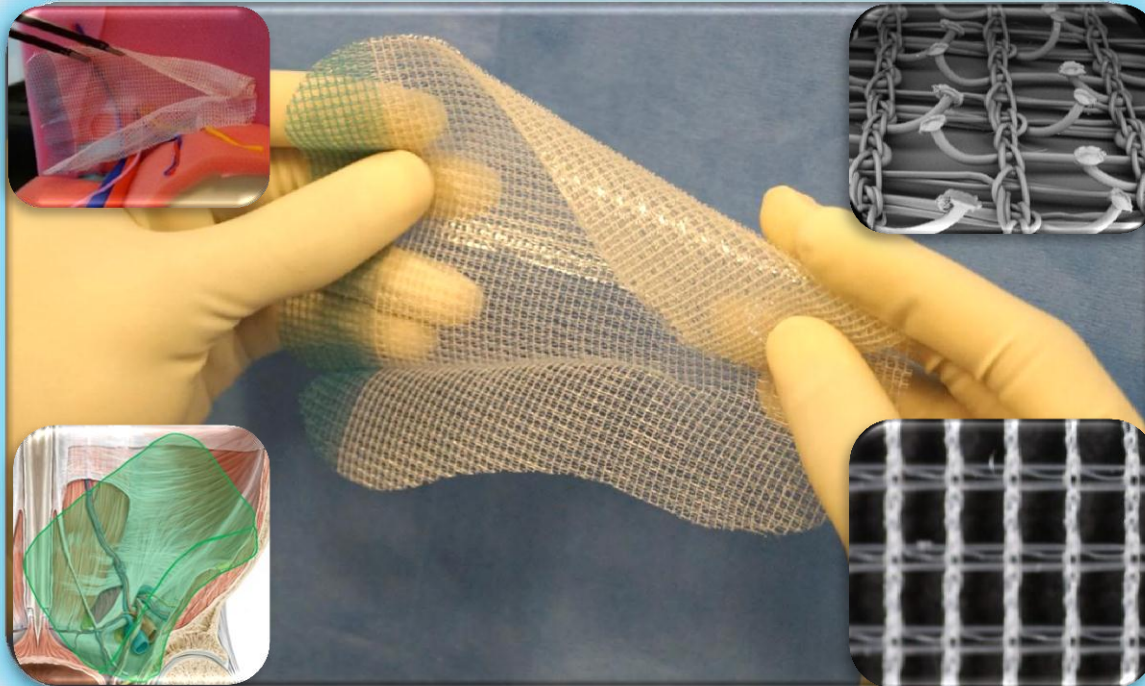
Hollinsky . *J Am Coll Surg*. 2009;208:1107–1114.

Kapischke. *Langenbecks Arch Surg*. 2010;395(4):317-22.

Kingsnorth. *Hernia*. [submitted].

New Product - ProGrip™ Laparoscopic Self-Fixating Mesh

Doesn't stick to itself making it easy to handle and unfold laparoscopically†,26



Tack-free fixation over the entire anatomy, even below the inguinal ligament, eliminates need for traditional fixation†,Ω,7

3D shape conforms to the anatomy

40% of the mesh weight resorbs reducing foreign material presence in patient over time†,8

† Based on pre-clinical animal and/or benchtop studies listed in reference on reference slide

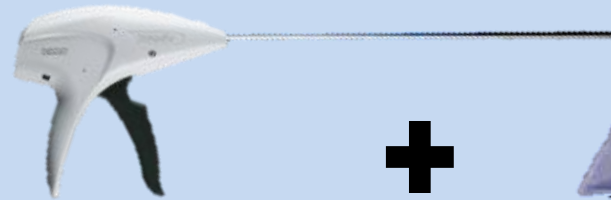
Ω ProGrip™ laparoscopic self-fixating mesh and ProGrip™ self-gripping mesh have equivalent gripping and mechanical properties

7 Kolbe, T, Hollinsky, C Walter, I Jochaim, A and Rüllicke, T. Influence of a new self-gripping hernia mesh on male fertility in a rat model. Surgical Endoscopy 2010; 24:455-461

8 Covidien Internal Test Report TEX033-a (October 2012). Data on File.

26 Internal Covidien Test Report 0902CR122 - Comparison of the self-gripping effect: textile type GT8 (Parietex™ ProGrip™) without collagen film (ProGrip™ Laparoscopic Self-Fixating Mesh). Data on File (June 2012)

Economic and Clinical Value Combined



ProGrip™ laparoscopic self-fixating mesh

Fixation

Mesh

**Potentially reduce cost of LIHR and SKUs
with ProGrip™ laparoscopic self-fixating mesh+**

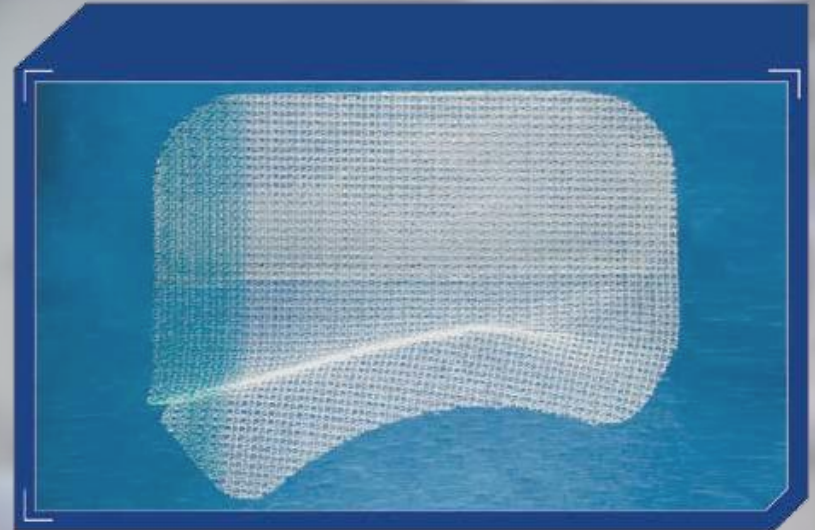
+Savings based on ASP of competitive mesh and fixation devices

TM* Trademark of its respective owner

At Covidien, Hernia Care means

LEADING THE FUTURE OF FIXATION

Innovation that matters



ProGrip™ Laparoscopic Self-Fixating Mesh Clinical and Technical Performance

| HERNIA CARE | MESH • FIXATION • PERMACOL™ • DISSECTION

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