

PARASTOMAL HERNIA:  
IS PREVENTION WITH MESH BETTER  
THAN CURE?

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# Mesh?... For Prevention??

NEW ZEALAND / HEALTH /

## Surgical mesh issues 'literally destroying



### Surgical mesh problems persist



8 Rectum: Mesh eroding through rectal wall

# MESH DOWN UNDER™


Dedicated to support and information sharing for  
New Zealanders injured by surgical mesh.

# Prevention of Parastomal Hernia (PH) with mesh

Incidence and consequences of parastomal hernia

Technique of prophylactic mesh insertion

Evidence



# Parastomal Hernia: A Big Problem Incidence

30%

50%

90%

“Inevitable”

(Goligher)

# Clinical consequences of PH

Asymptomatic

Pain, difficulty pouching, leaks, skin excoriation

Incarceration, obstruction, strangulation



***1/3 of parastomal hernias require operative intervention***

# Surgical treatment for PH

Primary repair of fascial defect

- *46 to 100% recurrence*

Relocation

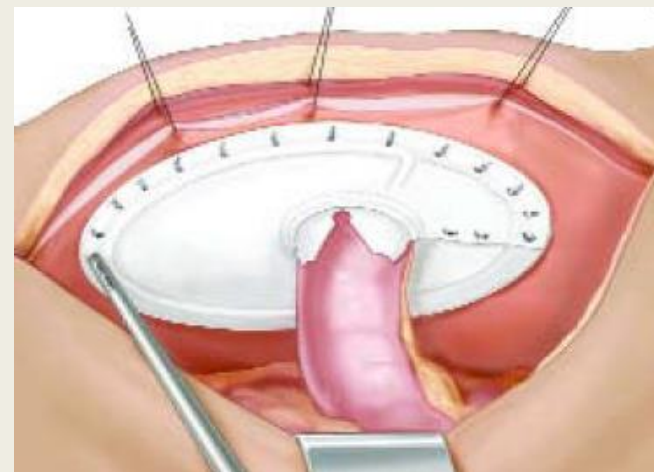
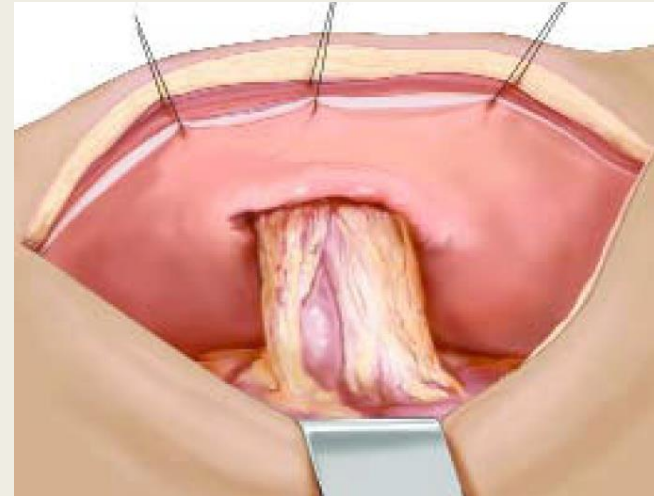
- *32% recurrence*

- *high morbidity*

Mesh repair

- *0 to 33% recurrence*

- *mesh related morbidity*





# Prophylactic Mesh for PH

First described by Bayer, 1986

Adopted routinely by some for permanent ostomies

Technical considerations

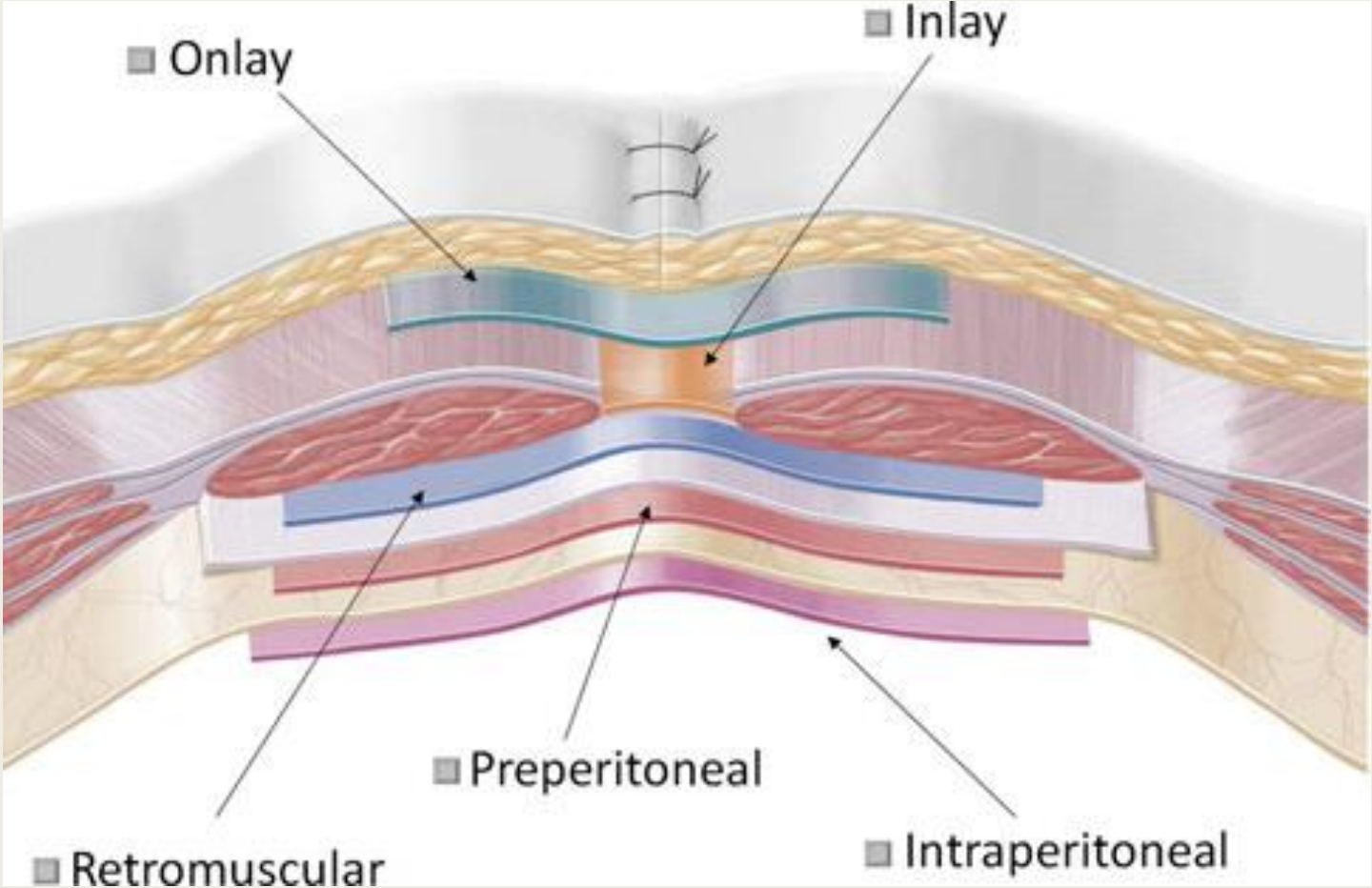
- Plane of mesh placement

- Open or laparoscopic

- Synthetic or biologic mesh



# Technique: Plane of Mesh Placement





# Technique: Mesh options

## Synthetic

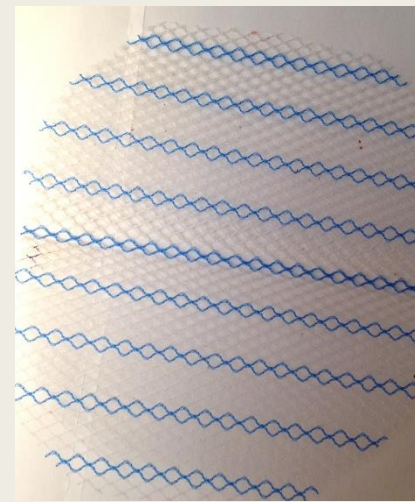
- dense inflammatory response
- risk of infection, shrinkage, erosion, fistula
- minimised with macroporous lightweight mesh

## Composite

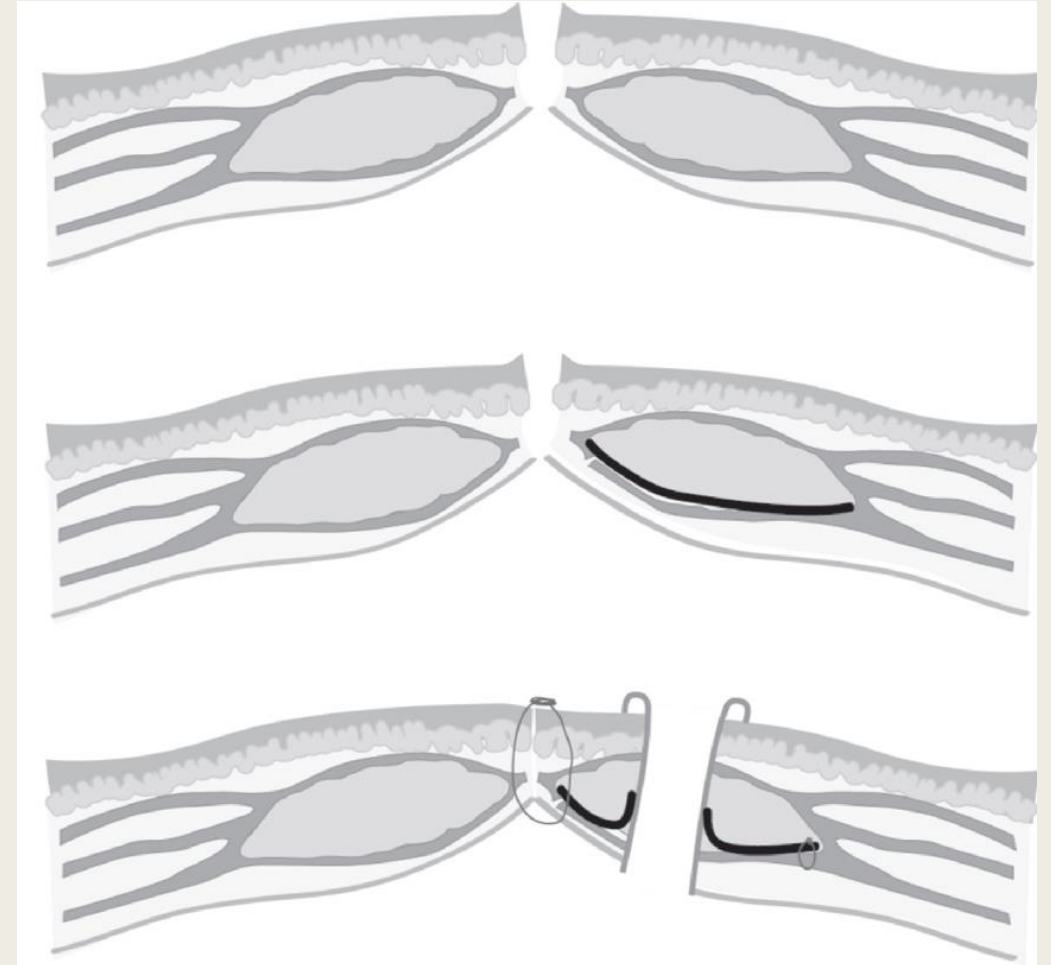
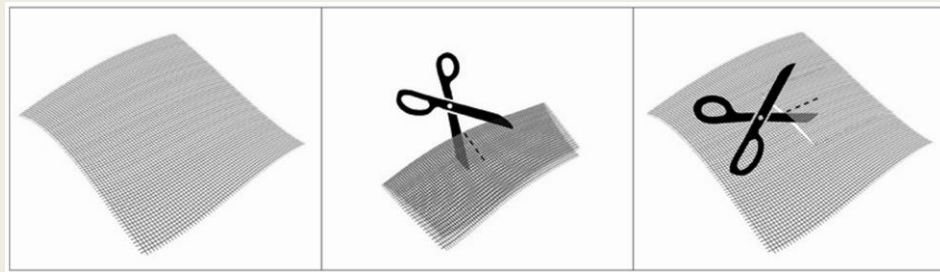
- additional surface allowing contact with bowel
- expensive

## Biologic

- better tissue compatibility, less adhesions
- expensive, ?long term durability



# Technique: Open retromuscular/sublay

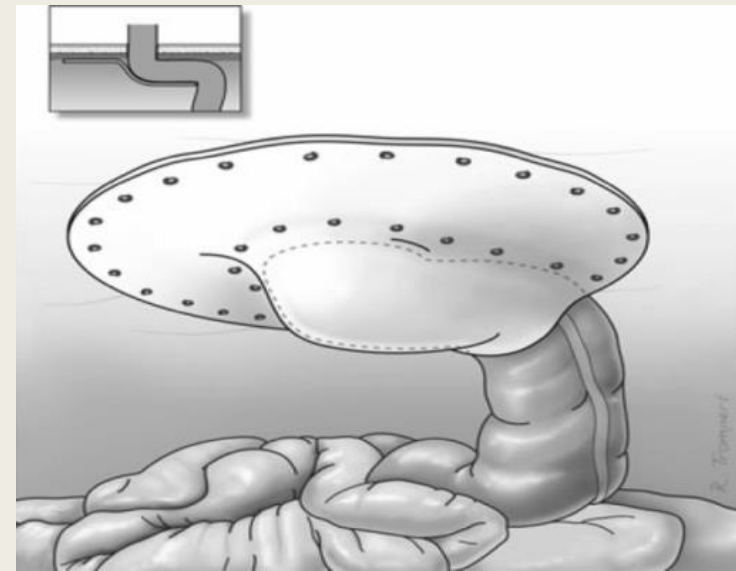


# Technique: Laparoscopic Placement

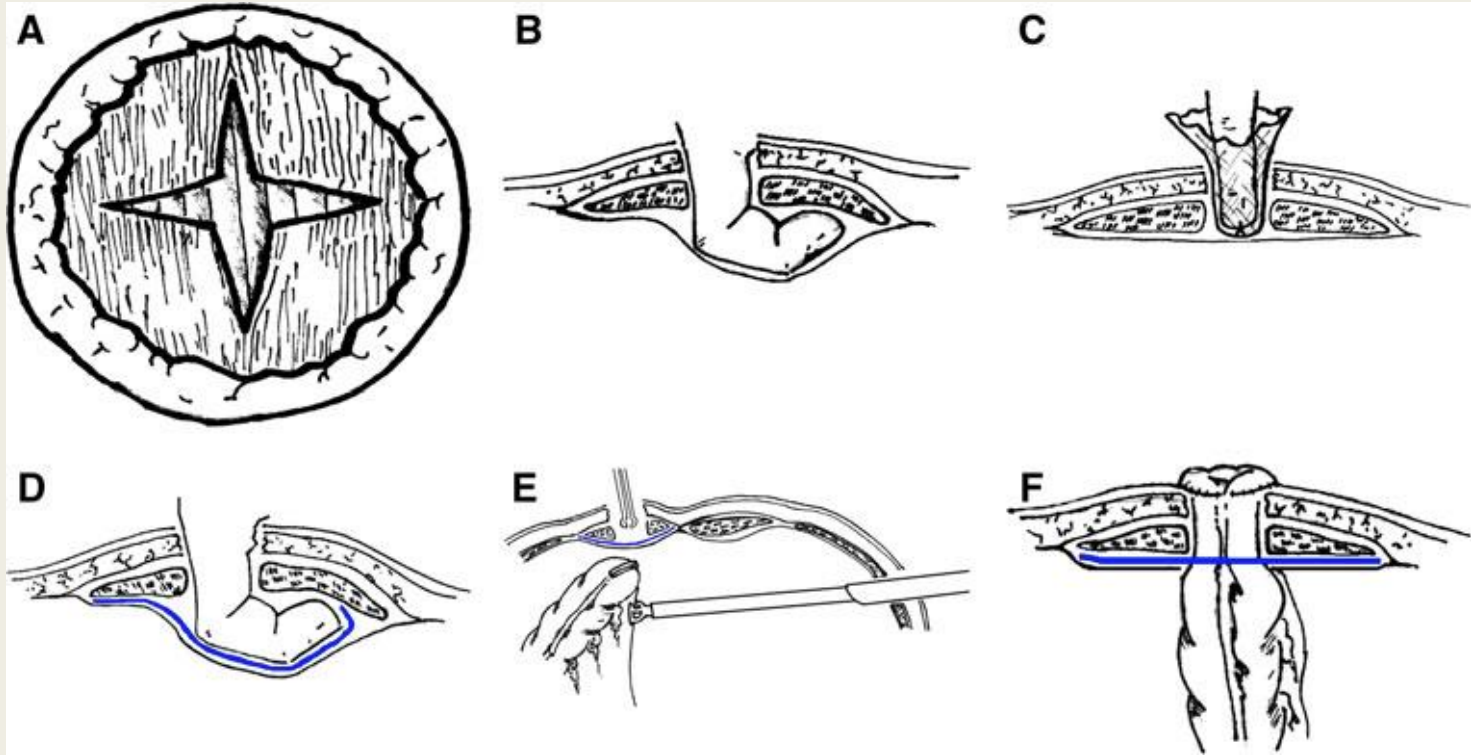
“Keyhole”



“Sugarbaker”



# Sublay mesh in laparoscopic APER



# Sublay mesh in laparoscopic APER





# Evidence for prophylactic mesh

Randomized trial

## Randomized clinical trial of the use of a prosthetic mesh to prevent parastomal hernia

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Lightweight polypropylene mesh, sublay

Parastomal Hernia

Controls 8/18

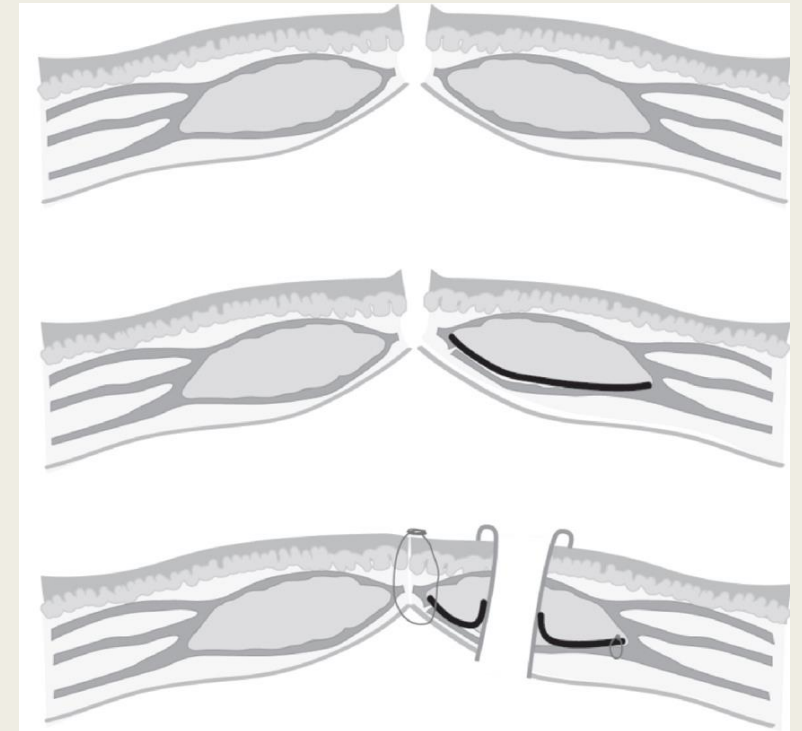
Mesh 0/16

Mesh complications

Infection 0%

Fistula 0%

Pain 0%



# A systematic review on the use of prophylactic mesh during primary stoma formation to prevent parastomal hernia formation

J. Shabbir\*, B. N. Chaudhary† and R. Dawson‡

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Study or subgroup	Mesh		No mesh		Weight	Risk ratio, M-H, fixed, 95% CI	Risk ratio, M-H, fixed, 95% CI
	Events	Total	Events	Total			
Hammond <i>et al.</i>	0	10	3	10	10.1%	0.14 [0.01, 2.45]	
Janes <i>et al.</i>	2	27	17	27	49.3%	0.12 [0.03, 0.46]	
Serra-Aracil <i>et al.</i>	6	27	14	27	40.6%	0.43 [0.19, 0.95]	
Total (95% CI)		64		64	100.0%	0.25 [0.13, 0.48]	
Total events	8		34				

Morbidity mesh group:

*1 peristomal infection*

*1 stomal necrosis (unrelated to mesh)*

# DCR Guideline 2015

*“...mesh may be placed at the time of permanent ostomy creation to decrease parastomal hernia rates.*

*Grade of recommendation: Strong recommendation based on moderate-quality evidence, 1B.”*

# Recent Studies

Vierimaa et al DCR 2015

*RCT n=83, lap APER, intraperitoneal composite mesh vs control*

*NO DIFFERENCE IN PH RATES*

Fleshman et al DCR 2014

*RCT n=113, permanent ostomy, sublay biological vs control*

*NO DIFFERENCE IN PH RATES*

Nikberg et al Int J Colorectal Dis 2015

*Retrospective n=206, sublay synthetic*

*NO DIFFERENCE IN PH RATES*

# Clinical Significance of PH

Many parastomal hernias may be asymptomatic

*QoL not assessed in trials of mesh prophylaxis to date*

What is the rate of reoperation for parastomal hernia?

*Historically 30%*

*Trials; 25/128 (19%) PH repaired*

*Swedish study 4/47 (9%) PH repaired over long term f/u*



# Unanswered Questions in 2016

- *Does mesh prevent PSH?*
- *What are the rates of mesh related complications (erosion/infection)?*
- *Does prophylactic mesh effect QoL?*
- *Does prophylactic mesh significantly decrease PSH repair?*

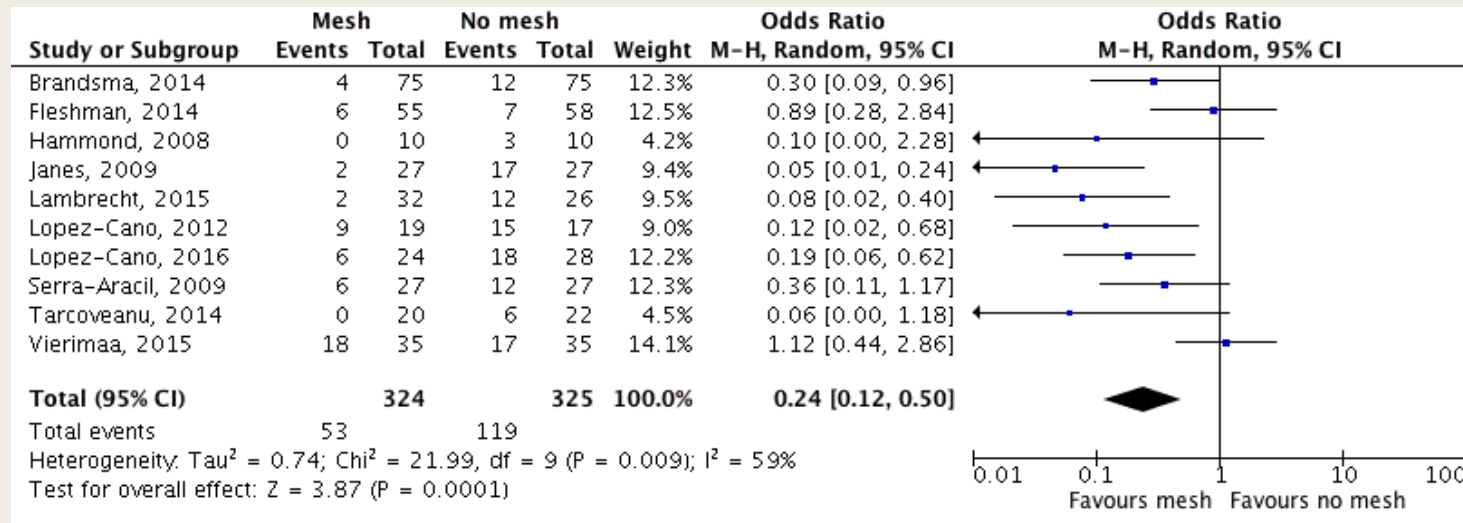
# Updated Systemic Review 2016

- 38 studies of prophylactic PSH mesh identified
  - 10 RCTs included for meta-analysis
  - 649 patients
- 
- *Does prophylactic mesh prevent PSH?*
  - *What are the rates of mesh related complications (erosion/infection)?*
  - *Does prophylactic mesh effect QoL?*
  - *Does prophylactic mesh significantly decrease PSH repair?*

*A Cross, P Buchwald, F Frizelle, T Eglinton. Systematic review of prophylactic mesh to prevent parastomal hernia. BJS 2016. Accepted Article.*

# Updated Systemic Review 2016

## *Does mesh prevent PSH?*



### ■ PSH

- *mesh 16%*
- *no-mesh 36%*
- *(71% reduction in PSH)*

*A Cross, P Buchwald, F Frizelle, T Eglinton. Systematic review of prophylactic mesh to prevent parastomal hernia. BJS 2016. Accepted Article.*

# Updated Systemic Review 2016

*What is the rate of mesh related complications?*

- Parastomal infection
  - *mesh 2.2%*
  - *no-mesh 3.4% (P = 0.51)*
  - *No mesh removal required*
- Stomal necrosis low

[note: short follow up, 1 year in most studies]

*A Cross, P Buchwald, F Frizelle, T Eglinton. Systematic review of prophylactic mesh to prevent parastomal hernia. BJS 2016. Accepted Article.*

# Updated Systemic Review 2016

*Does prophylactic mesh effect QoL?*

- No studies assessed symptoms, QoL from PSH

*A Cross, P Buchwald, F Frizelle, T Eglinton. Systematic review of prophylactic mesh to prevent parastomal hernia. BJS 2016. Accepted Article.*



# Updated Systemic Review 2016

*Does prophylactic mesh significantly decrease PSH repair?*

- Overall PSH repair rates low
  - *Mesh 2.5%,*
  - *no-mesh 8.9%*
  - *NNT = 16*

[Short follow up, repair avoided due to poor results]

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# PREVENT Trial 2016



- RCT, n=150, sublay mesh vs no mesh
- PSH 4.5% mesh, 24.2% no mesh
- QoL no difference
- Symptoms;
  - *2x rate of stomal complaints in no-mesh group*
  - *2x rate of stomal appliance modification in no-mesh group*

# Conclusion

- Evidence supports that prophylactic mesh insertion at permanent ostomy creation;
  - *Significantly reduces PSH rates*
  - *Is associated with minimal morbidity*
  - *Reduces requirement for PSH repair*
  - *lightweight synthetic mesh in a sublay position*

...in the short term...

- Long term results regarding mesh complications and durability of prevention are required

