



Advanced Biotech Products (P) Ltd.

Head Office: 77, First Cross Street, Ragavan Colony, CHENNAI – 600 083.
Ph: (044) – 2474 4650 www.advanced-biotech.com

Surgicoll-Mesh®

White Paper for Pelvic Floor Reconstruction

Description:

Surgicoll-Mesh® is an advanced implantable, bioresorbable, tissue regenerative sterile, Type-I collagen matrix. The collagen used in the Surgicoll-Mesh® product is based on a patented technology that ensures the high purity Type-I collagen. It is processed under GMP conditions with stringent USP quality tests as per WHO (World Health Organization) and other international standards.

List of all Surgicoll-Mesh® Indications:

- Intra Oral Surgical - Post-operative mucosal defect in oral cancer and pre-cancerous lesions, dental/OMF applications.
- Soft Tissue & Muscle Flap Reinforcement - As a patch used for suture line reinforcement, muscle supplement with sling, repair and anchorage of tendon damage, and Transverse Rectus Abdominis Muscle (TRAM) flap procedures.
- Pelvic floor reconstruction, sacro-colposuspension and urethral sling.
- Colo-rectal, urethral & vaginal prolapse.
- Hernia repair including abdominal, inguinal, femoral, diaphragmatic, scrotal, umbilical, and incisional hernias.
- Chronic ulcers and Diabetic ulcer treatment.
- Third-Degree Burn to accommodate the Skin Graft needs
- Orthopedic Surgery - Osteochondral resurfacing, synovial tissue implant, repair of rotator cuff, patellar, Achilles, biceps, quadriceps and other tendons.
- Cartilage Regeneration.
- Cardio-vascular - Atrial, ventricular and arterial patch repair, suture line buttress, intra-cardiac patch, thoracic wall etc.
- Neurosurgical - As a substitute for dura repair and nerve wrap.

Surgicoll-Mesh® for Pelvic Floor Reconstruction Surgeries:

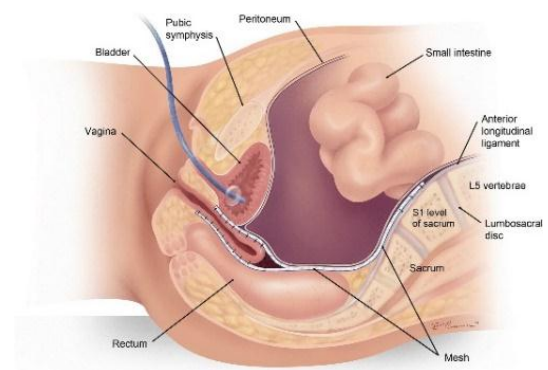
Types of Pelvic Organ Prolapses (ref 1):

- ✓ **Vaginal prolapse:** This is a prolapse of the vagina.
- ✓ **Urethrocele:** This is a prolapse of the urethra (the tube that carries urine).
- ✓ **Cystocele:** This is a prolapse of the bladder into the vagina, the most common condition.
- ✓ **Uterine prolapse:** uterus descends toward or into the vagina
- ✓ **Enterocoele:** This is a small bowel prolapse.
- ✓ **Rectocele:** This is a rectum prolapse.

✓ **Vaginal Prolapse:**

Weak muscles and ligaments supporting the pelvic organs may fall out of place and bulge down in the vagina. To treat POP, **Surgicoll-Mesh®** can be implanted to reinforce the weakened vaginal wall. Surgery can be done through the abdomen using mesh (ref 2).

The length of the mesh should represent the length of the vagina, and the breadth should represent the wideness. The vagina is approximately 3 cm wide distally and up to 10 cm proximally between the ischial spines (ref 4).



Incorporation of mesh in Sacrocolpopexy (ref 3)



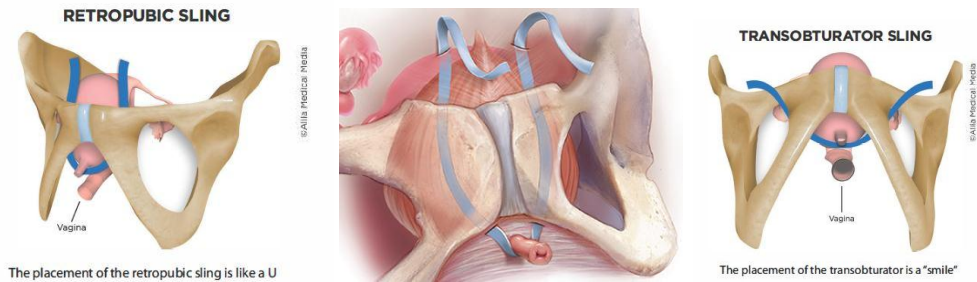
Advanced Biotech Products (P) Ltd.

Head Office: 77, First Cross Street, Ragavan Colony, CHENNAI – 600 083.

Ph: (044) – 2474 4650 www.advanced-biotech.com

✓ Urethrocele (Urethra Prolapse):

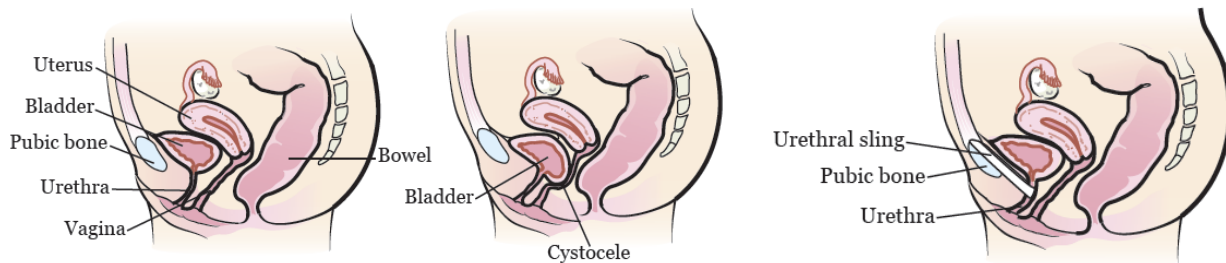
A urethrocele occurs when the tissues surrounding the urethra sag downward into the vagina (ref 5). **Surgicoll-Mesh®** urethral slings can be implanted through the vagina to support the bladder neck or the tube that carries urine from the body (urethra). This is known as a **midurethral sling** or a **mesh sling** procedure.



Urethral Sling Procedure

✓ Cystocele (Bladder Prolapse):

A cystocele occurs when the wall of the bladder presses against and moves the wall of the vagina (ref 5).



Female anatomy without (left) and with (right) a cystocele.

Female anatomy with urethral sling

Surgicoll-Mesh® urethral sling holds your urethra in its correct position. The sling is looped around your urethra and the ends are attached to the pubic bone.

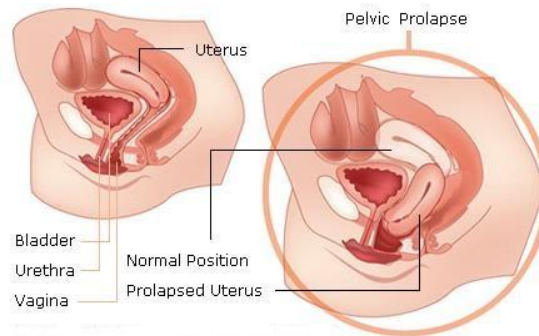
✓ Uterine Prolapse:

A uterine prolapse is when the uterus descends toward or into the vagina. It happens when the pelvic floor muscles and ligaments become weak and are no longer able to support the uterus (ref 6).

Uterus is supported in its natural position by attaching a piece of **Surgicoll-Mesh®** to connect the uterus to the vertebral spinal bone (ref 7).

This can be done in two different ways:

- keyhole (laparoscopic) surgery – the operation is carried out through small incisions (cuts) in the lower abdomen
- open surgery – a larger incision is made in the lower abdomen.



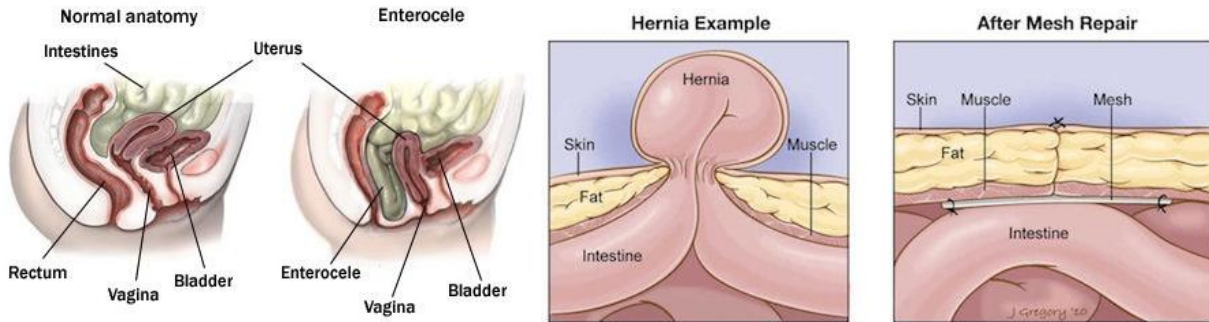


Advanced Biotech Products (P) Ltd.

Head Office: 77, First Cross Street, Ragavan Colony, CHENNAI – 600 083.
Ph: (044) – 2474 4650 www.advanced-biotech.com

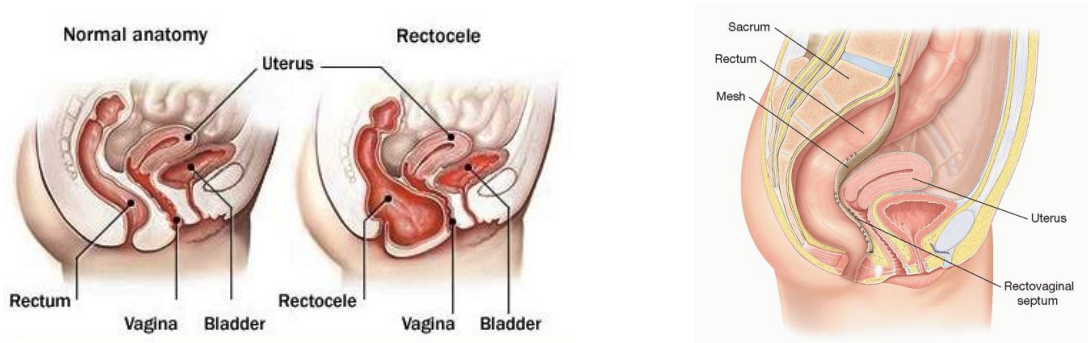
✓ **Enterocele (Small bowel prolapse):**

An enterocele (small bowel prolapse) occurs when the small bowel presses against and moves the upper wall of the vagina (ref 8). **Surgicoll-Mesh®** stabilizes and strengthens the area, supports organs and muscles, and acts as a scaffold for new tissue growth.



✓ **Rectocele (Rectum prolapse):**

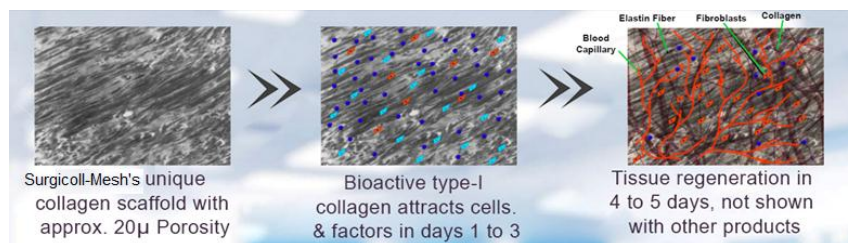
A rectocele is a bulging of the front wall of the rectum into the back wall of the vagina (ref 9). The posterior mesh rectopexy involves insertion of **Surgicoll-Mesh®** behind a completely mobilized rectum and its fixation to the sacrum as well as to the sides of the rectum (ref 10).



Mesh Rectopexy

Why use Surgicoll-Mesh®?

Surgicoll-Mesh® consists of a highly pure patented Type-I collagen that is not cross-linked resulting in an ideal bioactivity. Surgicoll-Mesh® also has controlled phosphorylation, making the matrix extraordinarily regenerative. Surgicoll-Mesh® is a bio-compatible collagen mesh that is flexible, strong yet soft collagen membrane that is supple when hydrated and handles like natural tissue. It is resistant to infections and acts as a scaffold for fibrous tissue ingrowth. Surgicoll-Mesh® readily conforms to the surgical site upon application and is easily sutured. It is constituted by Type-I collagen membrane that is free of contaminants like lipids, elastin and other immunogenic proteins.

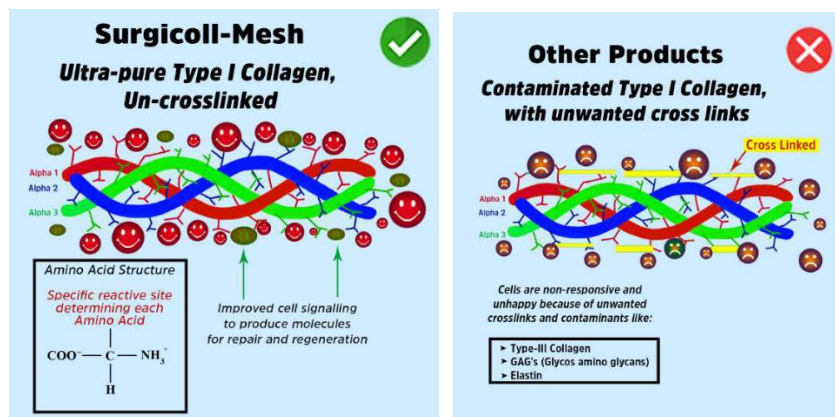




Advanced Biotech Products (P) Ltd.

Head Office: 77, First Cross Street, Ragavan Colony, CHENNAI – 600 083.

Ph: (044) – 2474 4650 www.advanced-biotech.com



Moreover, it is available in different sizes to accommodate multiple types of wounds. It has the capacity to remain clinically usable for 3 years when stored in room temperature conditions.

Complications of other meshes (ref 11):

Local irritation at wound site	Migration of the device
Infection	Pain
Urinary tract obstruction and urine retention	Recurrence of incontinence
Vaginal extrusion	Nerve damage
Erosion through the urethra	Swelling and redness at the wound site
Scarring	Vaginal discharge
Scar contracture	Fatigue
Inflammation	Shortness of breath
Fistula formation	Bleeding

Surgicoll-Mesh® Available Sizes (in cms):

5x5	2x25	5x10	10x10	10x15	10x20	15x15
10x25	15x20	20x20	15x30	20x25	20x30	

Conclusion:

Surgicoll-Mesh® is made of high purity, non-immunogenic and non-cross-linked, Type-I collagen for maximum biocompatibility. The exceptional bioactivity of Surgicoll-Mesh® is due to its phosphorylation that results in cell signal transduction. Surgicoll-Mesh® seems to be an advanced treatment option to successfully use in Pelvic Floor Reconstructive Surgeries.

References:

- <https://www.webmd.com/urinary-incontinence-oab/qa/what-are-the-types-of-pelvic-organ-prolapse>
- <https://www.mayoclinic.org/diseases-conditions/pelvic-organ-prolapse/in-depth/transvaginal-mesh-complications/art-20110300#:~:text=Surgical%20mesh%20can%20be%20used,reinforce%20the%20weakened%20vaginal%20wall.>
- <https://link.springer.com/article/10.1007/s00192-020-04236-1>
- https://cdn.ymaws.com/www.abdominalradiology.org/resource/resmgr/education_dfp/pelvicfloor/complications/posterior_vaginal_mesh_manag.pdf
- <https://www.uofmhealth.org/health-library/tv1498>
- <https://www.medicalnewstoday.com/articles/305971#:~:text=A%20uterine%20prolapse%20is%20when,able%20to%20support%20the%20uterus.>
- <https://www.nice.org.uk/guidance/ng123/resources/surgery-for-uterine-prolapse-patient-decision-aid-pdf-6725286112>
- [https://www.uofmhealth.org/health-library/tv1532#:~:text=Surgery%20Overview&text=An%20enterocele%20\(small%20bowel%20prolapse,muscles%20are%20weakened%20by%20aging.](https://www.uofmhealth.org/health-library/tv1532#:~:text=Surgery%20Overview&text=An%20enterocele%20(small%20bowel%20prolapse,muscles%20are%20weakened%20by%20aging.)



Advanced Biotech Products (P) Ltd.

Head Office: 77, First Cross Street, Ragavan Colony, CHENNAI – 600 083.
Ph: (044) – 2474 4650 www.advanced-biotech.com

9. <https://fascrs.org/patients/diseases-and-conditions/a-z/rectocele>
10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3902550/>
11. <https://www.drugwatch.com/transvaginal-mesh/bladder-sling/>

Thank you.

Advanced Biotech Products (P) Ltd.