The Synovis product portfolio includes COUPLER, FLOW COUPLER and GEM MicroClip. These products are used for joining small diameter vessels during autologous tissue breast reconstruction; sealing small blood vessels; in head, neck and hand procedures.

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What is COUPLER?
The GEM (Global Excellence in Microsurgery) microvascular anastomotic COUPLER device and system has been specifically designed for use in the anastomosis of veins and arteries normally encountered in microsurgical procedures.

Why use COUPLER?
The system provides a simple, fast yet safe way to perform microvascular anastomoses.

Material
GEM COUPLER rings are made of high density polyethylene with surgical grade stainless steel pins, intended for use with veins and arteries having an outside diameter no smaller than 0.8mm and no larger than 4.3mm and a wall thickness of 0.5mm or less.

Advantages over traditional suturing*
• Time savings versus hand suturing which means reduced ischaemic time for flaps
• Less exposure to anaesthesia and less operating time
• Zero intraluminal foreign (suture) material which should decrease the rate of thrombosis
• Stents the anastomosis site preventing vessel collapse and assuring patency
• Anastomoses are 50% stronger than sutured anastomosis at four months (Spector et al 2006)
• Highly versatile enabling effective anastomosis of vessels with size discrepancy

Evidence
Several large studies have documented the simplicity and dependability of this device in end-to-end and end-to-side anastomotic configurations, for use in various parts of the body

* References on file
What are MicroClips and SuperFine clips?

Our line of haemostatic MicroClips ensure a secure closure of even the most delicate vessels. GEM MicroClips and SuperFine titanium clips have a unique chevron shape and interlocking atraumatic teeth that prevent multi-directional slippage.

Why use SuperFine Clips?
• GEM SuperFine MicroClips are great for side branch occlusions
• Ideal for restricted access areas in and around nerve tissue, where damage could occur through bipolar or harmonic scalpel use
• Less metal work in surgical site

Material
MRI compatible pure, strong and malleable titanium.

Advantages
• Single system combining mechanical anastomosis with doppler technology
• Early warning of flap ischaemia
• Potentially reducing failed flaps
• Greater signal accuracy of blood flow due to probe housing being integrated into COUPLER ring.

Evidence
Several large studies have documented the simplicity and dependability of this device in end-to-end anastomotic configurations, in various parts of the body.

References on file
Evidence

Breast reconstruction with perforator flaps

- The length of the procedure needs to be decreased, scars need to be improved and complications need to be decreased. With improvements in technology and technique, these goals can be realised.

- An anastomotic coupling device typically is used to connect the recipient and flap veins. The coupling device makes the anastomosis easier and faster, and has the additional benefit of stenting the vein open after the vessels are joined. Robert J. Allen, M.D. et al

Lower extremity free flap reconstruction outcomes using venous coupler

A retrospective review of 67 consecutive patients who underwent lower extremity microvascular reconstruction performed from August 2003 to September 2010 was performed.

- There were no intraoperative or perioperative complications involving the use of a microvascular anastomotic coupling device itself. It presents an important tool in the armamentarium for lower extremity microsurgical reconstruction. Ducic, I., Brown, B., and Rao, S. Microsurgery. Volume 31, Number 5, July, 2011

Initially 50% stronger than sutured anastomoses at four months


COUPLER’s are used in breast, lower limb and head and neck reconstruction

1000 consecutive venous anastomoses using the microvascular anastomotic COUPLER in breast reconstruction.


Microvascular anastomotic COUPLER use in head and neck reconstruction.

Frederick J. W. et al. Otolaryngology – head and neck surgery 149(1); 67-70