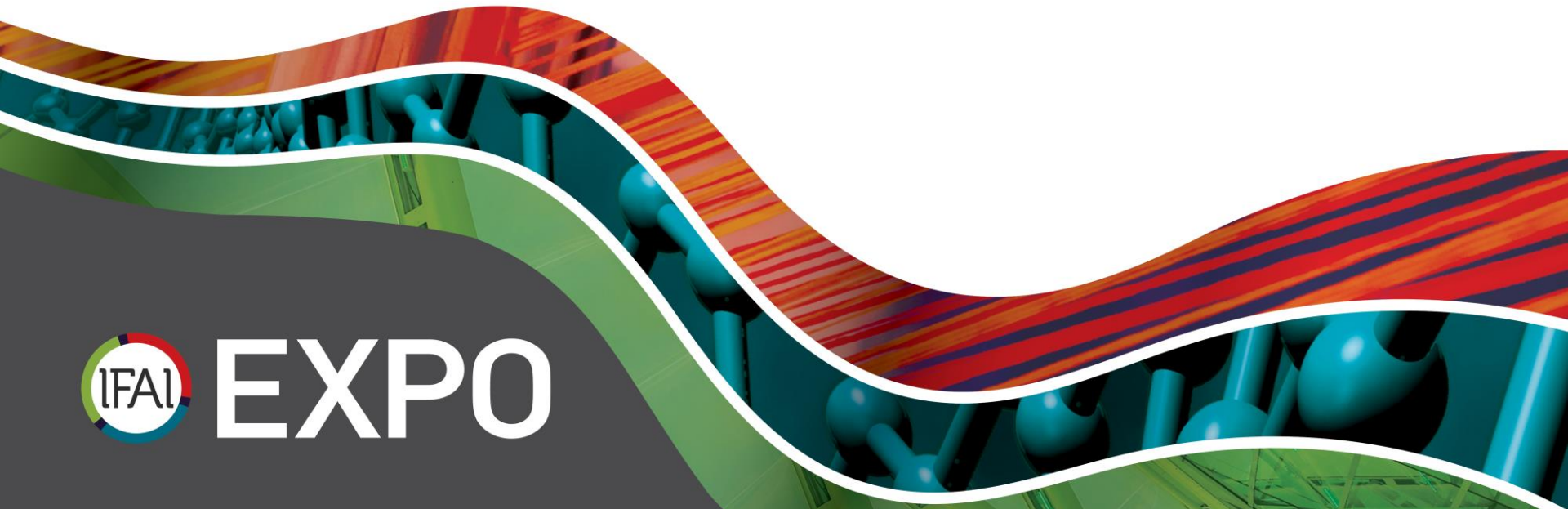


Surgical Textiles

Fitzroy Brown



EXPO



Textiles

- Type of cloth or woven fabric
- Flexible material consisting of:
 - Natural fibers
 - Wool
 - Artificial fiber
 - Polyester
- Textile Usage
 - Home furnishing
 - Transportation
 - Roads
 - Fashion
 - Sports
 - Construction
 - Medicine

Textile Role in Medicine

- Traditional application of textile in medicine
 - Wipes
 - Swabs
 - Gauzes
 - Bandages
 - Wound dressing
 - Compression garments

Implantable Fabrics

- Purpose of Implantable Textile
 - Medical device or applications with desired tissue in growth
- Potential Uses of Implantable Textile
 - AAA
 - Heart Valves
 - LVAD
 - Suture
 - Orthopedic
 - Hernia repair

Implantable Fabrics

- History
 - World War II and Korean war
 - Solid wall tube of glass and metal
 - Flexible plastic tubes
 - Synthetic mesh
- Need for Implantable Textile
 - Desired tissue in growth

Potential Uses for Surgical Applications

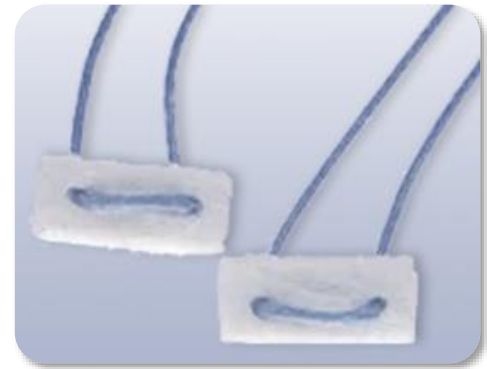
- Heart Valves:

- Sew rings
- Scaffolding



- Pledgets

- From Catheter Cuffs to Heart Valve Sew Rings
- Various thicknesses and porosities



- Cardiovascular patch

- Potential repair of dissected vasculature



Potential Uses for Surgical Applications

- AAA:
 - Repair of bulging abdominal aorta artery
- LVAD
 - Attached to drive line of Left Ventricular Assist Device
- Orthopedic



Structural Design

- Felts that may be used in areas of:

- Cardiovascular
- Pledgets for sutures



- Knitted

- Cardiovascular
- Promote tissue in growth



- Woven

- Tight structures
- Minimize blood loss



- Braided

- Surgical ligation
- Sutures



Considerations for Implantable Textile Material Selection

- Impact on tissue fluids
- Chemically inert
- Acceptance by tissue
- Non-Carcinogenic
- Withstand mechanical strain
- Fabrication capability
- Sterilization

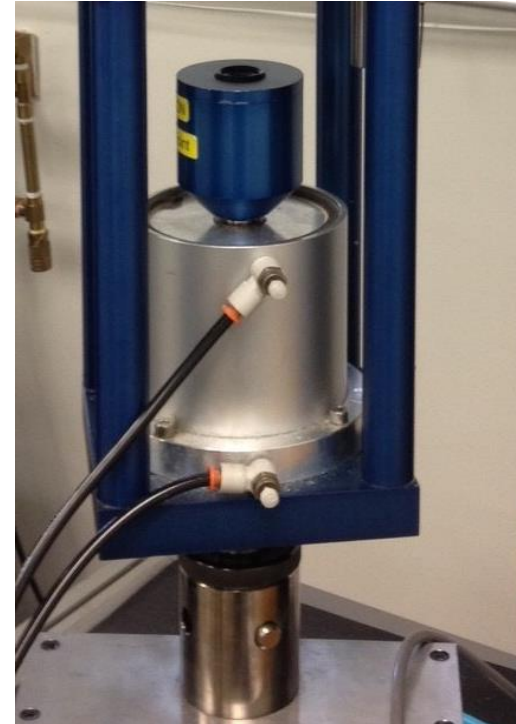
Testing Biomedical Textile

- Thickness
 - ASTM D177
 - Normalization with a 10 oz Weight
 - 1.129" diameter pressure foot



Testing Biomedical Textile

- Ball Burst
 - ASTM D3797-07
- Purpose
 - Determine burst strength of fabric



Testing Biomedical Textile

- Water Permeability
- Purpose:
 - To measure amount fluid through the fabric
- Wales and Course
- Purpose:
 - To verify the fabric structure is correct

Path to Market



Thank You



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