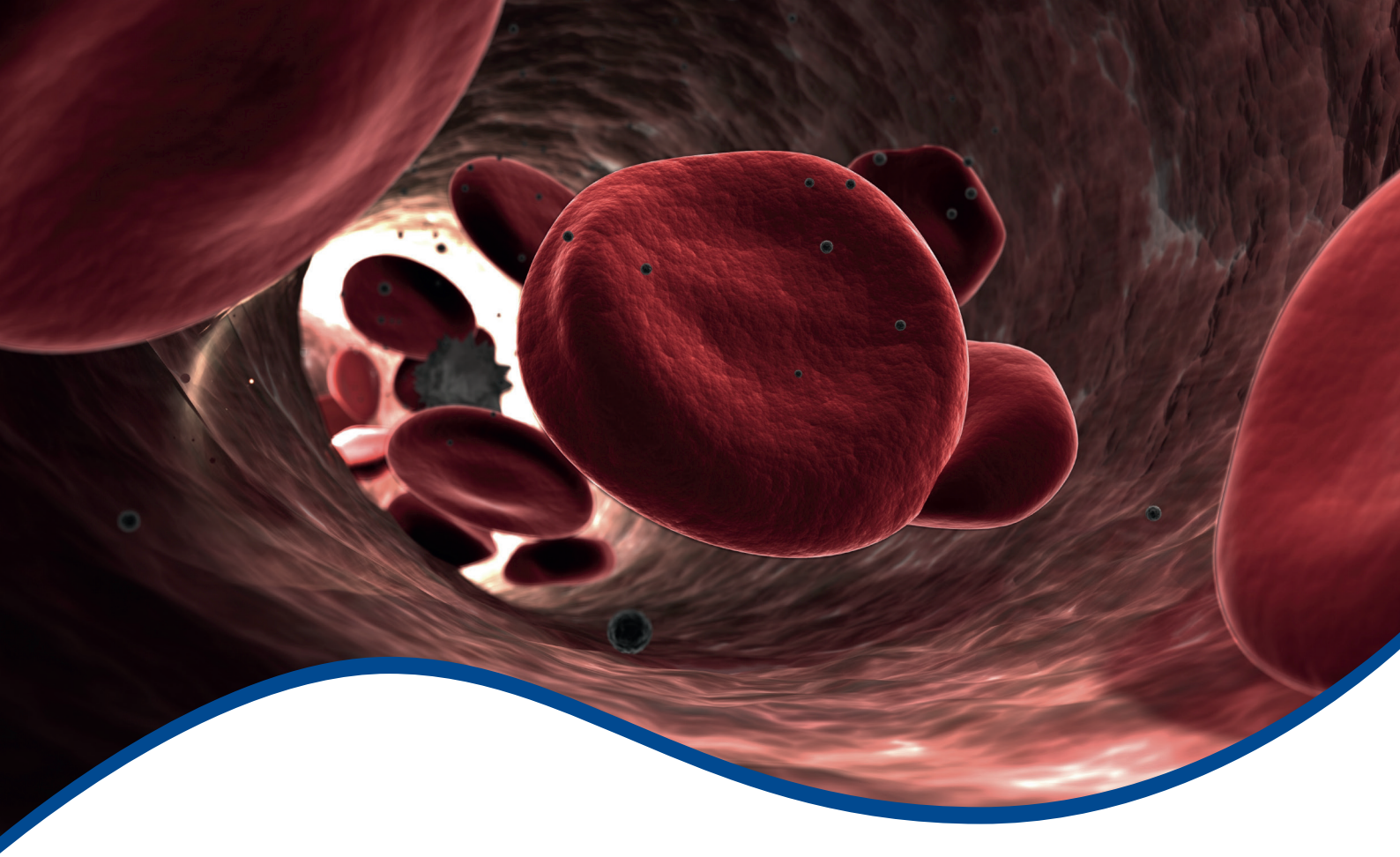


synchro™

Intermittent Pneumatic Compression System

for DVT Prophylaxis

Overview of Intermittent Pneumatic Compression (IPC) for reducing the risk of venous thromboembolism (VTE)

- The pathogenesis of thrombosis involves three key elements:
  - Venous stasis
  - Dilatation and / or damage of the leg veins
  - Changes in the coagulability of the blood

  Intermittent pneumatic compression (IPC) devices modify and in many cases overcome these elements. [1]

- National and International VTE guidelines acknowledge IPC as an effective modality which reduces the risk of DVT in at risk patient populations. [2-5]
- The Talley SYNCHRO™ IPC system prevents venous stasis and augment venous blood flow (see overleaf for details).
- IPC inhibits coagulation [6] and enhances fibrinolysis. [7, 8]
- Clinical literature acknowledges that no single method of IPC is clinically superior to another in terms of reducing the risk of DVT incidence. [1, 9, 10]

synchro™

COMPRESSION FOR DVT PREVENTION

- Intuitive, easy to use pump and garments are quick and simple to set up and operate.
- Fully automated, whisper-quiet microprocessor controlled power unit operates 3-chamber foot, calf or calf-thigh garments.
- Visual and audible operation status and fault indicators to enhance patient safety.
- Soft garment material provides optimal patient comfort and maximises wear time.
- 75 second cycle time (30 second inflation time, followed by 45 seconds of deflation) with pressures ranging from 40-60mmHg for leg garment operation to 120mmHg for foot garment operation.

SYNCHRO™ Three Chamber IPC Garments Provide Sequential Compression
Garments inflate sequentially in a distal to proximal direction over a 30 second period, with each chamber taking 10 seconds to inflate. Once the final chamber of the garment is fully inflated, all three of the inflated chambers deflate simultaneously. Garment deflation lasts for 45 seconds to allow venous refilling.

Microprocessor-Controlled Power Unit with Dual Pressure Range Modes The SYNCHRO™ features dual pressure range modes to ensure optimum pressure is applied to the limb according to the garment type. Simple to set up and use, and whisper-quiet in operation, the intuative power unit features LCD screen, audible and visual operation status and fault indicators, together with adjustable comfort control when using calf or calf-thigh garments, for optimum therapy, comfort and patient compliance.

Range of Disposable Garments The SYNCHRO™ intermittent pneumatic compression system is used in conjunction with a range of single patient use leg garments. All garments are disposable to reduce the risk of cross infection between patients. The brushed nylon velour fabric is comfortable to wear, increasing patient compliance. Velcro fastenings allow full adjustability of fit, ensuring optimum comfort and therapy.

Bilateral Outlets for 2 Garment Operation
The SYNCHRO™ features bilateral connection ports which allows two garments to be used at the same time so both lower limbs can receive IPC simultaneously.

CONTRAINDICATIONS

The use of external compression may not be recommended in the following conditions:- known or suspected deep vein thrombosis; congestive heart failure; pulmonary oedema; active infections; local conditions (e.g. dermatitis, skin graft). Always seek professional medical advice before using any of these products.

The following duplex ultrasound images demonstrate femoral vein blood flow augmentation when using the Talley SYNCHRO™ DVT prophylaxis system with either the foot, calf or calf-thigh compression garments.

FOOT

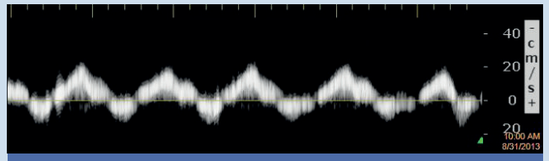


Fig. 1. Resting blood flow (pre-inflation)

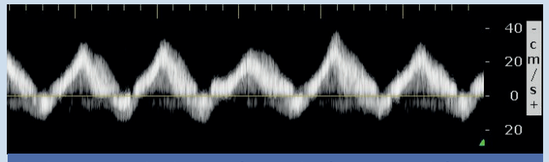


Fig. 2. Augmentation in blood flow during foot garment inflation

CALF

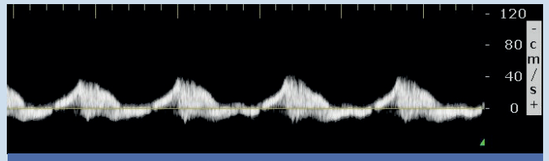


Fig. 3. Resting blood flow (pre-inflation)

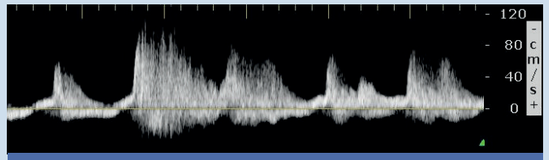


Fig. 4. Augmentation in blood flow during calf garment inflation

CALF-THIGH

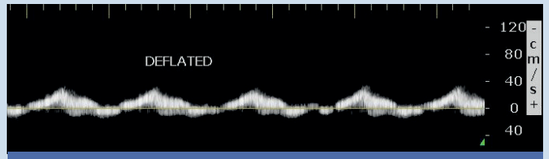


Fig. 5. Resting blood flow (pre-inflation)

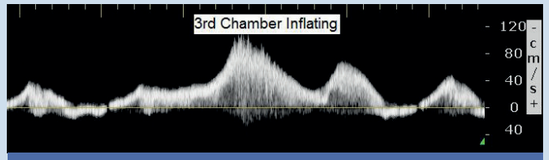
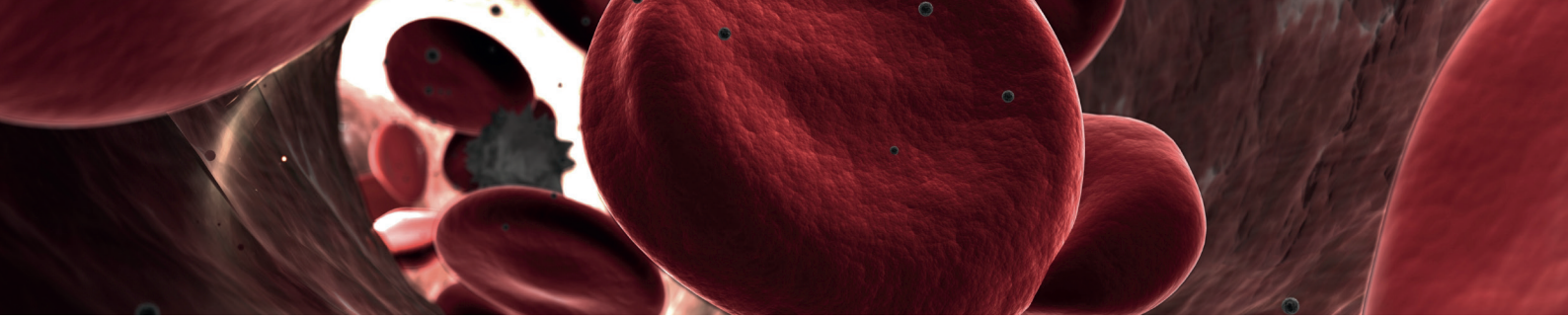


Fig. 6. Augmentation in blood flow during calf-thigh garment inflation

All blood flow meaurements detailed in this brochure were taken at the femoral vein of a healthy, 40 year old male volunteer test subject while lying supine. Measurements were taken by a single ultrasonographer using a Philips CX50 duplex ultrasound machine.



Overview of Venous Thromboembolism (VTE)

Definition

- Venous thromboembolism is the term used to describe a blood clot (or thrombus) which forms in a vein. Blood clots often occur in the deep veins of the legs where they are called deep vein thrombosis (DVT).
- An embolism occurs when some or all of the blood clot breaks off and travels in the blood. If the embolism reaches the lungs this results in a pulmonary embolism (PE) which can often be fatal.
- Post-thrombotic chronic venous insufficiency (CVI) can result from a DVT and is often overlooked. CVI can result in skin changes and ulceration in the lower limb, with approximately 25% of all venous ulcers believed to result from a previous DVT. [11]

Prevalence and cost

- Venous thromboembolism is a global issue;
  - In the UK an estimated 25,000 people die from preventable hospital-acquired VTE every year. [12] This is greater than all annual patient deaths from breast cancer, AIDS and road traffic accidents combined, and more than twenty five times the number of people who die from MRSA per year.
  - Every year in the US approximately 900,000 patients develop symptomatic VTE resulting in 300,000 deaths from pulmonary embolism. [13]
  - In Asia VTE incidence is an increasing problem and figures are comparable to those in Western populations. [2]
- The treatment and management of DVT and CVI place significant strain on healthcare budgets;
  - The total cost (direct and indirect) to the UK of managing VTE is estimated at £640 million per year. [12]
  - In Western Europe the estimated cost of CVI ranges from €600-900 million (equivalent to 1-2% of the total healthcare budget), and in the US this cost is approximately €2.5 billion ($3 billion). [11]

Risk factors

- There are multiple risk factors for VTE which can include; immobilisation; trauma; surgery; infection; age; obesity; malignancy; previous history of VTE; dehydration etc.

Prevention

- Prevention of VTE will typically be either pharmacological, physical (mechanical) or a combination of the two modalities.
  - Where major bleeding is a significant risk, intermittent pneumatic compression is often recommended for VTE prophylaxis. [2-4]
  - For many of the highest risk patient groups combined prophylaxis using both pharmacological and mechanical methods (including IPC) is recommended. [2,3]

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TECHNICAL DATA

Construction:	ABS Plastic
Dimensions:	335mm x 233mm x 165mm
Weight:	3.4 kg
Pressure Range (LEG):	40 - 60 mmHg
Pressure Range (FOOT):	120 mmHg
Duty Cycle Time:	75 seconds
Inflation Time:	30 seconds
Deflation Time:	45 seconds
Compatible Garment Type:	3 chamber foot, calf or calf-thigh garments: Calf-thigh (XL) - MDS305XL Calf-thigh - MDS305 Calf - MDS309 Foot - MDS315

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