PURPOSE: To promote venous return thus reducing venous stasis and formation of deep vein thrombosis (DVT) and resultant pulmonary embolism (PE) for the patient at risk.

DEFINITION: 1. T.E.D. Anti-Embolism Stockings: T.E.D. Stockings are noninvasive, graduated compression stockings used prophylactically to promote venous return, decrease leg swelling, and assist in the prevention of DVT and PE.

2. Sequential Pneumatic Compression Device (SCD): the pump provides intermittent cycles of compressed air which alternately inflate the single-chambered air garments. The compression applied on the extremity augments venous blood flow velocity and stimulates fibrinolysis.

KNOWLEDGE BASE: 1. Virchow’s triad identifies vessel wall injury, blood flow abnormalities (venous stasis) and hypercoaguable state as predisposing factors for thrombus formation.

2. DVT Score is a number that quantifies the patient risk for DVT/VTE after the completion of the admission profile and will be used to order the appropriate DVT/VTE prophylaxis.

3. A nurse will initiate the DVT nursing protocol for patients with DVT score of 2 or greater which includes: Anti-embolism Stockings/Devices- Bilateral SCD, or if not available order TED’s stockings unless contraindicated. 

CONTRAINDICATION: Ischemic vascular disease or severe arteriosclerosis, open ulceration, infections, local inflammation like dermatitis, trauma to the legs, acute/superficial DVT, recent vein ligation, skin graft or gangrene, massive peripheral edema and severe CHF.

4. T.E.D. Stockings can be used in conjunction with, and directly under, SCD. Skin covered by TED stockings and SCDs must be assessed at least once every shift. Refer to Corporate policy (00PAT66) Patient Assessment/Reassessment.

5. Compression sleeves can be removed temporarily for ambulation and bathing, and should be replaced.

6. Predisposing factors for DVT and surgical patients most likely to
need SCD include patients with the following risk factors:

**Risk Factors = 1 Point**
- Age 41-60 years
- Bed-rest
- COPD
- CHF (<1 month)
- Acute MI
- Pneumonia (<1 month)
- Sepsis (<1 month)
- Inflammatory Bowel Disease
- Minor surgery planned
- History of prior major surgery
- Obesity (BMI>25)
- Swollen legs
- Pregnancy
- Oral Contraceptives

**Risk Factors = 2 Points**
- Age 60-74 years
- Arthroscopic surgery
- Laparoscopic surgery
- Malignancy (present or history)
- Major surgery (>45 Minutes)
- Patient confined to bed (>72 hours)
- Immobilizing plaster cast (<1 month)
- Central Venous Access
- Infection
- Nephrotic Syndrome

**Risk Factors = 3 Points**
- Age >75 years
- Major surgery (>3 hours)
- History of DVT/PE
- Family history of Thrombosis
- Heparin-induced thrombocytopenia
- Thrombophilia
- History of clotting disorder

**Risk Factors = 5 Points**
- Elective major lower extremity arthroplasty
- Hip, pelvis, or leg fracture (<1 month)
- Stroke (<1 month)
- Acute spinal cord injury (paralysis <1 month)

**EQUIPMENT:** Sequential Pneumatic Compression Device (SCD)
1. Compression Sleeves and Unit (Central Service)
2. Knee Length - 1 size fits all (Central Service)

T.E.D. Anti-Embolism Stockings

1. Use the anti-embolism stocking measuring tape to measure the patient.
2. Bilateral knee and thigh high (Central Service or CS cart)

PROCEDURE(S):

APPLICATION OF KNEE LENGTH COMPRESSION SLEEVES

1. Check that the power switch on the pump is OFF.
2. Remove sleeves from plastic packaging and unfold.
3. Place the back of the patient’s leg in the center section of the sleeves with the connector tubing pointing towards the foot.
4. Beginning with the side without the Velcro tape, wrap the sleeve securely around the leg. Attach the Velcro tape securely to the sleeve. Ensure that the sleeves are fitted snugly and are not wrinkled or tucked.

NOTE: If sleeves are not applied snugly, a Lo pump alarm may result. To correct the alarm, simply rewrap the sleeve snugly.

5. Snap-lock the sleeve to the tubing assembly. Ensure that a “click” is heard. Pull lightly to confirm a proper connection.
6. To disconnect the sleeves from the tubing, press the snap-lock connector and pull apart

Troubleshooting Alarms:

1. LO (loose sleeve, sleeve leak, disconnected hose)
2. HI (kinked hose, hose disconnected, single leg not selected with one sleeve)
3. F (pump failure-return for repair)
4. Alarm Cancel (Switch pump off, then on again. Pump will reset itself).

NOTE: One sleeve SCD or anti-embolism stocking can be applied for patient with cast or traction on one leg, amputation, dermatitis, recent skin graft, extreme deformity of one leg, or per the MD order.

CAUTION NOTES:
1. Send sleeves back to C.S. for recycling when discontinued.
2. Proper application and connection to air controller must be assured.
3. Sleeves should be removed if patient experiences numbness, tingling or leg pain. Notify physician and document time.
4. When this device is used in the Operating Room, place Cooling Switch in the “OFF” position to maintain air quiescence.
5. To activate/deactivate sleeve cooling, press the cooling button.

**Application of T.E.D. Anti-Embolism Stockings**
1. Gather length of stocking down to heel pouch
2. Stretch stocking open and fit over foot and heel
3. Draw stocking evenly over ankle, calf and thigh to full length
   Do not turn down top of stocking.
4. Smooth out excess material with palm of hands and eliminate wrinkles in foot area by grasping toe section and pulling forward.

**DOCUMENTATION:**
Documentation for SCD is on the nursing assessment/reassessment flowsheet.

**REFERENCE(S):**
Prevention of Deep Vein Thrombosis Evidence Based Guideline, The University of Iowa Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core, Revised 02/06

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[www.huntleigh-healthcare.com](http://www.huntleigh-healthcare.com)


**REVIEWING AUTHOR(S):**
Lauren Linde, BSN, RN-BC, CPS, General Surgical Unit
Tonia Spenard, RN, Orthopedics Unit

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