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Compression Pumps

DESCRIPTION

Pneumatic compression pumps (PCPs), also known as limb compression devices, are a proposed treatment option for lymphedema, venous ulcers, and deep venous thromboembolism (DVT) prophylaxis. A variety of compression pumps are available, including single chamber (nonsegmented / uniform pressure) and multi-chamber (segmented / inflated sequentially with a fixed pressure). Nonprogrammable pumps deliver fixed uniform pressure in each compartment. Whereas the pressure is manually adjustable for each compartment with programmable pumps with varying designs and complexities such as pneumatic and non-pneumatic. Newer devices are battery powered to allow freedom of movement which encourages mobilization. Pneumatic compression pumps use compressed air to apply pressure to the affected area. Non-pneumatic compression devices apply controlled pressure to a limb and rely on mechanical, elastic, or spring-based systems to create compression rather than air.

Lymphedema is an abnormal accumulation of lymphatic fluid in subcutaneous tissue. Conservative therapy includes limb elevation and exercise as well as the use of compression garments and bandaging. Another conservative treatment is manual lymphatic drainage, a massage-like technique used to move edema fluid from distal to proximal areas. For individuals who have failed conservative therapy, pneumatic compression pumps applied to the limb may be a treatment option. Examples of FDA-cleared devices include: the Compression Pump, Model GS-128, the Sequential Circulator®, the Lympha-Press® and Lympha-Press Optimal, the Flexitouch™ and the Powerpress Unit Sequential Circulator. PCPs that include the trunk, chest, head and neck (e.g., FlexiTouch® System) have also been proposed as advanced lymphedema therapy. An example of an FDA-cleared non-pneumatic device is Dayspring by Koya Medical, Inc.

Venous ulcers, which occur most commonly on the medial distal leg, can develop in individuals with chronic venous insufficiency. Standard treatment includes compression bandages or hosiery supplemented by conservative measures such as leg elevation and exercise. Pneumatic compression pumps (e.g., Model GS-128, Lympha-Press®, Powerpress Unit Sequential Lymphedema Systems) have been proposed as a treatment for venous ulcers.

Pneumatic compression pumps are also proposed for use as prophylactic treatment of deep vein thrombosis following major surgery in individuals with contraindications to anticoagulation.

NOTE: This policy **does not** address end-diastolic compression pumps which are a very specialized pneumatic compression pump designed to coordinate the timing of the intermittent boot compression with the QRS complex on EKG.

POLICY

- The use of pneumatic compression pumps in the home setting is considered ***medically necessary*** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**

- The use of head or neck pneumatic compression pumps in the home setting for the treatment of lymphedema with or without involvement of the upper and/or lower limbs is considered ***investigational.***

- Pneumatic or non-pneumatic compression pumps for the treatment of other conditions/diseases, including, but not limited to venous ulcers is considered ***investigational.***

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- The use of non-pneumatic compression pumps in the home setting is considered ***medically necessary*** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**

- Any device utilized for this procedure must have FDA approval specific to the indication, otherwise it will be considered ***investigational.***

MEDICAL APPROPRIATENESS

- Pneumatic or non-pneumatic compression pumps are considered **medically appropriate** for **ANY ONE** of the following:
  - Pneumatic compression pumps if **ANY ONE** of the following are met:
    - Deep venous thromboembolism (DVT) prophylaxis for postoperative use in the home setting following major surgery (e.g., total hip arthroplasty, total knee arthroplasty, hip fracture surgery, open abdominal, or open-pelvic procedures) if **ALL** of the following are met:
      - Intermittent pneumatic device
      - No longer than 14 days
      - Documented contraindication to pharmacological agents (e.g., previous major bleeding [and previous bleeding risk similar to current risk], severe renal failure, concomitant antiplatelet agent, or surgical factors: history of or difficult-to-control surgical bleeding during the current operative procedure, extensive surgical dissection, and revision surgery)
    - As a treatment for lymphedema if **ALL** of the following are met:
      - Treatment of **ANY ONE** of the following:
        - One or more limbs
        - Chest or trunk in addition to the limbs
      - Treatment using **ANY ONE** of the following:
        - Nonprogrammable pump, single or multi-chamber, for treatment of lymphedema that has failed to respond to conservative measures such as limb elevation and use of compression garments
        - Programmable pump, single or multi-chamber if **ALL** of the following:
          - There is documented failure to respond to conservative measures such as limb elevation and use of compression garments
          - Documentation of **ANY ONE** of the following:
            - Documentation is present that the individual has characteristics that prevent satisfactory pneumatic compression performance from nonprogrammable pneumatic compression, such as significant scarring or recent surgery
            - There is documented failure to respond to an initial trial of a nonprogrammable pump
  - Non-pneumatic, wearable, programmable compression pumps (e.g., Koya Dayspring) if **ALL** of the following are met:
    - The pump is applied to one or more limbs
    - For the treatment of lymphedema if **ALL** of the following are met:
      - There is documented failure to respond to conservative measures such as limb elevation and use of compression garments
      - Documentation of **ANY ONE** of the following:
        - Documentation is present that the individual has characteristics that prevent satisfactory pneumatic compression performance from nonprogrammable pneumatic compression, such as significant scarring or contractures recent surgery
        - There is documented failure to respond to an initial trial of a nonprogrammable pump
      - There is documentation the individual has lifestyle considerations or mobility requirements that affect compliance with traditional programmable, pneumatic compression systems

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IMPORTANT REMINDERS

- Any specific products referenced in this policy are just examples and are intended for illustrative purposes only. It is not intended to be a recommendation of one product over another and is not intended to represent a complete listing of all products available. These examples are contained in the parenthetical e.g. statement.

- We develop Medical Policies to provide guidance to Members and Providers. This Medical Policy relates only to the services or supplies described in it. The existence of a Medical Policy is not an authorization, certification, explanation of benefits or a contract for the service (or supply) that is referenced in the Medical Policy. For a determination of the benefits that a Member is entitled to receive under his or her health plan, the Member's health plan must be reviewed. If there is a conflict between the Medical Policy and a health plan or government program (e.g., TennCare), the express terms of the health plan or government program will govern.

ADDITIONAL INFORMATION

Published evidence remains insufficient in quality and quantity to support the use of home pneumatic or non-pneumatic compression devices for head and neck lymphedema or for the treatment of venous ulcers.

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