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SEARCHING FOR TREATMENT?
is an FDA cleared, Medicare approved, non-invasive medical therapy for the treatment of stable and unstable angina, congestive heart failure, acute myocardial infarction, and cardiogenic shock. Hemodynamically, EECP® Therapy improves cardiac output, increases circulation, recruits and develops new collaterals. It also increases shear stress on the endothelium, improving endothelial function, reduces circulating inflammatory markers and arterial stiffness, while also inhibiting smooth muscle cell proliferation and migration. More than 150 peer-reviewed papers have been published demonstrating EECP® to be safe and effective in the treatment of angina and chronic heart failure.

EECP® THERAPY DELIVERY

The EECP® system consists of three sets of inflatable pressure cuffs wrapped around the calves and the lower and upper thighs, including the buttocks. In synchronization with each cardiac cycle, obtained with an integrated 3-lead ECG, the cuffs are sequentially inflated from the calves to the buttocks during diastole to produce an arterial retrograde flow towards the aortic root to increase coronary blood flow. EECP® simultaneously increases venous return to raise cardiac output. The cuffs are deflated simultaneously before the onset of systole to provide an empty vascular space, reducing systemic vascular resistance in the lower extremities to receive blood ejecting from the heart, significantly reducing the workload and oxygen demand of the heart.

**Diastolic Inflation**

- Upper thigh cuffs
- Lower thigh cuffs
- Calf cuffs

**Systolic Deflation**

- Upper thigh cuffs
- Lower thigh cuffs
- Calf cuffs
EECP® Therapy is primarily used as a non-pharmacologic outpatient treatment for patients with chronic stable angina (chest pain, atypical pain, shortness of breath, fatigue, and cough) as well as the symptoms of heart failure. Patients with severe, diffuse coronary atherosclerosis and persistent angina, or significant silent ischemia burden, such as elderly patients and those with diabetes, challenging coronary anatomies, or debilitating heart failure, renal failure, or pulmonary disease, have also been shown to derive benefit from EECP® Therapy. EECP® Therapy has also been shown to be effective in relieving angina symptoms in patients with Cardiac Syndrome X. Benefits of EECP® have also been determined in the management of angina in the elderly, angina patients with left main disease, and in patients with mild refractory angina (CCS Class II). EECP® Therapy is equally effective in reducing angina symptoms in patients with or without diabetes, and in patients with all ranges of body mass index.

EECP® Therapy has also been shown to improve exercise capacity in heart failure patients with NYHA Class II/III and in exercise peak oxygen consumption in older patients with heart failure. EECP® Therapy has also been demonstrated to be equally effective in providing symptomatic benefits in angina patients with either systolic or diastolic heart failure. For patients with left ventricular dysfunction, EECP® Therapy has been shown to sustain the initial benefits for up to 3 years.
**MECHANISMS OF ACTION**

There is evidence demonstrating improved endothelial function via the hemodynamic effects by the increased shear stress acting on the arterial wall, reducing arterial stiffness and providing protective effects against inflammation, inhibiting intimal hyperplasia and the atherosclerotic process.

**CONTRAINDICATIONS**

EECP® Therapy should not be used for the treatment of patients with:
- Arrhythmias that interfere with machine triggering,
- Bleeding diathesis,
- Active thrombophlebitis,
- Severe lower extremity vaso-occlusive disease,
- Presence of a documented aortic aneurysm requiring surgical repair,
- Pregnancy.

**PRECAUTIONS**

- Patients with blood pressure higher than 180/110 mmHg should be controlled prior to treatment with EECP®.
- Patients with a heart rate more than 120 bpm should be controlled prior to treatment with EECP®.
- Patients at high risk of complications from increased venous return should be carefully chosen and monitored during treatment with EECP®. Decreasing cardiac afterload by optimizing diastolic augmentation may help minimize increased cardiac filling pressures due to venous return.
- Patients with clinically significant valvular disease should be carefully chosen and monitored during treatment with EECP®. Certain valve conditions, such as significant aortic insufficiency, or severe mitral or aortic stenosis, may prevent the patient from obtaining benefit from diastolic augmentation and reduced cardiac afterload in the presence of increased venous return.

**Acute EECP® Effects**

- **Acute Hemodynamic Effects**
  - Systolic ↓
  - Diastolic ↑
  - Cardiac Output ↑

- **Shear Stress On Arterial Wall ↑**

- **Endothelial Progenitor Cells ↑**

- **Vascular Growth Factors ↑**

- **Neurohormonal AngII ↓**
  - BNP ↓
  - ANP ↓

- **Endothelial Function ↑**
  - Vasodilation: NO ↑;
  - ET-1 ↓
  - Vascular Resistance ↓

- **Arterial Stiffness ↓**

- **Angiogenesis ↑**
  - Collateral Circulation ↑
  - Microvascular Density ↑

- **Inflammatory Cytokines ↓**
  - TNF-α ↓
  - MCAP-1 ↓

**Pathophysiological**

- **Vascular Resistance ↓**
- **Hypertension ↓**

- **Ischemic Region Perfusion ↑**

- **Atherosclerotic Process ↓**

- **Hospitalization ↓**

- **Quality Of Life ↑**

There is also evidence that EECP® Therapy triggers a neurohormonal response that induces the production of growth and vasodilatation factors, which together with the increased pressure gradient created across the occlusive site during EECP® Therapy, promotes recruitment of new arteries, while dilating and normalizing the function of existing blood vessels. The collaterals bypass stenoses and increase blood flow to ischemic areas of the heart, leading to improved clinical outcomes.
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SEARCHING FOR TREATMENT?

Pre-EECP® 3-Year Follow Up

Improvement Maintained At 3-Year Follow Up After EECP® Therapy

<table>
<thead>
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<th>Pre-EECP®</th>
<th>3-Year Follow Up</th>
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<tbody>
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<td>19.3</td>
<td>5</td>
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<td>Class III</td>
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