

# Enhanced External Counter Pulsation System

A noninvasive outpatient treatment option for cardiac patients



*Technology with love innovate your life !*

 **amed**



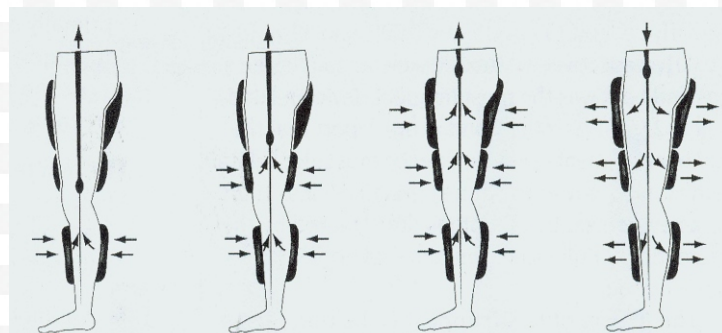


## What is ECP?

ECP stands for External CounterPulsation, a non-invasive procedure approved by the US FDA that can reduce or eliminate symptoms of angina pectoris, acute myocardial infarction, cardiogenic shock and congestive heart failure (CHF). It is believed that ECP therapy creates new pathways around blocked arteries in the heart by expanding networks of tiny auxiliary blood vessels, thereby increasing the amount of blood flowing to heart muscle. ECP therapy is clinically tested and proven atraumatic outpatient alternative procedure to standard surgical interventions, namely balloon angioplasty (PTCA) and bypass surgery (CABG).

## How does ECP performance your patients rely on?

The technique involves the use of the ECP system is inflate and deflate a series of compression cuffs wrapped around the patient's calves, lower thighs and upper thighs. A computer is programmed to inflate and deflate these cuffs according to the patient's heart rhythm, timed by the electrocardiogram. In early diastole, these cuffs inflate in a distal to proximal sequence to milk blood out of the lower extremities and at end diastole the pressure is released from all the cuffs simultaneously. The effects produced with the intermittent compression are increased diastolic pressure and retrograde aortic flow; increased venous return; and systolic unloading which results in increased cardiac output and coronary perfusion.



### The ECP Sequence:

**STEP 1: Inflation initiates retrograde pulse wave**

**STEP 2: Inflation of lower thigh cuffs 50ms later**

**STEP 3: Inflation of upper thigh cuffs 50ms later**

**STEP 4: Deflation facilitates cardiac unloading**

The latest research on ECP is focused on the effect of ECP on morphological and functional changes of the vessel endothelium by Prof. Zheng Zhen-sheng in Sun Yat-sen University in China. The experiments calculations has been observed that the shear stress will reach in peak value during the counterpulsation, which can limit atherosclerotic plaque formation, restore endothelial function as well as improving pathological coronary vascular remodeling.

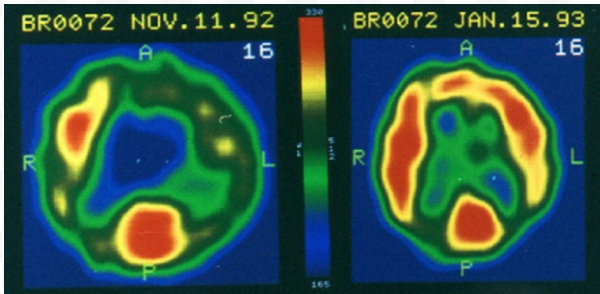
## Clinical benefits of ECP therapy

ECP has been tested in multi-center, controlled, clinical studies, with positive medical results and a demonstrated quality of life improvement. Years of research and clinical practice provide detailed support of patient benefits such as:

- ♥ ECP treatment is updated by [The ACC/AHA 2002 Guideline](#) on chronic stable angina. ECP treatment is generally determined well tolerated and efficacious to improve chronic stable angina symptoms. Specifically, ECP treatment as a therapeutic option for patients with drug-refractory angina who are not candidates for other forms of therapy, specifically coronary artery interventions (PTCA with or without stenting) and surgical revascularization (CABG).

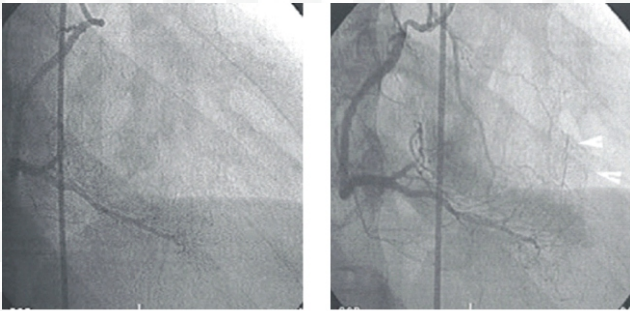


- ♥ Angina class at 3 or 4 grades improve one or two classes (statistic by IEPR\*) after accept ECP treatment. (\* IEPR: the international ECP Patient Registry is a study which enrolls patients who are undergoing ECP for treatment of angina pectoris.)
- ♥ Therapy and prevent restenosis after PTCA procedures.
- ♥ Therapy and prevent senile dementia and cerebral stroke sequel.



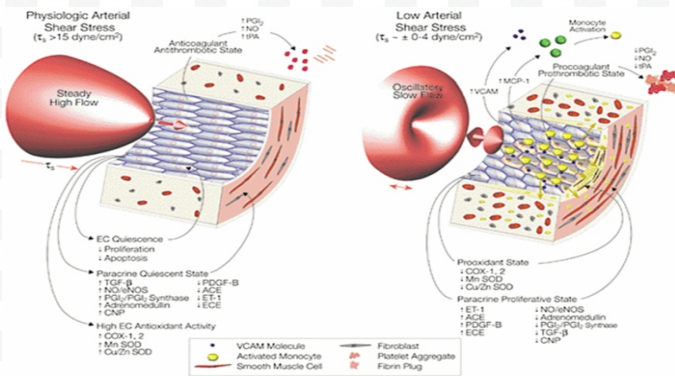
It is clearly to see the cerebral improvement in cerebral ischemia after 36 hours ECP therapy on senile dementia patient through comparing the tomographic slices of Pre-ECP and Post-ECP.

- ♥ Increase exercise tolerance.
- ♥ Significant improve in quality of life.
- ♥ Increase myocardial perfusion and grow “Natural” Bypass.



Remarkable coronary collaterals presented from right coronary artery to the proximal segment of LAD, which had 90% stenosis before EECP treatment for 36 hours.

- ♥ Increase the vessel endothelium shear stress, limit atherosclerotic plaque formation, restore endothelial function, as well as improve pathological coronary vascular remodeling.
- ♥ Decrease the need for anti-anginal medication.



Hemodynamic studies have identified shear stress as an important determinant of endothelium function.

## The advantages of ECP therapy over other options

- ◆ ECP is the only non-invasive treatment for coronary artery stenosis.
- ◆ ECP is performed on an out patient treatment.
- ◆ ECP is safe, painless, comfortable and no side effect treatment.
- ◆ Costly effective treatment with only 1/5 of the cost of PTCA, 1/10 of the cost of CABG.



## VAMED ECP therapy system model ECP-MC3

The new generation ECP-MC3 therapy system was designed by VAMED, the pioneer and world leader in External Counterpulsation Manufacturing. ECP-MC3 is ALL-IN-ONE device evolved from VAMED famous product EECP-MC2, it incorporates the same proven performance of ECP technology into a self-contained unit that is simply and effective. Most safety features to guarantee the reliable performance, extremely well-tolerated procedure provides a comfortable and calm circumstance without affecting reading, watching television or visiting friends, even though, sleeping during therapy.

(1) All-in-one design eliminates the need for a console, pump and air tank modules, minimizing floor space requirement. Integrated work surface and LCD display is mounted on a fully rotary arm, can be revolved on either side of table.



(2) All information during therapy is displayed on one screen. Just touch the on-screen controls to set timing and Pressure parameters, print waveform tracings and start/stop therapy.

(3) Non-invasively multi-parameters monitoring, such as ECG, finger plethysmographic and oxygen saturation (SPO2) used to help adjust inflation/deflation timing to achieve good therapy efficacies.

(4) Comfortable and quiet treatment procedures provide patients with the most relaxing experience possible. The state-of-the-art Rapid Connector is convenient to the operators and patients.



### Regular protocol of ECP therapy

The typically therapy is provided on patient basis in 35 one-hour sessions over a period of approximately seven weeks.

### Technical specifications

Power Supply: 220VAC, 50/60Hz, 15A

Dimension(L × W × H): 2150 mm×800 mm× 625mm

Net Weight: 255kg

LCD Monitor (17"): Touch on screen to get all information.

Display traces: ECG, Inflation/Deflation Timing, Pulse Plethysmograph, Pressure

Display Data: Heart Rate, D/S Ratio, SPO2, NIBP, Treatment Time.



Vamed Medical Instrument Co., Ltd.

5th Floor, 2# Building, Industry District High Technology Zone Harbor Rd., Fosahn City, GuangDong, P.R. China

Postcode: 528041 Tel: (86)(757) 83817601 / 83817602 Fax: (86)(757) 83817682

<http://www.vamed.com.cn> E-mail: [info@vamed.com.cn](mailto:info@vamed.com.cn)