ECP PSK

Enhanced External Counterpulsation (EECP)

Goodbye to surgery
Go for Natural bypass with EECP.

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Indications

- ✔ Stable & Unstable Angina
- ✔ Congestive Heart Failure
- ✔ Acute Myocardial infarction
- ✔ Cardiogenic Shock

TI model

T model

TM model

Paediatric Type for children

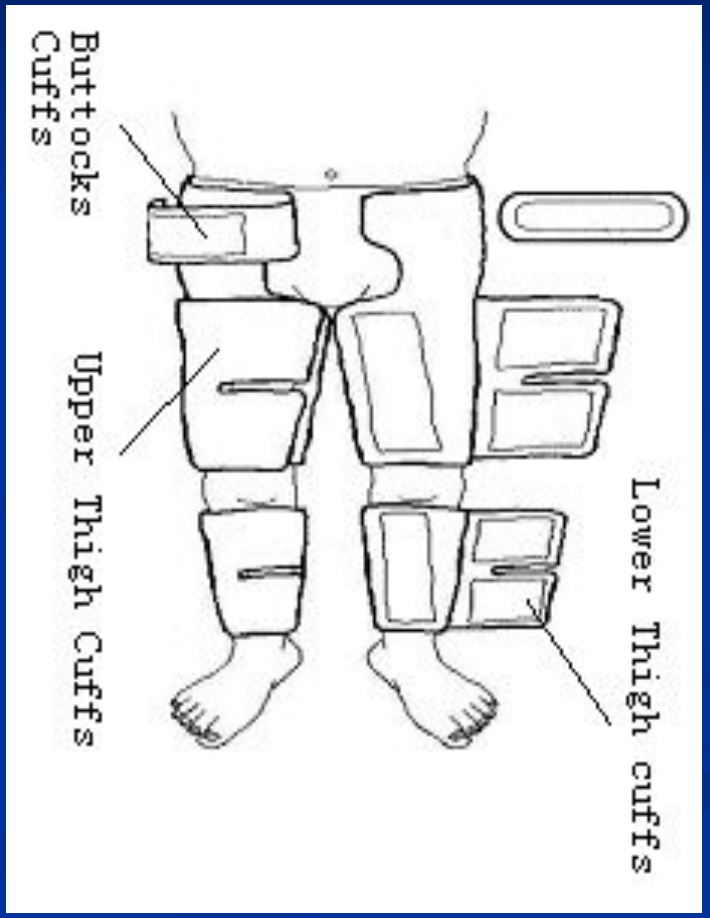
What is EECP ?

- EECP-**E**nhanced **E**xternal **C**ounter**p**ulsation is an FDA-approved, non-invasive, non-surgical and outpatient medical therapy for the treatment of angina, congestive heart failure, acute myocardial infarction, and cardiogenic shock. During the treatment, blood pressure cuffs, wrapped around your legs, squeezed and released in sync with your heartbeat, promoting blood flow throughout your body and particularly to your heart. In the process, EECP develops new pathways around blocked arteries in the heart by expanding networks of tiny blood vessels ("collaterals") that help increase and normalize blood flow to the heart muscle. For this reason, it is often called the **NATURAL BYPASS**.

- Numerous clinical trials have shown EECP therapy to be safe and effective for patients with refractory angina with a clinical response rate averaging 70-80%, which is sustained up to five years.

What does EECP do?

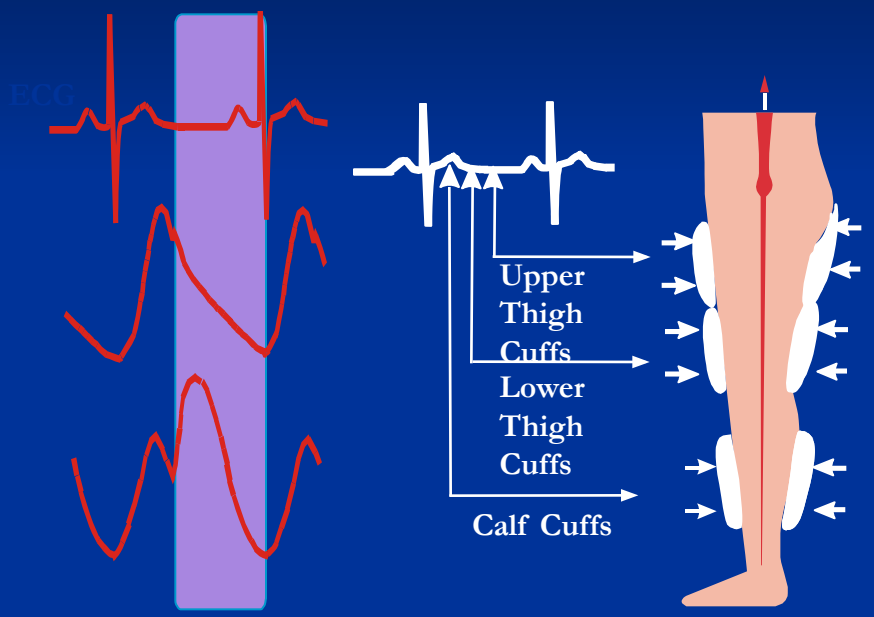
EECP therapy consists of a system of three sets of inflation pressure cuffs wrapped around the calves, thighs and hips and then rapidly inflated and deflated in sync with the patient's heartbeat. Using a heart monitor, the cuffs sequentially inflate with air when the heart relaxes and deflate when the heart pumps. The timing of the inflation and deflation makes it easier for the heart to pump and increases blood supply to the heart. Studies show that 75% of patients treated with a single course of EECP experience a reduction in their angina and increased exercise tolerance.



EECP Principles of Operation

Diastolic Inflation

Sequential inflate three sets of cuffs at the end of systole

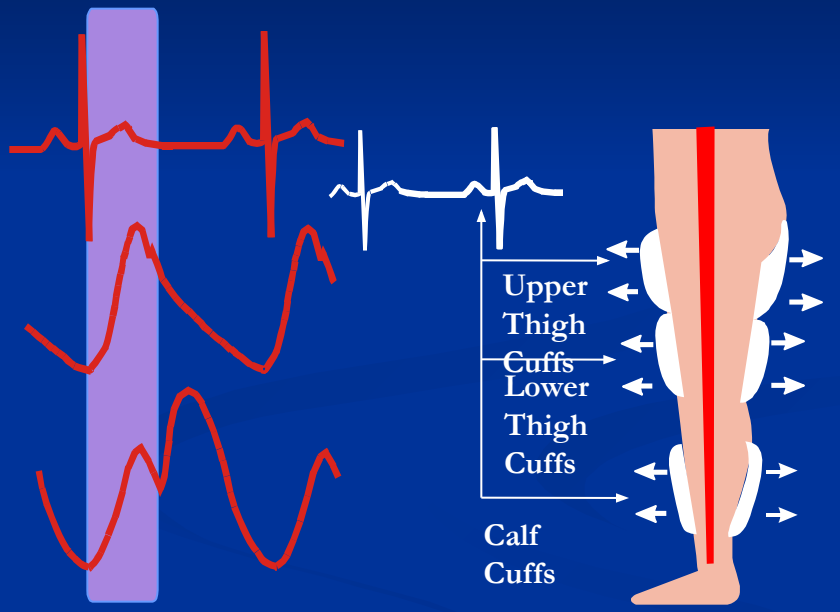


Diastolic Augmentation → Increase Coronary Perfusion

Increase Venous return → Increase Cardiac Output

Systolic Deflation

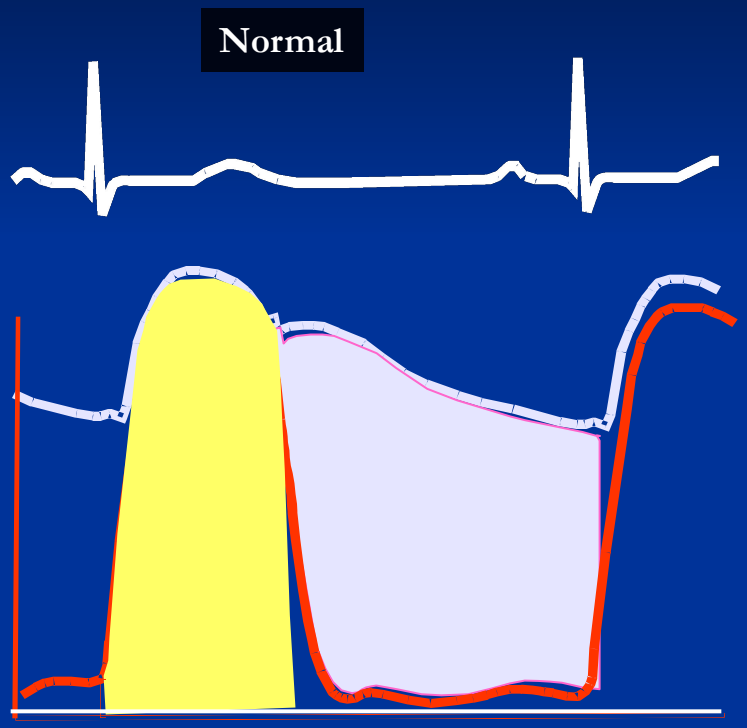
Simultaneously deflate all three sets of cuffs at the end of diastole

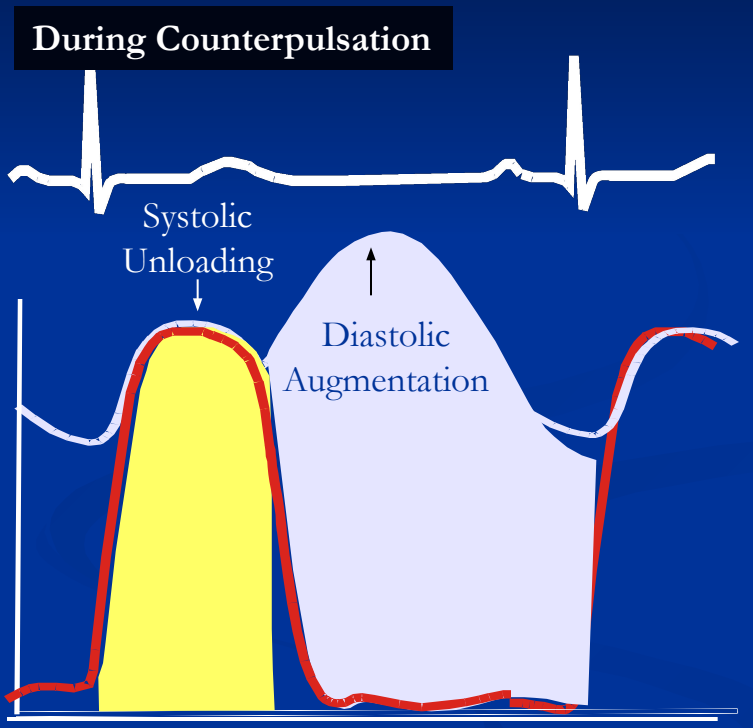


Systolic Unloading → Reduce Cardiac Workload

Systolic Unloading → Increase Cardiac Output

Myocardial Energy Demand and Supply





Time Tension Index
Workload of the heart is related to myocardial oxygen consumption

Diastolic Pressure Time Index
Energy supply to the myocardium in proportion to coronary perfusion pressure

Benefit of EECP

- Angina
- Angioplasty (PTCA) or Bypass surgery (CABG).
- CAD – Coronary Artery Disease
- CHD – Coronary Heart Disease
- PVD – Peripheral Vascular Disease
- ED – Erectile Dysfunction
- Cardiac chest pain
- Congestive heart failure
- Peripheral vascular disease
- Cardiomyopathy
- Peripheral neuropathy
- cerebral palsy
- Intestinal vascular insufficiency
- Edema, or venous insufficiency
- Chronic fatigue syndrome

Other benefits:

- Stroke
- kidney disease
- Parkinson's disease
- Memory disorders
- Diabetes and Diabetic Neuropathy
- High blood pressure
- Macular degeneration
- Other circulatory diseases
- hearing loss and tinnitus
- vision impairment
- autoimmune diseases (including Raynaud's phenomenon)
- rheumatic disease
- restless leg syndrome.
- Lymphatic System
- Sports Enhancement
- Anti-aging

CONTRAINDICATIONS

- Arrhythmias that interfere with machine triggering (need rate controlling)
- Bleeding diathesis (INR must be < 2.5)
- Active thrombophlebitis
- Severe lower extremity peripheral vascular 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.
- Patients with a heart rate of more than 120 bpm should be controlled prior to treatment.

- Patients at high risk of complications from increased venous return should be carefully chosen and monitored during treatment. Decreasing cardiac afterload by optimizing cuff inflation and deflation timing may help minimize increased cardiac filling pressures and the possibility of pulmonary congestion due to increased venous return.

- Patients with clinically significant valvular disease should be carefully chosen and monitored during treatment with enhanced external counterpulsation. 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.

EECP Treatment Regimen

- **Standard Treatment Time**
  - 5 daily 1 hour treatments per week over 7 weeks for a total of 35 hours or
  - 2 x 1 hours daily over 3½ weeks for 35 hours total
- **Extension**
  - 7% from IEPR-2 had extended their 35 hours by 10.3 ± 9.8 hours because of persistent angina (67%), patient's preference (41%), physician's (40%)
  - Extension is safe and patients continued to benefits with significant incremental improvement in symptoms and functional class
- **Repeat Therapy**
  - 18% of the patients having completed their initial course of 35 hours of EECP undergo retreatment within 2 years
  - Common reasons for retreatment are recurrent angina, persistent angina
  - About 13% of the patients failed to complete their initial 35 hours course of EECP because of patient's choice and adverse clinical events
  - 30% of those who failed returned within 1 year for retreatment
  - At retreatment, patients realized a benefit similar to patients who respond to a first course, with 70% improved by at least one CCS angina class, decreased angina episodes and nitroglycerin use.

F.A.Q.

- **How do I personally know EECP treatment has helped me?**
  - Patient can walk more distance without chest pain
  - Patient would have fewer or no angina
  - Episodes of angina would be less painful
  - Patient can return to work and can participate in their active life style once again
  - Patient would be more energetic and confidence.

- **Are there any risks or side effects of EECP?**

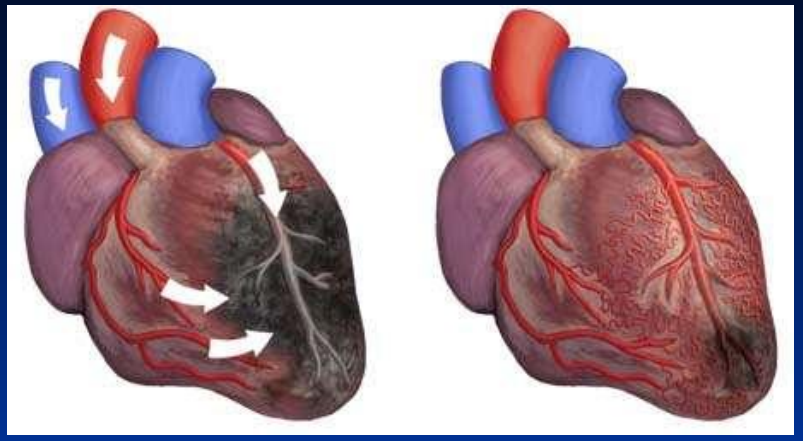
  EECP is safe. Occasionally, some patients experience mild skin irritation under the areas of the blood pressure cuffs. Experienced EECP therapists address this irritation by using extra padding to make the patient comfortable. Some patients experience a bit more fatigue at the beginning of their course of treatment, but it usually subsides after the first few sessions. In fact, patients typically feel energized by EECP.

- **How does EECP compare to angioplasty or bypass surgery?**
- The five-year outcomes for EECP patients are virtually the same as for angioplasty and bypass surgery patients.

- **What are advantages of EECP?**
- EECP is non-invasive, simple, safe, risk-free and cost effective treatment without surgery or hospital stay. Patient can take this treatment without disturbing his/her daily routine life.

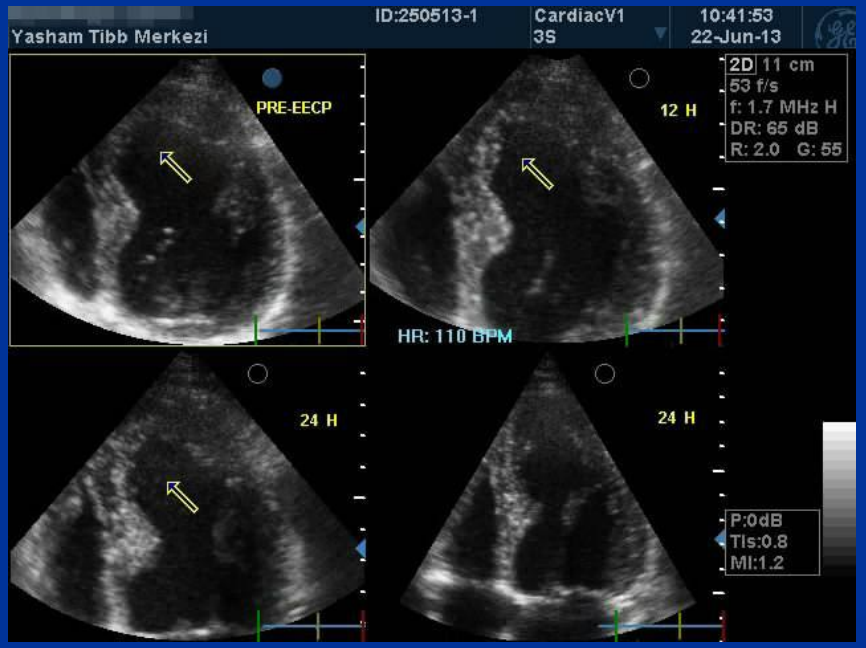
- **Is EECP possible after angioplasty or bypass surgery?**
- Yes, When the symptoms recurs or where the results of these procedures are inadequate or for additional benefit for a better and more active lifestyle.

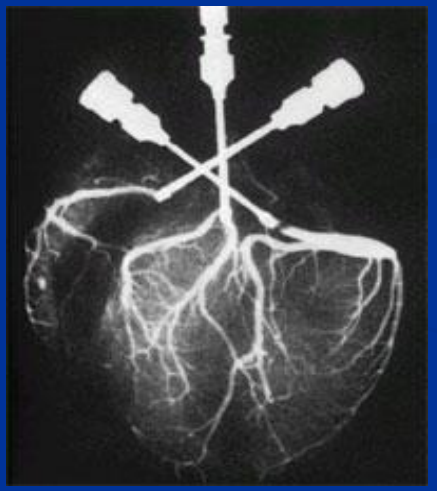
- **Long term benefits**
- Data from the International EECP Patient Registry (IEPR) by the University of Pittsburgh's Graduate school of Public Health, USA suggest that the reduction in angina following EECP treatment is frequently sustained for up to 2 years post treatment. Patient follows up in many studies suggest that benefits of EECP persist for up to 5 years or more.

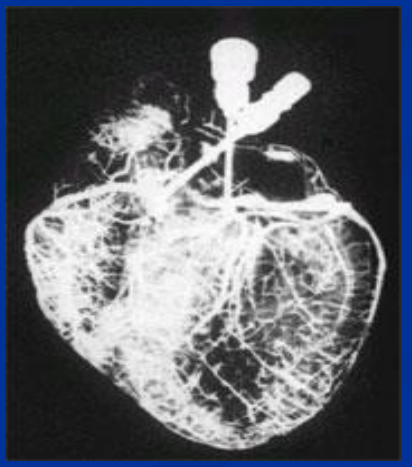


PRE EECP POST EECP

EECP helps grow new collaterals for blood to flow, like a natural bypass around blocked arteries.







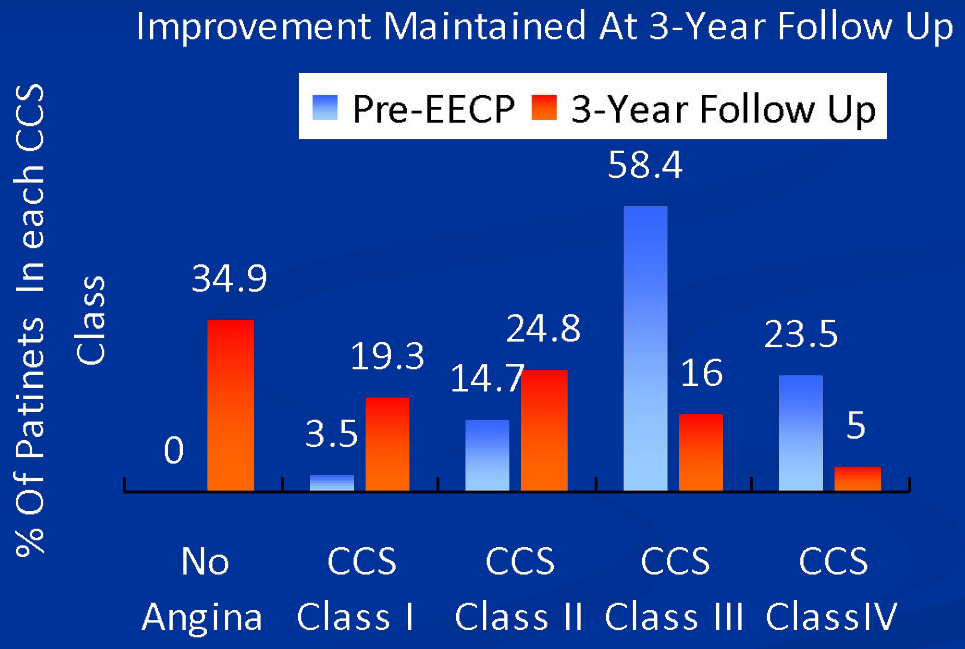
Very dark due to reduced blood flow
Extremely bright due to all of the new vessels feeding the heart

Clinical Evidence

The International EECP Patient Registry (IEPR) has provided data on over 5,000 patients demonstrating therapeutic outcomes and duration of benefit.
Functional scores were graded using CCS angina score - classes I (mild) to IV (severe).

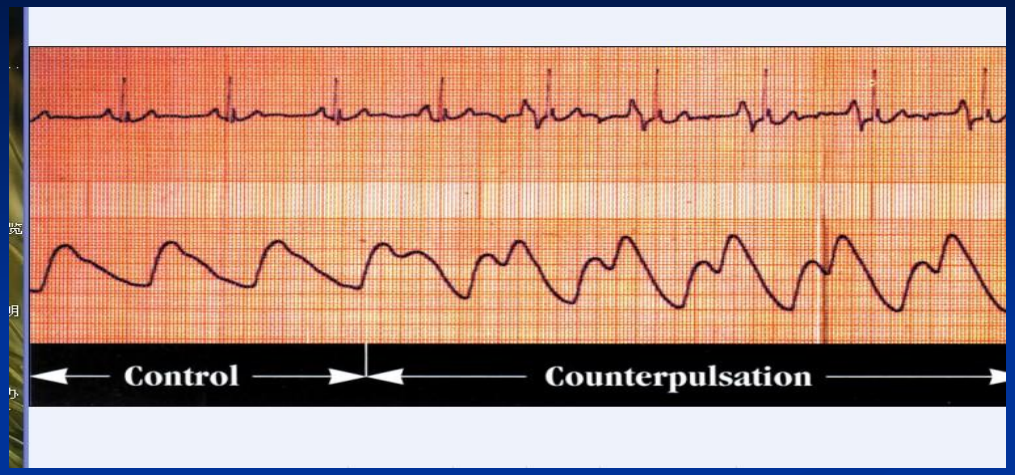
Summary:

- After 24 months follow up 31% of patients recorded being angina free compared to 0% at the start of the study.
- 82% of patients improved after EECP by one or more CCS class
- 43.9% of patients improved after EECP by two or more CCS classes
- Benefits were sustain over the 24 month follow up.



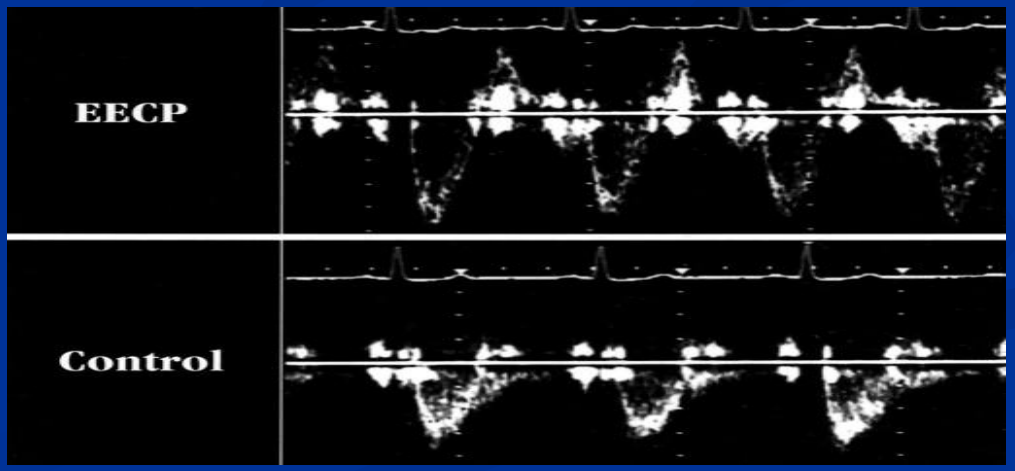
Visible evidence of hemodynamic effect on actual EECP patient

- Systolic unloading reduces energy requirements of the heart
- Dramatic diastolic augmentation (equal to or greater than intraaortic balloon pump)



Doppler echo of the descending aorta during EECP treatment

- Increased retrograde diastolic and enhanced systolic flow



Problems in Treating Heart Failure

- As the society aging, and the mortality rate from patients suffering from myocardial infarction decreases, the number of patients with heart failure will increase at a much faster pace, placing much more stress on the healthcare system
- Currently there is no effective therapy for heart failure
- The mortality rate for heart failure remain high (2001: 53,000 death/year)
- The difficulty in defining heart failure is because it is not a single organ disease but a systemic disease
- We require a treatment that not only improve the cardiac function but provide systemic pathophysiological benefits

Treatment of Heart Failure

Objectives:

- Symptomatic Improvement
- Preventing transition of asymptomatic cardiac dysfubction to symptomatic HF
- Preventing worsening of symptoms and/or functional limitations of HF
- Reducing ER visits and hosppitalizations
- Reducing mortality

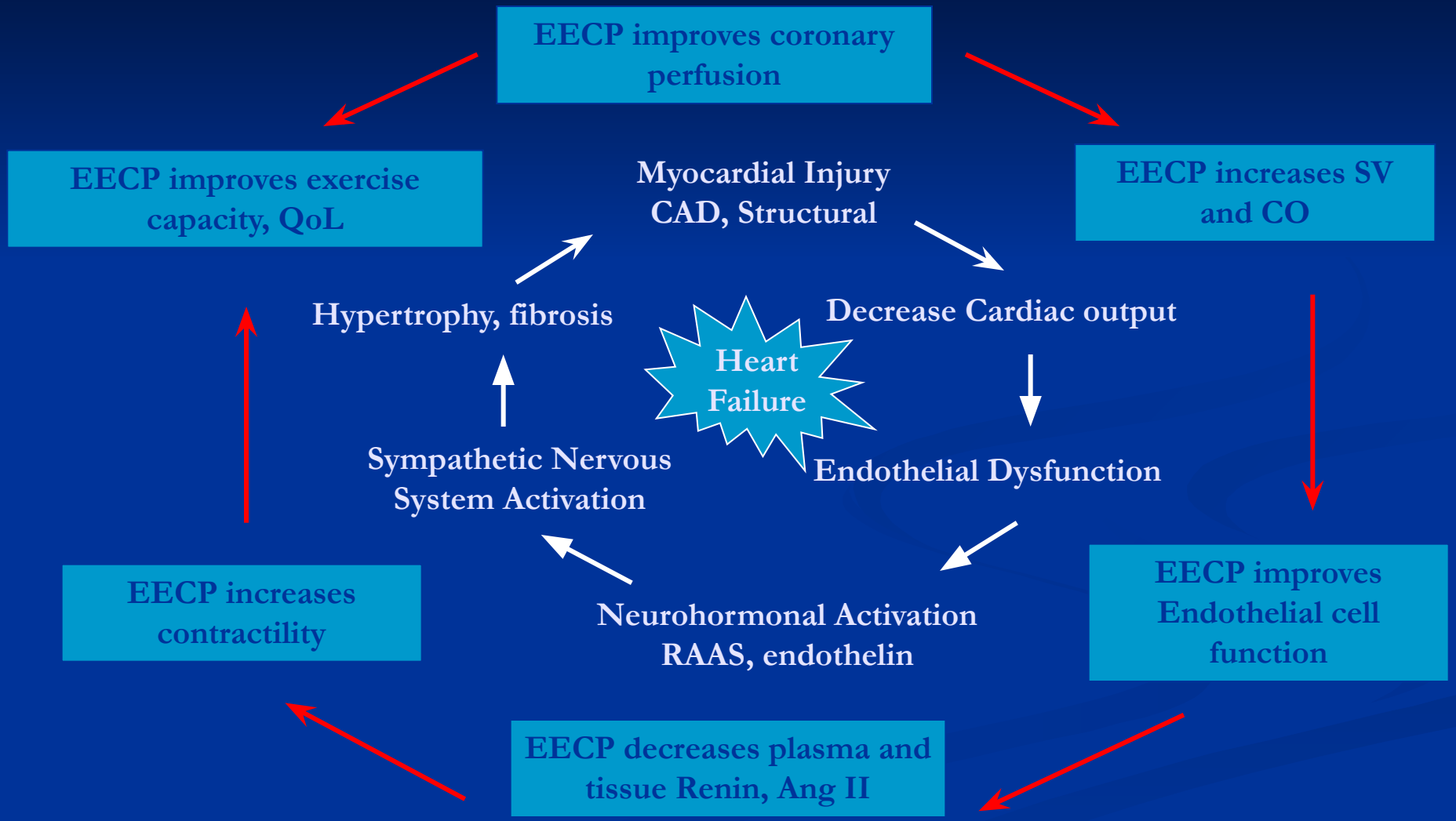
Pharmacilogical therapy:

- Prevention – hypertension, diabetes and underlying causes

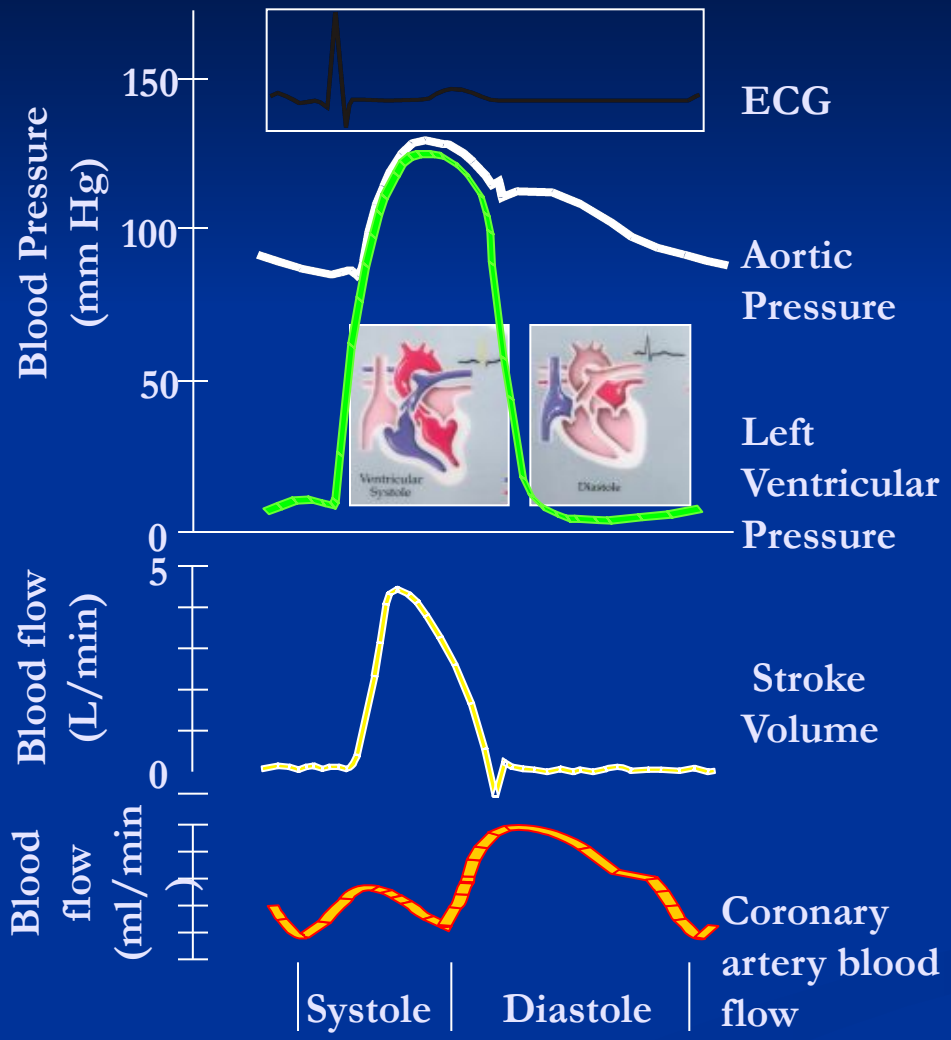
Device:

- Enhanced External Counterpulsation (EECP)
- Pacemaker
- Implantable cardioverter defibrilator in pts with ventriculat tachycardia or ventricular fibrillation
- Ventricular assist device / Artifical heart
- Utrafiltration
- Cardiac Resynchronization therapy; ptrs with abnormal conduction

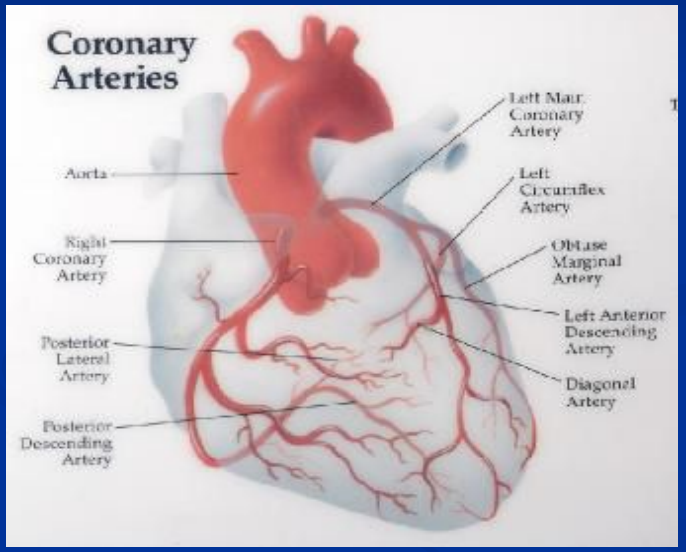
EECP Improves Each Major Pathophysiologic Feature of Heart Failure



Hemodynamics of the Heart



$$\text{Flow} = \frac{\text{Pressure}}{\text{Resistance}}$$



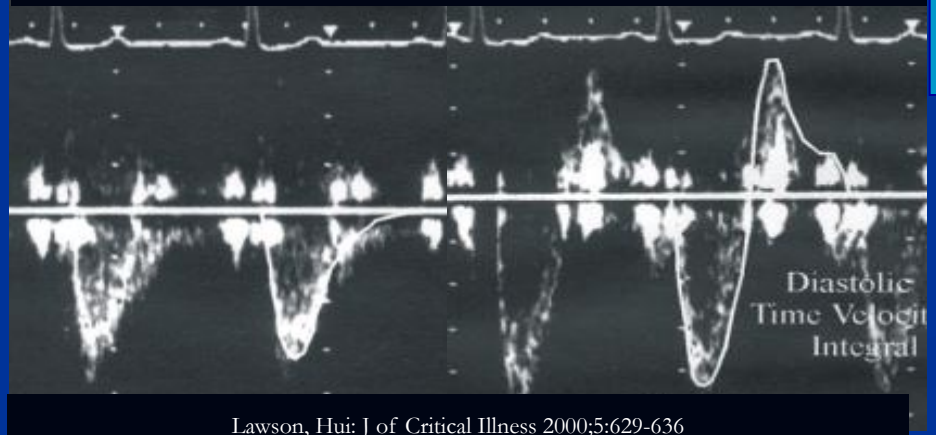
Energy balance
Supply: Diastolic Pressure Time
Demand: Systolic Pressure Time

The positive influence to blood circulation by EECP

Reduce systolic resistance

Increase cardiac output

Duplex echocardiography Descending Aorta



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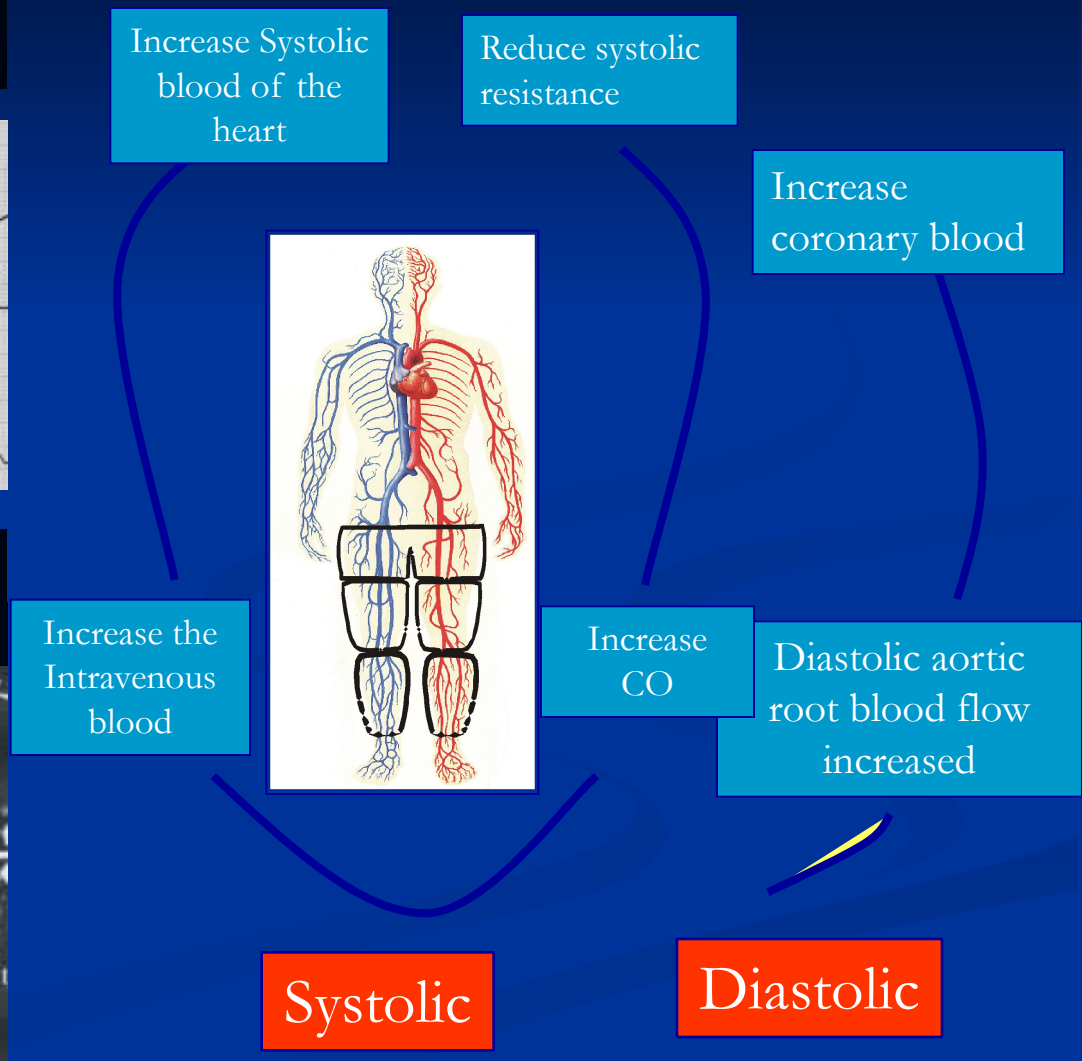

- **EECP TREATMENT CAN ALSO BE USED FOR PREVENTIVE PURPOSES**

- Patients who had successful balloon-stent application and/or bypass operation because of significant narrowings in their coronary arteries and are asymptomatic but are candidate for early re-stenosis and occlusions due to having
- small coronary arteries (as mostly seen in diabetic and woman), should receive EECP therapy, in order to prolong the asymptomatic period provided by these interventions.

- Patients with coronary artery disease who have no symptoms but have mild or moderate narrowings in their coronary arteries, and also patients who have no documented coronary artery disease but have strong family history and many risk factors and therefore candidate for coronary artery disease, can get benefit from EECP's preventive effects.

- In summary, EECP is a useful treatment for every stage of coronary artery disease beginning from the presence of risk factors without documented disease to the advanced stage of the disease with severe symptoms refractory to other treatment modalities.

EECP

Safest, Non-surgical, FDA approved.

P-ECP/TI (All-in-One Touch screen type)

P-ECP/TI (All-in-One Laptop type)

Characteristics:

- Passed by CE certificate and Bio-compatibility test.
- It is based on Modern Medicine, Bio-Clinic Medicine, and Scientific Precise Data.
- It adopts the latest computer, modern control technique, and software control system.
- It adopts Germany Air Compressor and electromagnetic value only for EECP with proprietary intellectual property rights.
- It adopts scientific designed system to reduce noise and heat.
- It adopts integration of equipment (All in One) design.
- Its shape is based on the ergonomic design.

Transport and Storage Environment

- Temperature 14 to 104 (-10°C to 40°C)
- Relative Humidity ≤80%
- Atmospheric Pressure 0.1013MPa Atmospheric Free of corrosive gas

Dimension and Weight

- L*W*H 2150mm×840mm×600mm
- Net Weight 178 kg

Power Requirement

- AC Single Phrase:220V±22V 50Hz/60Hz
- Maximum Power: 2.6KVA

Model: P-ECP/T (split type)

Characteristics:

- Design of air compressor and treatment bed separately, the air compressor comes with soundproof, place the air compressor and treatment bed in different rooms to make the patient completely free from noise impact during treatment;

Transport and Storage Environment

- Temperature 14 to 104 (-10**°C**to 40**°C)**
- Relative Humidity ≤80%
- Atmospheric Pressure 0.1013MPa
- Atmospheric Free of corrosive gas

Dimension and Weight

- Treatment Bed L×W×H 1980mm×800mm×700mm
- Net Weight 117kg
- Soundproof Box (Including Air compressor) L×W×H 720mm×600mm×730mm
- Net Weight 75kg
- Bedside Desk L×W×H 500mm×400mm×680mm
- Net Weight 18kg

Power Requirement

- AC Single Phrase:220V±22V 50Hz/60Hz
- Maximum Power: 2.6KVA

Model: P-ECP/TM (Movable type)

Characteristics:

- It is movable type with small space which make the treatment more easily.
- The air compressor adopted in the machine is Becker sliding vane rotary vacuum pump which is made in Germany and is full of gas, low noise and light.
- All the indexes of boxes of product have passed the CE Certificated and the test of bio-compatibility.
- It adopts the electromagnetic value with independent i… characteristic of inflation and deflation are more excellent.
- It adopts special noise reduction and heat d…

Transport and Storage Environment

- Temperature 14 to 104 (-10**°C** to 40
- Relative Humidity ≤80%
- Atmospheric Pressure 0.1013MPa
  Atmospheric Free of corrosive gas

Dimension and Weight

- L×W×H 780mm×515mm×960mm
- Net Weight 121kg

Power Requirement

- AC Single Phrase:220V±22V
  50Hz/60Hz
- Maximum Power: 2.6KVA

Split Model: Pediatric Type for children

Characteristics:

- CE approval and passed biocompatibility tests;
- Based on modern medicine, bio-clinical medicine, high-precision scientific data;
- Professional design in accordance with the characteristics of children such as the size, appearance, comfort;
- Bladder design specifically for Children to prevent from all kinds of circuit malfunction;
- Scientific design of cooling, noise reduction system;
- Design of air compressor and treatment bed separately, the air compressor comes with soundproof, place the air compressor and treatment bed in different rooms to make the patient completely free from noise impact during treatment;

Treatment Bed
L×W×H: 1600mm×710mm×610mm
Soundproof Box (including air compressor)
L×W×H: 720mm×600mm×730mm
Net weight: 75kg

Bedside Desk
L×W×H: 500mm×400mm×680mm
Net weight: 18kg

Media reports about Enhanced External Counterpulsation

Bypassing the surgeon(不需要外科的“心脏搭桥”！)

MARCH 8, 2004

TIME

How an unlikely blood-pressure device relieves the chest pain of heart disease

By CHRISTINE GORMAN

IF YOU HAVE HEART DISEASE, you probably know all about statins and beta blockers, angioplasty and bypass surgery, and the benefits of regular exercise and a diet that's low in saturated fat. But have you heard about strapping oversize blood-pressure cuffs to your legs and buttocks and pulsing them in synch with your heartbeat? The idea behind this wacky-sounding treatment, known as enhanced external counterpulsation (EECP), is to decrease the demand on an ailing heart by helping it push blood through the body. But perhaps the oddest thing about EECP is that it works amazingly well to relieve chest pain, or angina, in many patients.

First approved by the Food and Drug Administration in 1995, EECP is most often used in folks with stable angina—the kind that often lasts five minutes or less, is brought on by physical exertion and is usually relieved by drugs like nitroglycerin. (Unstable angina tends to be severe, occurs suddenly or unexpectedly, often while a person is at rest, and requires immediate attention as it may be a sign of a heart attack.) Unfortunately, stable angina isn't always easily controlled with medications, and some people just aren't good candidates for angioplasty or surgery. That's where EECP comes in.

Patients lie down during the procedure, which lasts an hour and is performed once a day, five times a week, for seven weeks. (The cost is about $6,000, compared with as much as $60,000 for bypass surgery.) The pneumatic cuffs are timed to inflate in progression—starting with the section around the calves—when the heart reaches its resting phase between beats. As each cuff inflates, it squeezes blood out of the legs and back to the heart. "It feels like a deep muscle massage," says Dr. Debra Braverman, who administers EECP to patients in Philadelphia. The most common side effect is chafing of the skin—usually prevented by wearing elastic clothing. Folks who have very high blood pressure, valve disease, phlebitis (inflammation of a vein) or are pregnant should not undergo EECP.

Intriguingly, recent studies suggest that the heart responds to this extra flow of blood by producing tiny blood vessels to better nourish the heart. That may be why the benefits of EECP often last several years. EECP may also be useful in other hard-to-treat conditions, like congestive heart failure. "It's probably underused," says Dr. William Lawson, director of interventional cardiology at Stony Brook University Hospital in New York. That may change as the benefits of squeeze therapy become better known.■

Cardiovascular News

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Currents & Countercurrents

E. R. Squibb & Sons, Inc., has announced that it received FDA approval to market a once-a-day combination beta blocker + diuretic for the management of hypertension. The combination tablet (called Corzide®) consists of nadolol (Corgard, Squibb) plus

A survey of patients with confirmed acute intermittent porphyria (AIP) has revealed a significant association ($p < 0.05$; possibly < 0.001) between this form of porphyria and chronic renal failure arising in

Some people are perhaps addicted to stress. They seek stressful situations because these give them "highs," literally, from the release of catecholamines. Suggestions that this may be the root of some individuals'

Having shown that a steward of social contract was the original perpetrator of the Piltdown Man fraud, and that, almost certainly, he was joined in this anthropological-paleontological scam by a man of the cloth, the historians of science have

While the skeletal myopathy or florid rhabdomyolysis of severe alcoholic intoxication may result in significant elevations of serum creatine kinase, and MB isoenzyme in particular, potentially clouding the specificity of these enzymes as indicators of myocardial necrosis, there is little

Dr. Taro Takemi, a recent president of the Japan Medical Association, has proposed that the atomic bombs dropped over Hiroshima and Nagasaki in 1945 may be said to have saved the Japanese from even more devastating carnage. While the two bombs killed, at once or later,

A study aimed at analyzing the apparent greater longevity of women confirmed that phenomenon, but also revealed that cigarette smoking is the sole key to the difference. The study was done by Dr. Dean Gerstein

Sequenced Counterpulsation Describ

CLEVELAND—Workers at the Cleveland Clinic are considering the feasibility of introducing a Chinese method of sequential external counterpulsation (SECP) in the treatment of acute MI and angina.

The procedure appears to be more effective than other noninvasive blood-moving procedures of its type. Used successfully by more than 120 clinics in China, the new procedure may be available here or "at selected settings in the U.S. by next year," Dr. Zhen Zheng, the developer of the pro told *Cardiovascular News*. This SECP—which has the unique fea cyclically applying pressure to t tocks via balloon cuffs—was the of a poster presentation at the 29th meeting of the American Society tificial Internal Organs held in T earlier this year.

Balloons sped in sequenced external counterpulsation technique are shown attached to subject's limbs and buttocks.

Marker May Foreto Ischemic Damage

ANN ARBOR, MICHIGAN—Ab leucocyte migration inhibition app be a relatively sensitive but non-e marker of ischemic myocardial da a recent study indicates.

Dr. Sunil K. Das and others University of Michigan Medical S Ann Arbor, evaluated leucocyte tion (inhibition as an assay for prog myocardial damage in patients ischemic heart disease. Abnormal

Large Series Shows Snaked Bypass Grafting Indicated Even in Some Asymptomatic Patients

SAVRE, PENNSYLVANIA—Based on an analysis of 973 consecutive patients who underwent coronary bypass by the snake graft technique, researchers here conclude that: "Surgery should be done on almost any ambulatory male patient under the age of about 80 who is free of major organ disease if he is within 30 pounds of normal weight and has an arteriographic demonstration of coronary lesions which expose him to risk of myocardial infarction or death, whether he is symptomatic or not."

In their report, Drs. William H. Sewell and Jagdish Kalkunte, and their colleagues Karlene B. Sewell and Steven Greenfield of the Guthrie Clinic, propose that surgery be offered to patients when there is a reasonable assumption that the operative mortality risk is under 0.5% and there is at least one 80% constriction involving one third or more of the left ventricular myocardium. They suggest that this applies whether the patient is symptomatic or not. However, for those facing

Evidence Suggests Presumed Renal Damage From Captopril Therapy Dubious and Waning

CLEVELAND—The glomerular basement membrane deposits in captopril-associated membranous glomerulonephritis apparently are not readily reversible and may be associated with persistent proteinuria, a recent study suggests.

However, Dr. Stephen C. Textor emphasized in an interview with *Cardiovascular News* that "the late progressive renal failure seen in these patients is very likely to be related to pre-existing progressive arteriolonephrosclerosis due to vascular disease itself."

During the course of captopril treatment of 53 hypertensive patients, Dr. Textor and others at the Cleveland Clinic Foundation reported in the *American Journal of Medicine* (74:705, 1983) two cases of nephrotic syndrome and membranous glomerulonephritis were encountered.

In both patients, "based on pathology," Dr. Textor said, "the membranous changes, although persistent, were quite unrelated to their renal failure. This

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Special Section, Advances in Y See Page A

BACK OF THE BOOK

MEDICINE

Bypassing the Surgeon

A new technique could simplify heart treatment

Two years ago, Ann Clement started talking to funeral directors about her husband, Pierre. His kidneys had failed, and his diseased coronary arteries were rapidly starving his heart. At 61, the Long Island gift-shop owner was too weak to walk, too frail to survive surgery. Only morphine made his chest pain bearable. "His condition was zero," Mrs. Clement recalls. "The doctors told us he was going to deteriorate and die."

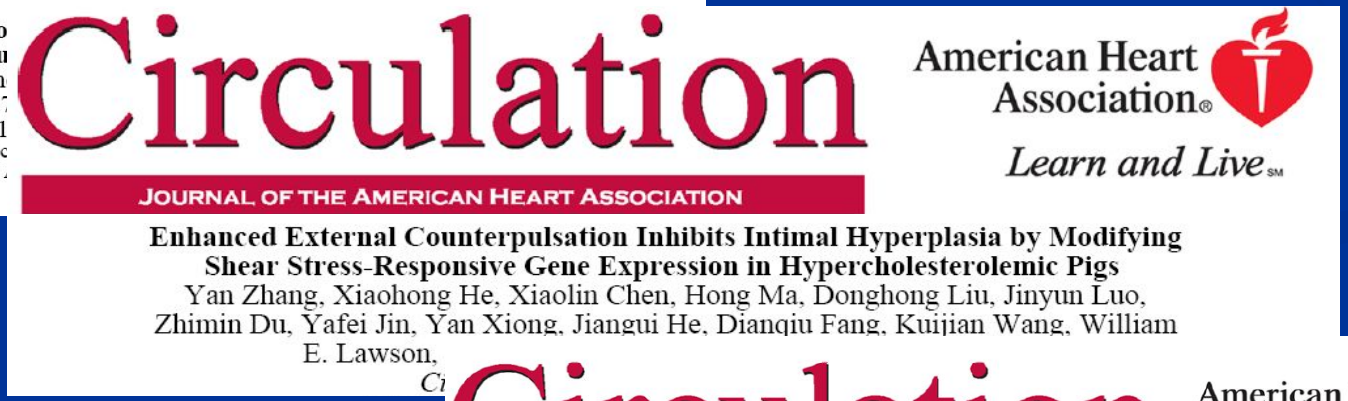
Today, Pierre Clement is off morphine, out of his wheelchair and walking two miles every morning. What changed his life was not a heroic operation or a costly new drug but a pair of pressurized pants. Clement is one of 18 U.S. heart patients pioneering a treatment called enhanced external counterpulsation. Rather than having his arteries catheterized or surgically bypassed, he spent 36 hourlong sessions strapped into a garment that works like a giant, pulsating blood-pressure cuff, painlessly forcing blood from the legs and hips into the chest. No one knows precisely how the treatment works or how long the effects last. But researchers at the Health Sciences Center in Stony Brook, N.Y., have recently shown that it can succeed where more costly and invasive treatments fail. If larger trials confirm that finding, cardiology may never be the same.

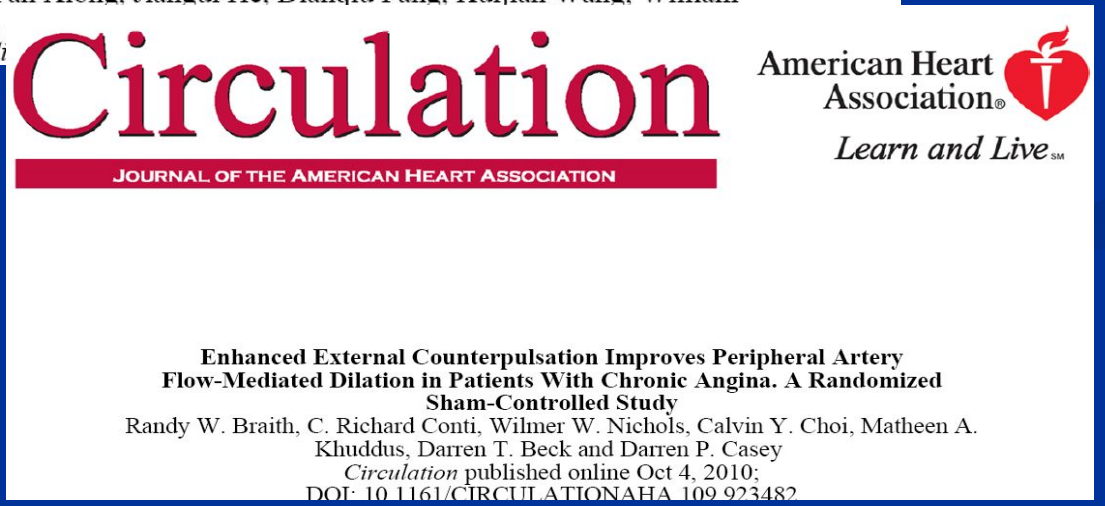
Dr. Harry Soroff, a heart surgeon at Stony Brook, conceived the counterpulsation technique 30 years ago at Harvard. During the 1960s and '70s, he and a collaborator designed various pulsating leg cuffs in attempts to force blood into the heart between beats. Unfortunately, their early devices lacked the power and precise timing the task demanded. Overshadowed by such flashy innovations as bypass surgery and balloon angioplasty (which uses a balloon-tipped catheter to reopen blocked arteries), counterpulsation fell into obscurity in the United States. In China, however, proved by Thallium tive dye to the heart, cent) regai ing treatm returned t ical mecha mystery, t forcing blo ing or enla sels that p the disease The res patients' l ing larger

HANK MORGAN

Suiting up: *Pressure may succeed where surgery fails*

Clinical research





Technical Cooperation And Exchanges

EECP experts Prof. William Lawson

Prof Zheng zhensheng(middle, The father of EECP) and our CEOs

Association of cardiovascular club President Prof Fu dayi and our CEO

Our CEO in the First Academic Exchange Conference of EECP

JHui Ph.D John Hui and our CEO

Prof Cai Dawei(middle, the author of External Counterpulsation) and CEOs

EECP users


CHONGQING PSK-HEALTH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PSK EECP WORLDWIDE

In the foreign market, we exported to **more than 20 countries.** **Established 3 branch offices: India, Bangladesh, Thailand.**

EECP AROUND THE WORLD

1994	FDA(Food and Drug Administration)Certification
1999	American Medicare
2002	ACC/AHA Guideline ACC(American College of Cardiology) AHA(American Heart Association)
2006	ESC Guideline ESC (European Society of Cardiology)
2006	CMA Guideline CMA (Chinese Medical Association)

American College of Cardiology (ACC) / American Heart Association (AHA) (2002), European Society of Cardiology (ESC) (2006) and Chinese Cardiovascular Society(2006) all put ECP therapy into the guidelines for treatment of angina pectoris and coronary heart disease.

EECP Association China (MCA)

2009-7 Chongqing

The 2nd International EECP Symposium

Launch of the International EECP

The International EECP Society (IEECPS) was created in October 2013 as an association of physicians and clinicians involved in the study, research, application and provision of Enhanced External Counterpulsation (EECP) Therapy. Enhanced External Counterpulsation (EECP)Therapy, is an FDA-cleared, non-invasive, treatment for the symptoms of cardiovascular diseases stable ischemic heart disease, angina and congestive heart failure and other. Clinical studies in over 160 published medical and scientific journal articles on the safety and efficacy of EECP therapy have demonstrated that EECP therapy eliminates or significantly reduces symptoms while also improving the quality of life for these patients. Follow up studies have shown these initial benefits to be maintained for 3-5 years. EECP therapy is covered by Medicare and most third-party payers in the U.S. and many countries globally.

The mission of the IEECPS is to promote excellence in the noninvasive treatment of cardiovascular diseases through physician education, research, increased patient awareness, representation, and the advancement of quality patient care with EECP therapy.

PSK Exclusive Sponsors

The 3rd International EECP Symposium

I have been coming to the GWICC for many years and I continue to be impressed by the scientific and educational materials presented by your Chinese colleagues. I look forward to once again attending and participating in the GWICC in October 2013.

I am pleased to see the inclusion of the EECP symposium and I hope that this will make the therapy readily available to Brazil patients.

Richard Conti MD, MACC

推广体外反搏技术，发展中国心血管康复事业。

祝贺第三届体外反搏国际学术交流会召开

繁星闪耀 集腋成裘

郭林琴 敬

Directory

目录

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The Third International EECP Symposium Invitation Letter
第三届国际体外反搏学术交流会邀请信

Strive to improve Quality of Life

International EECP Society
111 John Street Suite 1702 , New York, NY 10038

第三届国际体外反搏学术交流会邀请信

尊敬的专家与同行：

筹备委员会谨定于2013年10月12日至13日在中国北京举行第三届国际体外反搏学术交流会（International EECP Society，简称IESS）暨2013国际体外反搏学术交流会（GW-ICC）。会议将与第二届亚太体外反搏学术会暨第三届国际体外反搏学术交流会（APHC）合并举行。

2000年第一届国际体外反搏学术交流会举办以来，中国体外反搏的临床应用和基础研究方兴未艾，发表的研究文献大大加深了对体外反搏作用机制的认识，拓宽了体外反搏临床应用的领域，这预示着体外反搏的在心血管疾病治疗领域，治疗和康复中起到重要的作用。成为临床医生和基础研究者聚于一堂，体外反搏最大心血管康复的平台，除来了重要的发展机遇，本次国际体外反搏学术交流会，我们将围绕着自身的经验，今后专业领域的发展和体外反搏研究点，分享临床上常常看到的问题，以及将采用何种技术来加以克服，分享成果和开拓未来的新思路，共同地期待着的梦与。

本次会议将作为第二十四届亚太循环协会（亚太心脏大会的分会）（10月10日至12日）的重要组成部分，届时亚太心脏大会（亚太心脏大会主页登录以查（http://www.apcsonline.org），注意这里将邀请国家级secretariat@gw-icc.org。

我们真心期待您莅临会议的光临，与海内外学者互相交流，共谋发展！

秘书处：邹峰（Liang_zf@163.com）万真秋（Cmapkzf@163.com，13005569092）

国际体外反搏学会
第三届国际体外反搏学术交流会组委会 主席

Co-Chairmen: Gui FuWu, MD, PhD, FACC (China)　　John CK Hui, PhD (USA)

The 3rd International EECP Symposium Oct 12,2013 in Beijing, China

Dear Friends and Colleagues,

On behalf of the International EECP Society (IEECPS) Organizing Committee we cordially invite you to attend the 3 rd International Enhanced External Counterpulsation (EECP) Symposium to be held on October 12,2013 in Beijing, People's Republic of China as part of the 24 th Great Wall International Congress of Cardiology & Asia Pacific Heart Congress 2013 (GW-ICC & APHC). The Congress will be held in the China National Convention Center,Beijing, China from Oct 10-13, 2013 Enclosed is the clinical program for the symposium. Please register in the GW-ICC & APHC homepage:http://en.gw-icc.org.

During the past few years, there have been many scientific and clinical papers related to EECP therapy presented and published globally, extending our knowledge particularly on the mechanisms of action and exploration of clinical applications. EECP has reached a cross-road where we have seen exciting research opportunities and The 3 rd International EECP Symposium will include diverse presentations by experts from many different countries and many disciplines, It will be an opportunity for us to renew our friendship, exchange ideas, promote cooperative work and generate new concepts. Please join us.

This year the GWICC & APHC will have 9 sub-specialties with a series of 16 types of sessions on the latest developments in 50 professional categories and forums with more than 20 international academic organizations. Please register early. You can download a letter for your visa application from the GWICC & APHC homepage and log on the GWICC web site to make your hotel reservations. Further help can be obtained by emailing secretariat@gw-icc.org.

We look forward to seeing you in Beijing.

Organising Committee of the 3rd International EECP Symposium and EECP@GWI-ICC2013
Co-Chairmen: Gui FuWu, MD, PhD, FACC (China)　　John CK Hui, PhD (USA)

2

Highlights of EECP and Cardiovascular Rehabilitation Forum
体外反搏与心血管康复论坛

体外反搏与心血管康复论坛亮点介绍

伍贵富
深圳市第四人民医院广东医学院附属桐庐医院

中国体外反搏已经走过将近40年的发展历程，经历了起步、推广、提高、巩固四阶段的发展各阶段的特点明显，体外反搏在各心血管疾病临床的重要地位得到了肯定，在40年来在其技术研发、基础研究和临床应用等方面取得了显著进展，国际上仅存美无发表的体外反搏研究文献就将近3000篇，部分研究成果更是在心血管相关学术期刊如Circulation、JACC等发表。

世界医学人文学科"医学修合，为世为公"理念指导下，以"造福为中心"医疗服务理念指引标记加速推动体外反搏在全国乃至全球一种疾病领域治疗作用，又能普遍惠及心血管疾病一级预防，在社区医疗、在社区医疗领域也将有体现。

我们在这次会议上将邀请多位来自临床研究证实体外反搏有效治疗和康复的著名专家，包括国内和国际的专家，介绍体外反搏在心血管疾病领域的最新研究进展，分享临床应用经验，探讨体外反搏的适应症和禁忌症，以及体外反搏的作用机制，并邀请国内外知名厂家介绍体外反搏设备的最新技术和产品，为广大医生提供一个学习交流的平台，促进我们的临床医生和研究人员对体外反搏的进一步了解和认识，从而更好地为患者服务。

我们真诚地邀请您参加这次会议，并期待着与您的见面！

Highlights of EECP and Cardiovascular Rehabilitation Forum at GW-ICC2013

Guifu Wu , MD,PhD,FACC
The Affiliated Futian Hospital of Guangdong Medical College

The development of Enhanced External Counterpulsation (EECP) in China has gone through inception, eminence, recession, resurgence and gradual restoration over a period of 40 years. EECP has been proven to be an important non-invasive therapeutic modality of assisted circulation in cardiovascular medicine. Last decade has seen monumental progresses of EECP in terms of its R&D, basic science and clinical application. So far, more than 300 research papers (in English) on EECP have been published in the academia, including publications on top journals such as Circulation, JACC and etc.

As Medical Humanities and the concept of integrated medicine and comprehensive care being wildly promoted, the ultimate goal of patient-centered services becomes clearer and firmer than ever before, EECP is one of such technologies that not only precisely reflects this vision, but is also of immense value in both the primary and secondary prevention of chronic cardiovascular diseases. It has been well documented by multiple basic and clinical studies that EECP is associated with the protection of vascular endothelium, as well as the restoration of structural and functional integrity after injury. It provides the most appropriate non-pharmacological interventions for cardiovascular disease prevention and rehabilitation.

The most academically active and internationally renowned experts in the field of EECP research have been invited to the forum. New mechanisms of action, new areas of applications will be discussed, the experiences of its practical use around the globe will be exchanged, future trends and challenges of EECP will also be addressed. Speakers from China, USA, UK, Turkey, India, Russia, Hong Kong and etc, will be gathered at this conference. "International EECP Society" will be founded during the forum with the mission to seek common development among all its members in more than 30 countries and regions around the globe. Following the example of the first (Guangzhou, 2006) and second (Beijing, 2009) forum, the third International EECP Academic Exchange Conference will continue to be organized jointly by Chinese and American experts. Therefore, it will certainly be one of the splendid events on the Great Wall International Congress of Cardiology 2013.

1. C. Richard Conti

C. Richard Conti, MD, MACC,
Dr. H.C., FCP-SA HON, FESC

Endowed chair, "Palm Beach Heart Association Eminent Scholar"
Emeritus Professor of Medicine, University of Florida
Distinguished 1952 graduate Central Catholic High School, Allentown, PA,
1956 PRE graduate, Lehigh University
1960 AOA graduate, Johns Hopkins
1965-1974 cardiology faculty-Medical Director, Cardiac Catheterization Laboratory, Associate Professor of Medicine.
Professor of Medicine, former Director, Cardiovascular Division, UF.
Interests: Ischemic heart disease, chronic/acute ischemia, coronary artery spasm, silent myocardial ischemia.
President, ACC 1989-90
Member, American Clinical and Climatological Association, Association of University Cardiologists, Association of Professors of Cardiology
Chair, ACCP
Johns Hopkins Society of Scholars
Gifted Teacher, ACC
Presidential Citation, FCAOC
International Educator of the Year, Senior Faculty Award
Cardiology Distinguished Mentor and Scientist Award, Italian Society.
Editorial Boards: American Journal of Cardiology, American Heart Journal, Circulation, JACC, European Heart Journal, others.
Author/co-author, 700+ manuscripts, chapters, abstracts, edited six books, wrote two. Past Editor-in-Chief, Clinical Cardiology, ACC Audio Journal ACCEL, Associate Editor, CardioSource.

Diabetes, Coronary Artery Disease, and EECP
C. Richard Conti M.D MACC

• Twenty-four million Americans have diabetes (estimated), 16 million diagnosed, 8 million undiagnosed
• Heart disease death rates are two to four times higher in diabetes patients than in those without diabetes

Study 1: Enhanced External Counterpulsation for the relief of angina in patients with diabetes: Safety, efficacy and one year clinical outcomes Six-hundred and fifty-three patients with diabetes at baseline who were experiencing on average eleven episodes of angina per week were enrolled in the international EECP Patient Registry (IEPR) and were evaluated before and after a course of EECP, and at one year after completion of treatment. Most had been revascularized, and most were considered unsuitable for either additional prior Vane-Linnemeier, et al. (Am Heart J 2003; 146:853-8.)

Results: Immediately after EECP, 89% of patients with diabetes demonstrated a reduction in angina. After one year, maintenance of angina reduction was reported in 72% of patients with diabetes. One year mortality was similar to coronary intervention registry populations.

Conclusion: This large, prospective, observational study suggests that EECP is safe and effective in treating angina in patients with diabetes and

• The noninvasive nature of EECP therapy makes it an attractive alternative for patients with diabetes, particularly for those who have had previous revascularization procedures.

Study 2: Enhanced external counterpulsation improves peripheral artery function and glucose tolerance in subjects with abnormal glucose tolerance. Martin et al. (J Appl Physiol 112:868-875, 2012).

The effects of EECP on outcomes of arterial function, glucose tolerance, and skeletal muscle morphology were evaluated in subjects with Abnormal Glucose Tolerance (AGT).

• Eighteen subjects with AGT were randomly assigned to receive either seven weeks of EECP (n =12) or seven weeks of standard care (control; n =6).

Results:

• EECP normalized brachial artery (37%) and popliteal artery (50%) flow-mediated dilation.
• Plasma glucose 120 min. after initiation of oral glucose tolerance testing decreased (-28.3 ± 7.3 mg/dl)
• Vastus lateralis skeletal muscle biopsies demonstrated improvements in capillary density following EECP

3

Introduction of Invited Speakers
演讲专家简介

2.John CK Hui

John Chee Kuen Hui, PhD
Chief Technology Officer, Senior Vice President
180 Linden Ave, Westbury, NY 11590 USA
email: jhui@vasomedical.com

John CK Hui has over 30 years of experience in the technology and medical fields and is a world leader in the design and development of enhanced external counterpulsation (EECP) systems. John has published more than 60 clinical and scientific papers. He also holds 6 US and 22 international patents. After graduating with a BA in physics from International Christian University Tokyo, Japan in 1969 John spent a year at the University of California, Berkeley before moving to the State University of New York, Stony Brook where he obtained his Masters degree in 1972 and his doctorate in 1975. During his graduate research period John also studied at the Cavendish Laboratories at Cambridge University in the United Kingdom.

*John CK Hui*博士，
首席技术官，高级副总裁

E-mail: jhui@vasomedical.com

自四月技术转发到随生物医学和物理学，相关研究的特点和发展趋势，已发表和多篇临床医学和科学文献，持有6项美国专利，22项国际专利。1969年获东京国际基督教大学物理学学士学位后，在美国加州大学伯克利分校度过一年，次年前往纽约州立大学，随后分别于1972年和1975年获得硕士和博士学位。研究生阶段期间在英国剑桥大学卡文迪许实验室进行交流学习。

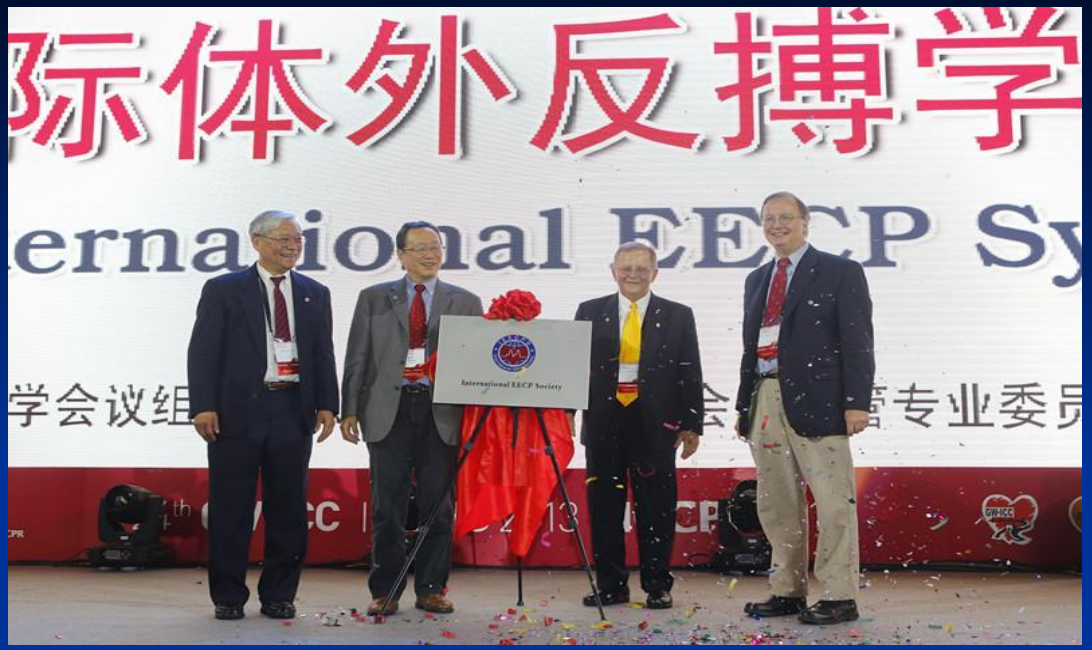
The 3rd International EECP Symposium
Title: EECP-the past, present and the future

John CK Hui, PhD
Cardiology, State University of New York at Stony Brook, NY, USA
VasomedicaI, Inc., Westbury, NY, USA

Abstract

External counterpulsation (ECP) was developed in the early 1960s as a circulatory assist device to support patients in acute myocardial infarction and cardiogenic shock. In the mid 1970s, Dr. ZS Zheng in China developed a pneumatic sequential counterpulsation system ushering the modern era of Enhanced ECP (EECP). During the past ten years, most of the research has been concentrated on EECP mechanisms of action including increases in shear stress that improves endothelial function, releases vasoactive factors controlling vascular dilation, promotes angiogenesis enhancing vascular growth and capillary development, activates anti-oxidative, anti-inflammatory cytokines protecting the vasculature, relaxes the vascular wall leading to a decrease in arterial stiffness, and stimulates the release of progenitor cells potentiating regeneration of impaired vasculature. Currently, EECP therapy is used in the treatment of refractory angina and heart failure, yet the underlying pathophysiology of EECP indicates that it is a noninvasive, preventive treatment of systemic vascular systems, particularly useful in microvascular impairment such as cardiac syndrome X, diabetic nephropathy, neuropathy and retinopathy. We may also postulate that EECP therapy would be specifically effective in cardiac rehabilitation and mild cognitive impairment. The future of EECP therapy will be vested in the prevention of cardiovascular, cerebrovascular, endovascular and peripheral vascular disease, integrating these four fields of medicine and hopefully will eventually be developed into a device for the regeneration of nervous and vascular systems.

The 3rd International EECP Symposium



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