

AIoT-Based EECF Solutions

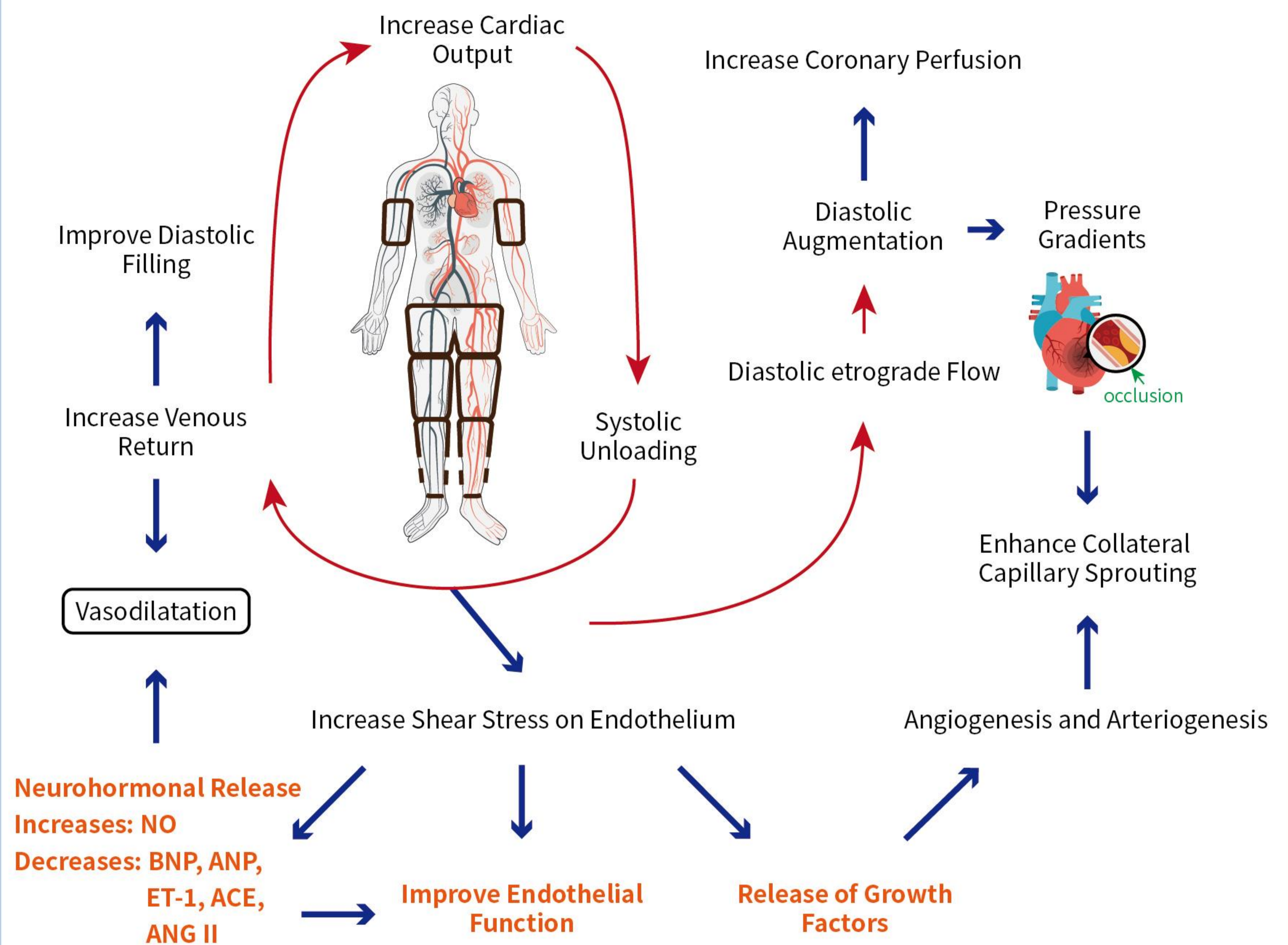


**WE CARE
YOUR HEALTH**

Enhanced External Counter Pulsation

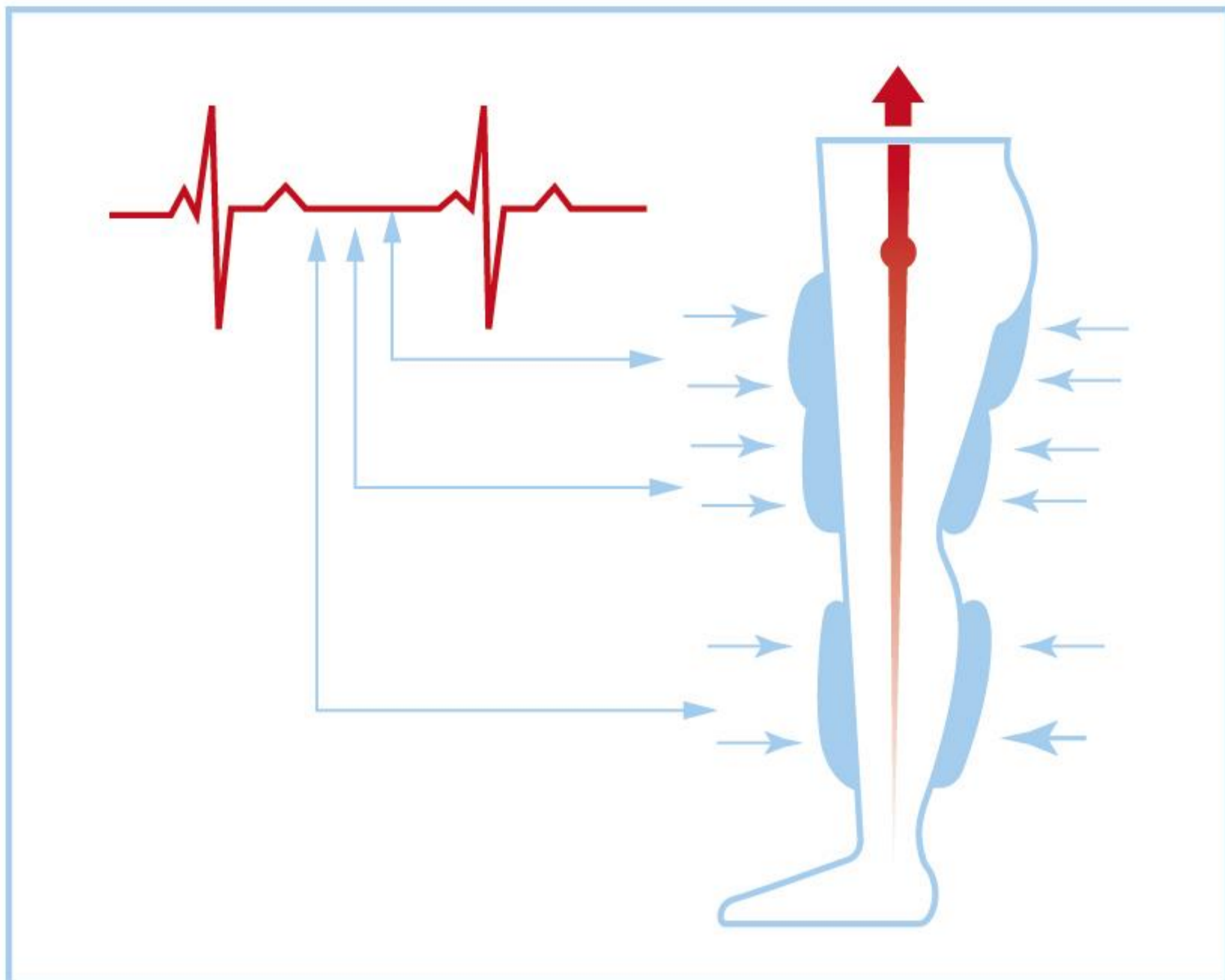
Enhanced External Counter Pulsation

Hemodynamic Effects of EEC

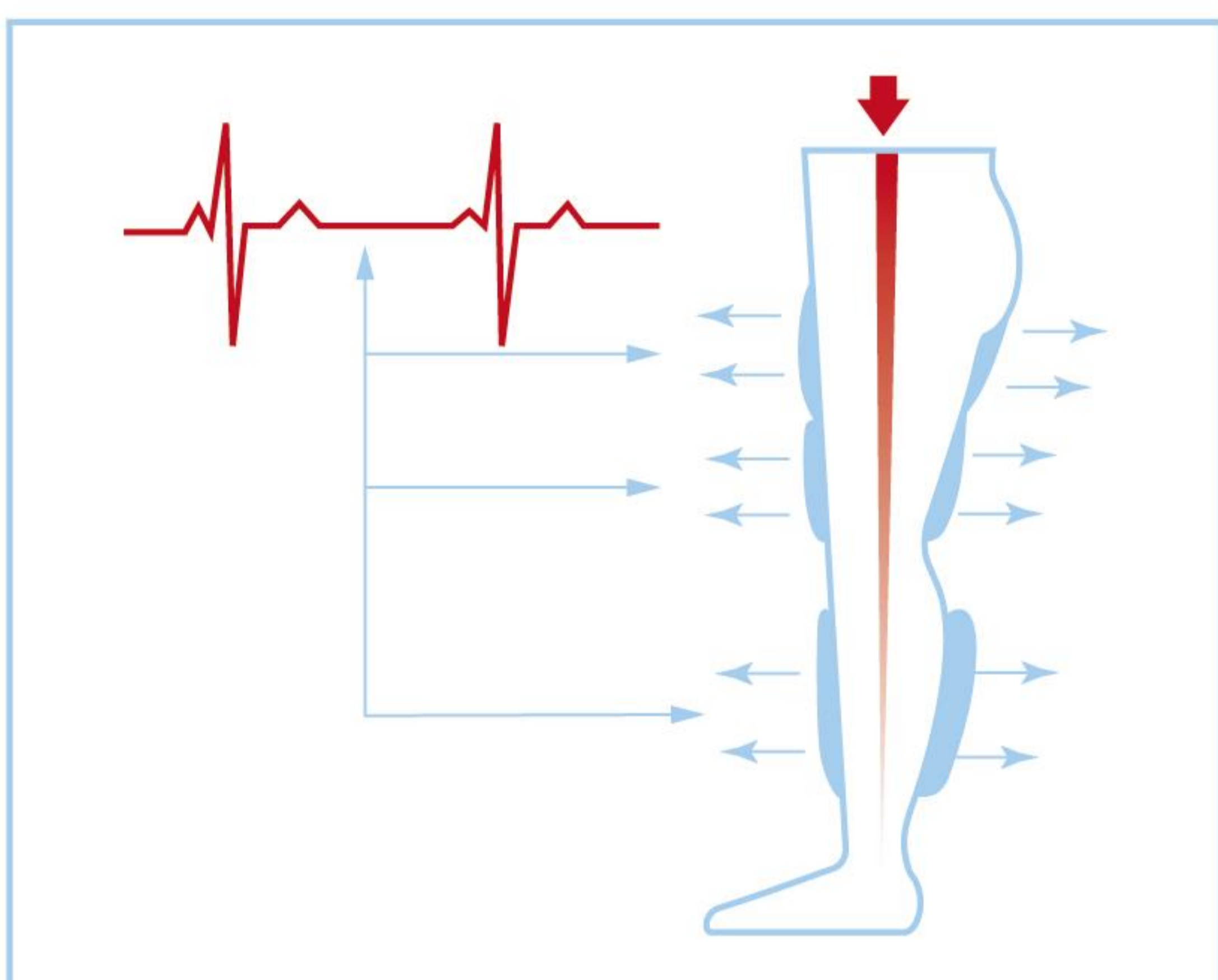


EECP external counterpulsation treatment uses the application to control the inflation and deflation of the pressure belt that wraps the patient's calf, thigh, buttocks and arms. The pressure belt is inflated sequentially in three stages from the distal end to the proximal end in the front early diastole, and simultaneously deflated at the end diastole before the heart begins to contract. Inflation and deflation will synchronize with the patient's electrocardiogram (ECG), increasing coronary perfusion pressure and venous return to the right ventricle (increasing preload and cardiac output); while the pressure belt rapidly and synchronously deflation reduces systemic vascular resistance and cardiac workload. The advantage of the treatment is that it can be operated in an outpatient clinic. The course of treatment requires 1 hour each time, 35 times over 7 weeks.

Enhanced External Counter Pulsation



- Generates a reverse pressure wave in the aorta
- Increase diastolic blood pressure
- Increase the perfusion pressure of the coronary arteries
- Increase the perfusion volume of the myocardium
- Increase venous return
- Increase front load
- Increase cardiac output



- Reduce systemic vascular resistance
- Reduce the workload of the heart
- Reduce myocardial oxygen consumption
- Reduce afterload

With the improvement of cardiovascular function, major organs in the body including the brain, nervous system, kidneys, urogenital system, also improved through better circulation. EECP external counterpulsation treatment is a non-invasive and safe method, approved by the US FDA, around 80% of patients using external counterpulsation treatment around the world, more than 300 medical journals have confirmed that EECP is effective for patients, with great benefits from therapeutic effects.

Advantage



HJ-SECP-01

HJ-SECP-01 External counterpulsation is an All-in-One system, consists of air storage tank, solenoid valve, signal acquisition module, and computer control operation, are all installed in the counterpulsation bed. The system has the feature of low noise, safety, reliability, and suitable for installation and use in narrow space environment.

Features

- ✓ 1. Unique single pneumatic delivery design, monitor and adjust the pressure to provide stable and comfortable treatment pressure
- ✓ 2. Clinical requirement base with ECG and blood oxygen concentration waveform logic, under proprietary counterpulsation index calculation method, aggregate treatment results and provide a consolidate objective treatment data
- ✓ 3. The whole treatment data is recorded to provide future monitor and analysis
- ✓ 4. Unique upper limb compression design, more suitable for patients with cerebral ischemia treatment and rehabilitation
- ✓ 5. User friendly interface to avoid operational errors and integrate treatment data on single screen for comprehensive interpretation by operators and physicians



Specification of External Counterpulsation System

ECG Electrocardiogram

- Using ECG Module
- Board Input Impedance:> 2MΩ

SpO2 Blood Oxygen concentration

- Oxygen saturation range: 0-100%
- Accuracy: ± 1

Trigger method

- External trigger: patient's R wave
- ECG external trigger rate 1:11:2
- ECG trigger range: 35-125 ± 1 bpm

Max weight usage

- 180KG

Equipment size and weight

- Length:2150mm
- Width:900mm
- Height:1250mm
- Weight:250kg

Safety features

- Auto air extraction from pressure belt during power cut off
- System stops at high air-compressor temperature
- System stops when electrode sheet detach or fall off during the treatment
- Emergency press for immediate system stop
- System stop when heart rate exceed/below normal 350bpm - 125bpm range
- Monitor arrhythmia and adjust counterpulsation to operate with heart rate alignment

Treatment pressure range

- 10-330mmHg

Treatment duration

- 0~120 minutes per session
- Preset 60 minutes

Operation Voltage

- Single-phase AC:220V ± 22 V,50Hz ± 1 Hz
- Current:10-15A

Shipping/Storage requirement

- Storage temperature :-10°C~40°C
- Humidity:<80%
- Atmospheric pressure: 0.85atm~1.05atm
- Good ventilation
- Avoid corrosive gas or strong electromagnetic interference space

Operating Environment

- Room temperature :0°C ~ 40°C
- Humidity:<80%
- Atmospheric pressure: 0.85atm~1.05atm
- Good ventilation
- Avoid corrosive gas or strong electromagnetic interference space



Domestic brand comparison

		Own brand	W brand	C Brand
Model		HJ-SECP-01	W**-*1	V**-**2
Type		HJ-SE2201NN HJ-SE2201SN HJ-SE2201NA HJ-SE2202SA	N	N
Sales Scheme		Capital sales/Lease	Capital sales only	Capital sales/Lease
Price Range (TWD)		2,800,000~4,000,000	3,200,000	4,200,0000
System upgrade		Y	Y	N
Body compression	Lower	Y	Y	Y
	Upper	Y(Optional)	N	N
Wireless transmission		Y	N	N
App applicable		<ul style="list-style-type: none"> Support APP Regular APP and SW upgrade Data storage certified by different medical institutions 	N	N
External and options		<ul style="list-style-type: none"> Mattress color Product body color 	Mattress color	N
Accessories		<ul style="list-style-type: none"> Mattress cover (S/M/L) SpO2, ECG Quick tube connector ECG patch Pressure release pad Conductive plastic 	<ul style="list-style-type: none"> Mattress cover (S/M/L) SpO2, ECG Quick tube connector ECG patch 	<ul style="list-style-type: none"> Mattress cover (S/M/L) SpO2, ECG Quick tube connector
Consumables		Lease with consumable coverage(SpO2, ECG, tube connector, therapy paints)	N	N
Warranty		Y On-site service coverage	Y limited coverage with optional charge	Y limited coverage with optional charge
Extend warranty		4yrs.	1yrs.	N
Primium warranty		<ul style="list-style-type: none"> 5 yrs. 48 hrs. onsite response 72 hrs. recovery Temporary system Consumable replacement coverage SW upgrade coverage 	<ul style="list-style-type: none"> Long replacement lead-time for particular consumable or part No temporary system coverage 	<ul style="list-style-type: none"> Consumable and part require import from manufacture country No temporary system coverage

EECP Efficacy



Advance Health Condition

- Reduce stress
- Reduce anxiety and depression
- Improve mental health and enhance vitality



Stimulate circulation

- Enhance blood NO release
- Accelerate circulating metabolic waste
- Improve endothelial cells



Enhance Cardiopulmonary Function

- Increase mean cardiac output
- Enhance collateral vessel proliferation
- Increase blood flow shear stress



Diet and detoxes

- Increase lymph cycle flow
- Increase metabolic rate
- Increase blood flow throughout the body



Anti-Aging

- Improve skin color
- Reduce oxidative and inflame reaction
- Reduce cardiac workload



Enhance Stamina

- Muscles stress relief
- Increase physical endurance
- Reduce and recover from sport fatigue

Ideal EECP Candidate



For prevention

- Higher postoperative complication diabetic
- High risk or elderly patient from of invasive treatment
- Individual seek to improve physical endurance
- Athletes seeking to enhance fitness ability
- Sub-healthy seekin g to improve cardiovascular function
- High risk profile with family cardiac or cerebrovascular diseases



For treatment

- Left ventricular dysfunction
- Patient suffers from microvascular angina (cardiac syndrome x)
- Patient with ischemic or congenital heart disease
- Patient ineffective in medication treatment
- Patient not suitable for surgery or revascularization with catheter therapy
- Inoperable or high-risk from surgery complication patient

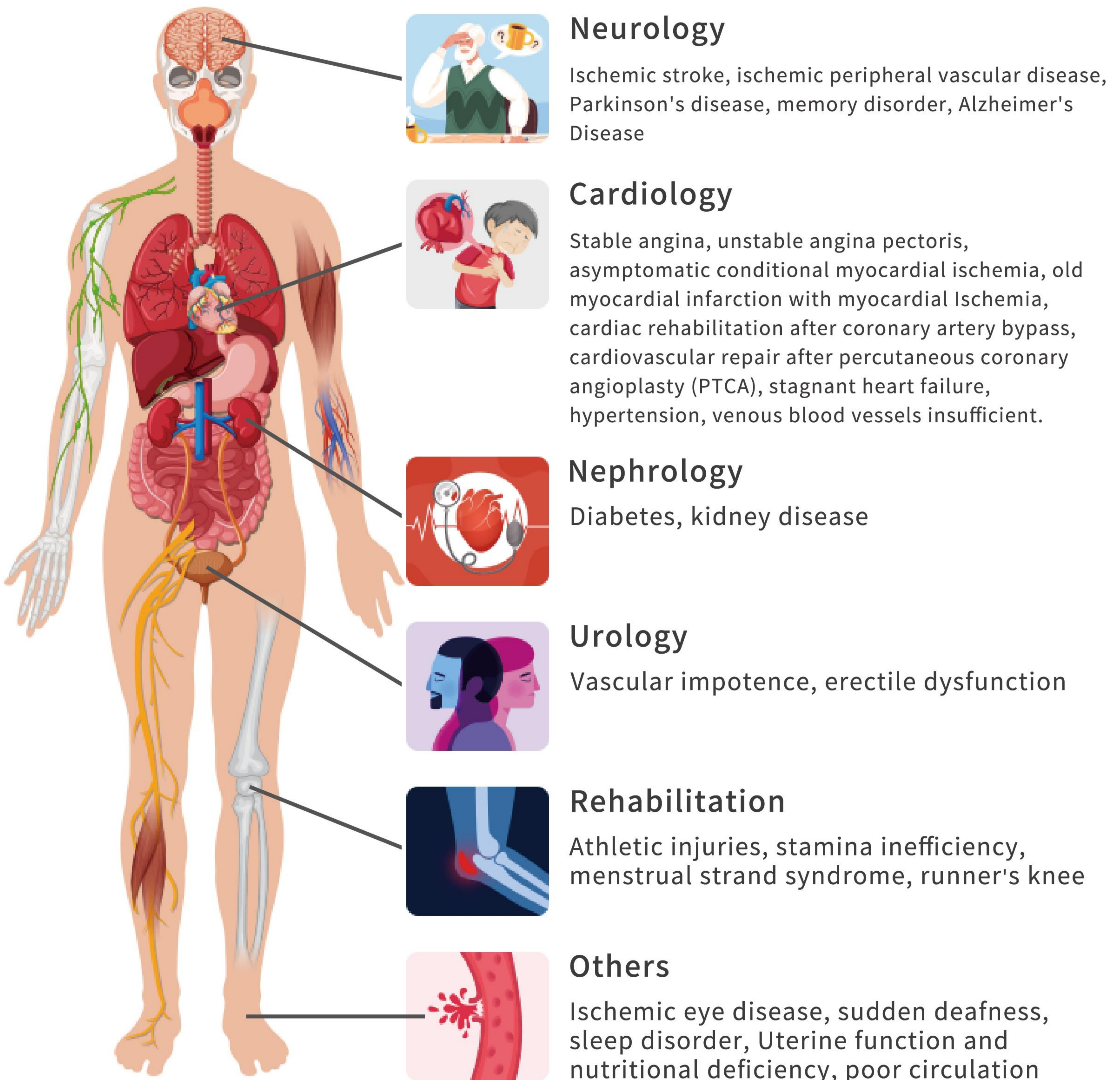


For rehabilitation

- Avoid to accept other invasive revascularization surgery
- Medical condition with high risk of surgery (e.g. diabetes, heart failure, lung disease, renal dysfunction)
- Rehabilitation from cardiac catheterization or bypass surgery
- Rehabilitation after ischemic stroke

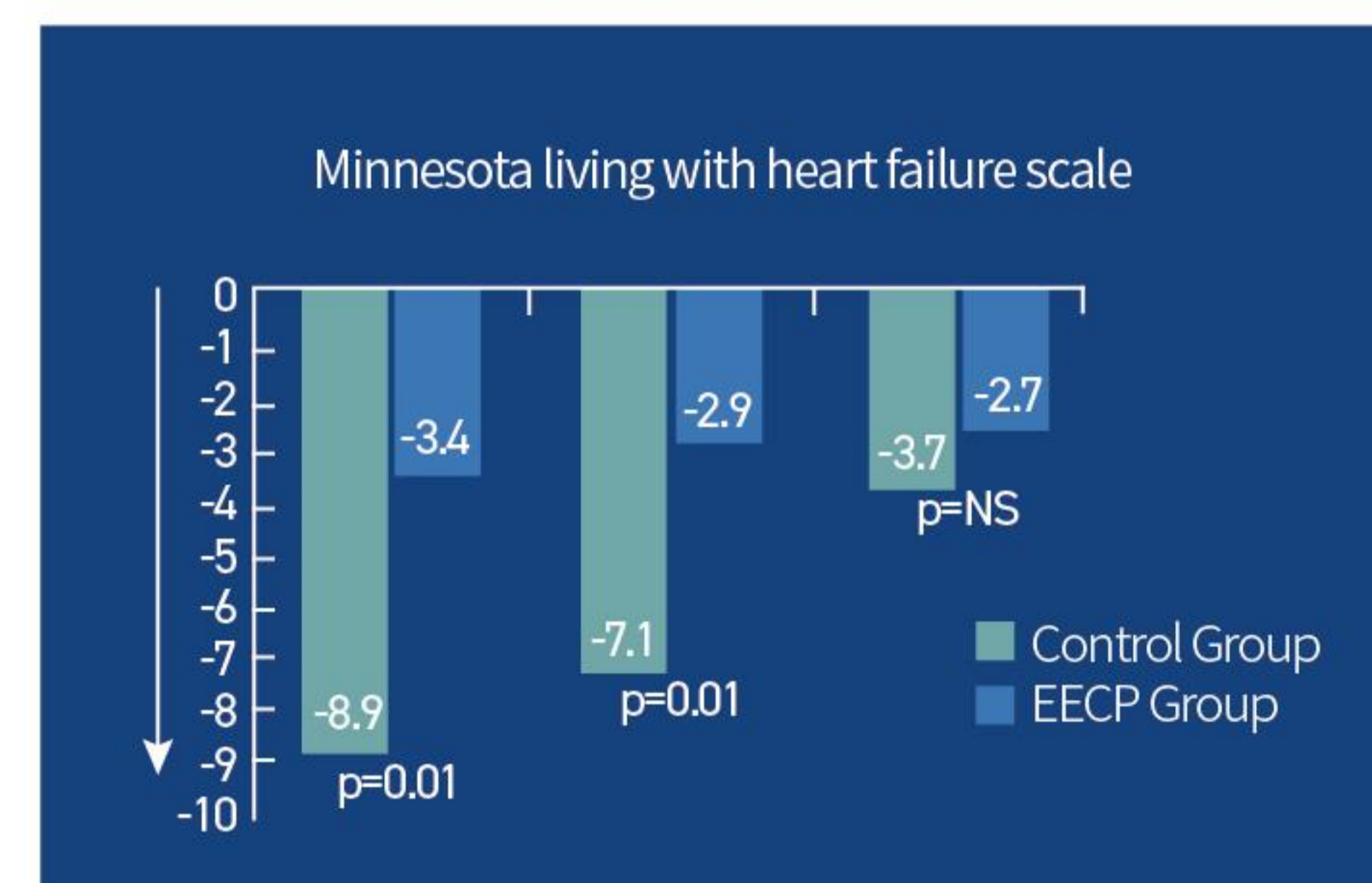
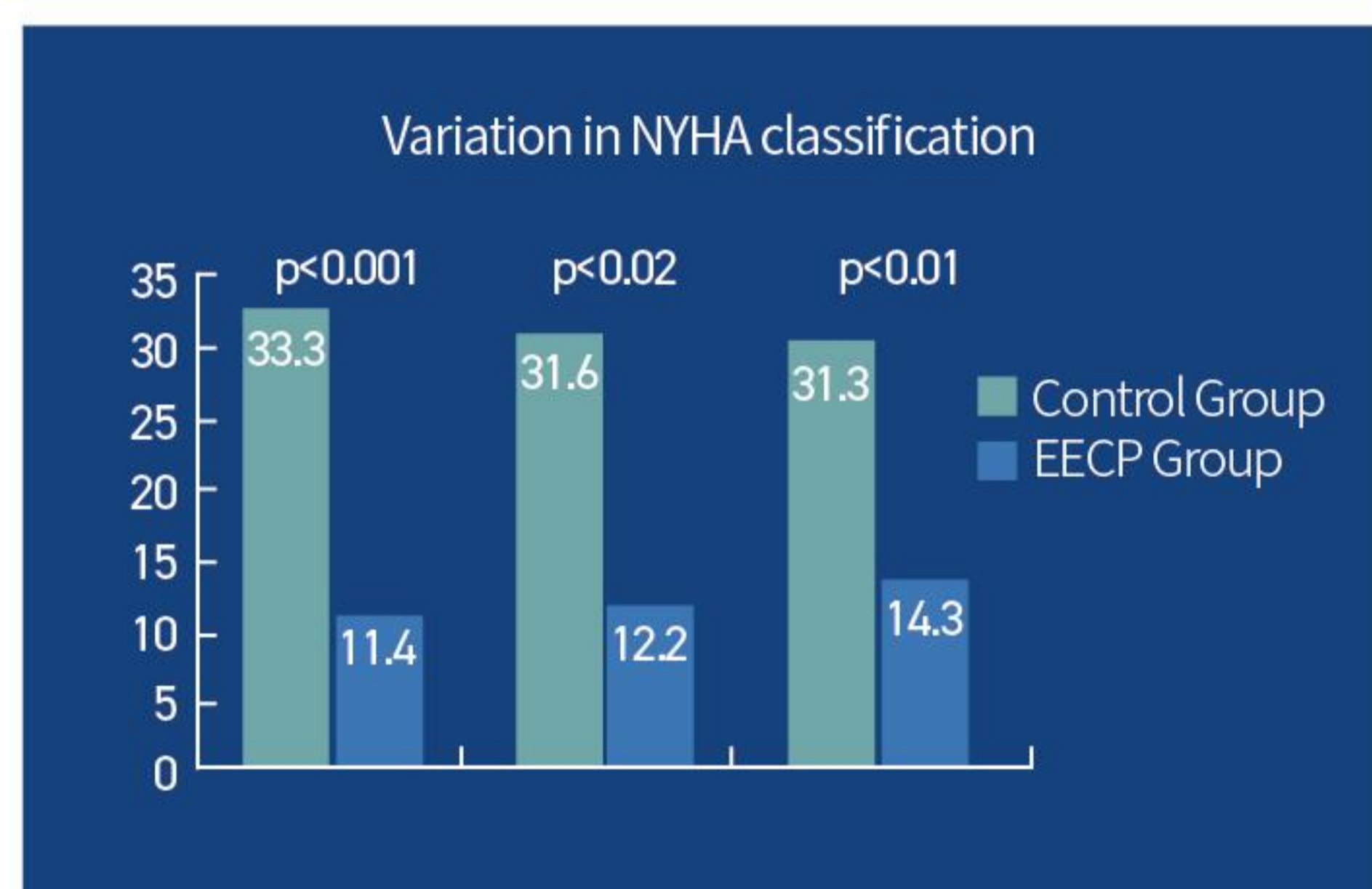
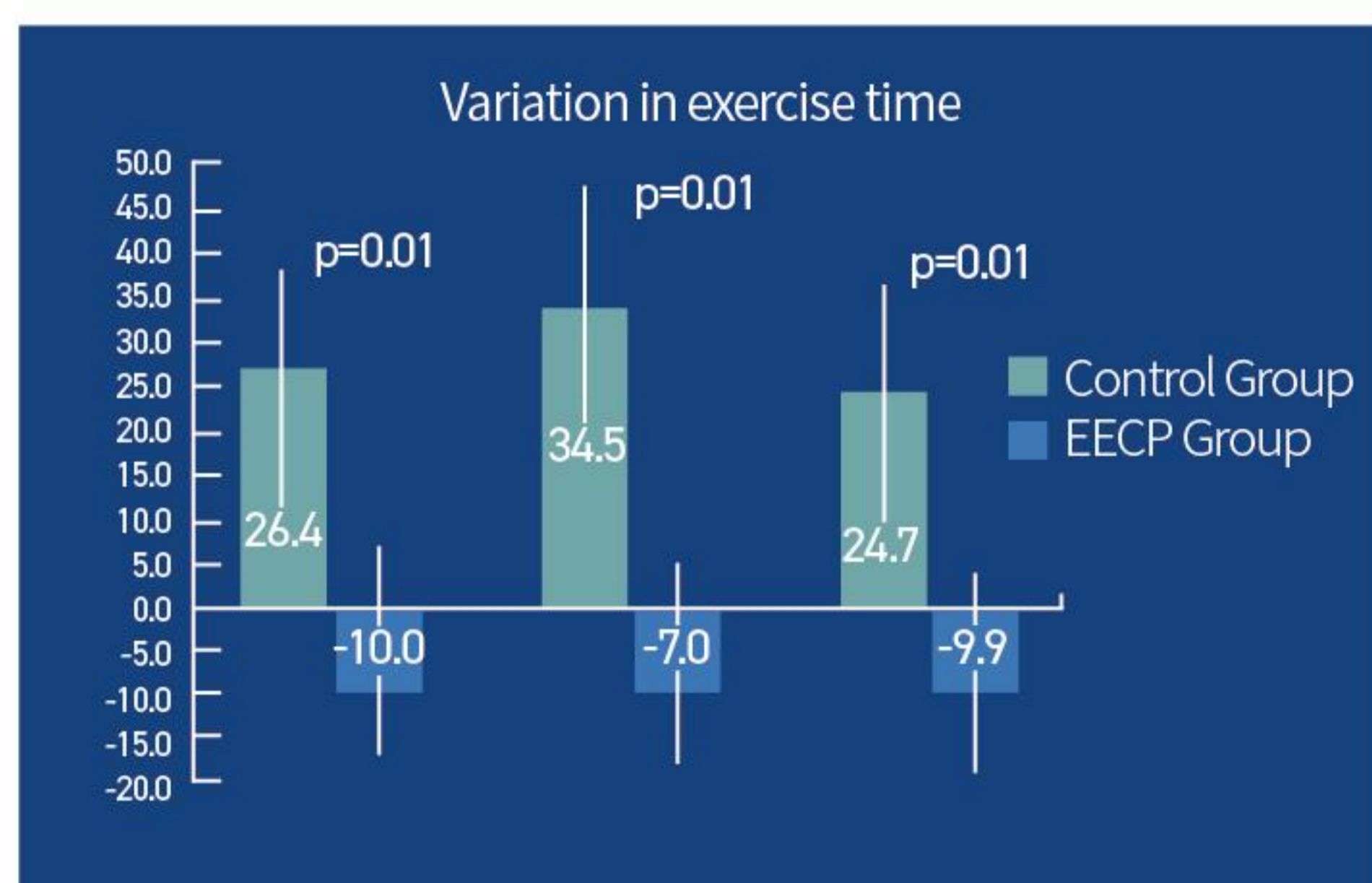
EECP Indications

External counterpulsation is a safe and effective treatment with long-lasting effects in patients suffering from disabling angina or similar conditions, left ventricular dysfunction and heart failure. Supported by medical clinical studies, the use of the HJ-SECP-01 external counterpulsation system has proven to treat the following indications:



Medical Journal Abstracts

PEECH™ Clinical Trials (EECP® Perspective Evaluation in congestive heart failure) Feldman, et al., J AM Coll Cardiol 2006



The PEECH study confirmed the positive results of the treatment by meeting the prespecified significance requirement for the co-primary efficacy measure of exercise time. 35% of EECP Group versus 25% of Control Group experienced at least 60 seconds longer exercise time (p=0.016) and secondary efficacy measure of exercise capacity also improved after 6 months as EECP Group was effective measured at weeks 1, month 3, and month 6, the patient's exercise capacity was significantly improved. Post month 6, the active treated group had 24.7 seconds longer exercise time, compared with 9.9 seconds shorter in the Control Group (p=0.013). In addition, EECP Group significantly improved functional status (under New York Heart Association classification) and quality of life compared with those who received only ideal drug treatment for Control Group. EECP Group showed a small positive change in higher VO₂ max at week 1 and month 3, versus Control Group VO₂ max only worsened.

Left Ventricular Systolic Unloading and Augmentation of Intracoronary Pressure and Doppler Flow During Enhanced External Counterpulsation.

Andrew D. Michaels, *Circulation* 2002

EECP treatment can clearly and significantly increase the diastolic and mean pressure of the core aorta and coronary arteries, and reduce their systolic blood pressure. Elevated coronary blood flow was measured by both ultrasound and angiography during EECP. The combined effects of systolic unloading and elevated coronary perfusion pressure demonstrate the potential of EECP therapy as a mechanical assist device.

Summary of findings

Biochemical markers

- Increased in carbon monoxide concentration
- Decreased in endothelin concentration
- Decreased in brain-type natriuretic peptide concentration
- Increased in vascular endothelial growth factor concentration

Predictive abilities

- Increase in coronary pressure and blood flow velocity
- Extend duration prior ST wave decline
- Increase in exercise tolerance
- Improve in max oxygen consumption
- Increase in myocardial contractility
- Reduce systemic vascular resistance
- Lower high systolic blood pressure
- Increase in ventricular ejection fraction
- Increase cardiac output

Clinical result

- Improved in CCS angina grade
- Reduced in case of angina attacks
- Reduced in nitroglycerin usage
- Improved in quality of life
- Maintained long term clinical benefits

Go Body Pro Smart Bio Analyzer



Through bio-impedance measurement method and intelligent 3D imaging body fat analyzer technology, Go Body Pro analyzes physiological data such as body composition, body posture, and bio-figures, to complete physical measurement. Go Body Pro comprehensively evaluates the health status and physical ability, and generates measurement data to perform quantify, analyze, and compare for long term health tracking and monitoring purpose.

Core Technology

◆ Body composition

- 8-points, 4-electrodes, 5-factors, 5-segment, 3- frequencies
- Direct segmental multi-frequency bioelectrical impedance analysis (DSM-BIA)
- Scientific FFMI analysis method
- 3D live-action model with proposed ideal goal figures

◆ Posture analysis

- AI recognition on 3D sensor camera technology to screen posture improvement
- Perform body 3-dimensional measurement and assess risk factor from irregular posture
- Posture result comparison from prior record stored in cloud database

◆ Functional assessment

- Dynamic evaluation through AI technology
- Combined with visual and deep neural network models to confirm action behavior
- Present athletic ability in quantitatively basis and and prevent sports injury risks



Go Body Pro Analyzer Specification

Bioelectrical impedance measurement

- Bioelectrical impedance: 5 segments
- 3 frequencies (5kHz, 50kHz, 250kHz)

Electrode method

- 4 Electrode measurement
- 8 point contact

Measurement method

- Direct segmental multi-frequency bioelectrical impedance measurement (DSM-BIA)

Imaging technology

- 3D Structured light Depth Image Capture
- Body Recognition Technology

Voice guide

- All-time live voice navigation

Applicable age range

- 03~99 years old

Applicable height range

- 90~240cm

Applicable weight range

- 10~260kg

Power system

- Input: AC 100~240V-50-60Hz-1A-0.5A
- Output DC12V, 3.34A

External interface

- WIFI 2.4GHz, 5GHz
- Bluetooth 4.0
- LAN*1 / USB 2.0*1 / USB 3.0*1
- HDMI*1

Database

- Backend management system
- APP program

Output reports

- Body Composition Analysis:
Body Weight, Lean Body mass, Muscle mass, Fat Mass, Skeletal Muscle Mass, Protein, Inorganic Salts, Total Body Water, Visceral Fat (grade), Body Mass (BMI), Body Type, Body Fat Percentage, Fitness Index, Segmental Muscle (Limbs and Trunk), Segmental Fat (Limbs and Trunk), Historical Comparison (Weight, Fat Mass, Muscle Mass), Ideal Figure Proposal (Fat Mass , Muscle Mass)
- Posture Assessment:
Cervical Anteversion, Cervical Roll, Rounded Shoulders, High and Low Shoulders, Anteroposterior/Posterior Pelvic Tilt, Pelvic Roll, XO Legs, Knee
- Body Ratios Assessment:
6 Body type, Head-to-Body Ratio, Shoulder-to-Hip Ratio (male), Waist-to-Hip Ratio(female), Leg to Body Ratio
- Functional Assessment:
Balance, Core Stability, Lower Body Stability

Equipment operating environment

- 10~40°C 20~75%RH 700~1060hPa

Shipping/Storage Environment

- -20~40°C 20~75%RH 700~1060hPa

Screen Dimension

- 11.6-inch 1920 * 1080 IPS touch screen

Equipment Size

- Length:452mm
- Width:667mm
- Height:1145mm
- Weight:23kg

Body Analyzer Comparison

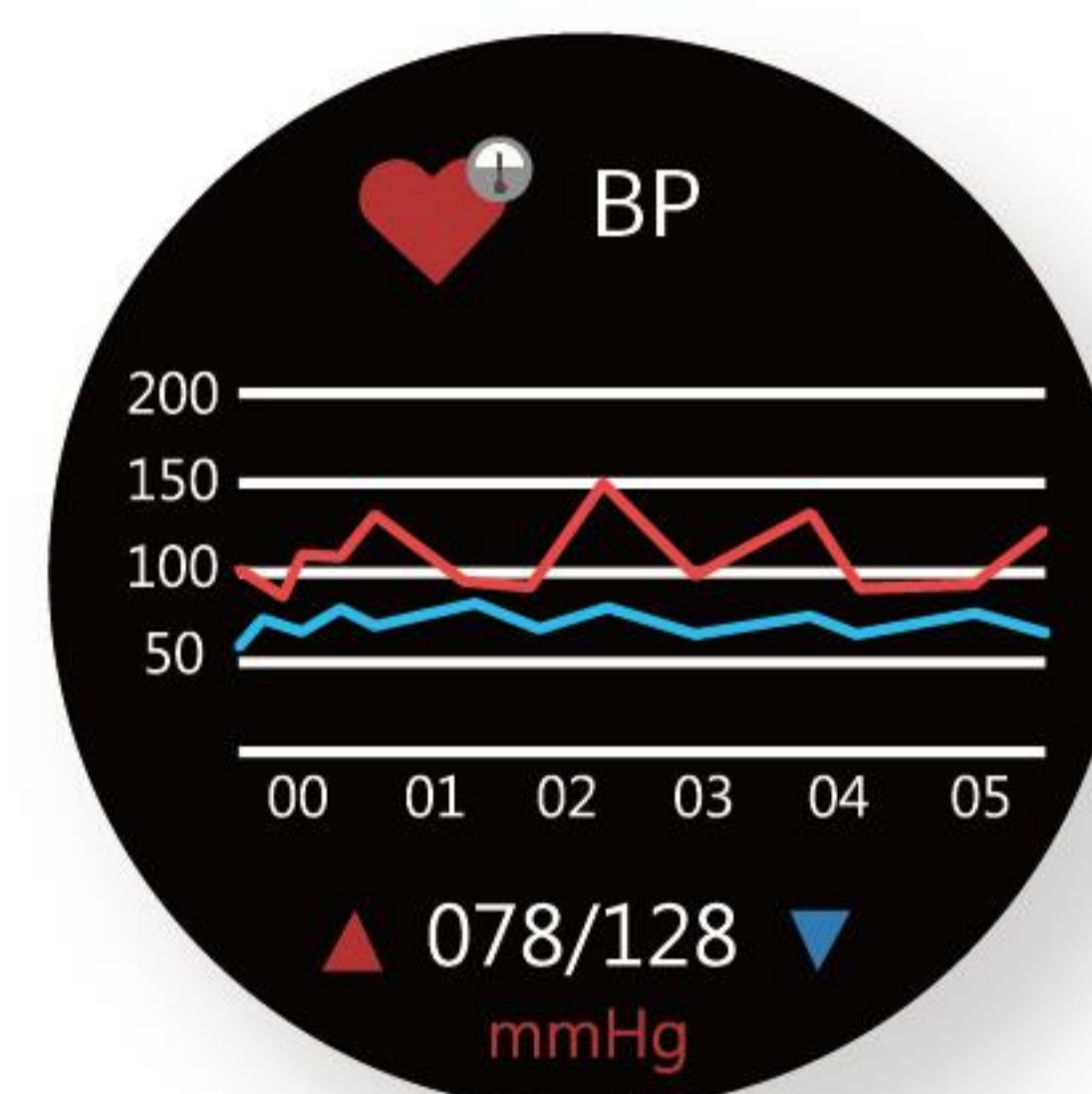
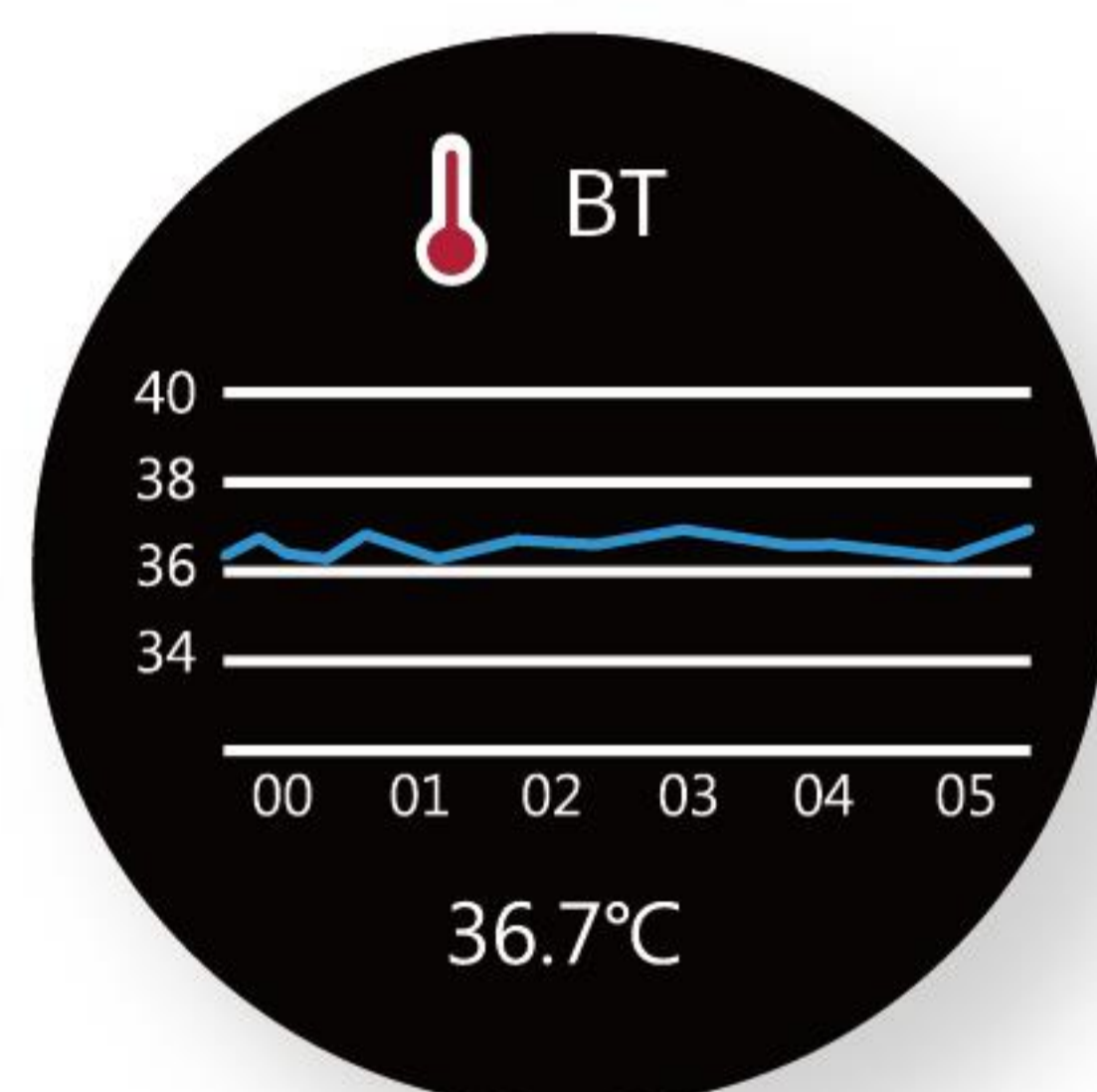
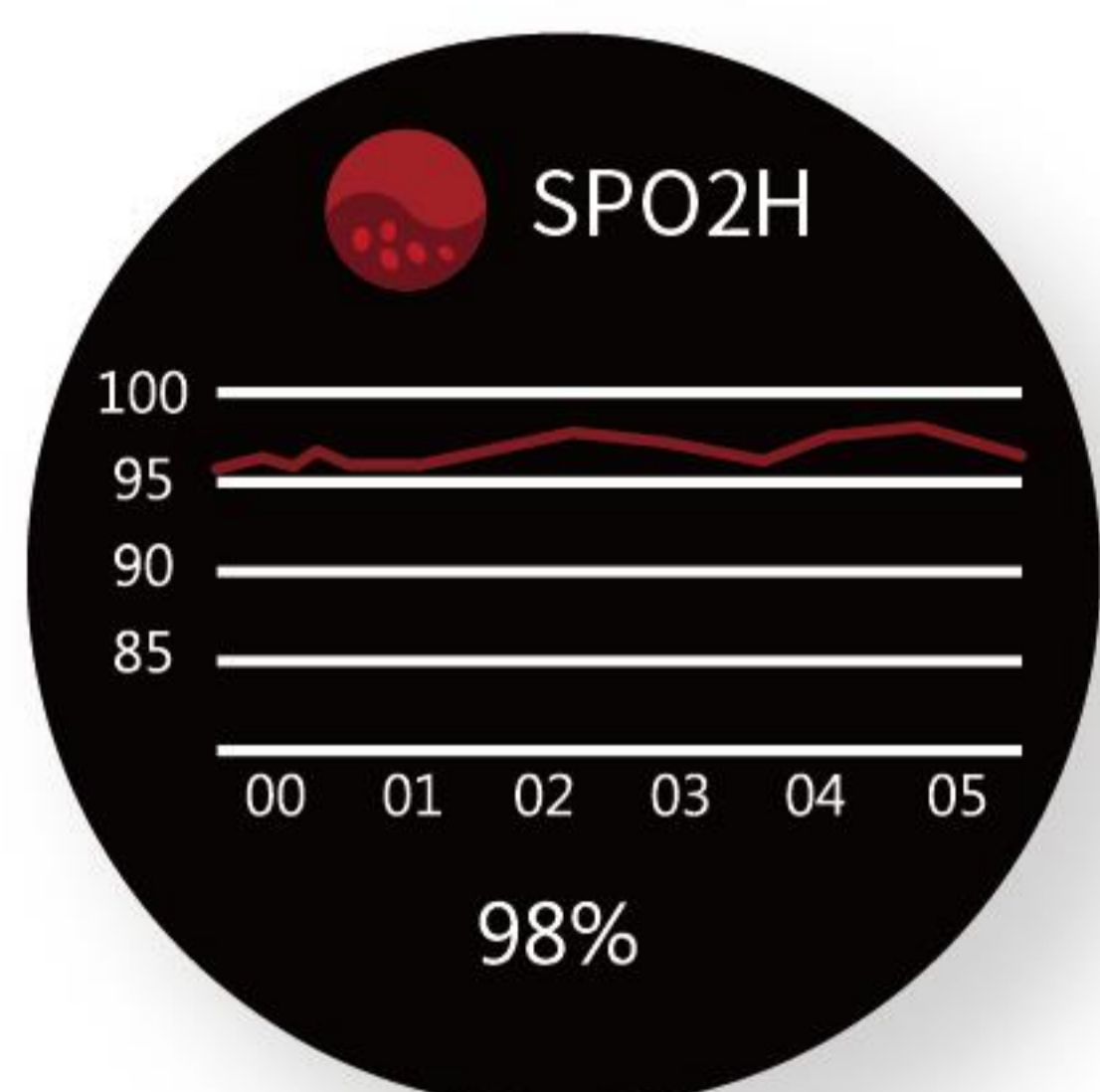
	Go Body Pro	InBody 570
Sales Scheme	Capital sales/Lease	Capital sales only
Price Range (TWD)	400,000	850,000
System Upgrade	Provide SW Upgrade	N
Key features	<ul style="list-style-type: none"> · Body composition analysis · Body posture assessment · Body function assessment 	<ul style="list-style-type: none"> · Body composition analysis · Body posture assessment
System Specification	<p>Bioelectrical impedance measurement</p> <ul style="list-style-type: none"> · Bioelectrical impedance: 5 segments, 3 frequencies Electrode method <p>Electrode method</p> <ul style="list-style-type: none"> · 4 Electrode measurement, 8-point contact <p>Measurement method</p> <ul style="list-style-type: none"> · Direct segmental multi-frequency bioelectrical impedance measurement (DSM-BIA) <p>Imaging technology</p> <ul style="list-style-type: none"> · 3D Structured light Depth Image Capture · Body Recognition Technology 	<p>Bioelectrical impedance measurement</p> <ul style="list-style-type: none"> · Bioelectrical impedance:5 segments, 3 frequencies <p>Electrode method</p> <ul style="list-style-type: none"> · 4 Electrode measurement, 8-point contact <p>Measurement method</p> <ul style="list-style-type: none"> · Direct segmental multi-frequency bioelectrical impedance Measurement (DSM-BIA) · Simultaneous multi-frequency impedance measurement
Applicable Figures	<ul style="list-style-type: none"> · Applicable age range 03~99 years old · Applicable height range 90~240cm · Applicable weight range 10~260kg 	<ul style="list-style-type: none"> · Applicable age range 03~99 years old · Applicable height range 95~220cm · Applicable weight range 10~250kg
APP functions	<ul style="list-style-type: none"> · Support APP program · Support APP SW upgrade 	N
Warranty	<ul style="list-style-type: none"> · 1~5 yrs. warranty · Free consumable and part coverage 	· 1 yr. warranty
Service	<ul style="list-style-type: none"> · 48 hrs. on-site responding · 72 hrs. recovery service · Provide temporary system over 72 hrs. recovery 	N

AI precession health smartware



Guarding your'heart and lungs"&"vascular health':

- ◆ TI medical grade ECG chip combined with big data AI dual method: TI for high performance calligraphy edge ECG dedicated chip, resolution up to 0.04 microvolts, supports ECG mode and guards your cardiovascular health.
- ◆ High-precision oxygen dioxide measure: Adopt the latest leading TI technology with OSRAM and 3-color light comprehensive blood oxygen algorithm, exceeding simple optical measurement method to monitor key body health indicators.
- ◆ Monitor lung health and respiratory control: Normal adult respiratory rates range 12-22 times per minute, exceed or below normal range signals potential health warning
- ◆ 24-hour heart rate monitoring: Professional heart rate monitoring module with self-developed AI advanced algorithm provides real-time heart rate data, records 24-hour heart rate, changes, and tracks heart rate deviation from normal range.
- ◆ Precession sleep detection: Automatically turn on sleep monitoring, track and record sleep states and quality at night to maintain long-term health.



SmartWare Comparison

	AI Precession SmartWare	Apple Watch Series 7
Price (TWD)	8,000~	11,900~
Physical monitor function	Blood oxygen, ECG, Blood pressure, Heart rate, Body temperature, Respiration rate	Blood oxygen, ECG, Heart rate
Instant warning	High and low heart rate	High and low heart rate, Arrhythmia
Display	1.3 inch TFT 240*240	1143 cm ² Retina 396*484
Battery edurance	6-13 days	18 hrs

AI precession health smartware specification

Content	Specification	
Basic architecture	Product number	HJ-E2101B
	Main control chip	Nordic52832
	Blood chip	TI AFE4404, OSRAM 2703 PD, OSRAM 3-in-1 LED
	Body transmitter	CT 1711 Array
	ECG chip	TI Chip
	Photoelectric chip	TI AFE4404, OSRAM 2703
	Vibration method	Mute, vibrate
	Waterproof level	IP68
	System support	Android 4.4 and above, iOS 8.2 and above
	Key Functions	Blood oxygen, Body temperature, ECG, Respiration rate, Blood pressure, Heart rate, AI aid report
	Other functions	Pedometer, Calories, Sleep monitor, Exercise mode, Incoming call notice, raise to wake, tap to take photo
Display Screen	Screen size	1.3 inch TFT 240*240
	Screen type	IPS HD TFT
Connection method	Bluetooth	5.0BLE (Low energy)
Others	Battery	High density polymer lithium battery
	Battery capacity	200mAh
	Charging type	Magnetic charger
	Battery endurance	In use 6-13 days, standby 20-40 days
	Control method	Full screen touch, mobile app control
	Material	Metal alloy, bottom shell:PC+ABS Strap:TPU/leather



惠家智醫股份有限公司
HJ DigiHealth Co. Ltd.



<http://www.HealthHJ.com>

TEL: +886-2-77032556

FAX: +886-2-77032717

ADD: 3F., No. 280, Xinhu 3rd Rd., Neihu Dist.,
Taipei City 114065, Taiwan (R.O.C.)

