



- The autonomic nervous system is the primary control mechanism and regulation within the human body
- The body's ability to control vital functions is affected by all chronic illnesses, stress and increasing age
- Active Air® therapy has been proven to improve this regulation system

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# The vegetative nervous system, also known as the autonomic nervous system, cannot be voluntarily controlled.

It regulates all vital functions, such as breathing, heart rate, blood pressure, energy production, digestion and metabolism. The vegetative nervous system is made up of the sympathetic ("tense nerves") and the parasympathetic ("relaxed nerves") nervous systems. Both these systems work contrary to one another.

**Example:** if a person is confronted with a dangerous situation, thus triggering the instinct to run, the sympathetic system ("tense nerves") becomes much more active than the parasympathetic system ("relaxed nerves"). The following reactions are observed in the body:

- The heart will pump faster
- Increase of oxygen supply
- Attention and concentration are heightened
- The body and the mind are in a state of alert
- Pupils are dilated
- Blood pressure rises
- Stress hormones, such as adrenaline, are released

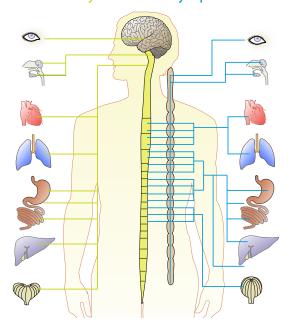
Under such conditions, the body can perform at a much higher level.

Once this stressful situation has passed the parasympathetic system ("relaxed nerves") will be more active than the sympathetic system ("tense nerves"). Functions such as recovery, regeneration and repair take precedence.

This example of regulation clearly shows the basic functioning of the vegetative nervous system. Increasing age, excessive stress, chronic illnesses or a weakened immune system impair the body's ability to regulate the nervous system.

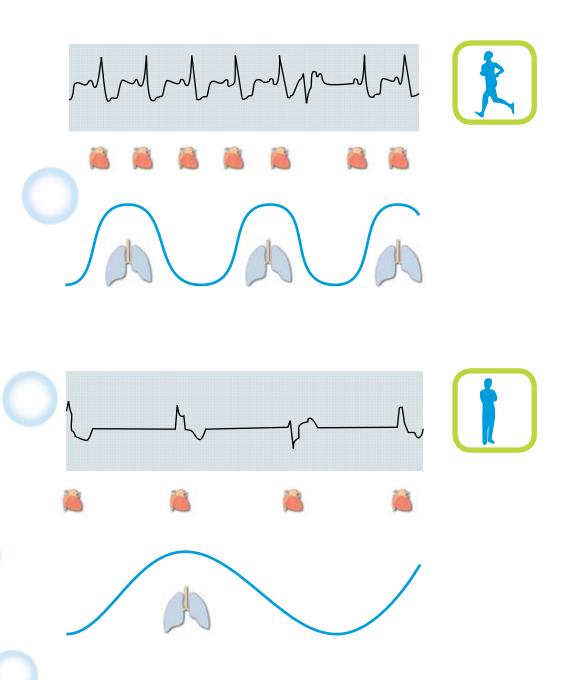
Parasympathetic nervous system

Sympathetic nervous system



Examples of organs which are regulated by the sympathetic and parasympathetic nervous systems

Regulation of the autonomic nervous system based on internal and external stimuli is one of the body's fundamental characteristics. The human organism regulates all vital functions by independently adjusting from a tense to a relaxed state.



## Overactive sympathetic system

#### **Hypertension (High Blood Pressure):**

The vegetative nervous system controls the vessels (vessel constriction and vessel dilatation) and therefore the blood pressure. Sustained physical and/or emotional stress, for example, can stop the effect (dilation) of the parasympathetic system. The equilibrium and regulation between tension (sympathetic) and dilation (parasympathetic) are impaired.

### **Diabetes Mellitus Type II (Blood Sugar Disorder)**

The production of insulin cells in the pancreas is controlled by the vegetative nervous system. Sustained physical and/or emotional stress leads to constant production of insulin in the pancreas. Sometimes, depending on the patient's state of health and emotional state, the pancreas eventually becomes completely exhausted since there is no relaxation and recovery phase or these phases are too short.

This leads to a permanent decrease in insulin production and to a diagnosis of Diabetes Mellitus Type II.

## Overactive parasympathetic system

#### Asthma:

One of the causes of an overactive parasympathetic system is the narrowing of the bronchi (bronchial contraction) and an increase in mucus production. Those affected find that their body has less capacity to regulate itself which leads to a permanent and significant reduction in its ability to perform.

	Parasympathetic	Sympathetic
Eye	Pupils constrict	Pupils dilate
Salivary gland	Watery secretion	Thick, viscose secretion
Heart	Heartbeat slows down	Increase in beat frequency and strength
Blood pressure	Vessels dilate	Vessels contract
Lung	Bronchi contract Stimulation of secretion	Bronchi dilate Inhibit secretion
Liver/gallbladder	Emission of bile	Release of sugar (glucose)
Bladder	Urination	Urination blocked

The application of Active Air® improves the Heart Rate Variability (HRV) and therefore also the vegetative nervous system's ability to keep vital functions under control.

# The permanent reaction of the heart to external and internal stimuli is called Heart Rate Variability (HRV).

The higher the level of reaction, the better the general state of health.

People with reduced Heart Rate Variability suffer in the form of stress and/or illness. Here the demands on the body are higher than when the intervals are regular.

All general health problems, such as heart conditions, Metabolic Disorders, Depression, forms of neuropathy (nerve damage) or also Cancer, will reduce the Heart Rate Variability.

Heart Rate Variability shows the interaction between the sympathetic (tension) and parasympathetic (release) nervous systems.

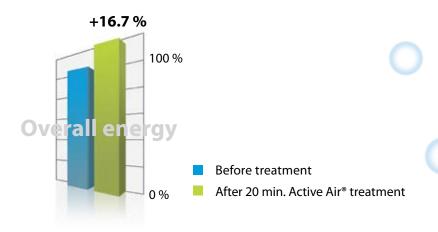
# Recognised scientific measurement technique: Heart Rate Variability (HRV)

In English medicine and increasingly in German medicine, Heart Rate Variability has a very important role which is starting to take on even greater significance. There are currently more than 600\* medical reports, in which this form of measurement acts as an important indicator. Studies on Heart Rate Variability show that after using Active Air® there is a significant improvement in the functioning of the autonomic nervous system. Stress is reduced and the regeneration and healing process are also improved.

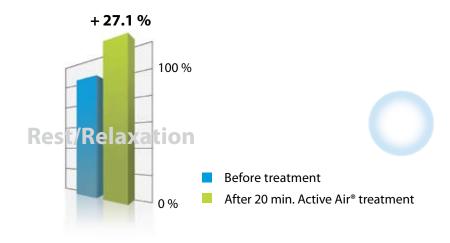
\*Internet investigation www.pubmed.gov, 12 March 2007



## Increase in overall energy (TP) by more than 16 %



### Increase in parasympathetic activities (RMSSD) by more than 27 %



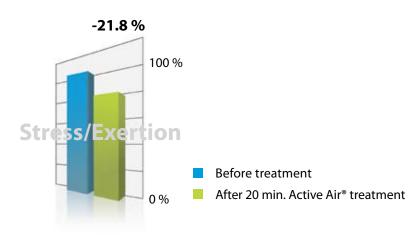
#### Data

- 37 people, (21 women and 16 men)
- Age: 23-83 years old,
   Average age: 52 years old
- Conditions: chronic cardiac conditions, Diabetes Mellitus Type I and II, COPD, Crohn's Disease, Rheumatism, Asthma
- One therapy session of 20 minutes with Active Air®, without suspending drugs therapy, measuring all recognised HRV parameters, in particular overall energy (TP), Stress Index (SI) and parasympathetic activities (RMSSD) each time 5 minutes before and 5 minutes after Active Air® therapy.

#### Source:

Explore! Magazine, For the Professionals, Volume 16, Number 2, 2007

### Stress reduction (SI) by more than 21 % after Active Air® therapy





The regulation between the sympathetic and parasympathetic system is improved through the application of Active Air®.

Active Air® is a medical device for all age groups to improve the regular functionality of all vital body functions, such as breathing, heart activity, blood pressure, metabolism and hormone balance.

Active Air® offers a high level of therapeutic assistance and is recommended for the following disorders:

- Heart conditions, i.e. High Blood Pressure and Blood Circulation Disorders
- Diabetes Mellitus Type I and II
- Asthma
- COPD
- Sleep Disorders (Sleep Apnoea)
- Parkinson's Disease
- Stress
- Attention Deficit Disorders (ADD)
- Burnout Syndrome
- Dementia/Alzheimer's Disease
- Macular Degeneration
- Fibromyalgia
- Tinnitus
- Multiple Sclerosis
- Metabolic Disorders

Active Air® is also used for prevention and regeneration purposes.

## Example of positive reactions following Active Air® therapy

- Lighter and improved ability to inhale and exhale (Asthma, COPD)
- Improved blood pressure (Hypertension, Hypotension)
- Better circulation (Circulatory Problems, Ateriosclerosis)
- Less pain (Rheumatism, Headache, Migraine, Injuries)
- Improvement in ability to fall asleep and sleep through (Disturbed Sleep, Sleep Apnoea)
- Improvement in sugar levels (Diabetes Mellitus Type I and II)
- Sight improvement (Macular Degeneration, Poor Sight)
- Improved concentration (Attention Deficit Disorder)
- Faster regeneration and recovery from stress (physical and emotional stress)
- More physical and mental energy (Burnout Syndrome, Fibromyalgia, CFS)
- More mobility where movement restricted (Multiple Sclerosis, Parkinson's Disease)

## **Sport:**

- Reduced pulse with same or improved physical performance
- Shorter resting pulse
- Less lactic acid build-up
- Resistance improvement (stamina, speed, strength)
- Faster recovery after exertion

All noticeable and visible reactions are achieved by the body! Since every organism is unique with different feeding habits, medication taken and other circumstances influence the complex processes, it is not possible to predict all possible reactions.







For centuries initial reactions have been recognised and indeed encouraged in general medicine, since they are a sign that the therapy in question is having an effect.

"Your body will always react rationally, even if at first it doesn't always appear to be doing so."

# Examples of initial reactions and their significance according to Active Air® therapy:

#### **Runny nose:**

After Active Air® therapy the nose starts to produce a watery secretion. The mucus in the nose and throat is our first line of defence.

A number of immune cells can be found in the nasal mucus membrane. Better regulation stimulates the mucus and immune cells and increases secretion in order to remove harmful substances.

### Unclean skin, for example, small spots:

Following Active Air® therapy, more impurities can appear on the skin, for example, spots! The skin is an important detoxification organ. Waste products stored in the body's tissue are eliminated via the skin. This is a passing reaction and should be viewed positively.

#### **Increased tiredness:**

People with physical, professional and/or psychological long-term stress (the sympathetic system is overactive) frequently report feeling more tired after the initial applications. As long-term stress is reduced, the relaxation and regeneration phase begins. After a short period, the body will achieve a better internal balance.

# Risks and side effects

There are no risks or side effects involved in using Active Air® therapy. The therapy can be applied in conjunction with traditional medicine and/or natural and alternative remedies.



## **Recommended use**

Length of application: 20-30 minutes

# For chronic conditions, physical and mental stress:

Frequency of use: daily





# **Active Air® technology**

Respiratory air is pulled into the Active Air® device through an air inlet. In the bottle filled with filtered or bottled water, the air is purified and moistened.

The Active Air® device has 3 or 5 activation chambers containing unique technology. This technology replicates the process that takes place in the body to produce vital energy.

# **Process in the body**

Air breathed in and oxygen in its inactive state cannot be utilised by the body. Therefore it is activated in the body and hence made usable for building energy. The transformation of oxygen from inactive to active is essential to releases vital energy.

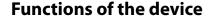
This natural process of transformation is replicated by the Active Air® device. The water molecules enriched with energy are inhaled through the nasal cannula.

The HRV measurement (HRV = Heart Rate Variability) can be used to show how this energy significantly improves the ability of the autonomic nervous system to control and regulate vital functions in our body.









Use bottled or filtered water to fill the glass bottle

#### Choice of colour for the device:

white/silver, anthracite/silver, special effect lacquered pearl white, special effect lacquered silver

#### **Characteristics (standard):**

- Large LCD display
- Illuminated keypad and easy to understand menu
- Option to program 2 individual settings
- Choice of coloured lights in the glass bottle
- Whisper or normal pump
- Beep to signal end of the session

## Extras (not included in standard price):

ChipCard system (programmable time credit)
Special lacquered effect (pearl white and silver)



#### **Technical Data**

Voltage: 15 V DC

Switch: 100–240 V AC

Electricity consumption: I max = 1600 mA

Standby = 10 mA

Protection Grade: Class B

Airflow: Normal: ca. 5 l/minute

Silent: ca. 3 l/minute

Weight: Active Air® (3 activation units) 3.9 kg

Active Air® (5 activation units) 4.5 kg

Dimensions: Width = 28 cm

Length = 31 cm

Height = 13 cm or 31 cm

(including bubbling unit)



Medical Biophysics GmbH works in accordance with a certified quality management system according to DIN EN ISO 13485.



The company Medical Biophysics GmbH has its headquarters North of Berlin in the biotechnology centre of Hennigsdorf (Blue Miracle). Its activities focus on development, production and sale of high-quality medical devices as well as worldwide marketing of and support for concepts in the healthcare market. Expeditious and extensive services, professional training of physicians, therapists and distributors as well as a permanent support service for users, provide guaranteed customer satisfaction. Active Air® is an innovation in the medical devices market with a unique medical-therapeutic concept.



Biotechnology Centre, Hennigsdorf

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