

# User's manual

Congratulations on choosing magnetic therapy  
as a treatment method as well as purchasing  
this wound-healing magnetic therapy device from our

# **RENAISSANCE<sup>®</sup>,**

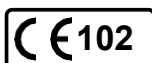
series. The product is intended to offer  
additional treatment alternatives for a variety  
of medical fields, helping patients to overcome  
some of their health problems.





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## **Caution**



Read this user's manual carefully prior to commissioning your RENAISSANCE Duo Forte magnetic therapy device. Make sure you always take into consideration all the advice and warnings contained herein.

# **1.**

## **General information**

### **1.1 Magnetic therapy device purpose of use**

Duo Forte is a magnetic therapy medical device designed to generate a therapeutic low-frequency magnetic field. It is perfectly suitable for both home application and clinical practice.

Its low frequency magnetic field may be used in targeted and non-targeted physical therapy as well as in orthopedy and as a complementary therapy (on an as-indicated basis).

### **1.2 Magnetic therapy device description and how to use it**

RENAISSANCE Duo Forte is a magnetic therapy device designed to generate a therapeutic low frequency magnetic field.

Low frequency pulsed magnetic therapy is a well-established and recognized treatment method. It has been used intensively in medical science for about five decades although it was not until recently that magnetic therapy experienced a boom. The most recent clinical studies provide conclusive evidence that pulsed magnetic therapy achieves the best results when utilized on a long-term and regular basis. Therefore, magnetic therapy is a treatment recommended globally by modern medicine for home application.

A magnetic field is generated by electric current travelling through a conductor or a coil. Ring-shaped magnetic field lines form around the conductor. If pulsed electric current passes through a conductor, a pulsed magnetic field is generated around it. Conversely, if a living nerve, muscle or any other type of cell is exposed to a variable magnetic field, weak electric current may be found in such a cell. Referred to as electromagnetic induction, this phenomenon helps us to understand how a magnetic field affects a living organism.

Magnetic therapy relies on a magnetic field whose parameters (frequency, intensity, gradient, pulse shapes, etc.) are favourable for the human body. Such a magnetic field speeds up healing processes, alleviates pain as well as improves blood supply, and removes swelling. If applied on a long-term and regular basis, such a magnetic field may reduce the symptoms of your disease and possibly help you to overcome the disease.

Our Renaissance® series consists of state-of-the-art low-frequency pulsed magnetic therapy devices which are perfectly suitable to be used at home as well as by professional physiotherapists. Technologically advanced, highly effective, simple to use and boasting an ergonomic design, these products comply with all the rapidly evolving standards of modern medicine.

## **2. Primary positive effects of the device**

- Treatment of musculoskeletal disorders.
- Treatment of musculoskeletal and post-surgery pain.
- Healing soft-tissue and hard-tissue wounds and injuries.

## **3. Recommendations for use of magnetic therapy**

An applicator must be placed as close to the body surface in the treatment area as possible. Patients do not need to undress. Instead, magnetic therapy should be applied through clothes and/or bandages. Alternatively, a disposable medical pad may be used. An applicator is not designed to come into contact with the skin.

## **4. Generally applicable rules**

- a) If necessary, laymen and socially responsible organizations consisting of laymen must contact the manufacturer or the manufacturer's representative (contact details provided in Chapter 16 hereof) and request assistance in assembling and maintaining the medical device. The manufacturer or his representative must also be contacted if any issues with the operation of the device arise or if any errors or unexpected events occur.
- b) Only apply magnetic therapy as recommended in 9.6 – List of health conditions.
- c) Persons with low or high blood pressure may experience a sudden blood pressure drop. This phenomenon disappears within 5-10 days and is not a reason to discontinue treatment using the medical device. We recommend patients remain seated or lying down in the entire course of a treatment session. You should stand up no sooner than 5 minutes after the application is finished.
- d) Approximately 10% of people may experience temporary deterioration in their condition. This is similar to what happens with a patient's body when they go to the spa. It means a magnetic field generated by the device is affecting the person, and their body is responding to the treatment. This is by no means a reason to discontinue the treatment. However, we recommend you apply magnetic therapy for a shorter period of time (e.g. the device's healing mode may be finished after only 10 minutes). Once their temporary complications have subsided, patients may continue to use the device for a longer stretch of time.
- e) Magnetic therapy makes it possible for patients to reduce, subject to a doctor's approval, dosage of the drugs they take (e.g. analgesics, anti-rheumatic drugs etc.)
- f) Treatment should not take place after 9pm as there is risk of sleep disturbance.
- g) Magnetic therapy should be applied as soon as possible since pulsed magnetic fields are more successful in treating functional disorders rather than fixed pathological changes. That said, magnetic therapy has the potential to improve a patient's condition dramatically even if they are stricken with fixed pathological changes.

- h) Magnetic therapy is to be included, in a sensible fashion, in a complex patient care plan. It is perfectly suitable to be combined with any traditional medical procedures except those that rely on X-radiation or any other type of ionizing radiation.
- i) It is essential that patients drink more while undergoing treatment with low-frequency pulsed magnetic therapy. The reason is this treatment method facilitates wound-healing processes and accelerates metabolism and it is therefore necessary to help your body to eliminate metabolic waste as well as any substances that accumulate in your body as a result of its detoxication. Make sure you drink enough throughout the day and always have at least one or two glasses of water just before application.

## **5. Indications and contraindications**

### **Indications:**

- Treatment of musculoskeletal disorders.
- Treatment of musculoskeletal and post-surgery pain.
- Healing soft-tissue and hard-tissue wounds and injuries. Further details are provided in 9.6. – List of health conditions.



### **Relative contraindications::**













- Patients with hyperfunction (increased function) of endocrine glands do not apply magnetic therapy devices to the respective area.
- Patients diagnosed with a tumour, patients who have had a cancer surgery, and patients on chemotherapy or radiotherapy should consult their physician prior to application.
- An infectious disease causing body temperature to exceed 38°C (100.4°F).
- A doctor's consent is required if a patient is suffering from active tuberculosis.
- Patients with neurological disorders accompanied by seizures (e.g. epilepsy) should not apply magnetic therapy devices to the head area (unless a neurologist recommends otherwise).
- Serious mycotic (fungal) diseases.
- Combining magnetic therapy and radiotherapy is not recommended.



### **Absolute contraindications:**

- Magnetic therapy must not be used in patients with sensitive electronic equipment such as cardiac pacemakers, implantable cardioverter defibrillators, etc.
- Patients with a cochlear implant must not apply magnetic therapy to the head, neck or upper torso.
- Pregnancy.
  - Haemorrhage (bleeding) regardless of origin. Magnetic fields increase blood circulation in tissues which may, in some cases, exacerbate the condition.
  - Pain of unknown aetiology (origin).

## **6.Symbols contained in the user's manual, on the device, and on the device transport packaging**

	Please, consult the user's manual and follow the instructions contained therein.
	CE marking that indicates conformity with the standards for products sold within the European Economic Area (EEA); such a product complies with the applicable EU legislation.
	Manufacturer.
	Serial number.
	Type BF applied part.
	Class II power supply.
	Caution.
	Protect from humidity.
	Storage, transport, and operation temperature range.
	Reduce humidity in the course of storage, transport, and operation.
	Reduce pressure during operation.
	This is electronic waste. When the product has reached the end of its life, it must not be disposed of in municipal solid waste.



## **7. Alerts and safety notices, residual risks**

### **7.1 Alerts and safety notices**

- a) This magnetic therapy device may only be operated by a person that has been trained to operate it, is fully knowledgeable of the entire contents of this manual, and abides by the procedures contained herein. Such training is to be provided by the manufacturer or an authorized entity.
- b) The magnetic therapy device may only be operated by adults with at least eight years of education and who have been trained to use the device. Persons with compromised physical, sensory, and/or mental abilities as well as persons who lack sufficient experience and knowledge may only use the device under supervision or after they have been trained to do so.
- c) The device is designed to be used by adult patients.
- d) Handle applicator cables carefully as strangling may occur. Make sure cables do not get tangled around your neck.
- e) A power supply plug disconnects the device from the electric grid. The magnetic therapy device must not be placed in such a way that makes it difficult to unplug it from the power socket.
- f) This magnetic therapy device can only be used for the purposes stated herein.
- g) The magnetic therapy device must not be used in the presence of a flammable mixture consisting of an anaesthetic agent and air, oxygen, nitrous oxide, and/or any other flammable material such as some types of cleaning agents.
- h) Only those applicators that have been supplied together with a specific generator may be connected to this specific generator.
- i) The applicators supplied may not be plugged into other devices.
- j) Handle applicators carefully, ensuring they are protected from falling, mechanical stress, etc.
- k) Do not bend a small applicator. Whenever you bend a large back applicator, the bend angle should not exceed 30°.
- l) Cables can be damaged by applying excessive pulling tensions. Therefore, make sure you hold the terminal plug of an applicator or an adapter whenever you wish to unplug the device.

- m) Be aware that applicators may cause damage to devices situated nearby (e.g. wrist-watches, TV sets, magnetic data carriers such as floppy disks and cassette tapes). Safe distance is one meter.
- n) Unplugging a generator power cord and replugging it shortly thereafter may result in the microprocessor getting deadlocked. Therefore, we advise you to wait a few seconds prior to replugging a generator power cord.
- o) Never switch on the device if it has recently been brought from a cold to a warm space. Condensed vapours that occur as a result of such a temperature shock may destroy the device. Instead, let an unplugged device adjust to the room temperature. The condensed vapours usually take approximately 1 hour to evaporate.
- p) Whenever you wish to clean and/or disinfect the magnetic therapy device, make sure you disconnect it from the electric grid by pulling its power supply plug out of the socket.
- q) This magnetic therapy device may only be operated using original accessories or manufacturer-approved accessories of equal quality. Pairing the device with unsuitable accessories may result in the device not performing as intended.
- r) The magnetic therapy device may only be repaired and/or set by designated persons associated with the manufacturer or by authorized maintenance companies.

## 7.2 Residual risks



If absolute contraindications are identified in a patient, application of magnetic therapy is prohibited. If only relative contraindications are discovered, a patient must consult a medical specialist, who is to decide whether magnetic therapy is advisable.



Our RENAISSANCE Duo Forte magnetic therapy device may only be powered by a type UE24WV-180130SPA power supply which you have received together with the device.

No other than the original manufacturer-provided power supply is allowed.

## **8. Magnetic therapy device description**

### 8.1 Device design description

Our RENAISSANCE Duo Forte magnetic therapy device is fitted with a microprocessor, memory, screen, and is fully automated. The device is very easy to operate. All device conditions including faults are signalized. Some conditions are also accompanied by audible

warning signals. The device offers healing programs as well as targeted applications that address specific diagnoses. Frequencies used range from 2 Hz to 72 Hz. The device generates pulses of a single polarity, making it possible to adjust time frames and regulate output power. Additionally, it features a pair of outputs that boast a considerable output power despite being very small, ensuring electromagnetic induction of up to 40 mT in applicators.




The device uses an 18 VDC power supply and voltage is obtained by a type UE24WV- 180130SPA network adapter certified in accordance with EN 60601-1.





The device’s software does not guarantee basic safety or necessary function. The program is stored in its read-only EPROM memory. It enables to select frequencies and application time frames as well as checks applicator defects (short circuit or coil break), if any.

All indicators and control elements are placed on the front of the device. The lower section contains applicator connectors and a plug-in connector. A label providing an overview of the device’s command and settings buttons is placed on the back of the device; a serial number can be found in the lower section.

The device has 7 applicators that address a variety of health issues.

## 8.2 Applicator types

<p><b>MANIC</b> – flat type</p> <ul style="list-style-type: none"> <li>• VYLEN® cold polyurethane foam</li> <li>• material: MOLITAN® polyurethane foam</li> <li>• DYNACTIV™215 leatherette</li> <li>• dimensions: 170 × 215 mm</li> </ul>	
<p><b>PIANO</b> – flat type</p> <ul style="list-style-type: none"> <li>• VYLEN® cold polyurethane foam</li> <li>• material: MOLITAN® polyurethane foam</li> <li>• DYNACTIV™215 leatherette</li> <li>• dimensions: 450 × 490 mm</li> </ul>	
<p><b>CAVO</b> – circular type</p> <ul style="list-style-type: none"> <li>• KG-PVC profile, material: ABS polymer</li> <li>• DYNACTIV™215 leatherette</li> <li>• diameter: 260 mm, designed for outdoor use</li> </ul>	

<p><b>BECCO</b> – flat type</p> <ul style="list-style-type: none"> <li>• VYLEN® cold polyurethane foam</li> <li>• material: MOLITAN® polyurethane foam</li> <li>• DYNACTIV™215 leatherette</li> <li>• dimensions: 700 × 215 mm</li> </ul>	
<p><b>LETTINO</b> – flat type</p> <ul style="list-style-type: none"> <li>• VYLEN® cold polyurethane foam</li> <li>• material: MOLITAN® polyurethane foam</li> <li>• DYNACTIV™215 leatherette</li> <li>• dimensions: 315 × 1,005 mm</li> </ul>	
<p><b>CASSO</b> – flat type</p> <ul style="list-style-type: none"> <li>• VYLEN® cold polyurethane foam</li> <li>• material: MOLITAN® polyurethane foam</li> <li>• DYNACTIV™215 leatherette</li> <li>• dimensions: 550 × 1,700 mm</li> </ul>	
<p><b>VIERA</b> – circular type</p> <ul style="list-style-type: none"> <li>• KG-PVC profile, material: ABS polymer</li> <li>• DYNACTIV™215 leatherette</li> <li>• diameter: 675 mm, designed for outdoor use</li> </ul>	

8.3 Device control buttons



## 8.4. Safety checks prior to use

Ensure the magnetic therapy device is checked routinely before each use. This includes a visual inspection and a functional check.

### Visual inspection:

- there must be no visible mechanical damage to the cover of the power supply or of the generator,
- there must be no visible mechanical damage to the applicator used or its power cord.

### Functional inspection:

A TESTER, which is supplied together with each generator, is used to check applicator function. If the TESTER vibrates gently in your hand, it means the applicator's function is not compromised. If no vibrations are felt, the applicator fails to function properly and it is necessary to contact the manufacturer's maintenance department.

## **9. Commissioning and operating the magnetic therapy device**

### **9.1 Plugging-in and operating the device**

If the device is being operated by a user, such a person is regarded as its designated operator. A pulse generator is a device that creates electrical impulses of certain parameters, which are in turn transformed into magnetic impulses by an applicator. The brain of the device is a generator controlled by a microprocessor. Important information is presented on its screen. A generator normally becomes slightly warmer while on duty, which is not a sign of defect.

The device can be made to work by connecting the adapter plug-in connector and the generator, which is then put in a socket. An acoustic signal will indicate the generator has been plugged into a power supply. The generator screen now reads the Duo FORTE Renaissance® logo.

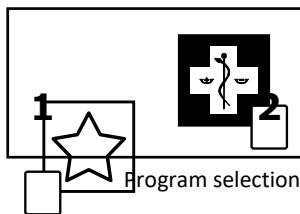
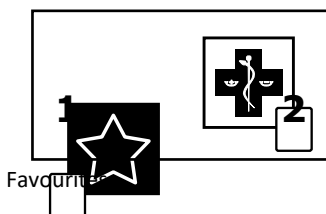


Select a suitable applicator type and plug it into the generator using connectors placed at the bottom of the generator; at least one applicator must be selected.

**PLUGGED IN APPLICATORS:****1****PLUGGED IN APPLICATORS:****1****2**

If no applicator is plugged in, the screen reads PLUG IN APPLICATOR! A TESTER, which is supplied together with each generator, is used to check applicator functions. If the TESTER vibrates gently in your hand, it means the applicator's function is not compromised. If no vibrations are felt, the applicator fails to function properly and it is necessary to contact the manufacturer's maintenance department.

Depending on whether one or two applicators have been plugged into the output port situated in the bottom section of the device, the generator automatically allows a user to select a program for one or both channels. Whenever an applicator is plugged in, this is detected in the bottom corners of the screen. Applications are selected by rotating the turning knob. These may be applications that have previously been added to the favourites, or you may opt for a specific program directly. Your choice is confirmed by pressing the confirm button in the centre of the turning knob.

**Program selection:**

Use a turning knob to select a program of your choice. Confirm your selection by pressing the confirm button in the centre of the turning knob. If you choose a program that makes it possible for you to select magnetic field intensity and an application time frame, the generator will ask you to set these values. This is done by rotating the same turning knob and confirming your selection by pressing the same confirm button in the centre of the turning knob. Application time frames range from 1 minute to 90 minutes (the number of minutes must be a positive whole number) while intensity increases by a minimum of 10%. If only one applicator is plugged in, the generator starts to work once these values have been set. If both applicators are plugged in, the generator asks if the same settings are also to be used for the second channel. This is again confirmed by pressing the confirm button in the centre of the turning knob. If you choose not to use the same settings for the second channel, you are asked to set the program for the second channel. This is done in exactly the same way as you would set the program for the first channel. If a second applicator is plugged in while application is in progress, this applicator initiates a program featuring the same settings as the first program.

<b>PROGRAM SELECTION</b> Bedsores R1 <div> <div>1</div> <div></div> </div>	<b>INTENSITY</b> <b>100 %</b>
--	----------------------------------

ALSO USE FOR 2ND APP?
 

PROG

1

2

YES

NO

if you plug in two applicators

### Adding items to the favourites:

Whenever you press and hold the button with a star ☆, for 3 seconds, the current generator settings are added to your favourites and saved (there are a total of 10 favourites). Such an item is saved including the application's current intensity. The generator always selects an empty slot with the lowest number. If the memory is full (i.e. all 10 slots are occupied) and no more items may be added to the favourites, the generator reports an error and asks the user to delete one of the items. This can be done by selecting an item to delete and pressing the left button with a star ☆.

<b>ADDED TO FAVOURITES – POSITION 1</b>  1	<b>FAVOURITES 1/10</b> R1 Healing mode + R2 Healing mode <div> <div>1</div> <div>2</div> </div>
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### Controlling the device in the course of application:

If both applicators are being used, press the left button with a star ☆ for no more than 5 seconds to switch between information about the ongoing programs on each of the channels. The generator may be caused to interrupt operation by pressing the right button Ⓜ for a short period of time. Pressing the right button Ⓜ again will result in the generator resuming operation. If you press and hold the right button Ⓜ for 5 seconds, the current application is turned off and the device resets to its default settings. The turning knob is inactive and unused during application.

If two applicators are used during application and one of them is disconnected, the pulse generator produces three short beeps and continues to run the therapeutic program with a single applicator. If the only remaining applicator is also disconnected, the screen starts to flash and the therapeutic program will only resume once at least one applicator has been plugged back in.

A generator normally becomes slightly warmer while on duty, which is not a sign of defect.



## 9.2 Applicator use

An applicator is such a component of the magnetic therapy device where electrical impulses produced by the generator give rise to a magnetic field. Applicators are connected with generators by detachable cables as a result of which they may be placed on a user's body whatever his or her position (lying on the back, lying on the stomach, sitting, on a wheelchair, etc.).

Patients do not need to undress. Instead, magnetic therapy should be applied through clothes and/or bandages. Alternatively, a disposable medical pad may be used. An applicator is not designed to come into contact with the skin.

There may be a number of available applicators. If that's the case, make sure you choose the one that best fits the intended therapeutical effect. Place such an applicator as close as possible to the body part to be treated.

**MANIC** – a small applicator suitable for rather small painful areas. Its size enables it to generate a strong magnetic field, making it a great choice primarily for pain relief. It may be placed on a number of body parts including the cervical spine, temporal bone, calves, wrists, and bone fractures to treat migraines, swelling (e.g. swollen legs), joint pain (e.g. wrist pain), rheumatism, inflammation, bruises, burns, etc. It has also proved incredibly successful in treating carpal tunnel syndrome as well as removing discomfort associated with so called tennis elbow and frozen shoulder. It is also an excellent choice for mothers whose small children frequently suffer from stomach ache (baby colic) or whose teeth are growing.

**PIANO** – a large back applicator designed primarily to treat health issues associated with the sacral, lumbar, and thoracic spine. Additionally, it is a great choice to treat conditions of the lower limbs as well as to improve blood circulation in the tissues of the lower limbs. It is therefore popular with patients suffering from varicose veins, osteoporosis, and/or vascular and neurological complications of diabetes. In addition to alleviating pain in the back, PIANO, when applied to the back area, also prevents and treats asthmatic fits (in such a case chest application is also recommended). Just lean against the applicator, or lie down on it.

**BECCO** – a belt applicator specifically designed to treat organs placed in the abdominal cavity, in the lumbar region, in the pelvic area, or in the hip region. A buckle may be used to fasten the applicator around a person's waist.

**LETTINO** – its size makes it possible for it to cover the whole length of the spine including the SI joints and the pelvis. This is incredibly important as the spine functions as a whole; surprisingly enough, an SI joint dysfunction may therefore manifest itself as a headache and/or a cervical spine disorder. In addition, this applicator may be used to treat haemorrhoids, prostate conditions, inflammation and thromboses of varicose veins as well as to improve blood supply to limbs. The device may be used both while a patient is lying and when they are sitting.

**CASSO** – this is a bed type applicator whose dimensions make it a perfect choice for whole-body healing. It is highly indicated in patients suffering from backache as this condition is commonly caused by an SI joint dysfunction, gluteal muscle issues or even knee problems. The applicator treats each of these segments, ensuring the real cause of backache

is removed and the patient is cured. Casso might be used both while a patient is lying and when they are seated in a semi-seating position.

**CAVO** – this is a great option for patients with osteoporosis in upper and lower limbs, arthrosis, and rheumatoid arthritis. Also, patients with bone fractures who use this ap- plicator heal considerably more quickly. If a patient is suffering from any of these joint disorders it is imperative that a pulsed magnetic field of equal intensity is applied to each tissue layer, which is best achieved by a circular applicator. Additional conditions this appli- cator’s balanced magnetic field is designed to address include migraines, upper respiratory tract inflammation, tinnitus, and cervical spine pain of a variety of origins. Body parts to be treated are inserted into the applicator.

**VIERA** – this is a large solenoid applicator that makes it possible for a patient to be placed inside a homogenous (uniform) pulsed magnetic field that penetrates the entire depth of the tissue being treated. Application is recommended to patients with arthrosis of the knee and/or hip joint as well as those suffering from rheumatoid arthritis, backache of a variety of origins, osteoporosis, and a number of other conditions. This applicator is designed to be used while a patient is lying; patients lie on a table which slides into the applicator.

### 9.3 Healing and analgesic programs

Healing and analgesic programs seek to accelerate tissue and cell metabolism, initiate healing processes, and alleviate pain. R1, R2, and R3 healing modes as well as B1 and B2 an- algesic modes offer application length ranging from 1 to 90 minutes. This does not apply to R4 or B3 modes as these modes are characterized by highly specific frequency development.

Substitute modes	Recommen- ded length	Length of 1-90 minu- tes	Frequency	Choice of intensity
R1 Healing mode	30	✓	5–45 Hz in the course of 3 seconds	✓
R2 Healing mode	30	✓	2–25 Hz in the course of 5 seconds	✓
R3 Healing mode	30	✓	35–60 Hz in the course of 5 seconds	✓
R4 Healing mode	30		5–45 Hz in the course of 3 seconds for 15 minutes; then 10–25 Hz in the course of 3 seconds for 15 minutes	✓
B1 Analgesic mode	30	✓	72 Hz	✓
B2 Analgesic mode	30	✓	3±1 Hz in the course of 3 seconds	✓
B3 Analgesic mode	30		72 Hz for 20 minutes; then 2–28 Hz in the course of 5 seconds for 20 minutes	✓

### Healing programs

A number of conditions make it possible for healing programs to be used as so called sub-stitute programs (see table above); these are interchangeable in most cases subject to how sensitively the patient responds to treatment. Their general characteristics are as follows:

**R1:** A universal program to activate healing processes in all body cells and tissues. It facilitates healing and body detoxication as well as eliminates fatigue.

**R2:** A healing program designed primarily to treat inflammatory diseases such as rheumatoid arthritis. Its frequency range is smaller to avoid hypersensitive reactions to treatment (referred to as “spa effect”).

**R3:** A healing program suitable primarily for improving blood circulation in tissues and thereby increasing oxygen and nutrient intake.

**R4:** A healing “wellness” program designed to help patients to reduce fatigue, accelerate post-workout muscle recovery, and relax.

### Analgesic programs

Alleviation of pain is among the most significant effects of magnetic therapy. While its mechanism of action has not yet been determined (possible due to the fact that each person perceives pain differently), it is known that magnetic therapy affects free nerve endings. These are endings which send pain signals and affect how these signals are processed in the spinal chord. Therefore, magnetic therapy should be applied both to the painful bodyarea and the respective spinal chord segment constituting the source of innervation – a patient suffering from pain in the lower limbs should apply magnetic therapy to the lumbar spine while a patient with pain in the upper limbs should also stimulate the region where the cervical spine transforms into thoracic spine.

**B1:** The main analgesic program that most patients respond to.

**B2:** An analgesic program that uses low frequencies; it is recommended to patients suffering from inflammatory diseases as well as individuals who fail to respond to B1 adequately.

**B3:** A combined analgesic program that includes a muscle relaxing (myorelaxant) sub-program; this program is a perfect choice for those with muscle pain and/or backache.

## 9.4 Special programs

Special programs are designed for targeted application of magnetic therapy to treat specific diagnoses. The frequencies selected and their development as well as additional characteristics of the magnetic field have been set in such a way that ensures therapy is as effective and as quick as possible. These programs may, in most cases, be combined with healing (or analgesic) programs that offer higher frequency ranges and kickstart body recovery, stimulate and harmonize the immune system, and improve healing. It is not possible to set the length of a magnetic therapy session due to the special programs having highly specific frequency developments. However, some of these programs make it possible for the user to choose between a variety of degrees of magnetic field intensity (strength). Alternative magnetic field intensities are usually opted for by patients with inflammatory diseases (e.g. rheumatoid

conditions and arthritis) who may rarely experience temporary subjective deterioration of their condition at the beginning of their treatment (See Chapter 9.7 Magnetic field intensity).

## 9.5 Plugging off the device after session

Once a magnetic therapy session has finished, disconnect the generator from the power supply by unplugging the power supply plug from the 230 V/50 Hz socket; make sure the applicators are also unplugged.

## 9.6 List of health conditions

### Allergic rhinitis (hay fever)

- A type of inflammation in the nose which occurs when the immune system overreacts to allergens found in the air. Symptoms include a runny nose and a fluid (which is typically clear) coming out of the nose.
- ✚ Magnetic therapy decreases the pressure on the capillary walls, improves blood circulation, and reduces the amount of fluid being produced, contributing to substantial clinical improvement.

### Alzheimer's disease

- A chronic neurodegenerative disease affecting the brain. Dementia, which gradually worsens, is caused by neuron death, disruption of connections between neurons primarily, though not only, in the cerebral cortex, and toxic build-up of pathological proteins in the intercellular spaces. While the cause remains unknown, it is presumed that a neurotransmitter production disorder combined with other factors is of influence. Magnetic therapy decelerates the progression of the disease significantly as well as improves cognitive functions and memory. Additionally, it treats speech impediments, disorientation in time and space, and changes in behaviour and mood.
- ✚

### Amputation stumps

- Wound care after amputation (regardless of the causes of amputation)
- ✚ Local application is incredibly effective especially in patients with purulent drainage and/or suffering from gangrenous processes; magnetic therapy also proves successful in reducing phantom pain (it is imperative that a magnetic field is also applied to the respective segment of the spine – the spinal chord. It may be expected that swelling and pain subside quickly and healing also accelerates.

### Angina pectoris, IHD

- Insufficient blood flow to the heart muscle. The build-up of fats and cholesterol on coronary artery walls (a condition known as atherosclerosis) restricts blood flow. The narrowing of coronary arteries may have a number of clinical manifestations that are referred to by the umbrella term ischemic heart disease. The most well known result of this condition is myocardial infarction (heart attack).

- ✚ Regular application of magnetic therapy improves performance of both the left and the right ventricle, prolongs the diastole (the part of the cardiac cycle during which the heart muscle rests), lowers the heart rate, and relieves chest pain. Also, the patient's sensitivity to meteorological phenomena is reduced and their cardiac stress tolerance improves. Cutting down on medication is frequently possible subject to your doctor's consent. Improvement is also visible on ECG tracing. Moreover, your blood clot risk is reduced and a mechanism that dissolves blood clots is activated. The applicator may be placed on both the chest and the back, and application must be long-term (for a minimum of 6-12 months).

### **Arrhythmia**

- This is a condition in which the heartbeat is irregular, too fast or too slow. A heart rate that is too fast is called tachycardia, and a heart rate that is too slow is called bradycardia.
- ✚ It is recommended that an applicator is placed on the mid-back (thoracic spine area). Patients with paroxysmal tachycardia (heart palpitations) regularly experience a decrease in the number and length of fits as their heart rate stabilizes. Also, magnetic therapy prevents recurrence of arrhythmia. Cutting down on medication is frequently possible subject to your doctor's consent. Make sure you consult your medical specialist regarding the use of magnetic therapy in your case.

### **Arterial diseases**

- Narrowed arteries due to the build up of plaque (atherosclerosis), diabetes-related vascular damage, and inflammation of the inner walls of arteries all lead to blood clots that may clog an artery or be embolized in the direction of blood flow.
- ✚ Regular application of magnetic therapy results in the following: an increase in the distance a patient is able to walk without feeling pain in the limbs affected by poor blood flow (this pain is called claudication, and it often occurs in patients with diabetes and/or blocked femoral arteries caused by atherosclerosis), improved results of positional testing, alleviation of pain, increase in skin temperature, improved blood supply, reduced coagulation of blood, higher amounts of oxygen in tissues, and accelerated healing of skin defects caused by poor nutrition and/or blood flow. It also has antibacterial and anti-inflammatory effects, and may prevent amputation in patients with diabetes.

### **Arthritis in patients suffering from psoriasis**

- This is a joint disease accompanied by changes in skin. Small joints of the upper and lower limb are affected the most frequently. Changes in joints are found in 5-8% of patients with psoriasis; however, if a large portion of skin is damaged, the figures may rise up to 40-45% of cases.
- ✚ Magnetic therapy has analgesic effects, removes joint swelling, improves joint mobility and flexibility, and, if used on a long-term basis, kickstarts the body's recovery processes. Patients in an acute phase of illness normally choose shorter applicators (5-10 minutes long) that are to be prolonged gradually.

### **Aseptic bone necrosis**

- Death of bone tissue (particularly heads of long bones) with no bacterial infection pre-sent.
- ✚ Analgesic effects, reduction of swelling, and increased joint mobility (range of motion). Regular application of magnetic therapy results in significant increase in bone density visible on an X-ray.

### **Asthma (bronchial asthma)**

- An allergic disease affecting the respiratory tract, resulting in long-term inflammation of its mucous membranes and, over a period of time, in difficulty breathing or even respiratory insufficiency.
- ✚ Regular application of magnetic therapy reduces the frequency of occurrences, improves spirometric parameters (spirometry measures lung function), and makes it possible for patients to cut down on corticoids (consult your physician first!). Manifestations of asthma may eventually disappear completely.

### **Atopic dermatitis**

- Eczema, rashes, and skin damage caused by an allergy; neurodermatitis is a skin disease characterized by intense itching and the presence of affected areas (with clear border) which are densely covered by blisters.
- ✚ MMagnetic therapy is to be applied to the affected area as well as the portion of the spine where the respective supplying nerve originates, resulting in subsidence of swelling, alleviation of pain (if any), acceleration of healing, and shortening of the amount of time necessary for a patient to recover. Be aware that long-term application is often necessary, especially if you are suffering from neurodermatitis.

### **Back and spinal pain**

- Back pain is caused by conditions affecting the spine and/or the surrounding structures. Magnetic therapy has dramatic analgesic effects but also improves mobility and eliminates painful muscle spasms (sudden involuntary contractions) that affect the muscles along the spine.
- ✚

### **Bartholin's abscesses**

- A Bartholin's abscess is a build-up of pus in one of the Bartholin's glands located on either side of the vaginal opening.
- ✚ Magnetic therapy may be applied both as part of primary treatment and after surgery. It eliminates inflammation, improves healing, and has analgesic effects.

### **Bechterew's disease**

- This is an inflammatory disease affecting primarily the intervertebral, costovertebral, and SI joints although intervertebral discs, ligamenta flava (ligaments of the spine), and all other joints may also be impacted. As inflammation progresses joint capsules and ligaments of the spine calcify, resulting in their immobility.

- ✚ Magnetic therapy has strong anti-inflammatory effects and its application also relieves pain and improves mobility. Morning stiffness subsides, rehabilitation involving physical movement becomes more effective, and it is frequently possible to cut down on medication subject to a doctor's consent. In case of spa effect at the beginning of treatment keep your applications short (5-10 minutes) first and then gradually extend the time frame.

### **Blocked cervical spine**

- A decrease in cervical spine mobility associated with pain.
- ✚ Magnetic therapy has analgesic and muscle relaxant effects (i.e. alleviates pain and relaxes tense muscles). Increased blood flow makes it possible for acidic metabolites to be washed away more quickly, and the spine regains its mobility.

### **Bone marrow inflammation (osteomyelitis)**

- Inflammation of bone marrow of a variety of origins.
- ✚ Magnetic therapy has anti-inflammatory and analgesic effects. It also increases effectiveness of antibiotics by ensuring better penetration of antibiotics to tissues. The result is accelerated healing and subsidence of swelling.

### **Brain stroke – consequences**

- Consequences of a brain stroke, most commonly as a result of a blood clot.
- ✚ Nerve tissues are very sensitive to a magnetic field. Therefore, magnetic therapy has the potential to achieve great results even if it is only applied several years after a brain stroke. Magnetic therapy stimulates blood circulation and boosts brain functions. Motor skills and sensation also improve and it frequently becomes possible to cure speech impediments as well as cognitive functions of the patient.

### **Breast-feeding and lactation failure**

- The production of breast milk in volumes that do not meet the needs of the infant (of a variety of origins).
- ✚ Magnetic therapy increases blood circulation as well as stimulates the mammary gland to produce (more) milk. Additionally, it promotes faster healing of minor abrasions and skin cracks and may also successfully be used to prevent and treat mastitis (inflammation of the breast associated with pus discharge). Over 80 % of mothers start to breastfeed again once they have undergone magnetic therapy.

### **Bronchitis**

- Inflammation of the lower respiratory tract.
- ✚ Application of magnetic therapy makes breathing and expectorating (coughing out phlegm) easier as well as eliminates cough attacks and breathlessness. The total amount of time necessary for a patient to recover is reduced significantly (by 30-50%).

## **Burns**

- ✚ Magnetic therapy relieves pain and significantly reduces swelling. Additionally, it improves microcirculation, accelerates healing, and promotes creation of a higher quality skin replacement.

## **Carpal tunnel syndrome**

- A medical condition due to compression of the median nerve in the area of the transverse carpal ligament. Manifestations include pain which worsens at night, changes in palmar sensation, and pins and needles.
- ✚ Magnetic therapy proves to have the fastest effect if pain is present, and long-term application is usually necessary to improve compromised mobility and sensation. Also, magnetic therapy has proved to be as successful in treating this condition as traditional pharmacological treatment (i.e. local application of corticoids). Make sure you also apply a magnetic field to the cervical spine!

## **Cellulite**

- Cellulite is an aesthetic problem characterized by a gradual loss of normal physiological properties of skin and subcutaneous tissues. Their layers weaken as a result of aging, connective tissues and collagen lose elasticity, and metabolism becomes compromised. Magnetic therapy increases intake of oxygenated blood, washes away metabolites and harmful substances, and accelerates
- ✚ elimination of excess subcutaneous fat and fat deposits. Also, it facilitates intensive detoxication of the area to which magnetic therapy is applied as well as the entire body.

## **Cervical erosion**

- A small abrasion with a clear border that is situated on the surface of the cervix. Magnetic therapy significantly accelerates recovery and reduces healing time. We recommend you combine it with vaginal douching.
- ✚

## **Chronic obstructive pulmonary disease (smokers' disease)**

- COPD is a type of obstructive lung disease (also affecting pulmonary blood vessels) characterized by long-term breathing problems. The disease commonly occurs as a result of smoking tobacco.
- ✚ Magnetic therapy has anti-inflammatory effects as well as makes coughing up phlegm easier. Additionally, it strengthens the effect of antibiotics by increasing antibiotic tissue penetration, and promotes exchange of respiratory gases that move between the air and the blood. Objective quantifiable improvement may be seen in the results of spirometry tests.

## **Constipation**

- Problematic defecation.
- ✚ Magnetic therapy improves peristalsis (bowel movement), making defecation regular and trouble-free.



### **Cornea – injuries, operations, eye infections**

- Corneal damage regardless of origin.
- ✚ Magnetic therapy reduces pain and eliminates inflammation. It also reduces eye irritation and helps to resolve a burning/stinging sensation in your eyes. In addition, it accelerates healing, promotes formation of a fine yet firm scar, and expedites reabsorption of a blood clot (if any) in the anterior chamber after injury.

### **Cracked nipples**

- Nipple cracks that occur as a result of breastfeeding.
- ✚ Magnetic therapy reduces pain and swelling as well as eliminates inflammation. As a result, both lactostasis (interrupted lactation) and mastitis (inflammation of breast tissue often associated with pus discharge) are prevented.

### **Degeneration of the spinal cord**

- Degenerative condition affecting the spinal cord.
- ✚ Application of magnetic therapy harmonizes muscle tone – patients with paresis experience increased muscle tone while muscle tone of patients with spastic conditions decreases. Additionally, urinary incontinence is reduced, and mobility, flexibility, and sensitivity of limbs improve. Long-term and patient application is necessary.

### **Degenerative retinoschisis**

- Death of retinal cells caused primarily, though not only, by compromised blood supply. Frequently a side effect of atherosclerosis treatment or a complication of diabetes. Treatment results in improved clarity of vision, reduced visual field loss (scotoma) as well as increased peripheral vision range, and decreased intolerance to visual perception of light (photophobia). While the maximum effects are visible after 1-2 months of treatment, application of magnetic therapy should be long-term.
- ✚

### **Detoxication program**

- ✚ Magnetic therapy supports metabolism. It also increases blood supply, resulting in more efficient elimination of metabolites and toxic agents and their discharge from the body. An increased intake of oxygen to tissues as well as support of the lymphatic system detoxicates organism, helping it to eliminate metabolic wastes, drug residues, and other toxic agents ingested in food and while breathing.

### **Diabetes**

- A condition characterized by decreased production or inability to use insulin, a hormone responsible for transforming food into energy. The result is blood sugar level increases, which has a number of negative effects on the body.
- ✚ If insulin production in the pancreas is retained, magnetic therapy increases its production and makes its use by the organism more efficient, decelerating progression of the disease. Long-term application may show preventive effects against complications of diabetes such as blood vessel and nerve damage in lower limbs (diabetic foot) and retinal damage.

### **Diabetic foot – blood circulation, pins and needles, wounds that do not heal**

- Diabetic foot is a term that refers to foot tissue disorders accompanied by nerve disorders, the area under the ankle being affected the most frequently. Even minor injuries result in development of ulcers and/or infections. Doctors perform surgeries to remove the affected portions one at a time and nearly a half of all patients end up having an amputation. Magnetic therapy has proved highly successful in treating this complication of diabetes. Excellent results are achieved by improving blood circulation in the affected limb and thereby increasing the flow of oxygen and nutrients thereto. Magnetic therapy accelerates healing by facilitating the formation of granulation tissue on the bottom of the wound necessary for the wound to heal completely. Additionally, it has positive effects on the affected nerve tissues, eliminates pins and needles, and improves sensation. Long-term regular application has the potential to avert the necessity to perform an amputation.

### **Dupuytren's contracture**

- A condition affecting the ligaments of the hand. It is characterized by the palmar fascia becoming thicker as well as by formation of hard nodules under the skin. Eventually finger contractions develop (referred to as the so called "claw hand").
- ✚ Magnetic therapy has strong anti-inflammatory and analgesic effects as well as reduces formation of ligament nodules. Considering the fact the disease has a genetic cause, application of magnetic therapy is also recommended after surgery (if any) to ensure the condition does not recur.

### **Endometriosis**

- This is a disease in which a specific cell type, which is normally only found in the endometrium, is also present in other places where it is not desirable; these include e.g. the ovaries, fallopian tubes, gastrointestinal tract, and bladder area. These cells behave in the same way as those in the endometrium – they swell and try to peel off on a monthly basis, causing internal bleeding (accompanied by pain) which may even bring about infertility.
- ✚ Magnetic therapy has analgesic properties, reduces the size of affected areas, and normalizes immune system indicators. The result is areas affected by the disease as well as problems gradually disappear. Make sure you consult your medical specialist regarding the use of magnetic therapy in your case. Also, ensure you get a medical check-up regularly!

### **Endoprosthesis**

- A surgery which involves replacement of a damaged joint with an artificial one.
- ✚ No implants (whether they are made of metal or other materials) constitute a contraindication. Magnetic therapy may therefore be applied even if you have had a replacement surgery. What is more, regular application of magnetic therapy may prolong the implant's life span by helping the bone tissues in the respective area to heal and thereby reducing the risk of the implant becoming loose (i.e. not firmly attached to the bone). It is recommended magnetic therapy is used shortly after surgery to ensure pain subsides.

quickly, inflammation-related complications are prevented, the wound heals properly, and minimal scarring is achieved. All of this results in quicker and easily rehabilitation and return to normal life. Make sure you consult your medical specialist regarding the use of magnetic therapy in your case.

### **Erectile and sexual dysfunction**

- Sexual dysfunctions of a variety of origins.
- ✚ When applied to the genital area, magnetic therapy significantly improves blood circulation in the respective segment of the body. The result is it is considerably easier for men to maintain an erection, while women experience increased lubrication of the vagina as well as decrease in effort necessary to reach orgasm.

### **Feeling of pins and needles in limbs (paresthesia)**

- Feeling of pins and needles in limbs of a variety of origins.
- ✚ Magnetic therapy reduces the unpleasant feeling of pins and needles in limbs as well as improves blood flow to limbs. It should also be applied to the spinal sector constituting the source of innervation, making recovery faster and longer-lasting.

### **Fractures**

- ✚ Magnetic therapy accelerates bone tissue repair and regeneration. It also eliminates swelling, boosts healing, and boasts anti-inflammatory properties. As a result, treatment is shorter and there is decreased risk of complications such as nonunion (false joint or pseudoarthrosis).

### **Fractures – complicated healing**

- ✚ Magnetic therapy commonly proves highly successful in treating these conditions. Application of a magnetic field normalizes reabsorption and regeneration of bone tissue, contributing to accelerating healing of fractures. A fibrocartilage callus (bony and cartilaginous material) is created which forms a connecting bridge across a bone fracture during repair. In addition to helping the callus to ossify faster and thereby significantly shortening the amount of time the patient needs to recover, magnetic therapy also has anti-inflammatory and analgesic properties.

### **Frozen shoulder**

- This condition is an enthesopathy, a group of diseases which involve inflammation and which affect the area where a tendon is attached to a bone. They are normally caused by tendon overuse and failed healing of the tendon (such as during sports activities or as a result of a person using a computer mouse).
- ✚ Magnetic therapy has analgesic effects, reduces and prevents swelling, and eliminates inflammation. While patients commonly experience relief very quickly, magnetic therapy must be used on a long-term basis to ensure the tendon has healed properly and there is no risk of recurrence of the disease. Treatment must be applied to both the affected joint and the cervical spine!

## Glaucoma

- Glaucoma is a serious eye disease characterized by elevated intraocular pressure (i.e. the pressure of the liquid inside the eye) as well as the typical changes in the optic nerve (i.e. the nerve that transmits visual information from the retina to the brain). Retinal damage and damage to the fibres of the optic nerve result in visual field loss. Magnetic therapy normalizes production and discharge of aqueous humour. Its application improves the function of the vascular system of the eye, which results in a decrease in intraocular pressure and lower risk of retinal degeneration processes. Magnetic therapy should be combined with high blood pressure treatment as elevated blood pressure is commonly the actual cause of the disease.

## Gout

- A disease that affects the locomotor system. Urate crystals (salts formed by uric acid) accumulate in joints, tendons, and even earlobes, causing painful inflammation.
- It is primarily the anti-inflammatory and analgesic effect of pulsed magnetic therapy that is used to treat this condition. Accelerating metabolism in affected tissues results in these accumulated substances being washed away more quickly, which also accelerates tissue recovery. It is imperative that magnetic therapy is applied on a long-term and regular basis including in periods with no gout attacks (as a preventive measure).

## Gynaecological surgeries

- Of all the positive effects of magnetic therapy, it is its analgesic properties as well as its ability to reduce swelling and improve microcirculation that are the most significant as far as post-surgery processes in the lower pelvic area (such that involve scarring) are concerned. If treatment takes place before and after surgery, the wounds heal considerably faster and both swelling and inflammation-related complications are prevented.

## Haemorrhoids

- This is a painful condition that causes inflammation and dilation (occasionally even thrombosis) of the blood vessels in the anal area.
- Application of magnetic therapy is highly recommended. If a patient is suffering from external haemorrhoids, magnetic therapy helps to prevent thrombosis and inflammation. A magnetic field also reduces swelling, facilitates healing, and contributes to regression of haemorrhoids. The mechanism of action of magnetic therapy is basically the same if internal haemorrhoids are diagnosed. However, its application is not recommended if the patient is bleeding heavily.

## Heartburn, reflux diseases

- Heartburn means that gastric acids move up into, and cause damage to, the oesophagus. Magnetic therapy is a highly suitable method to treat this disease, primarily due to its anti-inflammatory and analgesic properties.

### **Herniated disc**

- A condition characterized by a spinal disc that has either cracked or has been pushed to the side; a herniated disc can put pressure on the nearby nerves, nerve roots as well as the spinal cord.
- ✚ Magnetic therapy alleviates sharp, shooting pain and helps to reduce swelling of the affected nerve tissues. It also ensures relief from painful spasms of the surrounding muscles, making it possible for rehabilitation to be more intensive and effective.

### **Hip arthrosis**

- A degenerative disease affecting the hip joint.
- ✚ Magnetic therapy has strong analgesic effects, constituting a remedy not only for pain originating in a damaged cartilage and/or surrounding bones, but also for pain coming from the ligaments and tendons attached to the articular capsule. A magnetic field distributes equally, treating the entire ilio-lumbar (relating to the hip or lower back) area; the damaged cartilage starts to recover and its mobility and flexibility improve. As a result, patients need to have their hip joints substituted with an endoprosthesis much later while a portion of them may not need the surgery at all.

### **Hypertension (high blood pressure)**

- High blood pressure (hypertension) may have a variety of causes.
- ✚ Regular application of magnetic therapy normalizes blood pressure and eliminates risks associated with hypertension. These include brain stroke, ischemic heart disease, retinal damage, glaucoma, kidney damage, and a number of others. Magnetic therapy also relieves headaches and improves sleep. Cutting down on, or stopping, medication is frequently possible subject to your doctor's consent.

### **Hypothyreosis**

- A condition characterized by an underactive thyroid (of a variety of origins). Its manifestations include slower metabolism, tendency to become fat, sensitivity to cold, and constipation. The skin is dry, coarse, and may become scaly while hair gets thinner, brittle, and coarse.
- ✚ Magnetic therapy commonly proves highly successful in treating this condition. Its application increases blood supply to, and kickstarts metabolism in, the affected tissues, normalizing production and secretion of thyroid hormones. It is also important to ensure a sufficient intake of iodine and other trace elements, especially selenium.

### **Immune system boost**

- A compromised immune system of a variety of origins.  
Magnetic therapy strengthens your immune system and normalizes its function. The result is a considerable proportion of patients suffering from a variety of diseases experience improvement in their condition.



### **Infertility (reproductive system diseases)**

- Causes vary, ranging from inflammation of the ovaries, adhesions formed around the fallopian tubes, irregular menstruation, uterus which is too small or whose mobility is compromised, pelvic adhesive disease, to swelling in the lower pelvic area.
- ✚ Magnetic therapy normalizes menstruation and promotes better blood supply to the lower pelvic region. The result is improvement in hormonal parameters as well as increased chances of conception.

### **Inflamed colon, Crohn's disease**

- Affecting multiple areas of the gastrointestinal tract, Crohn's disease is a chronic condition which involves formation of ulcers. Scars occur as inflamed areas heal, obstructing the passageway. Symptoms include severe diarrhoea, abdominal pain, fever, compromised nutrient absorption, lack of energy, somnolence, loss of appetite, and weight loss. Pulsed magnetic therapy is recommended to patients suffering from this condition as it helps the body to fight inflammation, normalizes the immune system, and boosts recovery. Abdominal pain is relieved, defecation becomes normal, and patients regain control of their flatulence. Begin treatment with short applications (5-10 minutes long) and gradually increase the length. We remind you that magnetic therapy is only to be used when you are stabilized, i.e. not bleeding. Consult your physician regarding the use of magnetic therapy in your case.
- ✚

### **Inflammation of spinal nerve roots (polyradiculoneuritis)**

- An inflammatory disease (polyneuritis) that affects the peripheral nervous system – e.g. the spinal nerve roots, peripheral nerves, and nerve plexuses.
- ✚ Magnetic therapy has strong anti-inflammatory properties, improves blood flow to the skin in the affected areas, and alleviates pain. Additionally, reflexology findings improve and sensation and motor skill normalize. Recovery time of patients on traditional treatment (i.e. being treated by drugs) is nearly 50 % longer than that of patients who are applying magnetic therapy.

### **Inflammation of the ovaries and of the fallopian tubes**

- Inflamed ovaries and fallopian tubes might result in adhesions that obstruct the passageway and eventually cause infertility.
- ✚ Magnetic therapy has strong anti-inflammatory and analgesic properties. Also, it improves drug penetration to the affected tissues as well as shortens treatment length. The result is decreased risk of chronic inflammation, adhesions and infertility. Also, your menstrual cycle normalizes.

### **Inflammation of the urinary tract**

- ✚ In addition to having analgesic and anti-inflammatory properties, pulsed magnetic therapy also accelerates repair of membrane tissues, ensuring quick elimination of burning when urinating. There is also increased drug tissue penetration, which contributes to such medication being more effective.

### **Inflammation of the vagina and vaginal discharge**

- Inflammation of the external female genital area.
- ✚ Magnetic therapy boasts anti-inflammatory effects and also reduces swelling, congestion (localized increase of blood in a tissue), and itchiness. Moreover, the effect of antibiotics is strengthened and recovery time shortens.

### **Inflammatory diseases of the middle ear (otitis media)**

- ✚ Magnetic therapy relieves pain and reduces inflammation. It also promotes blood flow, resulting in better drug penetration to the affected tissues. Additionally, magnetic therapy prevents the condition from becoming chronic and shortens treatment and recovery time.

### **Insomnia (sleep disorders)**

- Insomnia, inability to fall asleep and interrupted sleep.
- ✚ Successful management of somatic and mental problems (such that may interrupt healthy sleep patterns) are pivotal to eliminating sleep disorders. Pulsed magnetic therapy promotes correct blood circulation in the brain, a prerequisite that must be met to ensure uninterrupted sleep. Application of magnetic therapy also stimulates the brain to increase its production of endorphins (referred to as “feel-good” chemicals), making treatment of mental disorders easier. Magnetic therapy is to be applied, on an as-recommended basis, to the head area, cervical spine as well as the back and all other painful segments of the body.

### **Joint arthritis**

- A non-inflammatory degenerative disease of joints and surrounding areas.
- ✚ A few applications result in partial alleviation of pain, which gradually subsides completely. Regular and long-term use also kickstarts cartilage recovery as well as improves mobility and flexibility. Magnetic therapy is able to accelerate metabolic processes in joints and thereby speed up healing of damaged tissues. Low-frequency pulsed magnetic therapy is also recommended to persons who have had a joint replacement surgery (endoprosthesis).

### **Kidney inflammation, colic**

- Renal colic refers to excruciating pain attacks affecting the lumbar region. The pain is normally unilateral and its intensity changes. It is commonly caused by spastic contractions of smooth muscle fibres of the ureters irritated by a solid piece of material (kidney stone) that has developed in the urinary tract. Nausea, vomiting, and blood in the urine also frequently occur.
- ✚ Pulsed magnetic therapy has anti-inflammatory and vasodilating (increasing blood flow by dilating blood vessels) properties that boost recovery and prevent chronic inflammation. Magnetic therapy also boasts analgesic and spasmolytic (suppressing muscle spasms) effects as well as the ability to calm irritated ureters. Be aware that your fluid intake should increase along with treatment.

### **Knee arthrosis**

- A degenerative disease affecting the knee joint.
- ✚ In addition to ensuring a quick onset of its analgesic properties, pulsed magnetic therapy treatment also facilitates healing processes (provided it is used regularly). Cells are stimulated to produce more collagen, elastin, and additional cartilage components, making it possible for articular surfaces to recover over a period of time.

### **Larynx, vocal chords, hoarse voice**

- Inflammatory conditions affecting the larynx.
- ✚ Magnetic therapy has anti-inflammatory and analgesic effects as well as helps the body to recover. This accelerates healing significantly and shortens the amount of time a patient needs to recover from this condition.

### **Limb injuries**

- Injuries of a variety of kinds and with a variety of causes.
- ✚ Magnetic therapy reduces pain and accelerates healing. It also prevents inflammations and other complications. The result is significantly shortened recovery time and more effective rehabilitation.

### **Liver damage caused by hepatitis or exposure to toxins**

- Liver is the largest and the most active gland (in terms of metabolism) in the human body. It has a number of functions such as producing bile, processing nutrients digested in the guts, synthesizing proteins and saccharides, and performing detoxification processes. Liver damage therefore results in a number of conditions including some allergic diseases, compromised immune system as well as migraine and various metabolic disorders.
- ✚ Magnetic therapy stimulates liver tissue recovery, improves blood supply thereto, and increases its detoxification capabilities. In addition, it has positive effects on the metabolic processes in the liver as well as the production of bile and other significant substances. Finally, magnetic therapy stimulates the immune system. It should, however, only be applied while a patient is in recovery, not in the course of the acute phase of an illness (particularly if you are suffering from hepatitis).

### **Low back pain (lumbago)**

- Sudden pain that occurs after bending or rotating the spine. The pain is a result of the ligaments between the vertebrae being overexerted and/or torn as well as of local inflammation. The pain is usually associated with compromised mobility and flexibility as well as contractions of the surrounding muscles.
- ✚ Magnetic therapy is highly recommended to treat this condition. Patients in the acute phase experience pain relief, considerably milder spasmodic muscle contractions, and elimination of inflammation. Magnetic therapy also expedites repair of damaged ligament tissues.



## **Lyme disease**

- An infectious disease caused by a bacterium named *Borrelia burgdorferi*. It is predominantly transmitted by infected ticks. Lyme disease affects a number of organs and tracts of the body and if antibiotics fail to be administered promptly a number of complications occur. These include e.g. meningitis, heart rhythm disorders, articular cartilage degeneration, and peripheral neuropathy. Late stages of the disease may involve, despite treatment with antibiotics, a number of disorders affecting the musculoskeletal apparatus. Therefore, long-term care is highly recommended.
- ✚ Magnetic therapy has proved highly successful in treating this disease. It is one of the few treatment methods that reduce inflammation as well as relieve long-lasting pain due to neuropathy and/or joint damage. In addition, improved blood circulation and a boosted lymphatic system increase antibiotic tissue penetration and thereby support elimination of bacteria.

## **Lymph vessel diseases**

- Primary lymphedema (swelling caused by blocked lymph vessels); secondary lymphedema (post-surgery).
- ✚ Magnetic therapy significantly improves blood as well as lymph circulation and is able to reduce the volume of an affected limb by more than 50 %. We recommend magnetic therapy is combined with manual lymphatic drainage.

## **Massage**

- ✚ Magnetic therapy has muscle relaxant effects and also improves blood flow in muscles. Its application is recommended before a massage as it makes it possible for a physical therapist to stimulate effectively a wider range of muscles including the deep muscles. Also, an after-massage boost of blood circulation and the lymphatic system ensures acidic metabolites are washed away more quickly, kickstarting whole body recovery.

## **Ménière's disease**

- A disorder involving damaged sensitive systems of the inner ear. The cause is unknown. The classic triad of symptoms comprises episodes of vertigo (feeling like the world is spinning), tinnitus (ringing in the ears), and hearing loss.
- ✚ Magnetic therapy has proved to be one of the most successful in treating this disease. It dramatically improves blood circulation in the area of the inner ear as well as helps the damaged nerve tissue structures to recover. The result is reduction or even elimination of both tinnitus and vertigo and significantly improved hearing. While treatment must be regular and long-term, up to 90 % of patients experience significant improvement in their condition as a result of its application. It is recommended that magnetic therapy is combined with acupuncture to treat this disease.

## **Migraines**

- Serious headache that may have a number of causes. The disease involves changes in blood flow to the brain and the meninges as well as damaged blood vessels in the area. A considerable proportion of migraines are caused by spinal damage.

- ✚ Magnetic therapy normalizes blood circulation and boasts strong analgesic and anti-inflammatory effects. Better treatment results will be achieved if magnetic therapy is applied as early as the very beginning of a migraine episode. Regular application is also essential as it gradually decreases sensitivity of the brain structures to the stimuli that cause migraines. As a result, frequency and intensity of migraine episodes decrease or they disappear completely.

### **Minimal brain dysfunction in children (MBD)**

- Minor brain dysfunctions in children such as hyperactivity, hypoactivity, inability to focus, impulsiveness, learning disorder, mood swings, unstable mental performance, insomnia, bed-wetting, etc.
- ✚ Pulsed magnetic therapy is highly successful in treating this condition. It calms down hyperactive people, cures sleep disorders, and boosts concentration. Patients also experience an improved ability to learn as well as decreased emotional lability and attention deficit disorder. Treatment should be long-term.

### **Mononucleosis**

- This is a viral infection caused by the Epstein-Barr virus (EBV). The disease typically affects the tonsils, larynx, liver, and spleen.
- ✚ Magnetic therapy stimulates liver tissue repair, which results in improved blood circulation and increased detoxification abilities. Additionally, it positively impacts metabolic processes in the liver as well as the production of bile and other significant substances. Magnetic therapy also stimulates the immune system. It should, however, only be applied while a patient is in recovery, not in the course of the acute phase of the illness.

### **Multiple sclerosis**

- A disease of the brain and spinal cord which involves inflammation.
- ✚ Magnetic therapy is among the treatment methods that prove the most successful in treating this diagnosis. It has anti-inflammatory and analgesic effects, improves gait (walking) and fine motor skills, and reduces muscle tone. Additionally, it reduces the frequency and intensity of attacks, prolonging periods of remission (a period during which symptoms of a disease are reduced or disappear). It also reduces, and occasionally eliminates, sphincter issues. Finally, magnetic therapy increases the release of endorphins, improving the mood of those patients who are suffering from depression.

### **Myopathy**

- A muscular disease resulting in muscular weakness. There are a variety of causes. Magnetic therapy promotes blood supply and muscle recovery, facilitates conduction of nerve impulses, and relieves tension. It is imperative that application is regular and long-term.

### **Odontogenic osteomyelitis**

- Inflammation of the bone marrow which occurs in the bones of the jaws. The condition is

caused by inflammation of the tooth socket and the root. Application of magnetic therapy is indicated only in case of presence of (a) clearly demarcated osteomyelitis-affected area(s); frequent medical check-ups performed by a medical specialist (stomatologist) are necessary.

- ✚ Magnetic therapy has anti-inflammatory and analgesic properties. Additionally, it enhances antibiotic tissue penetration which results in an increased effect of antibiotics. It also accelerates healing and promotes subsidence of the inflammation.

### **Optic nerve atrophy**

- A condition more frequent in elderly people; it usually occurs as a consequence of a microcirculation (circulation of blood in the smallest blood vessels) disorder affecting the area in question.
- ✚ Magnetic therapy significantly improves blood circulation, ensuring more efficient supply of oxygen and nutrients to the eye. The optic nerve is highly sensitive to magnetic field, and regular application of magnetic therapy has the potential to improve eyesight dramatically. Make sure you consult your medical specialist regarding the use of magnetic therapy in your case.

### **Osteoporosis**

- Osteoporosis is a disease characterized by lower-than-normal mineralised bone mass as well as damaged bone tissue structures. The condition results in fragile bones and increased risk of a fracture.
- ✚ Magnetic therapy is one of the most successful methods to treat osteoporosis. Its application harmonizes creation and reabsorption of bone tissue, contributing to more stable bone tissue structures as well as normalization of mineralization of bone tissue. A sufficient intake of calcium as well as magnesium is essential. Application of magnetic therapy must be long-term.

### **Painful, irregular menstruation**

- Disorders (of a variety of origins) related to menstruation as well as the period of time before and after it.
- ✚ Magnetic therapy is only to be applied when a woman is not bleeding. It boosts recovery and boasts analgesic and anti-inflammatory effects, relieving menstrual cramps and eliminating irregular periods in up to 95 % of women. Application should be regular and long-term (for a minimum of 3 months).

### **Pancreatitis (acute and chronic)**

- Inflammation of the pancreas with a variety of causes
- ✚ Magnetic therapy has strong anti-inflammatory and analgesic properties and strengthens the effect of medication being administered. Results of laboratory tests normalize quickly and the amount of time patients need to recover shortens.

### **Parkinson's disease, stiffness**

- The disease is caused by a lack of dopamine (a neurotransmitter) in the brain; its manifestations include impaired gait (walking) and motor coordination, tremor, and muscle stiffness.
- ✚ Magnetic therapy stimulates nerve cells to produce more dopamine, contributing significantly to improving all the parameters of the disease. Muscle stiffness as well as Parkinson's tremor are reduced. Patients also experience improved gait, motor coordination, and fine motor skills. Up to 95 % of patients experience improvement.

### **Peptic ulcers (gastric + duodenal)**

- A gastric ulcer is a disease affecting the inner lining and walls of the stomach while an ulcer which forms in the first part of the intestines (duodenum) is a duodenal ulcer. Application of a pulsed magnetic field stimulates cells of the inner lining and walls of the stomach to increase production of protective mucus that prevents additional damage to the tissues caused by gastric acids. Improvement is both objective and subjective, alleviation of pain also occurs. Positive effects of magnetic therapy kickstart tissue repair processes, which results in the gastric ulcer healing considerably more quickly. Be aware that magnetic therapy must not be applied when a bleeding peptic ulcer is present!
- ✚

### **Periodontitis**

- Inflammation and resulting damage to the tissues (bones and ligaments) that support the teeth. The primary cause is accumulation of a bacterial matrix at the gum line called dental plaque.
- ✚ Magnetic therapy reduces bleeding of gums, removes tenderness of gums, and eliminates their inflammation. Blood flow also improves, destructive processes stop, and healing is initiated. Be reminded that maintaining good oral hygiene and using an interdental toothbrush are equally important!

### **Peripheral neuropathy**

- Nerve damage as a result of a variety of diseases and injuries (including surgical injuries).
- ✚ Nerve tissues are highly sensitive to a magnetic field. This makes it possible for magnetic therapy to alleviate pain, eliminate an unpleasant feeling of pins and needles, restore sensation, and improve motor skills and coordination. It also prevents inflammation-related complications, accelerates healing, and improves results of rehabilitation.

### **Polio in children**

- Polio comprises a wide range of conditions mostly characterized by compromised motor skills and mobility although mental retardation and epileptic fits may also be present. There are a variety of causes which are frequently combined.
- ✚ Magnetic therapy is the primary treatment method for polio, and should therefore always be used. Nervous tissues are highly sensitive to a magnetic field and respond well to treatment. Long-term application relaxes muscle spasms and has analgesic effect,

frequently making it possible to commence intensive rehabilitation (e.g. using the Vojta method). Children's mental development and development of their motor skills may accelerate in such a way that their levels become comparable with healthy children of the same age. If epilepsy is also diagnosed, magnetic therapy must not be applied to the head area (unless a medical specialist advises otherwise). However, application to the shoulders and lower portions of the body is not only possible, but also recommended.

### **Postmenopausal syndrome**

- Menopause or climacteric refers to the time in women's lives when a gradual decrease in, and eventually termination of, hormone production by the ovaries occurs. Symptoms may also include unstable blood pressure, headache, dizziness, insomnia, fatigue, and mental problems. There are serious complications as well. These include osteoporosis which manifests itself as long-lasting and sharp pain in the back.
- ✚ Application of magnetic therapy contributes to a more balanced hormonal activity of the ovaries and thereby mitigates the problems stated above. Blood pressure normalizes, hot flushes subside, and fatigue and weakness disappear.

### **Post-operative care (healing)**

- ✚ Magnetic therapy significantly accelerates healing and shortens the amount of time patients need to recover. It has analgesic effects, prevents inflammation-related complications, and stimulates patient recovery. Magnetic therapy also reduces the size of, and calms, the scar. Rehabilitation may start earlier and may be more intensive.

### **Postpartum uterine regression**

- ✚ Magnetic therapy may be used as a supplementary treatment method under a gynaecologist's supervision and subject to his or her recommendation. Uterine regression accelerates; the puerperal period (the first six weeks following childbirth) passes with no complications. If you are bleeding, do not apply and contact your physician!

### **Prostate – inflammation, enlargement**

- ✚ Magnetic therapy is among the most effective methods to treat benign prostatic hyperplasia. It reduces pain and swelling, eliminates inflammation, and shrinks the prostate. What is more, sexual functions also commonly improve dramatically after 2-3 months of regular application.

### **Psoriasis**

- Psoriasis is a skin disease characterized by new skin cells being produced about 10 times as fast as in a healthy person. Persons suffering from the disease develop, in typical locations, patches of inflamed, red, thickened, and scaly skin. Pain and joint damage may also be present. The disease is not contagious.
- ✚ Magnetic therapy is to be applied to the affected area as well as the respective segment of the spine (spinal cord). Long-term application is necessary; 60-70 % of patients experience improvement in their condition. It is imperative that magnetic therapy is also

applied, as a preventive measure, to the spine and large joints as these may also be affected by the disease.

### **Relaxation of muscles – myorelaxation**

- ✚ Magnetic therapy has significant muscle relaxant effects, decreasing excess muscle tone and offering relief from painful muscle spasms. Additionally, it promotes blood and lymphatic circulation, which results in acidic metabolites being removed from muscles.

### **Rheumatoid arthritis**

- A long-term destructive autoimmune disorder (frequently involving inflammation) affecting cartilages, bones, and synovial membranes. Affected joints are usually painful and swollen, feel warm to the touch, and their mobility and flexibility are compromised. Magnetic therapy is among the treatment methods that prove the most successful in treating this condition. It has strong analgesic and anti-inflammatory effects, reduces swelling, and improves mobility of joints. Long-term application kickstarts tissue repair in the affected cartilage and makes it possible for patients to rehabilitate more effectively.
- ✚

### **Sciatica**

- Sciatica is pain caused by compression of a spinal nerve root in the lower back. Pain usually travels from the lower section of the lumbar spine via the rear part of the thigh all the way to the calf and the foot. Its causes include herniated discs, degenerative changes in the spinal structures, and elevated muscle tone as a result of a microtrauma or long-term overexertion.
- ✚ Application of magnetic therapy commonly proves highly successful in treating this syndrome. Pain is relieved quickly, and healing of the nerves as well as of the ligaments of the spine accelerates. Treatment helps to relax tense muscles as well as improves blood circulation, resulting in acidic metabolites being washed away faster. This also enables more effective rehabilitation.

### **Scleroderma – neurological complications and complications related to internal organs**

- Scleroderma is a diffuse disease affecting connective tissues in the skin and a number of internal organs. It is characterized by thickened peripheral arteries as well as branches of the celiac artery.
- ✚ Magnetic therapy improves blood circulation, which translates into improved supply of oxygen and nutrients to tissues. It has anti-inflammatory effects and reduces the body's negative autoimmune reaction. It helps to prevent and treat complications of scleroderma such as creation of ulcers on limbs, pulmonary damage, occurrence of cardiac arrhythmia, and other.

### **Shingles (herpes zoster)**

- A viral diseases caused by varicella–zoster virus, i.e. the same pathogen that causes chickenpox. The virus usually spreads along one of the branches of the trigeminal nerve

or along the nerves that come out of the spine, triggering inflammation thereof that commonly manifests itself on the skin in the form of painful blisters or red rashes. Patients frequently continue to be affected by mild to debilitating neuralgia (a chronic pain disorder affecting the nerves) even after they have undergone treatment.

- ✚ Application of pulsed magnetic therapy is highly recommended as the entire nervous system is very sensitive to a magnetic field. Pain subsides quickly; anti-inflammatory effects of magnetic therapy translate into nerve inflammation resolving sooner. Treatment also stimulates the body's immune system, helping the body to recover from the disease. It is imperative that magnetic therapy continues to be used for a minimum of one month after symptoms have disappeared.

### **Sinusitis – sinus infections**

- Inflammation of the paranasal sinuses.
- ✚ Magnetic therapy has analgesic and anti-inflammatory effects. It also reduces mucous membrane swelling, contributing to easier discharge of phlegm and pus. There is considerably improved penetration of antibiotics to affected tissues, which helps to eliminate all the bacteria which are causing the disease and which might otherwise survive in the tissue and later bring about an additional episode of infection.

### **Spinal cord injuries**

- Bruised (contused) spinal cord as a result of a spine injury – post-concussion syndrome. Nerve tissues are highly sensitive to magnetic stimulation and respond very well to treatment. Magnetic stimulation activates repair mechanisms, patients experience its analgesic and anti-inflammatory effects, and swelling is reduced. Recovery time shortens significantly; sensation and motor skills also improve. Magnetic therapy facilitates more intensive rehabilitation with better results.

### **Spinal protuberances**

- Protuberances (bulbs, outgrowths) that occur as a result of osteoarthritis.
- ✚ Magnetic therapy reduces painfulness and nerve irritation as well as swelling of the affected nerve tissue caused by the bulb pressing against the surrounding tissue. Magnetic therapy also removes muscle stiffness and, if used on a long-term and regular basis, is able to achieve partial outgrowth reabsorption.

### **Spine surgery (postoperative care)**

- Spine surgery with a variety of causes.
- ✚ Magnetic therapy relieves pain and significantly accelerates healing. Risk of complications involving inflammation is reduced; patients are commonly able to initiate rehabilitation sooner and their rehabilitation may be more intensive.

### **Spurs**

- A calcaneal (heel) spur is a bony outgrowth from the heel bone. When a foot is exposed to constant stress (mechanical stress, improper footwear, misaligned feet), calcium de-

posits build up on the bottom of the heel bone. Piling up of these deposits causes a spur-shaped deformity called a heel spur. The deformity may also affect the back of the heel at the insertion of the Achilles tendon.

- ✚ Magnetic therapy has anti-inflammatory and analgesic effects, initiates repair mechanisms in the affected area, and prevents additional spurs from being formed. Make sure you also decrease mechanical stress on the heel by walking more carefully and by using soft heel cups (made of rubber, silicon, or molitan foam). It is also recommended you consider altering the height of the heels on your shoes.

### **Swelling**

- Of a variety of origins.
- ✚ Magnetic therapy improves circulation of blood as well as the function of the lymphatic system, contributing to reducing and absorption of existing swelling as well as preventing it from recurring. If swelling is caused by a heart failure, magnetic therapy should also be applied to the chest and back.

### **Tennis elbow**

- This condition is an enthesopathy, a group of diseases which involve inflammation and which affect the area where a tendon is attached to a bone. They are normally caused by tendon overuse and failed healing of the tendon (such as during sports activities or as a result of a person using a computer mouse).
- ✚ Magnetic therapy has analgesic effects, reduces and prevents swelling, and eliminates inflammation. While patients commonly experience relief very quickly, magnetic therapy must be used on a long-term basis to ensure the tendon has healed properly and there is no risk of recurrence of the disease. Treatment must be applied to both the affected joint and the cervical spine!

### **Tick-borne encephalitis**

- Transmitted by the bite of infected ticks, this is a viral infectious disease affecting the brain.
- ✚ Magnetic therapy is to be applied while a patient is in recovery. Late inflammatory processes are inhibited, tissue repair is initiated, and the overall condition of the immune system improves, resulting in the consequences of the diseases being mitigated.

### **Tinnitus**

- An unpleasant condition characterized by patients hearing sounds (ringing, roaring, clicking) when no external sound is present. The disease may have a variety of causes. Magnetic therapy is among the treatment methods that prove the most successful in treating this diagnosis. It significantly increases blood flow to the inner ear area, promoting repair of damaged nerve tissues. The result is reduced or eliminated tinnitus as well as considerable improvement in hearing. If treatment is long-term and regular, up to 90 % of patients experience significant improvement. It is recommended that magnetic therapy is combined with acupuncture.
- ✚



### **Tonsillitis, nasopharyngeal conditions**

- A bacterial or viral infection.
- ✚ The magnetic therapy device improves effectiveness of antibiotics taken during acute infection as well as accelerates healing. Magnetic therapy is only to be applied once fever has ceased. When applied regularly and on a long-term basis, magnetic therapy improves your immune system as well as helps to normalize bacteria culture test results.

### **Ulcerative colitis**

- Ulcerative colitis is a long-term condition that results in unspecified inflammation of the colonic mucosa. While the cause remains unknown, many patients simultaneously suffer from food allergies. Main symptoms include diarrhoea mixed with blood (and occasionally phlegm), abdominal pain, flatulence, loss of appetite, and weight loss. Magnetic therapy may only be used when a patient is stabilized, i.e. no bleeding or malabsorption is present. Pulsed magnetic therapy has anti-inflammatory effects, normalizes the immune system, and promotes healing. It may also help to reduce/relieve abdominal pain, normalize defecation, and make it possible for patients to gain control of their flatulence. Start with short applications (5-10 minutes) and gradually increase the length. Please, consult your medical specialist regarding the use of magnetic therapy.
- ✚

### **Unspecified pulmonary diseases**

- Bronchial asthma, chronic obstructive pulmonary disease (COPD, also referred to as smokers' disease), emphysema.
- ✚ Magnetic therapy reduces the frequency of attacks that occur in patients with asthma, improves results of spirometry tests, and makes it easier to cough up phlegm. Moreover, it has anti-inflammatory effects, reduces the risk of fibrosis, and promotes exchange of respiratory gases that move between the air and the blood. Finally, it improves penetration of drugs into tissues, frequently making it possible for patients to cut down on their medication (subject to a doctor's consent)

### **Urinary incontinence in children**

- A pathologic condition characterized by involuntary urination.
- ✚ Once magnetic therapy has been applied, incontinence is reduced or disappears completely. Lower urinary tract X-ray results normalize and inflammation-related complications subside.

### **Uterine inflammation and endometritis**

- Inflammation of uterus and of endometrium with a variety of causes.
- ✚ Application of magnetic therapy results in quick subsidence of inflammation and alleviation of pain. Menstrual cycle as well as results of laboratory tests normalize, and risk of infertility is decreased.

### **Varicose veins, varices**

- Varices (singular: varix) are enlarged and convoluted veins that often occur as a result

of veins being overloaded for a long period of time and their walls being weakened. Damaged vein walls hinder the flow of blood from the vein, swelling is present, and there is increased risk of a thrombosis (and a subsequent embolism).

- ✚ Magnetic therapy strengthens vein walls dramatically as well as accelerates circulation of blood, also speeding up the flow of blood from the lower limbs. This reduces the risk of blood clots that may result in a pulmonary embolism. It also treats inflammation of veins and prevents it from recurring. Slight pain (if any) during the first few applications does not constitute a reason to interrupt treatment. Such pain, which will disappear in a few days, proves the organism is responding well to magnetic therapy.

### **Venous diseases**

- These include, but are not limited to, inflammation of veins associated with risk of a thrombosis and subsequent embolism, chronic venous insufficiency, venous diseases accompanied by swelling and formation of blood clots, varicose veins.
- ✚ Regular application of magnetic therapy achieves reduction of swelling, an increase in the amount of oxygen in arterial blood and its more effective absorption in tissues, accelerated tissue repair resulting in the arteries being unclogged, a decreased tendency to form blood clots. Also, magnetic therapy kickstarts healing processes that eliminate skin defects and ulcers.

### **Venous ulcers**

- A chronic skin defect characterized by tissue decomposition and necrosis. Venous ulcers may have venous, arterial, and/or combined causes.
- ✚ Application of magnetic therapy results in more intensive formation of granulation tissue on the bottom part of an ulcer, pain relief, and reduction of pus discharge. Increasing blood supply to the exposed tissue also increases intake of oxygen and nutrients, shortening the amount of time necessary for the wound to heal. Pulsed magnetic therapy regularly proves highly successful in treating patients with this diagnosis.



Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Back and spinal pain	40	large and flat	spinal area	✓	2–5 Hz in the course of 5 seconds, there and back, for 15 minutes, 6–10 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	20
Bartholin's abscesses	30	small and flat	lower abdomen	✓	7 Hz for 15 minutes, 25 Hz for 15 minutes	R2	
Bechterew's disease	30	large and flat	spinal area	✓	2–5 Hz in the course of 5 seconds, there and back, for 15 minutes, 7–10 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	
Blocked cervical spine	40	small and circular	cervical spine	✓	2–4 Hz in the course of 5 seconds, there and back, for 20 minutes, 6–10 Hz in the course of 5 seconds, there and back, for 20 minutes	R4,2	21
Bone marrow inflammation (osteomyelitis)	40	small and circular	affected area	✓	24–30 Hz in the course of 5 seconds, there and back, for 20 minutes, 45–80 Hz in the course of 5 seconds, there and back, for 20 minutes	R4	
Brain stroke – consequences	30	small and circular	head area		15–25 Hz in the course of 5 seconds, there and back, for 15 minutes, 25–30 Hz in the course of 5 seconds, there and back, for 15 minutes	R3	
Breast-feeding and lactation failure	40	flat (small and large)	chest area		12 Hz for 20 minutes, 22 Hz for 20 minutes	R2,4	
Bronchitis	40	small and circular; small and flat	thymus gland area		5–15 Hz in the course of 5 seconds, there and back	R2	

\* large and flat: Piano, Lettino, Casso, Becco; \* small and flat: Manic; \* large and circular: Vier; \*small and circular: Cavo

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Burns	40	flat (small or large)	affected area	✓	5–8 Hz in the course of 5 seconds, there and back, for 20 minutes, 10–12 Hz in the course of 5 seconds, there and back, for 20 minutes, 20–24 Hz in the course of 5 seconds, there and back, for 20 minutes	R2	22
Carpal tunnel syndrome	45	small and flat; circular	wrist and cervical spine	✓	10 Hz for 15 minutes, 13 Hz for 15 minutes, 25 Hz for 15 minutes	R2	
Cellulite	40	large and flat	affected area		2–25 Hz in the course of 5 seconds for 20 minutes, 30–45 Hz for 20 minutes	R4,1,2	
Cervical erosion	30	small and flat	lower abdomen		12 Hz for 15 minutes, 18 Hz for 15 minutes	R2	
Chronic obstructive pulmonary disease (smokers' disease)	40	large and circular; flat	chest area		R2	R1	
Chronic pancreatitis	30	large and circular	the region where cervical spine transforms into thoracic spine	✓	2+8+10+15+10+8 Hz in the course of 3 seconds	R2	33
Constipation	45	flat (large and small)	abdominal area		25 Hz for 15 minutes, 35 Hz for 15 minutes, 45 Hz for 15 minutes	R3,4	22
Cornea – injuries, operations, eye infections	40	small and circular	head area		R1	R4	23
Cracked nipples	40	flat (small or large)	area around the nipples		12 Hz for 20 minutes, 28 Hz for 20 minutes	R2,4	
Degeneration of the spinal cord	40	small and flat	spinal cord area		18–20 Hz in the course of 5 seconds, there and back, for 20 minutes, 25–30 Hz in the course of 5 seconds, there and back, for 20 minutes	R1	

\* large and flat: Piano, Lettino, Casso, Becco;    \* small and flat: Manic;    \* large and circular: Vier;    \*small and circular: Cavo

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Degenerative retinosis	45	small and circular	head area		25 Hz for 15 minutes, 35 Hz for 15 minutes, 50 Hz for 15 minutes	R3,4	23
Detoxication program	30	large and flat; circular	whole body	✓	2–20 Hz in the course of 5 seconds for 15 minutes, 25–45 Hz for 15 minutes	R1, R4	
Diabetes	45	small and flat	pancreas and liver		R2 for 15 minutes, then 15 Hz for 15 minutes, 24 Hz for 15 minutes	R1	
Diabetic foot – blood circulation, pins and needles, wounds that do not heal	40	large and flat	affected area		10–12 Hz in the course of 5 seconds, there and back, for 20 minutes, 14–25 Hz in the course of 5 seconds, there and back, for 20 minutes	R1,2,4	24
Dupuytren's contracture	45	small and flat	palmar region		28 Hz for 15 minutes, 40 Hz for 15 minutes, 85 Hz for 15 minutes	R3	
Endometriosis	30	flat (large and small)	loins and lower abdomen		6+14+22 Hz for 10+10+10 minutes	R2	
Endoprosthesis	30	circular (small or large)	area around the joint	✓	2–5 Hz in the course of 5 seconds, there and back, for 15 minutes, 18 Hz for 15 minutes	R2	
Erectile and sexual dysfunction	30	small and flat; circular	genital area		28 Hz for 10 minutes, 48 Hz for 10 minutes, 90 Hz for 10 minutes	R3,4	25
Feeling of pins and needles in limbs (paresthesia)	30	large and flat; circular	affected area as well as the cervical or lumbar spine		2–5 Hz během 5 vteřin tam a zpět 15 minut, 6–10 Hz během 5 vteřin tam a zpět 15 minut	R2	
Fractures	45	small and circular; flat	affected area		16 Hz for 15 minutes, 30 Hz for 15 minutes, 50 Hz for 15 minutes	R1,2	
Fractures – complicated healing	45	circular (small or large)	affected area		10 Hz for 15 minutes, 18 Hz for 15 minutes, 25 Hz for 15 minutes	R1,2	

\* large and flat: Piano, Lettino, Casso, Becco;    \* small and flat: Manic;    \* large and circular: Vier;    \*small and circular: Cavo

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Frozen shoulder	30	small and circular	shoulder area	✓	2–5 Hz in the course of 5 seconds, there and back, for 15 minutes, 15–20 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	25
Glaucoma	30	small and circular	head area		20 Hz for 15 minutes, 25 Hz for 15 minutes	R2	26
Gout	30	small and circular	affected area	✓	2 Hz for 10 minutes, 8 Hz for 10 minutes, 20 Hz for 10 minutes	R1,2	
Gynaecological surgeries	40	small and flat	lower abdomen		5–8 Hz in the course of 5 seconds, there and back, for 20 minutes, 10–13 Hz in the course of 5 seconds, there and back, for 20 minutes	R1,2,4	
Haemorrhoids	30	small and flat	anal area	✓	12–18 Hz in the course of 5 seconds, there and back	R2	
Heartburn, reflux diseases	30	small and flat; circular	stomach and thoracic spine		4–6 Hz in the course of 5 seconds, there and back	R2	
Herniated disc	40	large and flat	spinal area	✓	2–6 Hz in the course of 5 seconds, there and back, for 20 minutes, 6–15 Hz in the course of 5 seconds, there and back, for 20 minutes	B2,1 R2	27
Hip arthrosis	45	circular (either small or big)	hip area	✓	R1 for 5 minutes, 3+7+12+18 Hz for 10+10+10+10 minutes	R1	
Hypertension (high blood pressure)	40	large and flat	chest area	✓	6–10 Hz in the course of 5 seconds, there and back	R1	
Hypothyreosis	45	small and circular	laryngeal region		25 Hz for 15 minutes, 40 Hz for 15 minutes, 55 Hz for 15 minutes	R3,4	
Immune system boost	30	small and circular	thymus gland area		5–45 Hz in the course of 5 seconds, 2–25 Hz in the course of 5 seconds	R1,2	
* large and flat: Piano, Lettino, Casso, Becco; * small and flat: Manic; * large and circular: Vier; *small and circular: Cavo							

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Information on page
Infertility (reproductive system diseases)	45	large and circular	loins and lower abdomen		R1,2		28
Inflamed colon, Crohn's disease	30	large and circular; flat	abdominal area	✓	3 Hz for 10 minutes, 8 Hz for 10 minutes, 10 Hz for 10 minutes	R2	
Inflammation of spinal nerve roots (polyradiculoneuritis)	30	small and flat	spinal cord area	✓	2+8+15 Hz for 10+10+10 minutes	R2	
Inflammation of the ovaries and of the fallopian tubes	30	small and flat	lower abdomen	✓	3–6 Hz in the course of 5 seconds, there and back, for 10 minutes, 11–13 Hz in the course of 5 seconds, there and back, for 10 minutes, 17–20 Hz in the course of 5 seconds, there and back, for 10 minutes	R2	
Inflammation of the urinary tract	40	small and flat	lower abdomen	✓	10–12 Hz in the course of 5 seconds, there and back, for 20 minutes, 22 Hz for 20 minutes	R2	
Inflammation of the vagina and vaginal discharge	30	small and flat	lower abdomen	✓	12 Hz	R2	29
Inflammatory diseases of the middle ear (otitis media)	30	small and circular	head area	✓	2–5 Hz in the course of 5 seconds, there and back, for 10 minutes, 9 Hz for 20 minutes	R2	
Insomnia (sleep disorders)	45	small and circular	head area		5 Hz for 15 minutes, 12 Hz for 15 minutes, 16 Hz for 15 minutes	R4	
Joint arthrosis	45	small and circular	affected area	✓	R1 for 5 minutes, 3+7+12+18 Hz for 10+10+10+10 minutes	R1	
Kidney inflammation, colic	40	large and circular	loins	✓	2–4 Hz in the course of 5 seconds, there and back, for 20 minutes, 6–10 Hz in the course of 5 seconds, there and back, for 20 minutes	R2	

\* large and flat: Piano, Lettino, Casso, Becco;    \* small and flat: Manic;    \* large and circular: Vier;    \*small and circular: Cavo



Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Knee arthrosis	45	small and circular	knee area	✓	R1 for 5 minutes, 3+7+12+18 Hz for 10+10+10+10 minutes	R1	30
Larynx, vocal chords, hoarse voice	30	small and circular	neck	✓	12 Hz for 15 minutes, 18–25 Hz in the course of 5 seconds, there and back, for 15 minutes	R3,4	
Limb injuries	40	small and circular	affected area		20–25 Hz in the course of 5 seconds, there and back, for 20 minutes, 33 Hz for 20 minutes	R1, R4	
Liver damage caused by hepatitis or exposure to toxins	40	small and flat	liver area		35 Hz for 20 minutes, 42 Hz for 20 minutes	R2	
Low back pain (lumbago)	30	large and flat	spinal area	✓	6–8 Hz in the course of 5 seconds, there and back, for 15 minutes, 9–12 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	
Lyme disease	45	large and flat; small and circular	head and spinal area	✓	2–4 Hz in the course of 5 seconds, there and back, for 15 minutes, 12 Hz for 15 minutes, 18 Hz for 15 minutes	R2,4	31
Lymph vessel diseases	30	large and flat	whole body		25–35 in the course of 5 seconds, there and back	R2	
Massage	30	large and flat	whole body	✓	2–35 Hz in the course of 5 seconds	R4,1,2	
Ménière's disease	40	small and circular	head area		16 Hz for 10 minutes, 22–26 Hz in the course of 5 seconds, there and back, for 20 minutes, 36 Hz for 10 minutes	R1,2	
Migraines	30	small and circular	head area		5–12 Hz in the course of 5 seconds, there and back, for 15 minutes, then 4–6 Hz in the course of 5 seconds, there and back, for 15 minutes		
* large and flat: Piano, Lettino, Casso, Becco;    * small and flat: Manic;    * large and circular: Vier;    *small and circular: Cavo							

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Minimal brain dysfunction in children (MBD)	30	small and circular	head area		2 Hz for 10 minutes, 4 Hz for 10 minutes, 6 Hz for 10 minutes	R2	32
Mononucleosis	45	small and flat; circular	liver and cervical spine		45 Hz for 15 minutes, 60 Hz for 15 minutes, 80 Hz for 15 minutes	R3,4	
Multiple sclerosis	40	large and flat; small and circular	spinal and head area		15+20+25+30 Hz for 10+10+10+10 minutes	R2	
Myopathy	40	large and flat	spinal area		R1 for 20 minutes, 27 Hz for 20 minutes		
Odontogenic osteomyelitis	45	circular (small and large)	affected area	✓	7 Hz for 15 minutes, 15 Hz for 15 minutes, 24 Hz for 15 minutes	R2,4	
Optic nerve atrophy	45	small and circular	head area		18 Hz for 15 minutes, 30 Hz for 15 minutes, 60 Hz for 15 minutes	R3,4	33
Osteoporosis	40	large and flat; circular	affected area		R1 for 10 minutes, 18–25 Hz in the course of 5 seconds, there and back, for 20 minutes, 36 Hz for 10 minutes	R1	
Painful, irregular menstruation	40	small and flat	lower abdomen	✓	5–8 Hz in the course of 5 sec., there and back, for 20 minutes, 10–13 Hz in the course of 5 sec., there and back, for 20 minutes	R1,2	
Parkinson's disease, stiffness	45	large and flat; small and circular	spinal and head area		20+35+45 Hz for 15+15+15 minutes	R1,3	34
Peptic ulcers	30	large and circular	stomach area		5 +7+12 Hz for 10 minutes	R2	
Periodontitis	30	small and flat; circular	head area		28 Hz for 15 minutes, 42 Hz for 15 minutes	R3,4	
Peripheral neuropathy	45	small and circular	head area		2+8+15 Hz for 15+15+15 minutes	R4	
Polio in children	30	small and circular; large and flat	head area and spinal area		18–20 Hz in the course of 5 seconds, there and back, for 10 minutes, 25–30 Hz in the course of 5 seconds, there and back, for 10 minutes, R2 for 10 minutes	R3	

\* large and flat: Piano, Lettino, Casso, Becco;    \* small and flat: Manic;    \* large and circular: Vier;    \*small and circular: Cavo

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Postmenopausal syndrome	40	small and flat	lower abdomen		12–15 Hz in the course of 5 seconds, there and back, for 20 minutes, 30–37 Hz in the course of 5 seconds, there and back, for 20 minutes	R1,2,4	35
Post-operative care (healing)	40	large and flat; circular	affected area		3–7 Hz in the course of 5 seconds, there and back, for 20 minutes, 8–12 Hz in the course of 5 seconds, there and back, for 20 minutes	R2,4	
Postpartum uterine regression	30	large and circular	loins and lower abdomen		2–5 Hz in the course of 5 seconds, there and back, for 15 minutes, 7–12 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	
Prostate – inflammation, enlargement	45	large and circular; flat	lower abdomen		13–15 Hz in the course of 5 seconds, there and back, for 15 minutes, 20–24 Hz in the course of 5 seconds, there and back, for 15 minutes, 32–40 Hz in the course of 5 seconds, there and back, for 15 minutes	R4	
Psoriasis	40	small and flat; circular	affected area		2–3 Hz in the course of 5 seconds, there and back, for 20 minutes, 20–22 Hz in the course of 5 seconds, there and back, for 20 minutes, 28–30 Hz in the course of 5 seconds, there and back, for 20 minutes	R1	
Relaxation of muscles - myorelaxation	30	large and flat	affected area		2–35 Hz in the course of 5 seconds	R4,1,2	36
* large and flat: Piano, Lettino, Casso, Becco; * small and flat: Manic; * large and circular: Vier; *small and circular: Cavo							

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Rheumatoid arthritis	30	large and flat	spinal area	✓	2–5 Hz in the course of 5 seconds, there and back, for 15 minutes, 7–10 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	36
Sciatica	30	large and flat	spinal area	✓	6–8 Hz in the course of 5 seconds, there and back, for 15 minutes, 9–12 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	
Scleroderma – neurological complications and complications related to internal organs	40	small and circular	head area		15 Hz for 20 minutes, 5–15 Hz in the course of 5 seconds, there and back, for 20 minutes	R4	
Shingles (herpes zoster)	30	large and flat	affected area	✓	3–6 Hz in the course of 5 seconds, there and back, for 15 minutes, 6–10 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	
Sinusitis – sinus infections	30	small and circular	head area	✓	8 Hz for 15 minutes, 22 Hz for 15 minutes	R4	37
Spinal cord injuries	40	small and flat	spinal cord area		18–20 Hz in the course of 5 seconds, there and back, for 20 minutes, 25–30 Hz in the course of 5 seconds, there and back, for 20 minutes	R1	
Spinal protuberances	40	large and flat	spinal area	✓	2–8 Hz in the course of 5 seconds, there and back, for 20 minutes, 6–18 Hz in the course of 5 seconds, there and back, for 20 minutes	B2,1 R2	

\* large and flat: Piano, Lettino, Casso, Becco;    \* small and flat: Manic;    \* large and circular: Vier;    \*small and circular: Cavo

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Info on page
Spine surgery (postoperative care)	40	large and flat	spinal area	✓	4–8 Hz in the course of 5 seconds, there and back, for 20 minutes, 12–25 Hz in the course of 5 seconds, there and back, for 20 minutes	R2	37
Spurs	30	small and flat	foot and heel area	✓	2–8 Hz in the course of 5 seconds, there and back, for 15 minutes, 8–14 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	
Swelling	40	flat or circular	affected area		2–25 Hz in the course of 5 seconds, there and back, for 20 minutes, 25–35 Hz in the course of 5 seconds, there and back, for 20 minutes	R1,2	38
Tennis elbow	30	small and circular; flat	elbow area	✓	2–5 Hz in the course of 5 seconds, there and back, for 15 minutes, 15–20 Hz in the course of 5 seconds, there and back, for 15 minutes	R2	
Tick-borne encephalitis	45	small and circular; large and flat	head and spinal area	✓	2–4 Hz in the course of 5 seconds, there and back, for 15 minutes, 12 Hz for 15 minutes, 18 Hz for 15 minutes	R2,4	
Tinnitus	40	small and circular	head area		16 Hz for 10 minutes, 22–26 Hz in the course of 5 seconds, there and back, for 20 minutes, 36 Hz for 10 minutes	R1,2	
Tonsillitis, nasopharyngeal conditions	40	small and circular	neck	✓	18 Hz for 20 minutes, 33 Hz for 20 minutes	R1	39
* large and flat: Piano, Lettino, Casso, Becco; * small and flat: Manic; * large and circular: Vier; *small and circular: Cavo							

Diagnoses	Time	Recommended applicator	Where to apply	Choice of intensity	Frequency	Substitute mode	Information page
Ulcerative colitis	30	large and circular	abdominal area, loins and buttocks	✓	3 Hz for 10 minutes, 8 Hz for 10 minutes, 10 Hz for 10 minutes	R2	39
Unspecified pulmonary diseases	40	large and circular	chest area		R2	R1	
Urinary incontinence in children	40	small and flat	lower abdomen		2–12 Hz in the course of 5 seconds, there and back	R2	
Uterine inflammation and endometritis	30	small and flat	lower abdomen	✓	14 Hz for 15 minutes, 22 Hz for 15 minutes	R2	
Varicose veins, varices	30	large and flat	affected area	✓	6 Hz for 10 minutes, 12 Hz for 10 minutes, 22 Hz for 10 minutes	R2	
Venous diseases	30	flat (large and small)	whole body		for 20 minutes	R1	40
Venous ulcers	40	flat; small and circular	affected area	✓	10–12 Hz in the course of 5 seconds, there and back, for 20 minutes, 14–18 Hz in the course of 5 seconds, there and back, for 20 minutes	R1,2	

\* large and flat: Piano, Lettino, Casso, Becco;    \* small and flat: Manic;    \* large and circular: Vier;    \*small and circular: Cavo

## 9.7 Magnetic field intensity

### Magnetic field intensity

Healing, analgesic, and some special programs make it possible for users to set pulsed magnetic field intensity (strength) to values ranging from 10 to 100 %. This is especially useful in conditions involving inflammation (e.g. rheumatic disorders, arthritis) where a temporary deterioration of a patient's condition may rarely occur at the beginning of treatment involving magnetic therapy. Such a temporary deterioration is caused by the substances causing the inflammation being washed away from the patient's tissues; in fact, what is really happening is the affected tissues are being "cleansed". While this is no doubt a sign that a body is responding well to treatment with magnetic therapy, it may be seen as unpleasant by patients. Therefore, it is possible to decrease temporarily the applied magnetic field intensity and shorten the application length until the undesirable reactions disappear.

## **10. Magnetic therapy device maintenance and cleaning instructions**

Make sure you only carry out maintenance and cleaning of the device once it has been unplugged from the electrical grid! Applicators must be cleaned in accordance with instructions whenever a patient being treated changes, or at least once a week.

Neither the pulse generator, nor the network adapter or the magnetic field tester require special maintenance. Do not spray water on the surface of the generator to clean it! Instead, first sponge using lukewarm water and neutral detergent, then sponge again using clean water. Ensure no large amount of water penetrates the stitches.

It is recommended applicators are disinfected with Sanytol, a universal disinfectant product; both disposable wiping cloths and a liquid solution may be used. If the device is shared by a number of patients, we recommend you alternate Sanytol with a disinfectant product containing peracetic acid (e.g. Persteril) on a monthly basis. The device must not be cleaned using solvent-based detergents as these substances might cause damage.

Store in the original packaging and in a dry covered place. Further information available in Chapter 11 (Medical Device Technical Specifications).

## **11. Medical Device Technical Specifications**

<b>Network adapter</b>	
Network supply voltage	100–240 V/50 Hz
IEC protection class	II.
Type of surroundings	regular
Type	UE24WV-180130SPA
Secondary voltage and current	18 V=1,300 mA
Wattage	24 VA
Weight	160 g

<b>Pulse generator</b>	
Wattage	7–20 VA (based on selected applicator type)
Applied part type	typ BF
Energy source required	18 V = coming from adapter
Guaranteed frequency range	2–72 Hz
Maximum magnetic field induction	40 mT
Impulse waveform	rectangular
Temperature of surroundings during device operation	+5 °C až +40 °C
Relative air humidity during device operation	15–93 % (no condensation)
Atmospheric pressure range	from 700 hPa to 1,060 hPa
Dimensions	175 × 90 × 28 mm
Weight	280 g
Alerts and safety notices	acoustic signal + information available on the screen
Termination of application	acoustic signal + information available on the screen
Memory	EEPROM
Application length	30 minutes



### Applicator types

MANIC – flat type, dimensions:	170 × 215 mm
PIANO – flat type, dimensions:	450 × 490 mm
BECCO – flat type, dimensions:	700 × 215 mm
LETTINO – flat type, dimensions:	315 × 1 005 mm
CASSO – flat type, dimensions:	550 × 1 700 mm
CAVO – circular type, diameter:	ø 260 mm
VIERA – circular type, diameter:	ø 675 mm

### Applied part type:

BF

### Medical device technical specifications

Temperature of surroundings during operation:	+ 5 až + 40 °C
Relative air humidity during device oper:	from 15 % to 93 % (no condensation)
Atmospheric pressure range:	from 700 hPa to 1,060 hPa
Prescribed storage conditions:	the device must be stored in the original packaging and in a dry covered place; it must not be exposed to chemicals; storage temperature may range from -25 °C (no relative humidity tests required) to +70 °C (maximum allowed relative humidity of 93%, no condensation)
Shipping and transport instructions:	transport in the original packaging and in a roofed vehicle, or commission a transportation company; allowed transport temperature ranges from -25 °C (no relative humidity tests required) to +70 °C (maximum allowed relative humidity of 93 %, no condensation)

**Tinkering with RENAISSANCE Duo Forte, a magnetic therapy device, is prohibited!**

## **12. Periodical technical and safety inspections**

If periodical technical and safety inspections (PTSIs) are prescribed by law, they must be performed once every two years. Failure to have a technical or safety inspection performed within a specified deadline (whether by the manufacturer or an authorized maintenance company) results in the device being inoperable.

The expected life of the pulse generator including the applicators is 20 years provided periodical technical and safety inspections are carried out as prescribed.

## **13. Magnetic therapy device maintenance**

Both warranty and post-warranty maintenance of the RENAISSANCE Duo Forte magnetic therapy device may only be performed by the manufacturer or an authorized maintenance company! If a PTSI discovers a defect, the repairing and/or maintenance of the magnetic therapy device must be carried out while no patient is being treated by the device.

Complaints are to be addressed to, and professional maintenance services are to be requested from, the manufacturer:

Company name: ZES Brno, a. s.

Registered office: Sladovnická č.p.518/4, 620 00 Brno, Czech Republic e-mail: technik@zes.cz, telephone: +420 545 229 355

## **14. EMC – electromagnetic compatibility**

The RENAISSANCE Duo Forte magnetic therapy device requires a specific EMC precaution – it must be installed and operated in accordance with the EMC specifications stated below. Portable and mobile high-frequency devices may affect the device's performance.

### **14.1 Manufacturer's instructions and declarations – electromagnetic radiation**

RENAISSANCE Duo Forte is a magnetic therapy device designed to be used in an electromagnetic environment as specified below. A user of RENAISSANCE Duo Forte, a magnetic therapy device, must ensure the device is only used in such an environment. Floors must be made of wood, concrete or ceramic tiles. If floors are covered with synthetic material, the minimum relative humidity is 30%.

The RENAISSANCE Duo Forte magnetic therapy device only uses high-frequency energy to sustain its own internal functions. Therefore, its high-frequency radiation is limited, and there is very little associated risk of interference with other electronic devices located nearby.

The device may be used in all places and institutions including households and such properties that are directly connected to a public low voltage network which supplies electricity to residential buildings.

The RENAISSANCE Duo Forte magnetic therapy device must not be used while it is located very near another electronic device or when it is placed on top of another electronic device. If there is no alternative to placing the device near, or on top of, another electronic device, observe RENAISSANCE Duo Forte carefully to ensure it operates normally despite its position.

## 14.2 Manufacturer's instructions and declarations – electromagnetic interference

Our portable magnetic therapy devices from the RENAISSANCE® series with applicators and Duo Forte pulse generators are Group 1-rated and, considering their stated purpose of use, Class B-rated. They must not be installed near active high-frequency devices or in rooms which house medical magnetic resonance imaging systems and feature radio frequency shielding; the reason is the degree of electromagnetic interference in such places is high.

Limit characteristics for full function and for a complete loss of all the stated characteristics have been calculated for the specific frequencies of each program as well as for a complete loss of function under normal conditions and in case of a single defect.

If electromagnetic interference causes a deviation from a stated frequency or if a total loss of function occurs due to electromagnetic interference, these do not constitute a significant danger either for the patient, or the device operator.



If the portable magnetic therapy device is used near, on top of, or in combination with, another electronic device, improper device operation may occur. If there is no alternative to using the portable magnetic therapy device in such a way, observe both the magnetic therapy device and all other devices carefully to ensure their proper function.



Use the supplied UE24WV-180130SPA network adapters to power your portable magnetic therapy devices from the RENAISSANCE® series with applicators and Duo Forte pulse generators. No other network adapter is allowed. Additionally, the portable magnetic therapy device may only be used together with applicators which have been supplied by the manufacturer and which are suitable for a specific diagnosis as detailed in this user's manual.



Refrain from using a portable radio communications device (including end devices such as antenna cables and external antennas) at a distance of less than 30 cm (12 inches) from any part of the portable magnetic therapy device including its interconnect cables. Otherwise, its function may become compromised.

It is not necessary to adopt any measures to prevent electromagnetic interference-related incidents that might affect patients or device operators.

Our portable magnetic therapy devices from the RENAISSANCE® series with applicators and Duo Forte pulse generators fully comply with applicable electromagnetic radiation standards for Group 1, Class B:

ČSN EN 55011 ed. 4: 2017+A1: 2017 (EN 55011:2016)

Frequency band 0.15–0.50 MHz:

- quasi-peak value does not exceed 66 dB ( $\mu\text{V}$ ) and decreases linearly with logarithm of frequency to 56 dB ( $\mu\text{V}$ );
- median value does not exceed 56 dB ( $\mu\text{V}$ ) and decreases linearly with logarithm of frequency to 46 dB ( $\mu\text{V}$ ).

Frequency band 0.50–5 MHz:

- quasi-peak value does not exceed 56 dB ( $\mu\text{V}$ );
- median value does not exceed 46 dB ( $\mu\text{V}$ ).

Frequency band 5–30 MHz:

- quasi-peak value does not exceed 60 dB ( $\mu\text{V}$ );
- median value does not exceed 50 dB ( $\mu\text{V}$ ).

Frequency band 23–230 MHz:

- quasi-peak value does not exceed 42 dB ( $\mu\text{V}/\text{m}$ ) and decreases linearly with logarithm of frequency to 35 dB ( $\mu\text{V}/\text{m}$ )

Frequency band 230–1000 MHz:

- quasi-peak value does not exceed 42 dB ( $\mu\text{V}/\text{m}$ ).

Our portable magnetic therapy devices from the RENAISSANCE® series with applicators and Duo Forte pulse generators fully comply with applicable ČSN EN 61000-3-2 ed. 4: 2015 standards (EN 61000-3-2:2014), which make provision for limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase).

Portable magnetic therapy devices from the RENAISSANCE® series with applicators and Duo Forte pulse generators fully comply with applicable ČSN EN 61000-3-3 ed.3: 2014 standards (EN 61000-3-3:2013), which make provision for limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current  $\leq 16$  A per phase and not subject to conditional connection.

Our portable magnetic therapy devices from the RENAISSANCE® series with applicators and Duo Forte pulse generators fully comply with applicable immunity standards.

ČSN EN 61000-4-2 ed. 2: 2009 (EN 61000-4-2:2009)

test voltages:

- contact discharge  $\pm 8$  kV
- electrostatic discharge (ESD) test  $\pm 2$  kV,  $\pm 4$  kV,  $\pm 8$  kV,  $\pm 15$  kV

ČSN EN 61000-4-3 ed. 3: 2006+A1: 2008+Z1: 2010+A2: 2011 (EN 61000-4-3:2006)

RF and EM fields radiated by the device

- voltage per meter during immunity test 10 V/m
- radiated high frequency 80 MHz to 2,7 GHz; 80% AM at 1kHz

ČSN EN 61000-4-4 ed. 3: 2013 (EN 61000-4-4:2012)

- contact discharge  $\pm 2$  kV
- repetition frequency 100 kHz

ČSN EN 61000-4-5 ed. 3: 2015+A1: 2018 (EN 61000-4-5:2014)

test voltages:

- line-to-line testing:  $\pm 1$  kV
- line-to-ground testing:  $\pm 2$  kV

ČSN EN 61000-4-6 ed. 4: 2014 (EN 61000-4-6:2014)

- voltage per meter during immunity test: 3V/m
- radiated high frequency: 150 KHz až 80 MHz
- voltage per meter during immunity test: 6V/m
- radiated high frequency: 80 % AM at 1 kHz in ISM bands ranging from 0.15 KHz to 80 MHz

ČSN EN 61000-4-8 ed. 2: 2010 (EN 61000-4-8:2010)

- power frequency magnetic field immunity test (50 Hz):  
30A/m 50Hz

ČSN EN 61000-4-11 ed. 2: 2005+A1: 2017 (EN 61000-4-11:2004)

- short-term voltage dip and voltage variations immunity test:  
0 %  $U_T$  in 0,5 of cycle time at 0°, 45°, 90°,  
135°, 180°, 225°, 270°, 315°;  
0 %  $U_T$ , 1 cycle;  
70 %  $U_T$ , 25/30 cycles; Single  
phase: at 0°.
- voltage interruption immunity test: 0 %  $U_T$ , 250/300 cycles

All the stated standards have been used in their entirety, i.e. with no exceptions or deviations therefrom.

## **15. Disposing of the magnetic therapy device**

Czech Act No. 7/2005 Sb. classifies the RENAISSANCE Duo Forte magnetic therapy device as electronic waste. At the end of its life, the device must therefore not be disposed of in municipal solid waste.

## **16. Contact details:**



Company name: ZES Brno, a. s.  
Address: Sladovnická 518/4, 620 00 Brno, Czech Republic  
Company ID: 49969510  
[www.pulzni-magnetoterapie.cz](http://www.pulzni-magnetoterapie.cz)

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