
THE AUTOR

- Dr. Saan was born in Groningen in 1931.
- After secondary school he studied medicine at the University of Groningen from 1949 to 1957.
- Already from the start of his medical study sport played an important role in his life.
- After winning the Junior Gymnastics Championships of the Netherlands in 1951 he became a qualified trainer in 1952 and gave lessons after that.
- After qualifying as a doctor he completed one year of military service and then became a general practitioner in Groningen.
- He has been a busy general practitioner for more than 20 years.
- During that period he has fulfilled many other activities.
- From 1963 – 1983 he taught the following subjects at the Academy for Physical Training: traumatology, health education and sport medicine.
- For 25 years he held a consultation clinic at the same Academy.
- From 1965 – 1980 he taught at The Academy for Physiotherapy.
- He became a Doctor of Medicine in 1966. The title of his thesis was " methods to improve the efficiency in the practice of the general practitioner."
- From 1959 to the present, attached as 'foundation doctor' to the Prison and the Dr. S. van Mesdag Clinic at Groningen.
- From 1978 – 1990 he was medical advisor/head of department of an industrial insurance board.
- In this framework he was registered as an insurance doctor in 1982.
- His favourite hobby, teaching, and in particular, the retaining of doctors, he's always played an important part in his life due to his participation on many boards, work groups and other organisations.
- Dr. Saan has been married since 1957 and has 2 children.
- He now leads his own medical advice bureau.

PREFACE

Many people do not like theoretical stories.

They find it sufficient to know that the *Therapeutic Mt365* lets the whole body vibrate pleasantly, massages it so to speak, and simultaneously warms it, excluding the head.

The head can be kept cool by an individually adjustable double-sided ventilation.

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Relaxing music rounds off a session of about 30 minutes in the *Therapeutic Mt365*, after which an incredibly relaxed feeling remains.

Muscle pains, back pains, painful and stiff joints, over-tiredness and stress symptoms disappears or decline clearly after one or more treatments.

The feeling of well-being increases:

But:

There are also people who find such a story lacks depth.

They require more medical background; want to know what really happens to you now and why using the *Therapeutic Mt365* these relieving and relaxing effects.

The following report has been written and is meant for these people; somewhat medical, but written so that you do not have to be a medical person to understand the main points.

Dr. M. Saan

The tension in the blood vessel wall

Using the *Therapeutic Mt365* means, in medical terms, widening blood vessels. The width of blood vessels is regulated by muscles in the wall of the blood vessels. Talking about the width of blood vessels means, therefore, talking about the muscle tension (tonus) in the blood vessel wall.

Muscles relax due to warmth. This also applies for the muscles in the wall of the blood vessels.

Warmth stimulates, therefore, the widening of blood vessels.

Do wider blood vessels have advantages?

Yes, because food and energy substances can be supplied better through wider blood vessels, similar for oxygen, while waste products can be disposed of more easily.

This is particularly advantageous for sickness, traumatic or overload processes of muscles, tendons, synovia, joints, but also for the whole body!

With the *Therapeutic Mt365* we are dealing with a sophisticated combination of vibration, warmth, ventilation and music.

These four factors can be adjusted and regulated separately by the users themselves.

- Vibration from shoulders to heels, the intensity can be set by the client. The whole body is, so to speak, massaged.
- Dry heat from 20 – 80° C, adjustable by the client.
- Ventilation, which directs the warm current evenly along the body, by which the head can be supplied with a double-sided self-adjustable cool ionized air current.
- Music with an effect aimed at relaxation.

The above combination of factors ensures a long-lasting mentally and physically relaxed feeling.

We shall examine this in more depth.

Muscle innervation

Muscles are stimulated, pricked, innervated as that is called respectfully, by nerves.

Voluntary – or cerebrospinal nervous system

With regard to our arm and leg muscles, in general, our skeletal muscles, that pricking (innervation) takes place by nerves from our voluntary or cerebrospinal nervous system.

These nerves go, therefore, from the brains via the spinal cord (cerebrospinal) to the muscles.

Voluntary means here: influenced by our will.

Muscle tension

A muscle that contracts itself more or less closes its own blood vessels simultaneously and by this soon lacks oxygen.

That is why, for example, you can only hold a bucket of water in front of you on an outstretched arm for just a short time.

As known, the muscles holding up the arm are stretched tight, blood vessels to the muscle fibres are closed off, the muscle does not get enough oxygen, so the arm becomes tired and sags.

The example above is used primarily to illustrate that tension in muscles means shortening of muscles, gives a feeling of stiffness caused by an obstruction of the blood stream.

We can state the following:

The more relaxed the muscle the longer the muscle, the more supple the feeling, the better the blood supply.

Autonomous or vegetative nervous system

But there are also muscles that cannot be influenced by our will, such as the muscles surrounding our blood vessels, the heart muscles, around the intestines, etc..

These muscles are stimulated to contract, in a given case relax, by the involuntary nervous system.

This is also called the autonomous or vegetative nervous system.

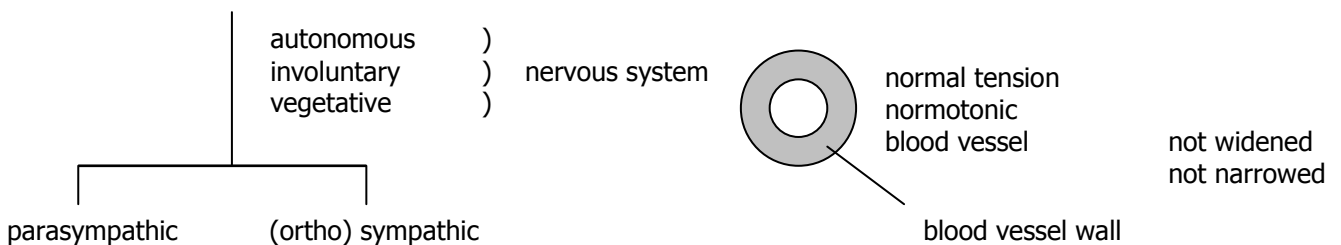
Parasympathetic and (ortho) sympathetic nervous system

The autonomous nervous system has 2 components, which work contrarily (antagonistically). If the one component widens a blood vessel (vasodilatation), the other component will act precisely to narrow it (vasoconstrictions).

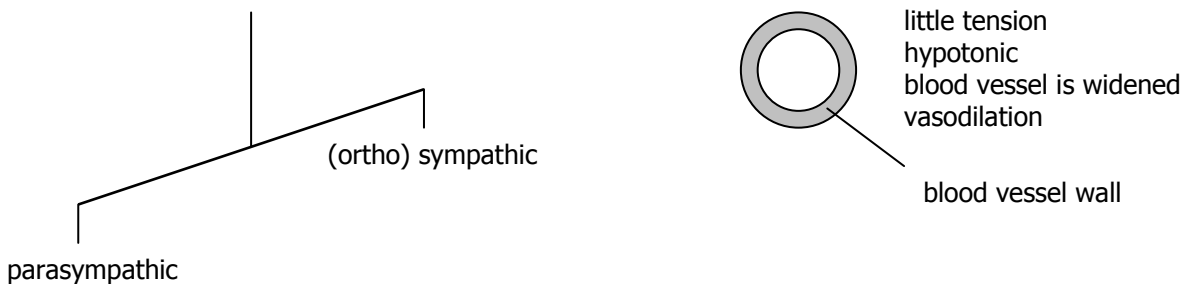
We call both components of the autonomous nervous system the parasympathetic and the (ortho) sympathetic nervous system.

Normally speaking these components keep themselves in balance, but it is also possible for one to dominate the other.

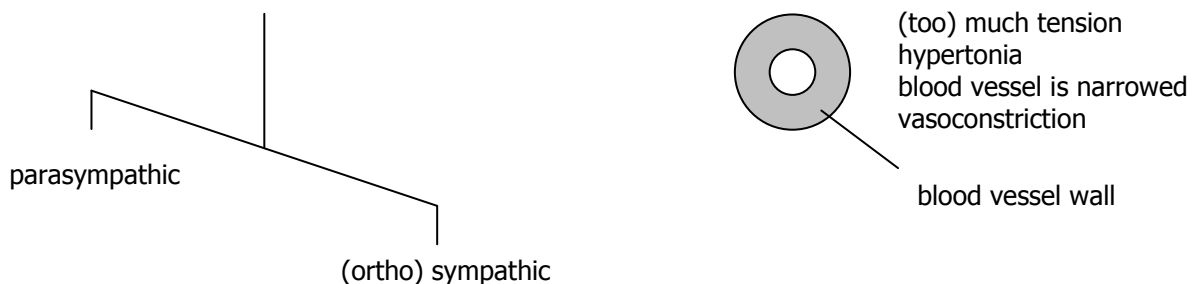
SITUATION 1 balance situation



SITUATION 2 parasympathic domination (= parasympathicotonia)



SITUATION 3 sympathetic domination (= sympathiconia)



Continuation autonomous nervous system

The basic tension (tonus) of our skeletal muscles is also influenced by the autonomous nervous system.

Given mental tension the muscles also feel more tense. If, on the contrary, you are relaxed mentally, then the muscles often feel more supple.

In principle, both the components of our nervous system – the parasympathic and the (ortho) sympathetic system – are in balance.

This balance is never precise. Some fluctuations can always be observed. If, for example, you are somewhat busier, then the scale tips slightly towards the sympathetic side. If You are more at rest, then the parasympatic component will dominate more.

Sympathic and parasympathic examined further

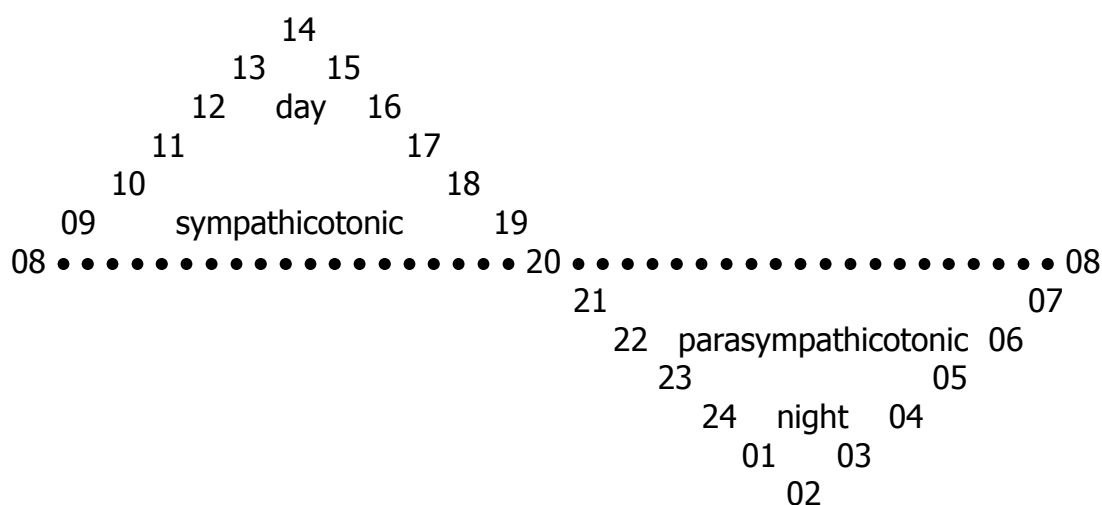
If we examine these matters further now then it appears that quite considerable fluctuations do still occur.

We have, for example, a day and a night rhythm in which the autonomous nervous system is controlled by our biological clock.

During the day we see a sympathetic domination, at night a parasympathic.

In young children the day and night fluctuations are extremely pronounced, in older people precisely not. Adults are between these.

This can be reproduced diagrammatically as follows:



A further analysis of the effect of the *Therapeutic Mt365*

If a nerve prickles a body cell (in our case let's say a muscle cell), then such a nerve does not do this via an electric prickling, but by emitting a chemical fluid at the end of its nerve, which influences the cell.

Therefore:

a nerve does not work via an electric, but via a chemical fluid prickle.

This chemical fluid is called neurotransmitter.

----- X X X X X X **cell**
nerve neurotransmitter

Neurotransmitter

It has been discovered that different types of nerves separate different types of neurotransmitters.

We shall limit ourselves to the two neurotransmitters released by prickles from the autonomous nervous system.

We have seen already that we are concerned with the sympathetic and parasympathic nervous system.

The neurotransmitter released by a sympathetic prickle is called (nor) adrenalin.

----- X X X X X X **cell**
sympathic nerve noradrenalin

The neurotransmitter released by a parasympathic prickle is called acetylcholine.

----- X X X X X X **cell**
parasympathic nerve acetylcholine

A sympathetic reaction on the muscles is:

- energy consuming (catabolic)
- reserves consuming
- adrenergic
- sympathicotonic

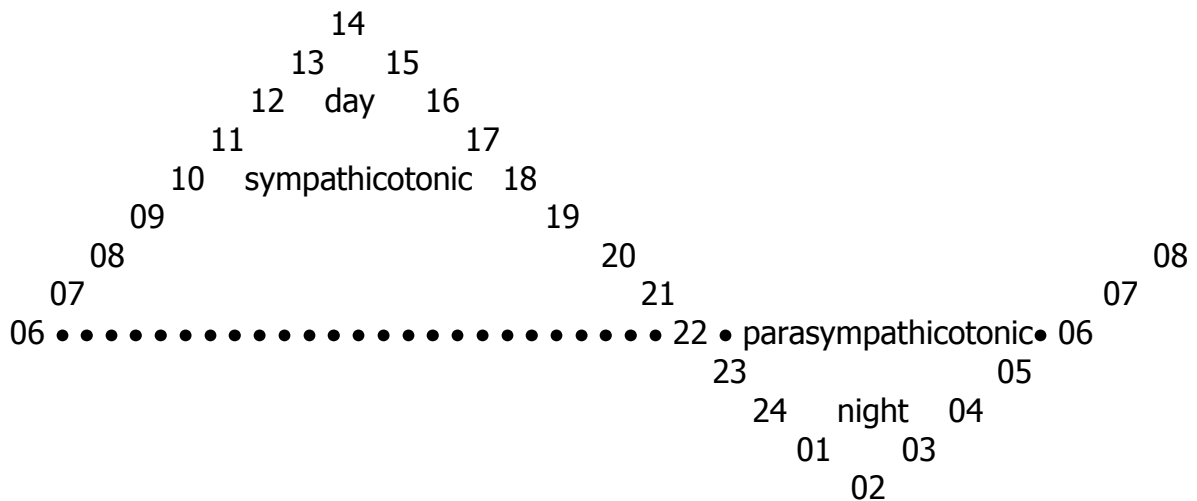
A parasympathic reaction on the muscles is:

- energy saving (anabolic)
- reserves savings
- growth stimulating
- cholinergic
- parasympathicotonic

The sympathicotonic type

Nowdays, many people are burning themselves out (a so-called sympathicotonic, adrenergic, catabolic life-style).

This can be reproduced diagrammatically as follows:



We can see here that the sympathetic part has become much larger at the cost of the anabolic, reserve developing parasympathic part.

This type of person is called the sympathicotonic type.

These types can be compared with engines, which run too fast while run to fast while stationary. They use too much energy and burn themselves out.

Characteristics:

- accelerated heart beat (normally 60 – 80/min.)
- accelerated breathing (normally 12 – 18/min.)
- raised blood pressure
- too rapid metabolism
- (by several fractions) raised temperature (normally 36.8°C – 37.3°C)
- shifting of the acid level of their blood towards the acidic side, by which the cell metabolism functions less effectively
- dilated pupils
- restless sleep

It appears that regular use of the **Therapeutic Mt365** breaks through this pattern.

First, the body is activated strongly by the increasing warmth in the **Therapeutic Mt365**. The heart beat, therefore the pulse and the breathing frequency, increase. The blood pressure also will rise slightly.

After the motors, which produce the vertical vibrations, stop and after the heat supply also stops, then the rule is that the client remains lying down for at least 5 to 10 minutes more (until the temperature in the **Therapeutic Mt365** has dropped to +/- 40°C).

During this 10 minutes rest an enormous sweat production occurs. Simultaneously a naturally deep relaxation occurs and the body is pushed, so to speak, in the parasympathic directions. The wider blood vessels, the relaxed muscles, the relaxed mind, now bring the body in the desired state of parasympathicotonia.

This means that 1 hour after a **Therapeutic Mt365** treatment:

- the heart beat has become slower
- the breathing has become slower
- the blood pressure has become lower
- the metabolism is less fast (the stationary motor no longer runs too fast)
- the temperature has dropped by several fractions
- the acid level has shifted to the alkaline side by which the cell metabolism becomes much more efficient. 'Acidity' occurs less rapidly
- the pupils have become narrowed
- the sleep is more restful (anabolic, reserve developing)

Of course, this effect is not permanent after 1 session. But the more often a state of relaxation is reached the greater the chance of stabilization.

Many machines that provide localized warmth also create a localized widening of the blood vessels and muscle relaxing effect.

But they will never be able, contrary to the much more integrally working **Therapeutic Mt365**, to direct the autonomous nervous system so powerfully towards the much more favourable parasympathic, energy developing, anabolic direction.

THE RELATIVE BALANCE OF THE AUTONOMOUS NERVOUS SYSTEM

We have seen already that for many people the sympathetic and the parasympathic nervous system is not in an absolute balance.

There are people (the sympathicotonic types) whose sympathetic nervous system is dominant.

There are also people (the parasympathicotonic types) whose parasympathic nervous system is dominant.

In these cases, we speak of a relative balance.

As already mentioned earlier, the sympathicotonic, the power and reserves consuming catabolic types (such as, e.g. McEnroe, Leconte, Cruyff) are the most grateful candidates for the ***Therapeutic Mt365***. This is because the relative balance moves itself more in the parasympathicotonic direction, the power and reserves developing anabolic direction. We see then, therefore, a slower pulse and breathing rate, lower blood pressure, lower temperature, more efficient metabolism, narrower pupils and more restful sleep.

The parasympathic type (such as e.g. Bjorn Borg, Edberg, Wilander and Clint Eastwood) will profit similarly in the ***Therapeutic Mt365*** from the feeling of well-being and from an accelerated recovery phase during and after a heavy tournament. Here through we do not find a further increase of the domination of the parasympathic nervous system. At the most it will stabilize.

THE *Therapeutic Mt365* IN COMPARISON WITH SEVERAL METHODS OR APPARATUS THAT ALSO WORK WITH VIBRATION, WARMTH & RELAXATION

VIBRATION BENCHES

Benches, which vibrate the whole body, have been on the market for a long time. Similarly, apparatus exists that brings about localized vibrations. They are recommended and applied for their (supposed) general or local fat dissolving capacity.

The scientific foundation concerning the positive effect of this apparatus is extremely thin and disappointing.

This does not detract from a vibration bench perhaps being the first psychological stimulation for a person to slim, so that, naturally in combination with a slimming diet, a reduction in weight can be achieved.

SAUNA

A sauna bath also can be used to get an excellent degree of relaxation.

Although the temperature of a sauna can become higher (90°C on the upper benches) than in a *Therapeutic Mt365* (maximally 80° C), it must be remarked that the human body has its highest sweat production at 75°C and that this does not increase above 75°C. In other words, sitting on the top sauna bench is not more effective than sitting on the middle benches where the temperature is +/- 75°C.

(We do not consider here that you can sweat just as well either sitting or lying on hard wooden benches, but certainly relax less than when you lie on the pleasantly vibrating *Therapeutic Mt365* bed).

The sauna scene is a social occasion, which is appreciated as such by many.

But there is also a category of people who feel less comfortable naked amongst others, or who find that the company of others obstruct them from relaxing maximally.

On this point *Therapeutic Mt365* and sauna could work not competitively, but supplementary to each other.

PHYSIOTHERAPY

Most physiotherapeutic techniques are based on the application of localized warmth, which then again leads to a localized blood vessel widening considered therapeutically desirable. One may consider paraffin packings, massage and various electro-magnetic radiation apparatus.

Damaged parts of the body show less tension (tonus) due to the treatment and by that less pain.

It seems a question of time before the physiotherapist recognized that the *Therapeutic Mt365* can form a welcome addition to and a partial substitute for his/her therapeutic arsenal. The general warmth, blood vessel widening, tonus and by that more rapid pain reduction of muscles, tendons, ligaments and synovia must appeal to every physiotherapist who takes his/her profession seriously, anyhow to set them thinking.

YOGA – MEDITATION

Yoga and meditation give, if practiced well, an excellent degree of internal rest and relaxation. The *Therapeutic Mt365* aims for the same internal rest, but adds physical relaxation to that due to the warmth and the vibration.

THE RECOVERY PHASE AFTER STREUOUS PHYSICAL EFFORT

Everybody who has read the above with care will understand that the *Therapeutic Mt365* is pre-eminent treatment to let heavily burdened organic system recover as fast as possible.

The familiar stiff, painful and, therefore, poorly blooded muscles 1 or 2 days after, e.g. a football, basketball, hockey or rowing match, after a cross-country run, marathon, triathlon, etc., recover much faster due to the mild warmth and vibration of the *Therapeutic Mt365*, which, as known, leads to an improved supply and discharge of blood.

It has already become apparent that several top tennisers make use of the *Therapeutic Mt365* several times per day for half an hour during long-lasting and exhausting tournaments because this method appears to win from the customary light training and sport massage.

MEDICAL APPLICATIONS IN THE REVALIDATION AND RHEUMATOLOGY

For many patients with rheumatic complaints there is still not an adequate treatment aimed at the cause.

Physiotherapy is mostly applied one-off, or sometimes alongside a medical treatment.

Warm water baths, heated swimming pools and other forms of heat therapy often paly a leading role.

Despite the short time since the *Therapeutic Mt365* was introduced in the Netherlands, it can be determined already that it has an extremely favourable effect on the well-being of the patients with fibrositis, fibromyalgia, myalgic encephalopathy, morbus Bechterew and the back pain in morbus Scheuermann.

The results follow on from earlier medical findings in, in particular, Australia, the United States and Japan. In Sweden the *Therapeutic Mt365* has been placed recently in several large hospitals with the intention of expanding the research, in a given case to evaluate it.

CAN EVERYBODY USE THE *THERAPEUTIC Mt365*?

In principle, every healthy person, but also all those with the complaints already described above, can use the *Therapeutic Mt365*.

There are, however, complaints for which the warmth produced in the apparatus may be disadvantageous.

These may be people with:

- a very high blood pressure (upper value higher than 200, and/or under value higher than 115)
- recent (shorter than 2 years ago) heart complaints. Ask for expert medical advice!
- recent (shorter than 2 years ago) diseases of the blood vessels, for example a brain haemorrhage
- temperature higher than 38°C
- patients with rheumatoid arthritis in an acute phase with swollen, warm, extremely painful joints. Advice from a rheumatologist is required.

THE UNSTABLE AUTONOMOUS NERVOUS SYSTEM

There are also people with an extremely unstable autonomous nervous system.

Types who sweat more easily, blush, have rapid heart flutters, faint, etc., and all this not separately, but in combination.

This type can react strongly in the *Therapeutic Mt365* (or particularly after it).

During the session with vibrations and warmth they can react strongly sympathicotonic with, among others, an extremely rapid pulse and breathing, and rapid and much transpiration.

When the apparatus switches off – when the transformation from sympathicotonic to parasympathicotonic occurs – and, after the 10 minutes of obligatory rest, they stand up too briskly, then they can react so strongly that they faint (pulse too slow, blood: a collapse or fainting follows).

The frightening view for non-professionals, thought it is, in fact, very innocent, is extremely rare and can be prevented through simple instructions.

REVIEW

Throughout the ages warmth has been linked to well-being.

“Warmth and love”, “a warm reception”, “warm interest”, innumerable examples can be thought of in which warmth radiates an untouchable, positive status.

That certain vibrations have a massaging and, therefore, relaxing effect has also been known for ages and it has also already been applied, more or less provisionally, as such for a long time.

Due to the multi-functional effect of the ***Therapeutic Mt365***, the patterns of expectations of the users, the mechanisms along which improvement occurs, also cannot be reproduced unequivocally.

- The recreant in a holiday park who gets into the ***Therapeutic Mt365*** expects and gets a state of more well-being, however vaguely defined.
- During a multi-day tournament, or after an exhausting match, a sportsman/woman expects and gets a more rapid recovery of, in particular, muscles and tendons.
- A patient with muscle pains in legs, back (crink), shoulder, neck, (stiff neck), with fibrositis or with symptoms diagnosed as morbus Bechterew or Scheuermann, fibromyalgia or myalgic encephalomyelitis expects and gets less stiffness and less pain after several sessions.
- The stressed person – and let’s not think primarily now about managers, but also particularly of the middle management and the employee on the shop floor – these stressed people expect and attain a more relaxed feeling because the sympathetic domination of their autonomous nervous system is turned around into a parasympathic, reserve developing, anabolic direction.

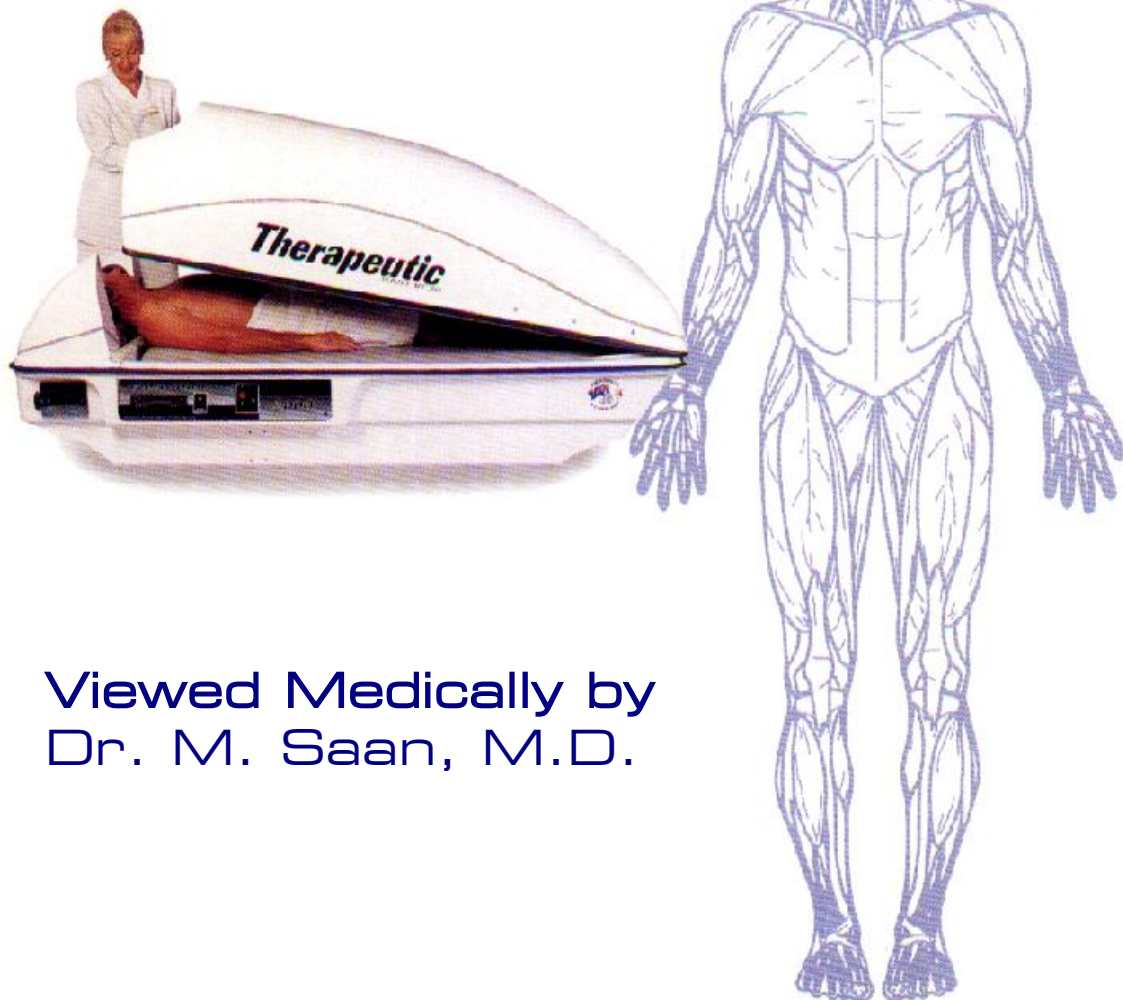
The ***Therapeutic Mt365*** is not a cure for all complaints.

But many users with different intentions will benefit from it due to the improvement of their general well-being.

Dr. M. Saan

Therapeutic

series MT365



Viewed Medically by
Dr. M. Saan, M.D.

TESTIMONIANZA MEDICA REDATTA DAL DR. M. SAAN (Olanda)

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