VISSMAN

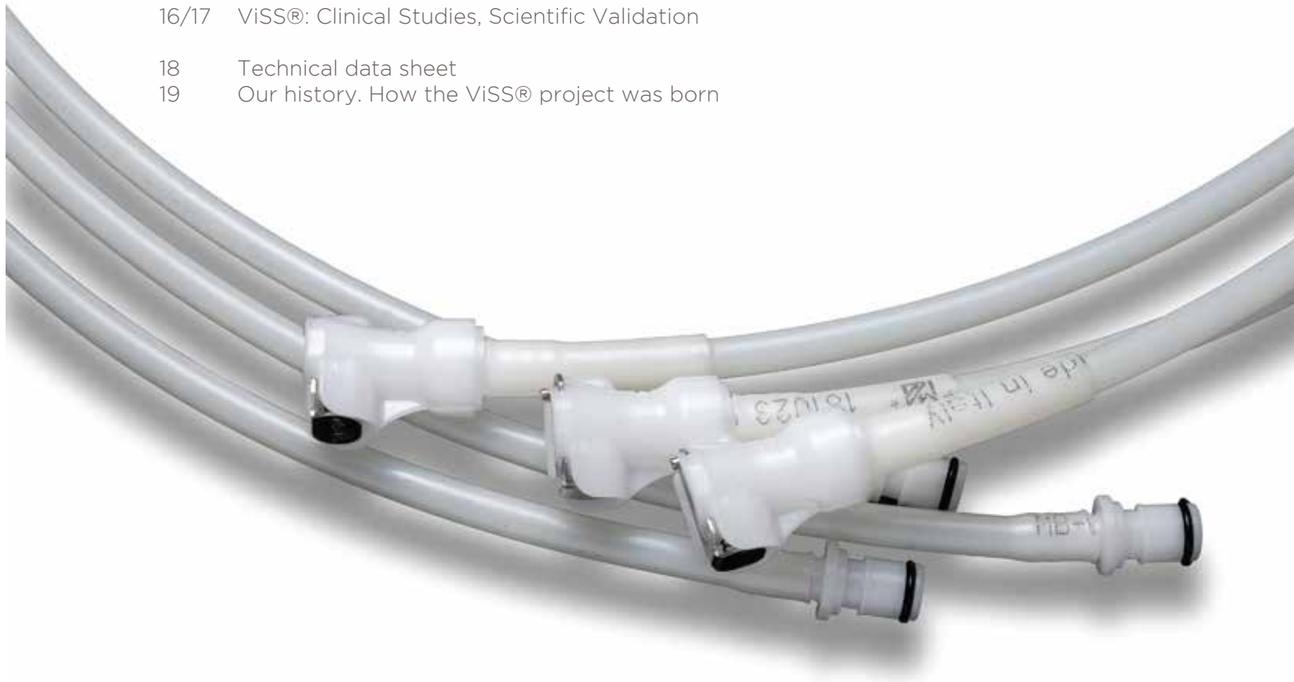
VISS MANUFACTURING COMPANY

“If exercise were available in a pill,
it would be the most sold drug in the world...
and also the most prescribed.”

Robert Butler,
Former Director
National Institute on Aging

VISS® the energy inside you

CONTENTS



The Mechanical Vibration History

The first documented attempts to use mechanical vibration on humans can be traced back to Jean-Martin Charcot. In 1880s, the French neurologist Jean-Martin Charcot observed that patients suffering from Parkinson disease experienced a reduction of their rest tremor and a better sleep after a train carriage ride or after horse riding. Hence, he fashioned a vibratory chair (fauteuil trépidant) that simulated the rhythmic shaking of a carriage.
His chair caused a stir at the time, but the effects were transient and the chair was later abandoned.
His student and junior colleague Georges Gilles de la Tourette extended these observations and fashioned a helmet that vibrated the head, on the premise that the brain responded directly to the pulsations, reporting efficacy schizophrenia and migraine.
Over the years, vibration studies have been repeatedly taken up and then abandoned. A new relevant interest in vibrations started when Pavlov demonstrated the plasticity of the Central Nervous System (CNS). Many scientists perceived vibration as a suitable method for interaction between the peripheral system and the CNS.
After Pavlov and World War II, other scholars contributed with their studies to the understanding of how vibration should be used.

Here below the most significant events

- **1960 - Kandel and Rosenkranz** begun to associate the vibration mechanics at high frequencies with the LTC (Long Term Condioning) phenomena and LTP (Long Term potentiation);
- **1962 – Melzack** and Wall in Bolt demonstrated that vibration action on the control of pain at **120 Hz;**
- **1975 - Lucier** published a study about the maximum activation of Alpha motor neurons happening at a frequency of **300 Hz**;
- **1975 - B. Bishop** states that vibration is not effective due to its short term effects;
- **1976 – (various authors)** the tonic vibration reflex (RTV) operates predominantly, if not exclusively, through Alpha motor neurons and it does not use the same efferent cortical patterns as the voluntary movement;
- **1980 - Wolpaw JR.** It is possible to produce plastic enhancements of the propriocepti-ve network using mechanical stimuli according to the phenomena of the LTP;
- **1994 - Carmelo Bosco** developed the first whole body vibration (WBV);
- **2000 - J. Rothwell and K. Rosenkranz** the muscle exposed to vibration activates specific neuronal circuits by changing the brain excitability distribution circuits (this modulation persists after the end of the stimulus);
- **2003 - Rosenkranz** the effects on muscle reprogramming, through the modulation of brain circuits, can only be achieved if the mechanical vibration is focal;
- **2005 - Wolpaw JR** demonstrated the LTP and LTC phenomena;
- **2005 - Kandel** show that vibration creates a new memory on selected neural networks;
- **2006 - L. Vecchiet and R. Saggini** published the first clinical evidence of the effects and duration of the mechano-acoustic square wave;
- **2010 - Saggini et al.** show the effects of the focal mechano-acoustic vibration on the endocrine System and the muscular tissue.

Gilles de la Teourette's Vibration helmet - 1890

Jean-Martin Charcot's Vibration chair - 1870

Mechano-Acoustic Vibration

In the year 2000, the effectiveness of vibration, at a specific frequency and intensity, was already consolidated by clinical evidence. It was also known that this effectiveness resisted beyond the stimulus over time. The technology available at of the time did not differ from the one available today, and it offered, devices that produced vibration through distributed energy. After a careful examination and several years of experiments, in 2003, the ViSS® team work came to the conclusion, that these technologies were unusable for our purpose. We came up with the idea of separating the source of energy from the element creating the vibration. The objective was to generate vibration at any frequency and without resistance.
So, Mechano-Acoustic Vibration was born in 2004.
This device obtained the Invention Patent in Italy and in other countries.
This project was, is and it will forever be the basis of our technology.

The acronym ViSS®, Vibration Sound System, (focal mechano-acoustic vibration square waves) comes from the Latin word Vis, meaning strength.
Since then, the word ViSS® has not only been identified as a product but as procedure and a technology. The word is added to the name of specific models to all the devices using our technology.

ViSS®: the Mechano-Acoustic square wave vibration system. Features and areas of application

ViSS® uses fast-moving air cones to produce a Square Wave Mechanical Vibration. This Vibration is transferred to the skin by self-standing transducer and, passing through the surface layers and fat tissue, stimulates the mechanical receptors, known as “High threshold activation”.
The signals released by these receptors trigger interactions and biochemical processes, which are able to change the course of different pathologies. The results, immediately perceptible, are so relevant that they get to change the physical characteristics of any individual: healthy or needing rehabilitation.
The effectiveness of our method has been documented over the years in many articles, several books, two Atlases of Physical Rehabilitative Medicine and an Essay, that clarifies in depth the Rehabilitative systems based on the use of Vibration.
These Clinical and Physiological Studies (published on indexed magazines and impact factor journals), have bestowed our method its own scientific validity.
Therefore, ViSS® can be used as a physical therapy device in the following pathologies/therapeutic areas:

- *Post surgical/traumatic recovery;*
- *Urinary pathologies (neurological and/or stress incontinence);*
- *Musculoskeletal Pain;*
- *Acceleration of repair processes;*
- *Phantom limb pain;*
- *Fibrotic Skin Diseases (keloids hypertrophic scars);*
- *Neurorehabilitation (stroke related disabilities);*
- *Degenerative neurological processes (Parkinson);*
- *Osteoarthritis/arthritic processes;*
- *Oncologic complications;*
- *Musculoskeletal disorders (including joints, ligaments, muscles, nerves, tendons);*
- *Chronic headaches (tension headaches);*
- *Chronic headaches or migraine non-responding and/or partially responding to drug therapy;*
- *Cervical brachial Syndrome (pain and stiffness of the cervical spine with symptoms in the shoulder girdle and upper extremity)*
- *Flat foot;*
- *Osteoporosis;*
- *Postural realignments;*
- *Sarcopenia and Aging (prevention of falls, disability resulting from muscle mass reduction);*
- *Urology (prostatectomized patients);*
- *Constipation;*
- *Dismenorrea;*
- *Amateur and Professional Athletes (post-exercise fatigue, post trauma, performance improvement);*
- *Aesthetic Medicine;*
- *Well Being (quality of life).*

How to use the devices

ViSS®, with its 2 models, has 5 to 14 outputs. Each one of them allows simultaneous action on different muscle districts (up to 28). The therapeutic session takes place in absolute comfort. It can be static, the patient is not required to complete movement, or dynamic, to increase coordination, to improve the specific sports gesture for some specific pain therapies.
The device is not operator-dependent. The therapist positions the transducers, sets the program, and ViSS® vibrates for a period and frequency according to the selected program, which is specific for the pathology and the characteristics of the patient (body weight and subcutaneous fat).
It is operator-dependent if the therapist uses the manual transducer to treat trigger points.

Therapeutic programs

There is a wide choice of therapies. 40 preset programmes (in terms of frequency, amplitude and treatment time) are available, based on published clinical evidence that validates the effectiveness of our technologies.
An explanatory menu (copyrighted) facilitates the identification of the subject (based on his/her physical characteristics and individual age), and the choice of the therapeutic programme.

Duration and therapeutic effects

Therapeutic effects appear quickly, from the first session, and are stable over time. Even after six months.
For athletes it is advisable to repeat the sessions in order to maintain and improve the results achieved and to ensure maximum performance.

A technology for everyone

This technology is recommended also for healthy subjects, to maintain their physical abilities even in the absence of movement. However, it is always advisable to associate physical activity with the treatment. The simplicity and the reduced application time make the use of this device possible in everyday life for the following reasons:

- Easy to use;
- It is pleasant for the patient;
- Evident results - Therapeutic outcomes obtained very quickly;
- It can be integrated with any other rehabilitative treatment (except electrostimulation);
- It does not require the constant and active presence of the therapist;
- It does not require an active participation of the patient and it is therefore useful both in the immediate post-operative period and by frail or elderly subjects;
- It allows to maintain and/or improve fitness when movement is not

importance of physical activity and sport is never overstated.

Professional use

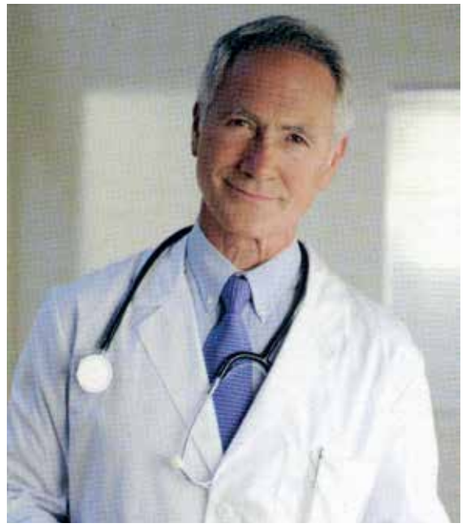
ViSS® can be integrated in any rehabilitation centre in an extremely easy way!
Physiotherapists can quickly acquire the necessary skills for the use of the device.
ViSS® is, in fact, easy to use; it allows to obtain immediate results in functional recovery (both post-traumatic disorders or post-surgical recovery) for any subjects; as well as modulation of muscle tone (hypertonia and hypotonia); reduction of acute and chronic pain; improvement of some motor aspects of neurodegenerative diseases. It can be used in the treatment of Sarcopenia or as an integration to postural realignment techniques. Finally, ViSS® assists in the re-abilitation and/or in training for amateur and professional athletes.
Additionally, ViSS® technology, acting on hormonal molecule and functional remodelling mechanisms, proved to be effective, as endorsed in recent publications, in the treatment of:

- **Flat foot (art. 33);**
- **Urinary diseases, such as neurological or stress incontinence (art. 29, 30, 31);**
- **Osteoporosis (art. 32).**

Patient Expectations

All patient expects visible and rapid results from a therapy, because today's society requires rapid healing times. The need is to get back to work or get back on track to improve performances, in the shortest time possible.
This can be achieved with ViSS®:

- It is fast for recovery of the correct muscle tone and strength;
- ViSS® is immediately effective in reducing pain, particularly Myalgia;
- It offers immediate and relevant improvement of balance, posture and motor skills;
- It optimizes the contractile capacity of the muscle and delays the onset of muscle fatigue. In addition, thanks to the increase in strength and aerobic capacity, it also allows a greater resistance of workloads;
- For athletes it is very quick in the disposal of catabolites, when used manually at high intensity and as a lymph drainage massage;
- It helps in the prevention of future injuries, thanks to the perfect coordination between agonist and antago nist muscles;
- It allows the optimization of phycal abilities both in everyday life, in amateur sport and in competition;
- It improves efficiency in modulation of the blood flow and the lymphatic drainage.



Experienced and specized staff are encouraged to prepare tailored programs to athletes or patients, for a personalised treatment.

Because the Vibration must be Meccano-acoustic, focused (120 – 300 Hz) and Square Wave

Because Meccano-Acoustic:

Thanks to the flow modulator, it is possible to treat simultaneously different muscle districts, with identical effectiveness. The therapeutic beneficial effects are equal for each applicator, due to the high frequency/intensity ratio.
Because this kind of energy does not cause damage. The Air-transmitted mechanical vibration is elastic and interacts with mechanoreceptors at any depth, without tissue or vascular damage.
Varying the frequency of the wave, it is possible to selectively activate different types of muscle fibres and achieve different therapeutic effects.

Because Focused and at frequencies 120 – 300 Hz:

Rosenkranz: the effects of Mechanical Vibration is only focal;
Pacinian Corpuscles: have the highest sensitivity at a frequency of 300 Hz;
Melzack and Wall: Vibrations action on pain control at 120 Hz;
Wolpaw: enhancements of the proprioceptive network, using LTP–LTC phenomena;
Lucier: the maximum activation of the Alpha motoneurons happens at 300 Hz;
Kandel: shows as vibration, with high intensity and frequency, creates a new memory in selected neural networks.

Because must be a Square Wave:

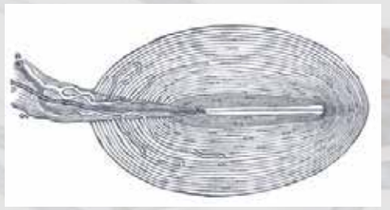
The Pacinian corpuscle is a phasic receptor. It responds to the all or none principle. A square wave activates this receptor for a period long three times as much as a sinusoidal wave. Its activation for a longer time allows to send a continuous signal to Central Nervous System as a maximum information, with greater efficiency and with the least energy expenditure.
In addition, in more than 15 years of experience, we have learned how to control the harmonics that could disturb the progressing waves, both square and sinusoidal ones, and to synchronize the reflection phenomenon. The outcome is an optimal afferent signal, without any distortion.
This technology is the only that can constantly control the applied pressure and the interval between stimuli.
Only ViSS® allows, indeed, to minimize the negative half-waves, making the treatment very efficient by limiting the use of energy.

ViSS® observes all these specifications.

This system permits surprising results in order to acquire new sensorimotor skills, proprioception and modulation of biochemical and hormonal factors.
These characteristics are linked with the concept of "tensegrity", which has recently changed the biochemical, histological and biological point of view of several scientists.

Neurotransmission and Neuroplasticity

The Nervous System includes the Brain, the Spinal Cord, and a complex network of Neurons.
This system is responsible for sending, receiving, and interpreting information from all parts of the body.
The Central Nervous System (CNS) is the processing centre for the whole body. It receives information from the receptors (mechanic receptors, chemoceptors, thermoceptors, to mention), nerve fibres (peripheral nervous system), molecules and hormones.
The Nervous System monitors and coordinates the internal organ function and responds to changes of the internal and external environment.
The primary function of the somatic nervous system is to connect the central nervous system to the body muscles, bones, tendons and to control voluntary movements thanks to a communication network (afferent and efferent).
Today we know that the brain can change continuously reacting to the received stimuli. This phenomenon is defined as Neuronal Plasticity.
To achieve this plasticity, the stimulus must be suitable for intensity, frequency and amplitude.



Pacinian Corpuscles

Pacinian Corpuscles, LTC (Long Term Conditioning) and LTP (Long Term potentiation)

Pacinian Corpuscles are located in the deeper layers of the skin, consist of a single unmyelinated afferent neuron, wrapped in 20-60 concentric lamellae. They are, no doubt, the mechano receptors more engaged in the response to the vibration perception, with the highest sensitivity at a frequency of 300 Hz. At this frequency, a 1 µm pressure is sufficient for the receptor activation.
They are:

- Type 1 Sensory Receptors: they are nerve endings, covered with nume rous layers of collagen and they recognize external stimuli;
- Unimodal Receptors: are activated only with pressure;
- Phasic Receptors – they are fast-a-dapting. They follow the all or none principle meaning they are activated or not.

The charge capacity is as crucial as the activation, that is the intensity of the signal from the single receptor and the quantity of close activated receptors.
The greater the intensity of the afferent signal (charge capacity), the greater the efferent CNS response.
An intense nervous efferent response allows multiple motor units recruitment, hence the activation of more motor neurons that will result in more muscle fibres being activated, and therefore a stronger muscle contraction. This results in improved motor performances, in shorter times.
After the activation of the neurotransmitter receptors, several nervous and biochemical signals are triggered, thus permitting persistent forms of synaptic plasticity, including, among others, structural synaptic plasticity, in order to maintain the information in a long-term memory.
This cellular mechanism for information storage in the Central Nervous System (LTC/LTP), is likely to create new synapses in selected networks (Kandel 2005).

Tensegrity

Recent researches open a new interpretation of the connective tissue and its functions, intended as a real “communication network”. The mechano-sensitivity and mechano-transduction models are represented as a “metal network”. The Tensegrity recognizes that the forces of attraction and repulsion at the molecular scale (for example, the transmission of information from integrine proteins to the cellular nucleus) are comparable with the tension and compression forces at higher size scales that can be used as models.
In this perspective, it is possible to explain the anatomic, physiologic and biochemical processes as a network of structures under tension or compressed (Tensegrity).
The muscle-skeletal system interacts with cellular mechanisms and mechano-receptors using an archaic method, but certainly not less important: the mechanic communication.
ViSS® is based on this mechanical response model, capable of modulating the afferent messages peripheral structures and the central nervous system responses. The brain is thus able to regulate the osteo-tendon-muscular system more efficiently (Tensegrity).

ViSS® and the endocrine system

Clinical evidence from physiological studies show that ViSS®, through the activation of Pacini receptors, is able to maximise muscle fibre recruitment, to make the muscular performance more efficient, to reduce fatigue and to optimise the global motor coordination (Article 19, 23).
Since 2010, the demonstration of the important changes that ViSS® produces on the endocrine system and on the muscular fibre (table below, extracted from Article 20) has been added to the previously described clinical evidence.

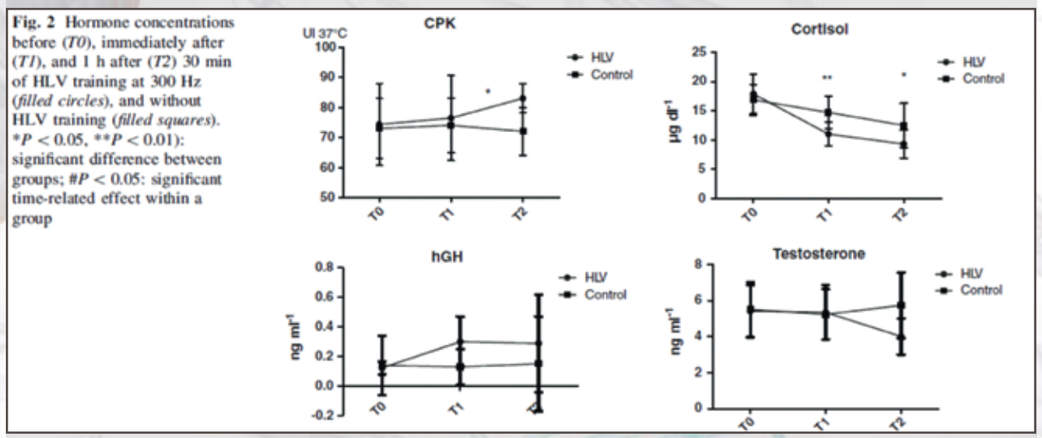
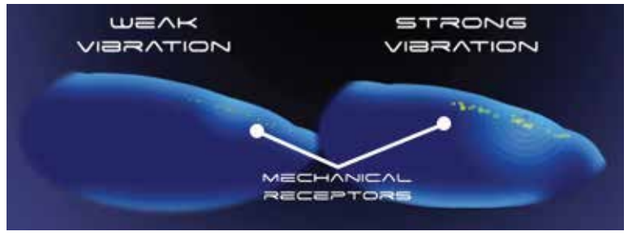


Fig. 2 Hormone concentrations before (*T0*), immediately after (*T1*), and 1 h after (*T2*) 30 min of HLV training at 300 Hz (*filled circles*), and without HLV training (*filled squares*). $*P < 0.05$, $**P < 0.01$): significant difference between groups; $\#P < 0.05$: significant time-related effect within a group

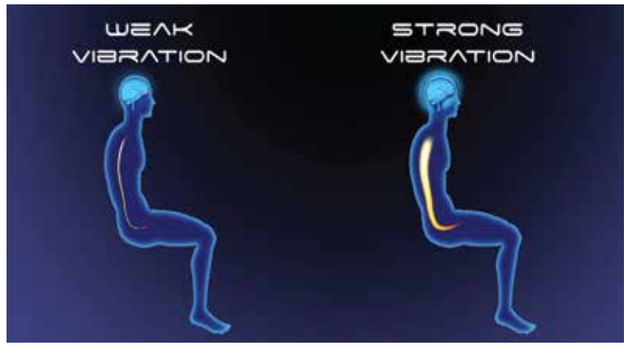
An additional study, published by the Jour. Of Molecolar Medicine, demonstrates that ViSS® activates the mitochondrial metabolism on the motor unit (art.23).

Afferent and Efferent neuronal Signals

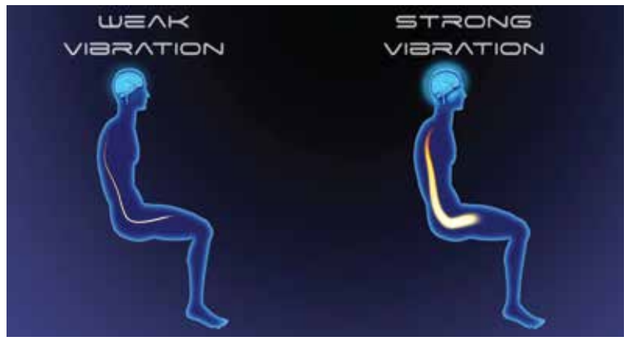
Afferent signals come from external stimuli and send the information to the CNS. Afferent neurons bring stimuli to the brain, through the spinal cord and thalamus. In this way, the signal is integrated and processed. The brain coordinates then a response via efferent signals back to the rest of the body.
Efferent signals carry the message from the central nervous system to the muscles that activate the stimulus.



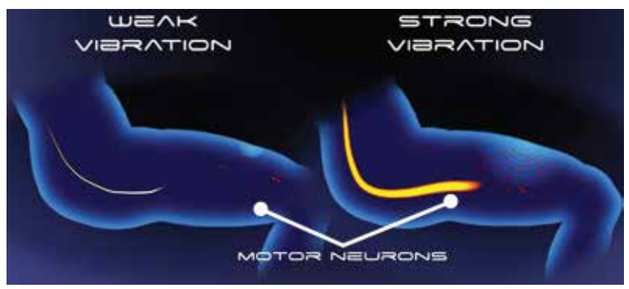
Once the transducer has been placed near the muscle-tendon junction, a vibration of adequate intensity activates population of mechano-receptors that is greater if the stimulus is more intense.



The afferent signal, from receptors through the thalamus to the CNS, will be of greater or lesser intensity, based on the number of the activated receptors by the intensity of the stimulus.



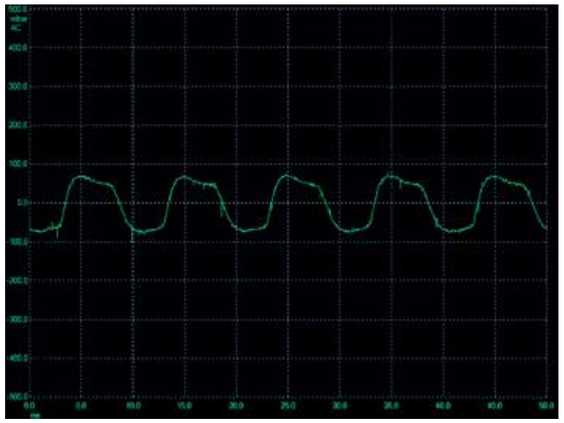
The greater is the intensity of the afferent signal (information), the more relevant the efferent response will be.



In The more relevant the efferent response is, the greater the number of the activated motoneurons (the motor units and muscular fibres recruitment) will be.

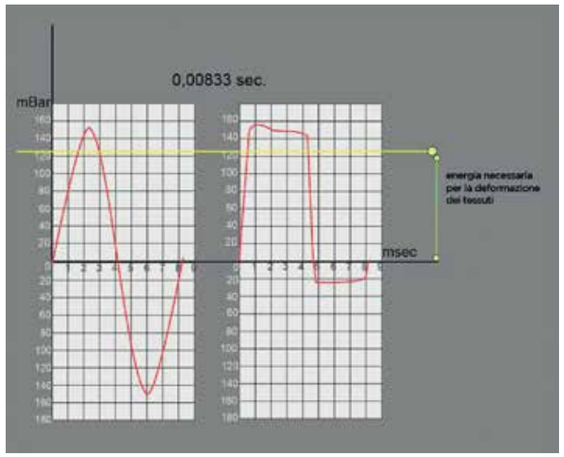
Mechano-receptors and Square Wave

The mechanical wave emitted by ViSS® device, detected with Picoscope oscilloscope and with the Medas US661-05-0058 pressure probe, at the point of transduction, i.e. on the skin.

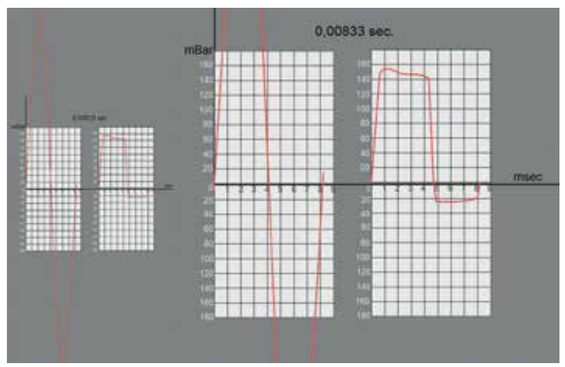


Square wave

Pacini Receptors are phasic Receptors. They send their information only for the duration of their activation time. If we consider as an example, a 120Hz wave working cycle (Wall and Melzack, Gate Control theory), the duration is 8,33 ms.



Before the wave can deform (then activate) the receptor, the strength of the mechanical wave has to pass through the superficial and subcutaneous layers. After deforming the surface tissues and the fat layer, the wave begins to interact with the Pacini Receptors.



This Receptors send the information to the neural network. The message that the receptor emits, lasts only for the time in which it is activated (deformed). Square wave activates the receptor for a period of time that lasts 3 times longer than a sinusoidal stimulus of equal energy. Moreover, stretches greater than 0.12 mm are harmful for the muscle fibres. It is, therefore, useless and harmful to use unnecessary energy.

The Technology

VISSMAN® offers two types of devices: one as a fixed station and one portable. The two versions are different in shape and weight but with they have the same power and mechanism of action, for absolutely overlapping results.

ViSS Myomodulator

A compact, lightweight and portable device. Up to 5 bilateral muscle districts can be treated at the same time, thanks to 10 transduction points. Equipped with a comfortable transport suitcase, it is essential for teams and athletes or to perform home therapy.

ViSS 1 Evolution

Designed to permanently stay in the rehabilitation centre.
The device can work even 20 hours a day. It allows the possibility to treat 14 bilateral muscle districts at the same time, thanks to 28 transduction points.

Patents and Trademarks

Maybe not everyone knows that ...
When we read: “patent application N. ...” it is thought that behind that number there is the recognition of some industrial patent but it is not so. That number can only be traced back to the filing of a file with the Patent Office. Who presented it, until the Examiners have completed their Priority search in Databases, can only hope that his “found” was not thought of by others before. If Patent number is then assigned to it, it means that in the world Databases nothing similar or superimposable has been found.
Since that moment, the moment of the “granting of the Patent Number”, he is qualified as “invention” and has the privative industrialist, otherwise he is nothing.
A 2015 statistic states that only 12.2% of the patent applications submitted receive the “Patent License” recognition. And the databases continue to grow.

Patent:

Patent	**EU N. 1824439**	Europe
Patents	**US N. 8105254 and US N. 9713567**	United States
Patent	**RU N. 2449824**	Russia
Patent	**CA N. 2593021**	Canada
Patent	**IN N. 276258**	India
Patent	**MX N. MX/A/2007/006677**	Mexico
Patent	**BR N. PI 0518422-3**	Brazil

Made in Italy Product

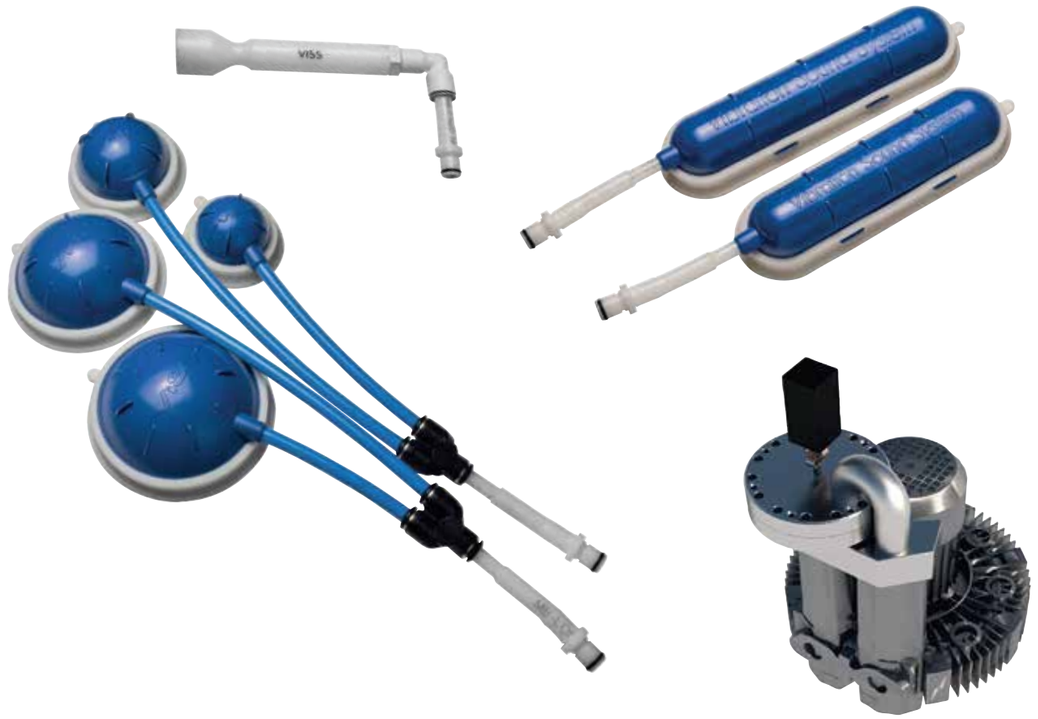
THE TRANSDUCTORS

Transmit 100% of the generated energy to the body.

The vibration is transmitted to the body tissue by transducers made in ABS, coupled with a sound shock absorber. The shape is seagull wing, the building material is Santoprene, to ensure adherence to the skin and avoid air leakages.
They are available in 6 different sizes and in two different forms, to be able to best adapt to the physical configuration of an individual and “shape” well in relation to the characteristics of the body.
Some transducers are equipped with an interposed membrane between the polymer and the Santoprene bearing. This membrane allows to treat areas where adherence to the skin is particularly difficult, such as small areas with an uneven shape and protruding areas as elbows, knees, ankles, fingers and toes.
The membrane is designed to reduce the risk of air leakage, that would compromise the therapeutical effects of the vibration, and for a uniform transmission, even in the case the contact with the skin is imperfect.

Transducer with interposed membrane

In addition to self-acting transducers, our equipment is equipped with two pen transducers for manual therapy, particularly suitable for the disposal of catabolites, the treatment of lymphedema, trigger points, or for lymphatic drainage.



The flow modulator

All the Scientific articles listed below used VISS® as therapeutic instrument (as for paragraph “Methods and materials”). The reported results refer only to the use of VISS® (Mechano Acoustic Square Wave Vibration).
Among these, there are Physiology studies, aimed at proving the mechanism and clinical investigations, aimed at validating the harmlessness and effectiveness of the Mechano Square Wave Vibration. The articles provide information regarding the functional parameters (posology, frenquency, amplitude) related to the different pathologies that VISS® is allowed to threat.
In addition to the Impacted Articles, we have taken the license to add some, certainly less relevant for scientific purposes, considered significant to allow those who have the interest to understand more satisfactorily the mechanism of action of our Method.

Acute and chronic pain

1. TREATMENT OF MYOFASCIAL PAIN SYNDROMES: LOCAL ACOUSTIC VIBRATION VS LIDOCAINE INJECTION
R. Saggini, Bellomo RG, Cancelli F, Iodice P - Int. Journal of Musculoskeletal Pain, 2007; 15 (suppl n. 13)

2. CANCER PAIN - THE ROLE OF AN INTEGRATED, COMPREHENSIVE REHABILITATION PROGRAM AND ITS MANAGEMENT
R Saggini, Bellomo RG, Carmignano SM, Saggini A In: “Updates on Cancer Treatment”, book edited by Leticia B. A. Rangel and Ian Victor Silva, ISBN 978-953-51-2194-7 October 28, 2015 under CC BY 3.0 license.

3. TRATTAMENTO DEL DOLORE DA SINGROME MIOFASCIALE: VIBRAZIONI ACUSTICHE LOCALI CONTRO LITOCAINA
Tripoli S, Iodice P, Lolli A, Salerno C, Bellomo RG, Saggini R Gior. It. di Med. Riabilitativa, 2007 vol. 21, p. 306-307, ISSN: 1128-4935

4. INFERIOR HEEL PAIN IN SOCCER PLAYERS: RETROSPECTIVE STUDY WITH PROPOSAL OF GUIDELINES FOR TREATMENT
Saggini R, Migliorini M, Di Stefano A, Russo C, Carmignano SM, Bellomo RG - bmjsem-2016-000085 BMJ Open Sport & Exercise Medicine

5. ACCIDENTE POR ELECTRIZACION. ¡Estoy vivo! (Case Report)
M. V. Serrano, I. Rodríguez, A. Molina - Revista Española de Traumatología Laboral - Vol. 2. Fasc. 1. Núm. 3. Mayo 2019

Post surgery rehabilitation/recovery

6. SELECTIVE DEVELOPMENT OF MUSCULAR FORCE IN THE REHABILITATIVE CONTEXT
R Saggini, Scuderi N, Bellomo RG, Dessy LA, Cancelli F, Iodice P - Europa Medicophysica, 2006; 42(suppl. 1), p. 69-72, ISSN: 0014-2573suppl.1 to n.2):357-8

7. REHABILITATION APPROACHES OF ROTATOR CUFF INJURIES
R. Saggini, S.M. Carmignano, R.G. Bellomo In: Advances in Medicine and Biology. Editor: Leon V. Berhardt. 2016 Volume 93 Nova Science Publishers ISBN: 978-1-63483-206-9 pp130-189

8. LO SVILIPPO SELETTIVO DI FORZA MUSCOLARE NEL CONTESTO RIABILITATIVO: METODICHE A CONFRONTO
R. Saggini, Iodice P, Cancelli F, Bellomo RG - Europa Medicophysica, 2006 vol. 42 (suppl.1), p. 357-358, ISSN: 0014-2573

Neurorehabilitation

9. INTEGRATION OF FOCAL VIBRATION IN NEUROREHABILITATION
R Saggini, Bellomo RG - Eur. Jour. Phis Rehab Med: 2015; 51;508-9

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DATA SHEET

CLASSIFICATION OF VISS 1 EVOLUTION AND VISS MYOMODULATOR DEVICES	
TECHNICAL-CONSTRUCTIVE PARAMETERS	
FOR THE TYPE OF PROTECTION AGAINST ELECTRICAL HAZARDS	Class I device
FOR THE LEVEL OF PROTECTION AGAINST ELECTRICAL HAZARDS - APPLIED PARTS	Type BF device
FOR ELECTROMAGNETIC COMPATIBILITY	Group 1, Class A
FOR THE TYPE OF PROTECTION AGAINST DAMAGE RESULTING FROM THE ENTRY OF WATER	Common device
FOR THE TYPE OF PROTECTION AGAINST DAMAGE DERIVING FROM THE ENTRY OF DUST	Common device
FOR THE STERILIZATION METHOD	Not applicable
FOR THE LEVEL OF SAFETY IN THE ATMOSPHERE WITH FLAMMABLE GASES	Device not suitable
FOR THE METHOD OF USE	Continuous use device
FOR THE PLACEMENT METHODS	Transportable device

TECHNICAL OPERATING DATA		
	VISS 1 EVOLUTION	VISS MYOMODULATOR
Mains voltage	~ 230 V 3 10%	~ 230 V, 115 V o 90 V 3 10%
Network frequency	50/60 Hz	50/60 Hz
Power absorbed by the network	0.950 kW (max)	0.400 kW (max)
Protection fuses	F1 – F2 = T10A	F1 – F2 = T10A
Cooling down	With air	With air
dimensions	L 400 x P 440 x H 1000 mm	L 370 x P 430 x H 190 mm
Weight	50 Kg	9.5 Kg
Vibration frequency range	30 – 300 Hz	30 – 300 Hz
Simultaneous transduction points	28	10
Maximum noise pollution *	73 dB	72 dB

Maximum Acoustic Pollution means the value detectable if a transducer separates completely from the patient's skin during therapy at the maximum frequency of use (300Hz).

OVER 15 YEARS OF EXPERIENCE IN MECHANO-ACOUSTIC VIBRATION

It was **1998** when we first discovered the possibilities of focal mechano-acoustic vibration for rehabilitation and muscular tone recovery. Albeit the technology available at the time was efficient and provided results for those inconceivable times, it was not suitable for everyday professional use.
It was essential for us to find an alternative solution and, in March **2000**, we started our mechanic and technical research.
In **2001**, we started to evaluate the opportunity of using air, i.e. a vibration emitted by fast moving air cones.
After several partial successes and failures and much frustration, in **2003**, we realized that we needed to change our way of thinking if we wanted to achieve a good mechanical capacity at frequencies higher than 100 Hz (between 100 and 300).
It soon became clear that the only possible way was to separate the two components and use one of them to produce the necessary energy and the other to create the vibration.
The theory was simple, the practice (the building of what we called the "Flux modulator") was not so easy.
In May **2004** we had gained the attention of one of the most important Italian universities, that had already showed a particular interest in the field of vibrations for a few years. That was the beginning of a special collaboration that is still ongoing. Their interest started to gradually involve other of their colleagues from different Universities. Thanks to this cooperation, we have discovered the various possible therapeutic applications, some of which we had not even considered. This gave us motivation, confidence and energy to face all the obstacles linked to our project.
VISSMAN® (ViSS Manufacturing Company) started in **2006** and the first VISS® device was manufactured and sold. The first buyer was an Orthopedist Surgeon from Naples, who is still satisfactorily using its more recent version today.
As today, dozens of studies have been published on sector magazines on the effects and effectiveness of our VISS® system, mechano-acoustic square wave; a whole chapter has been dedicated in the book: "The Mechanical Vibration: Therapeutic Effects and Applications", a reference point for the therapeutic use of vibration. Another book entirely on VISS® has been written as a training and rehabilitation method for athletes and in 2009, VISS® has been integrated as new method for the functional rehabilitation in two Atlases of Physical and Rehabilitative Medicine, Valobra-Gatto-Monticone and Saraceni-Fletzer.
The acronyms **VISS®**, **V**ibration **S**ound **S**ystem, is the symbol of our technology. All the manufactured devices bring this name, linked to the word identifying the specific model.
ViSS MyoModulator is the most recent one. VISS® is the technology (Mechano Acoustic Square Wave Vibration) and MyoModulator is the type: a lightweight, versatile, portable device, with 5 outputs.
It's been 150 years since the invention of Charcot's Chair and yet almost every day new Articles on vibration continue to come out. There is no doubt that his story evolution continues, that much has already been written, that there will also be much more to say and that more surprises will be coming. A past with several pages already written behind it and others there on a table, in white. Pages to which we will try again to get to, with the usual enthusiasm, passion and limits, but also all the remaining energy, to contribute to writing a few lines.

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