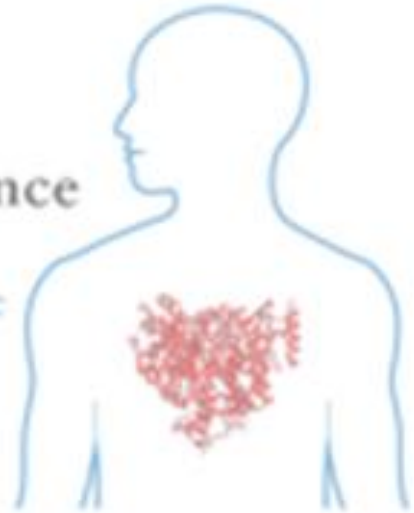
MRTBS 2024

1st International Conference

Modern research trends in biomedical sciences: a holistic approach to health care

Opole, Poland,17-19.04.2024



Bio-Physico-Metric-Approach in Musculoskeletal Dysfunction

Focused Mechano-Acoustic Vibrations in Chronic pain: bio-physico-metric path, key trigger points and posture

Giovanni Barassi MSc,BSc(Hons),D.O.

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*Lecturer (subject expert) School of Medicine and Health Sciences "G.d'Annunzio" University Chieti-Pescara

*Ce.Fi.R.R. (Physiotherapy, Rehabilitation and Re-education Centre)

Teaching headquarters "G.d'Annunzio" University of Chieti-Pescara

Viale Abruzzo,322-Chieti (Ch)-Italy

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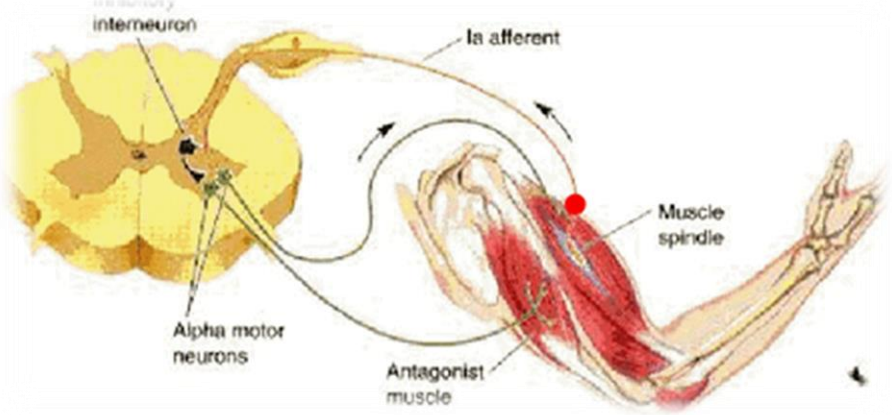
POSTURE

"SPINAL CORD REFLEX MANIFESTATION OF CONVERGENCES AND FACILITATION, SECONDARY TO CORTICAL EXPRESSIVENESS"



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> Int J Environ Res Public Health. 2021 Mar 28;18(7):3507. doi: 10.3390/ijerph18073507.

Posture and Health: Are the Biomechanical Postural Evaluation and the Postural Evaluation Questionnaire Comparable to and Predictive of the Digitized Biometrics Examination?

Giovanni Barassi [1], Edoardo Di Simone [1], Piero Galasso [2], Salvatore Cristiani [3], Marco Supplizi [1], Leonidas Kontochristos [1], Simona Colarusso [4], Christian Pasquale Visciano [1], Pietro Marano [5], Di Iulio Antonella [6], Orazio Giancola [7]

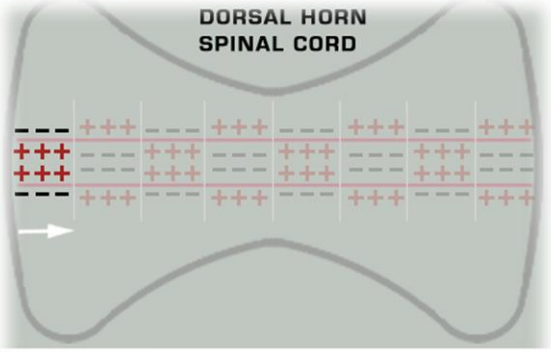
Affiliations + expand
PMID: 33800610 PMCID: PMC8038060 DOI: 10.3390/ijerph18073507
Free PMC article

Abstract

Background: Postural tone alterations are expressions of myofascial and, therefore, of structural, visceral, and emotional disorders. To prevent these disorders, this study proposes a quantitative investigation method which administers a postural evaluation questionnaire and a postural biomechanical evaluation to 100 healthy subjects.

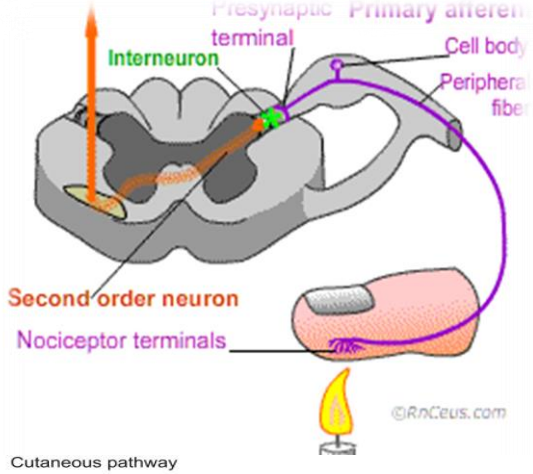
Barassi, G., Panunzio, M., Galasso, P., Moccia, A., Colombo, A., Praitano, B., Licameli, M., Di Bussolo, G., D'Ambrosio, L., Maurelli, R. and Sticca, G. 2023. **POSTURAL VALUATION IN CHILDREN AND ADOLESCENTS: POSTURE CLASSIFICATION**. Journal of Advanced Health Care. 5, 2 (Sep. 2023). DOI:https://doi.org/10.36017/jahc52228

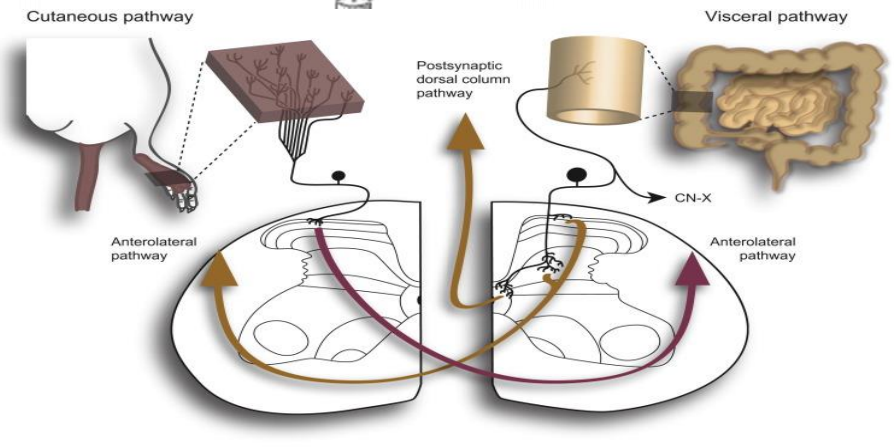
SPINAL CONVERGENCE



VISCERAL AND SOMATIC RELATIONSHIPS (MOMENTANEOUS AND LASTING) ADAPTATIONS FROM EMOTIONAL STIMULI

VISCERAL (AUTONOMIC) AND SOMATIC NERVES

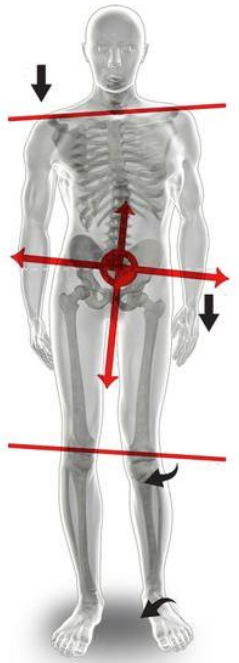


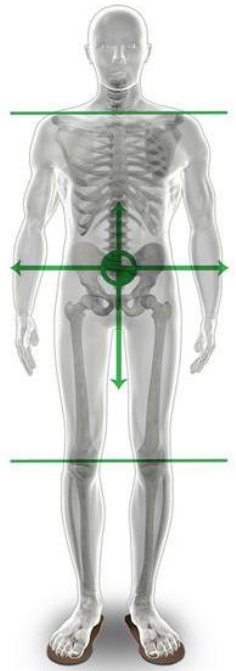


Cervero F, Connell LA, Lawson SN. **Somatic and visceral primary afferents in the lower thoracic dorsal root ganglia of the cat**. J Comp Neurol. 1984 Sep 20;228(3):422-31.
Blitshteyn S, Whitelaw S. **Postural orthostatic tachycardia syndrome (POTS) and other autonomic disorders after COVID-19 infection: a case series of 20 patients**. Immunol Res. 2021 Apr;69(2):205-211. doi: 10.1007/s12026-021-09185-5. Epub 2021 Mar 30.

Korr IM. **Proprioceptors and somatic dysfunction**. J Am Osteopath Assoc. 1975 Mar;74(7):638-50. PMID: 124754.

SPINAL FACILITATION

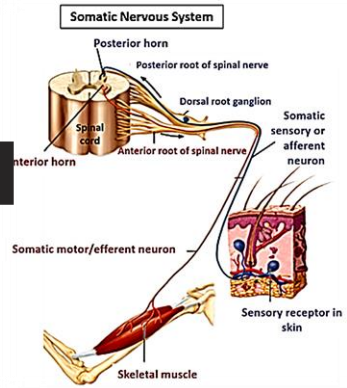


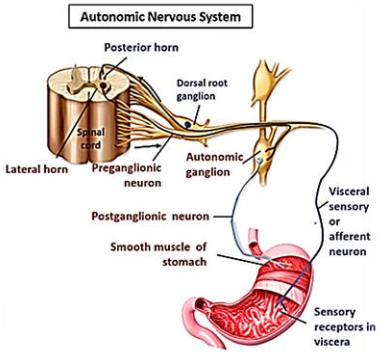


1. SOMATIC OR VISCERAL DYSFUNCTIONS OR BOTH ARE ABLE TO FACILITATE THE SPINAL CORD AND CONSEQUENTLY CAUSE THE ALTERATION OF THE EFFERENT BY THE ANTERIOR ROOTS

2. THE SOMATIC AND VISCERAL SENSORY AND MOTOR NERVES:

3. ANATOMICAL AND FUNCTIONAL ARRANGEMENT OF METAMERIC TYPE IN THEIR COURSE TOWARDS AND FROM THE SPINAL CORD…





Giamberardino MA, Affaitati G, Fabrizio A, Costantini R. **Myofascial pain syndromes and their evaluation**. Best Pract Res Clin Rheumatol. 2011 Apr;25(2):185-98. doi: 10.1016/j.berh.2011.01.002. PMID: 22094195 Review.

Giamberardino MA, Vecchiet L. **Visceral pain, referred hyperalgesia and outcome: new concepts**. Eur J Anaesthesiol Suppl. 1995 May;10:61-6. PMID: 7641646 Review.

Kagitani F, Kimura A, Sato A, Suzuki ***A.The role of the spinal cord as a reflex center for the somatically induced reflex responses of splenic sympathetic and natural killer cell activity in anesthetized rats****. Neurosci Lett. 1996 Oct 18;217(2-3):109-12.*

Sato A. ***Somatovisceral reflexes****. J Manipulative Physiol Ther. 1995 Nov-Dec;18(9):597-602.PMID: 8775021*

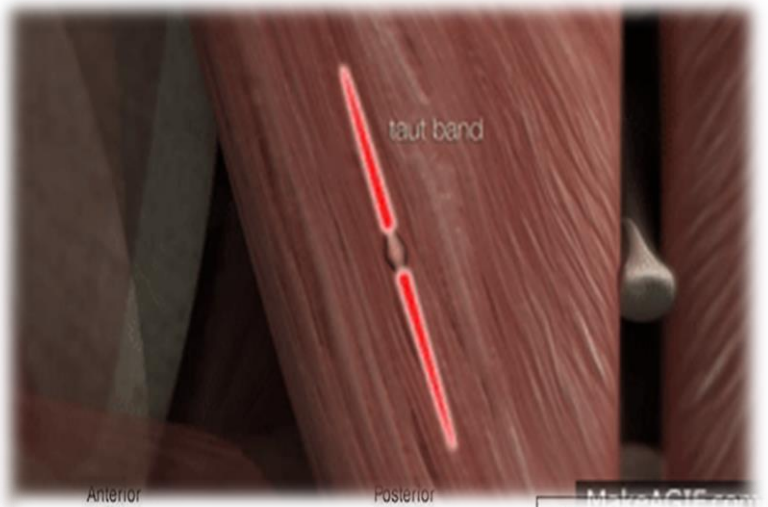
CHRONIC INFLAMMATION PAIN AND POSTURE

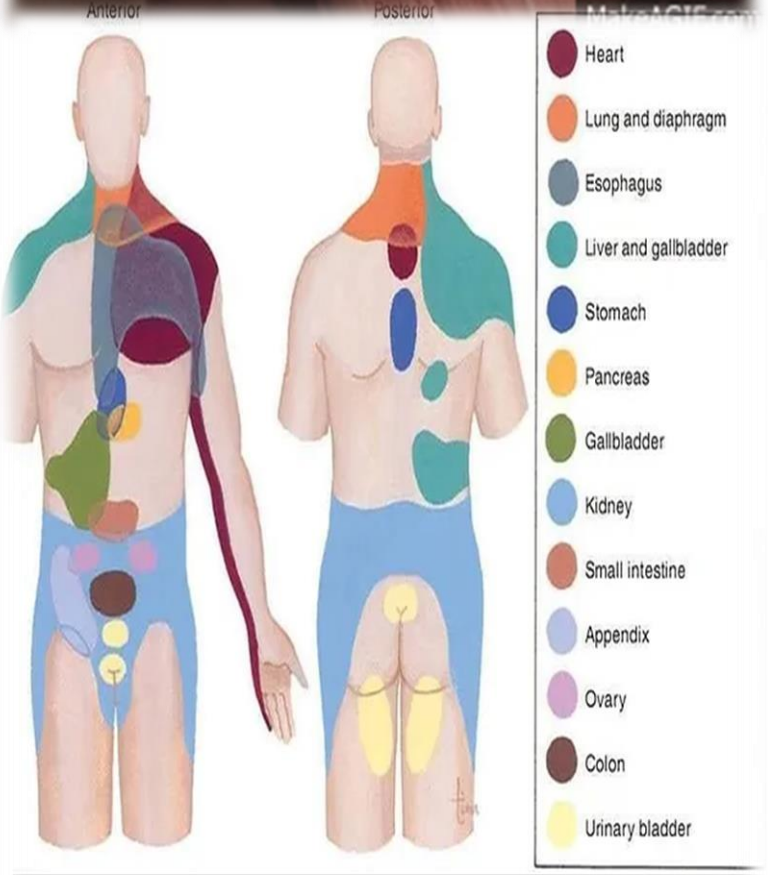
Hyperfunctioning PRIMARY AFFERENT NOCICEPTORS
INCREASE IN THE FUNCTIONS OF THE ANTERIOR ROOTS

A CONSEQUENTIAL INCREASE IN THE TONIC STATE OF THE MUSCLES ASSOCIATED WITH THAT SPINAL SEGMENT

IT IS POSSIBLE TO OBSERVE AT A CLINICAL LEVEL AN ALTERATION IN THE RANGE OF JOINT MOVEMENT OF MUSCLE TONE (MYOFASCIAL TRIGGER POINTS) AND AN ALTERATION OF POSTURE.

AFFERENT «CONVERGENT ON THE SPINAL CIRCUIT AND SPINAL FACILITATION»



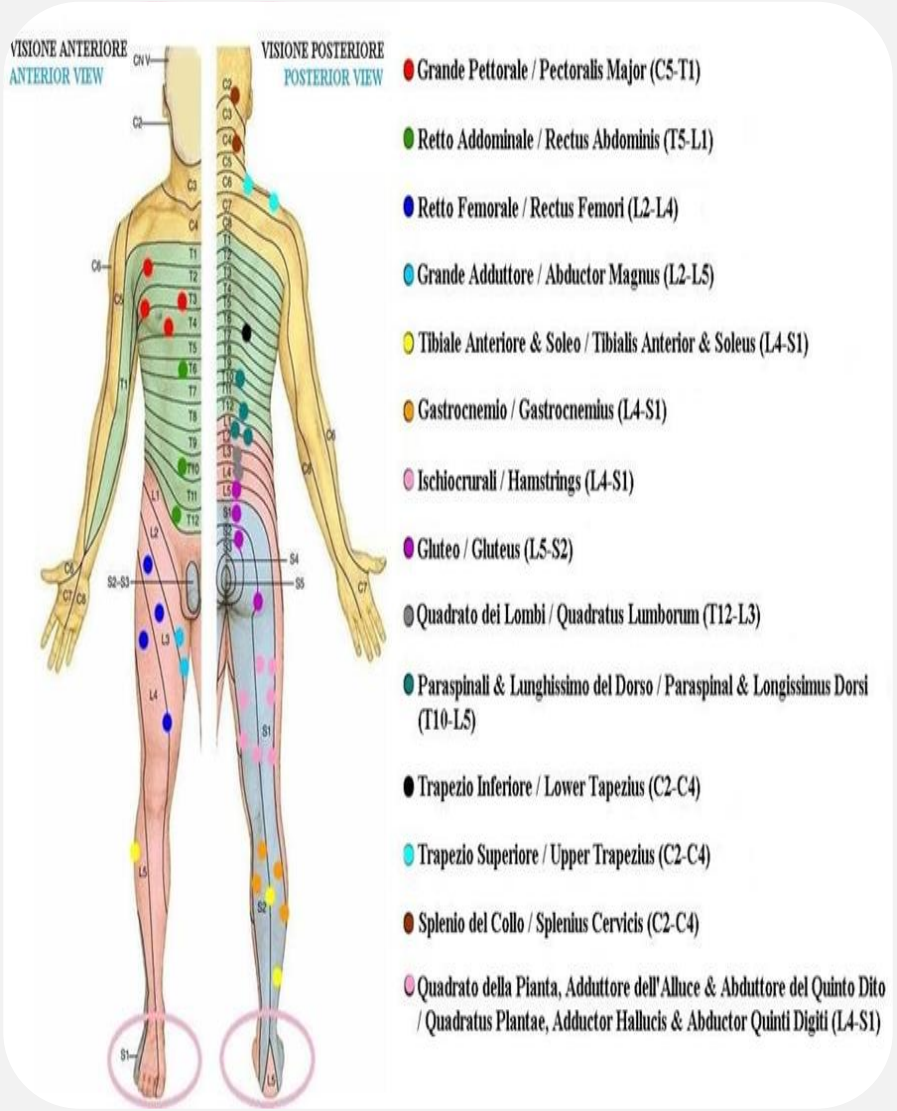


Referred pain. The sites for referred pain from various organs are shown.

Raj SR, Arnold AC, Barboi A, Claydon VE, Limberg JK, Lucci VM, Numan M, Peltier A, Snapper H, Vernino S; **Long-COVID Postural tachycardia syndrome: an American Autonomic Society statement**. American Autonomic Society. Clin Auton Res. 2021 Jun;31(3):365-368. doi: 10.1007/s10286-021-00798-2. Epub 2021 Mar 19

BioPhysicoMetricPostural APPROACH (BFMP)

1. ASSESSMENT OF FUNCTIONAL PARAMETERS (OPERATOR)
2. ..OF THE POSTURAL QUESTIONNAIRE (PATIENT)
3. ..OF THE SKIN IMPEDANCE RELATED TO THE DERMATOMS LINKED TO METAMERIC DYSFUNCTION
4. DIGITIZED BIOMETRY
5. QUANTUM EVALUATION



Prosperi L, Barassi G, Panunzio M, Pellegrino R, Marinucci C, Di Iulio A, Colombo A, Licameli M, Moccia A, Melchionna M. ***Bio-Physics Approach to Urinary Incontinence Disabilities***. Int J Environ Res Public Health. 2022 Oct 2;19(19):12612. doi: 10.3390/ijerph191912612. PMID: 36231912; PMCID: PMC9564884.

1.ASSESSMENT OF FUNCTIONAL PARAMETERS (OPERATOR)

Article

J. Biol. Regul. Homeost. Agents. 2023; 37(1): 25-29
https://doi.org/10.23812/j.biol.regul.homeost.agents.20233701.3

Bio-Physico-Metric Approach: Assessment and Treatment of Key Myofascial Trigger Points through an Adaptive Neuromodulation Device

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[3]Department of Medicine and Science of Aging, University Centre of Sports Medicine, "G. d'Annunzio" University, 66100 Chieti, Italy

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LETTER TO THE EDITOR

Bio-Physico-Metric approach: integrated postural assessment in musculoskeletal dysfunctions

G. Barassi[1,2], E. Di Simone[1], M. Supplizi[1], L. Prosperi[1], C. Marinucci[1], R. Pellegrino[3], P. Galasso[4], S. Guerri[1], M. Della Rovere[1], A. Younes[1], and A. Di Iorio[5]

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Received November 5, 2021 – Accepted February 24, 2022

To the Editor,

Postural deviations can cause alterations in functional activities and pain (1). Based on information from peripheral afferent structures (ears, eyes, muscles, tendons, viscera), the cerebral cortex organizes posture or the execution of movements. Consequently, the dysfunction of one or more of these structures can lead to a postural dysfunction in the form of myofascial adaptations. This situation can remain latent for a long time and predispose to musculoskeletal injuries, in which tissues can undergo an inflammatory process. Inflammation mediators evoke pain through direct activation and sensitization of nociceptors, which consist of unmyelinated C fibres and myelinated Aδ fibres that innervate the skin, muscles, and joints visceral organs (2). During the state of latency of aberrant myofascial adaptations, due to the overlap of "triggering factors", the compensatory capacities of the musculoskeletal system are exceeded and, consequently, alterations are established. The whole process leads to a myofascial dysfunction characterized by pain and limitation of functional activities. In addition, orthopaedic and rheumatological diseases can cause alterations in posture and body balance (3). Altered moods, anxiety and intake of some drugs are also risk factors for posture alterations (4). Therefore, an exhaustive postural evaluation must assess the biomechanical system, the biochemical-metabolic system, the neuro-psychological system and the environmental context. These systems are interconnected, and the deficit of one affects the stability of the whole complex, requiring a multidisciplinary and Bio-Physico-Metric Approach; this is especially true since, to date, there is still little knowledge in the literature of the role that postural analyzes and their interpretations can have in the prevention and evaluation of any musculoskeletal problems caused by postural alterations (5). Therefore, this study aims to provide guidelines for the data interpretation of a validated sequence of postural investigation techniques, based on a questionnaire, called Postural Evaluation Questionnaire (PEQ), and a biomechanics evaluation, called Biomechanical Postural Evaluation (BPE) (6).

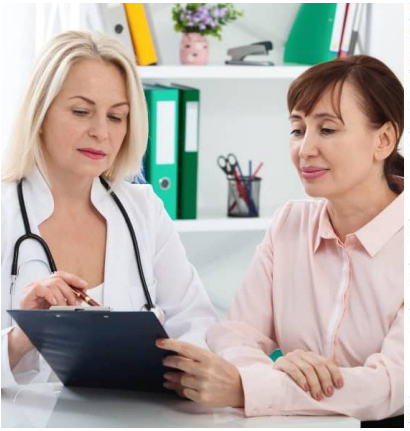
Keywords: rehabilitation, posture, postural balance, biometry, musculoskeletal diseases

Corresponding Author:
Dr Giovanni Barassi,
Center for Physiotherapy,

0393-974X (2022)

Giovanni Barassi: Bio-Physico-Metric-Approach in Musculoskeletal Dysfunction

2. POSTURAL ANAMNESTIC QUESTIONNAIRE (PATIENT)



QUESTIONARIO BIOPOSTURALE

Rif. Cartella

Nominativo M☐ F☐

Data di nascita (gg/mm/anno) Calzature n. Peso kg. Altezza cm

Indirizzo n. Prov.

Città CAP

Nato/a Cod Fiscale

Telefono e-mail

Professione Stile di vita: seduto☐ in piedi☐ in movimento☐

Le risposte sono strettamente riservate e legate al vincolo del segreto professionale. Per rispondere mettere una croce sulla risposta (risposte dubbie dovranno essere segnalate con un "?"), ogni risposta non sincera è rischio per il paziente, per lo Specialista e per tutto il personale ausiliario del Centro ed ostacola la migliore riuscita di ogni terapia.

ESERCIZIO FISICO ☐No ☐A volte ☐Più volte la settimana ☐Più di 30 minuti al giorno ☐Sport Agonistico

E' AUMENTATA/O☐ **DIMINUITA/O**☐ **ECCESSIVAMENTE DI PESO NEGLI ULTIMI 24 MESI?** ☐No ☐Si di quanti kg.

HA AVUTO FRATTURE? ☐No ☐Si Dove? Quanto tempo fa?

DOLORI E TENSIONI AL COLLO ☐No ☐Spesso ☐A volte ☐Al risveglio ☐A fine giornata

DOLORI E TENSIONI ALLA SCHIENA ☐**DORSALI** (PARTE ALTA) ☐**LOMBARI** (PARTE BASSA)
☐No ☐Spesso ☐Se sollevo pesi ☐Quando sto molto in piedi

☐**GONFIORE** ☐**FORMICOLII** ☐**SENSIBILITA' RIDOTTA** **BRACCIO** ☐DX ☐SX
☐No ☐Spesso ☐Al risveglio ☐A fine giornata ☐A volte
MANO ☐DX ☐SX
☐No ☐Spesso ☐Al risveglio ☐A fine giornata ☐A volte

DOLORI ARTICOLARI ALL'ANCA (OSSA DEI FIANCHI) ☐No
☐Spesso ☐A volte ☐Quando cammino a lungo

DOLORI E TENSIONI DEL GINOCCHIO ☐DX ☐SX
☐No ☐Spesso ☐Facendo le scale ☐Quando cammino a lungo

☐**GONFIORE** ☐**FORMICOLII** ☐**SENSIBILITA' RIDOTTA** **GAMBA** ☐DX ☐SX
☐No ☐Spesso ☐Al risveglio ☐A fine giornata ☐A volte
PIEDE ☐DX ☐SX
☐No ☐Spesso ☐Al risveglio ☐A fine giornata ☐A volte

STRAPPI MUSCOLARI O TENDINITI ACUTE NEGLI ULTIMI 24 MESI? ☐No ☐Si

SOFFRE DI CRAMPI NOTTURNI? ☐No ☐Si ☐A volte Dove?

PRENDE STORTE QUANDO CAMMINA? ☐No ☐Spesso ☐A volte

DOLORE AI PIEDI ☐No ☐Spesso ☐A volte ☐Quando cammino a lungo

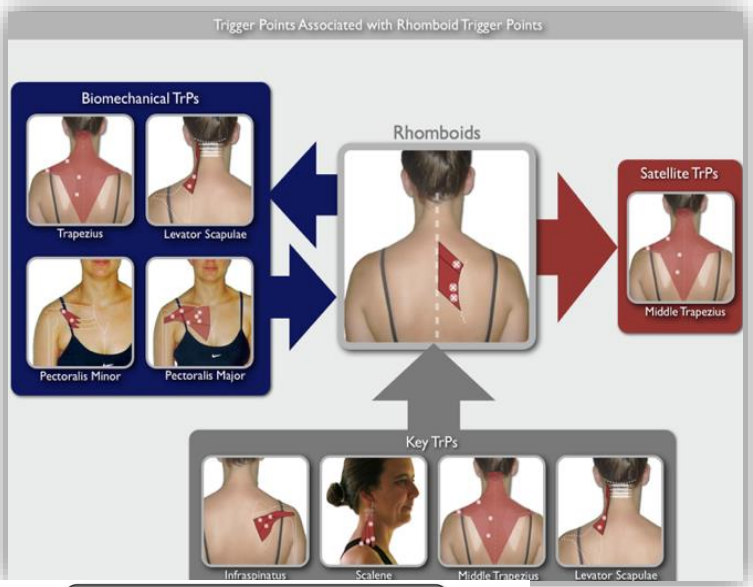
HA AVUTO VERRUCHE AI PIEDI? ☐No ☐Si

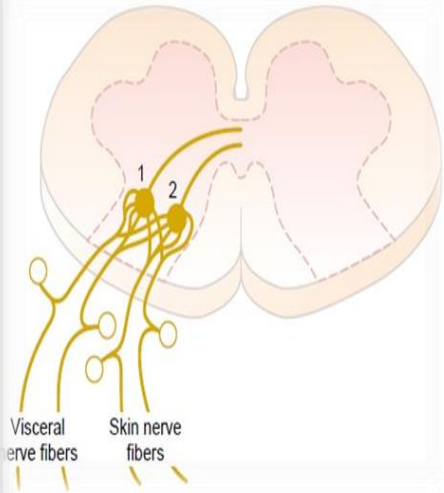
HA SPESSO CALLOSITA' SOTTO I PIEDI? ☐No ☐Si

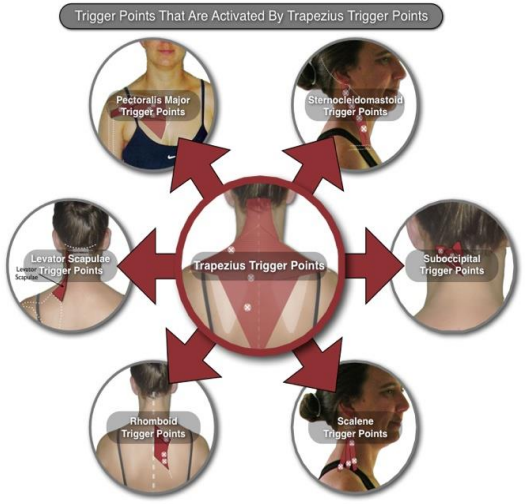
HA PROBLEMI DI VISTA? ☐No ☐Si ☐A volte ☐Utilizzo occhiali/lenti a contatto

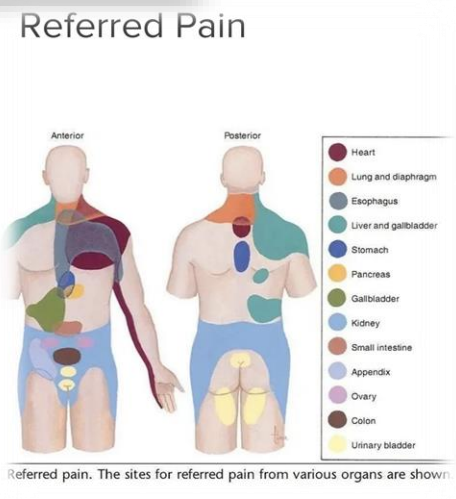
DA QUANTO TEMPO NON VA DALL'OCULISTA? ☐1 mese ☐1 anno ☐Oltre 1 anno ☐Oltre 5 anni

MYOFASCIAL DYSFUNCTION INFLUENCES THE FACTORS THAT CONTROL THE ACTIVITY OF EFFERENT NEURONS CAUSING HYPER- OR HYPO-ACTIVITY OF THESE FIBERS AND THE ORGANS THEY INNERVATES









Sato A, Sato Y, Schmidt RF, Torigata Y. **Somato-vesical reflexes in chronic spinal cats**. J Auton Nerv Syst. 1983 Mar-Apr;7(3-4):351-62. doi: 10.1016/0165-1838(83)90088-7. PMID: 6875196.

Sato A. **Neural mechanisms of autonomic responses elicited by somatic sensory stimulation**. Neurosci Behav Physiol. 1997 Sep-Oct;27(5):610-21. doi: 10.1007/BF02463910. PMID: 9353786.

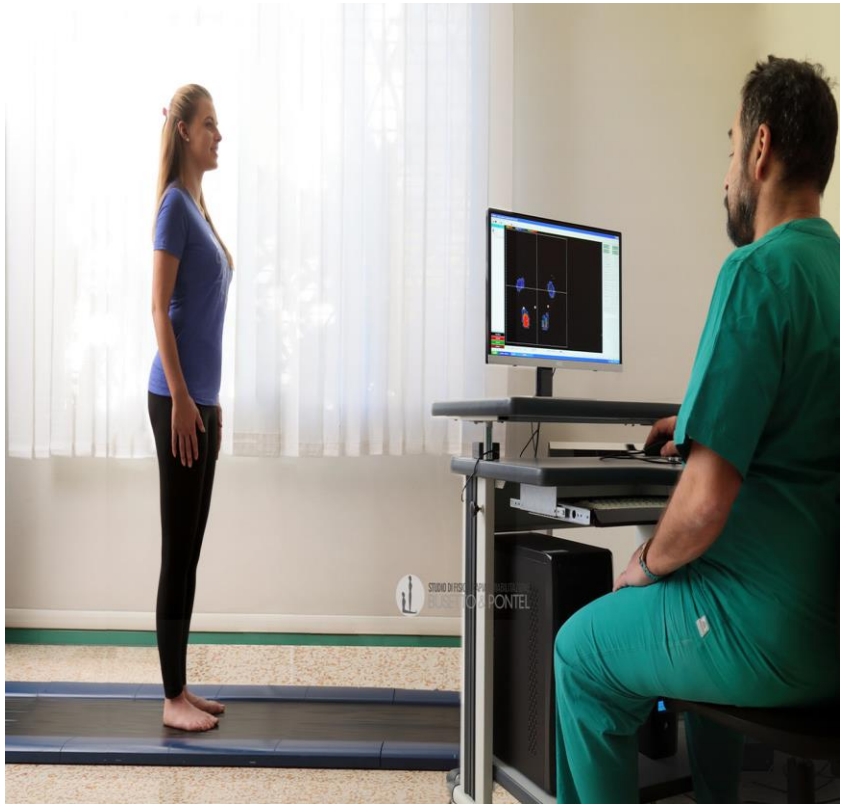
KEY TRIGGER POINTS: SOMATIC DYSFUNCTION

THE MAJOR DYSFUNCTION IS OFTEN CHRONOLOGICALLY OLDER:

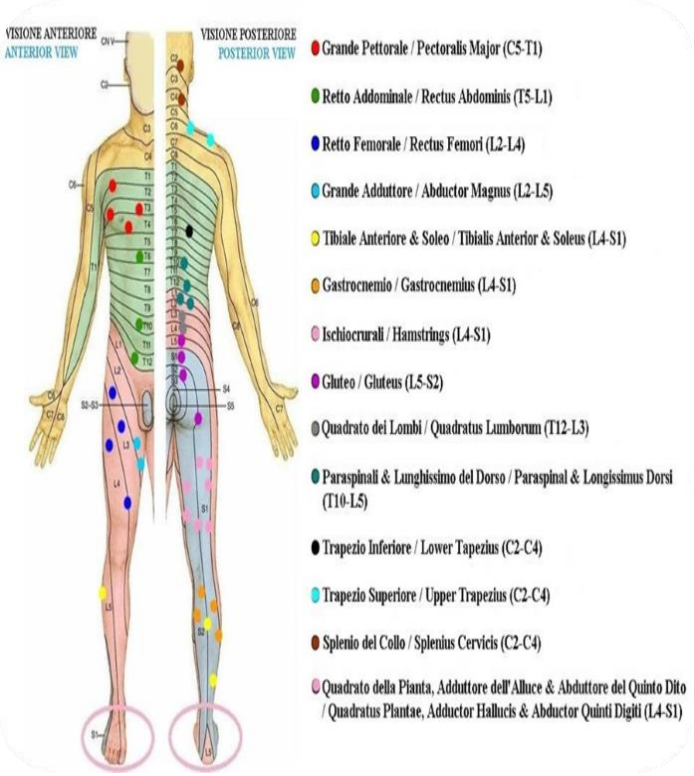
1. CAN AFFECT MUSCLES AT A CONSIDERABLE DISTANCE
2. MAY EXHIBIT AUTONOMIC DISORDERS
3. ELECTROMYOGRAPHY INCREASE IN ACTIVITY OF THE MOTOR UNIT INVOLVED

Giamberardino MA. ***Referred muscle pain/hyperalgesia and central sensitisation****. J Rehabil Med. 2003 May;(41 Suppl):85-8. doi: 10.1080/16501960310010205. PMID: 12817663*
Barassi G, Pokorski M, Matteo CD, Supplizi M, Prosperi L, Guglielmi V, Younes A, Della Rovere F, Di Iorio A.
Manual Pressure Release and Low-Grade Electrical Peripheral Receptor Stimulation in Nonspecific Low Back Pain*: A Randomized Controlled Trial.Adv Exp Med Biol. 2021;1324:73-81. doi: 10.1007/5584_2020_605.*

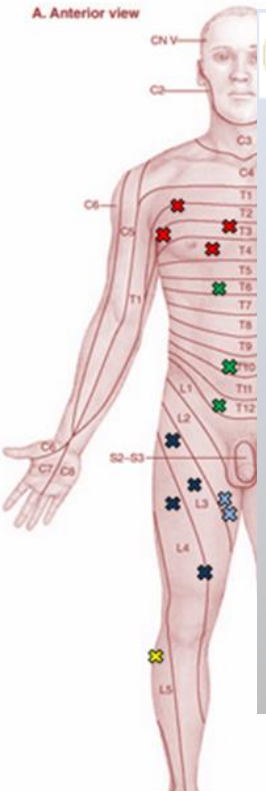
3.DIGITIZED BIOMETRY



4.SKIN IMPEDANCE RELATED TO THE DERMATOMS



DERMATOMS EVALUATION



Classificazioni

TRIGGER POINTS

ATTIVO

Is a symptom-producing MTrP and can trigger local or referred pain or other paraesthesiae. The presence of a so-called local twitch response (LTR), referred pain, or reproduction of symptomatic pain increases the diagnosis of MPS.

LATENTE

A latent MTrP does not trigger pain without being stimulated. Myofascial trigger points are the hallmark characteristics of MPS and feature motor, sensory, and autonomic Components.

DOLORE RIFERITO

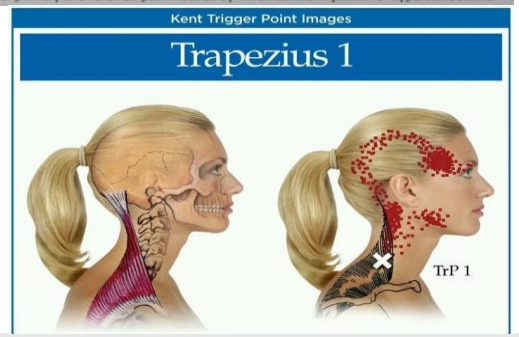
PRIMARIO

The local pain from active TrP reproduces symptoms suffered by patients, who identify the pain as their usual or familiar pain.

SECONDARIO

Pain felt in a region away from the source of pain is termed "referred pain." Referred pain can be perceived in any region of the body. Referred pain occurs at the dorsal horn level and is the result of activation, by means of sensitization mechanisms.

Simons DG, Travell JG, Simons LS. Travell and Simons' Myofascial Pain and Dysfunction: The Trigger Point Manual. Vol. 1., MD: Williams & Wilkins, 1999.
Law PC, Lewis J, Story I. Inter-therapist reliability in locating latent myofascial trigger points using palpation. *Man Ther* 1997;2:87-90.
Rubin TK, Gandevia SC. Effects of intramuscular anesthesia on the expression of primary and referred pain induced by intramuscular injection of hypertonic saline.



Barassi G, Younes A, Di Felice PA, Di Iulio A, Guerri S, Prosperi L, Stamile A, Di Iorio ***A.Microcurrents in the treatment of chronic pain: biological, symptomatological and life quality effects****. J Biol Regul Homeost Agents. 2020 Jul-Aug,;34(4):1561-1565.*

*Barassi G, et al.:****Effects of Manual Somatic Stimulation on the Autonomic Nervous System and Posture****.Adv Exp Med Biol. 2018;1070:97-109. doi:10.1007/5584_2018_153.*

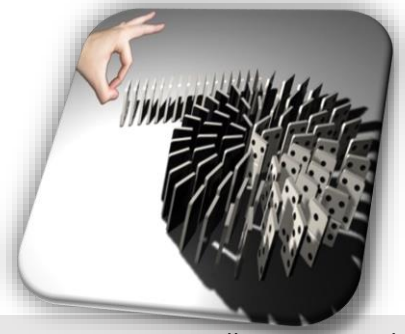
Barassi G, Supplizi M, Prosperi L, Irace G, Younes A, Della Rovere M, Rabini A, Colombo A, Di Iorio A. ***Dual-wavelength high-power laser therapy and neuromuscular manual therapy in chronic neck pain: a randomized clinical trial****. J Biol Regul Homeost Agents. 2021 Mar-Apr;35(2):767-773.*

IDENTIFICATION OF SUBLIMINAL AFFERENT

AS A RESULT OF THE ADDITION OF STIMULI AND CHRONICITY, AN ADDITIONAL STIMULUS IS PERHAPS NORMALLY COMPENSATED FOR IN A SYSTEM OF THIS TYPE

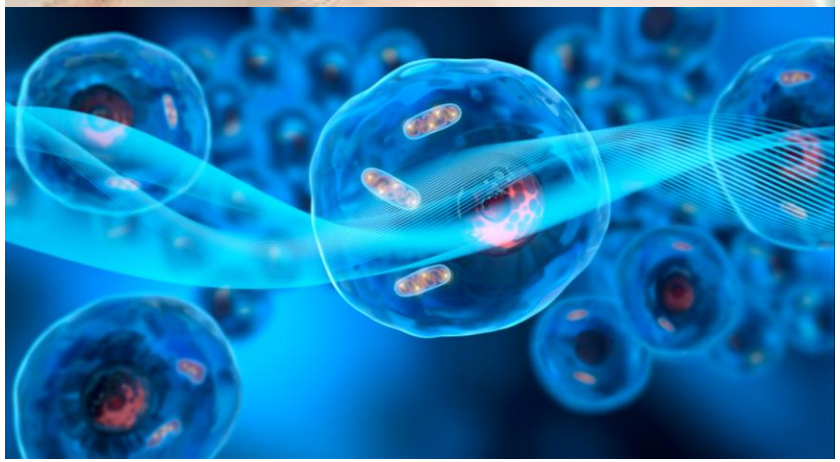
1. IT CAN PRODUCE CHRONIC DEGENERATIVE PATHOLOGIES THAT ARE ONLY APPARENTLY UNSOLVABLE

2. IT IS POSSIBLE TO TRACE EVERYTHING THAT GENERATES THEM

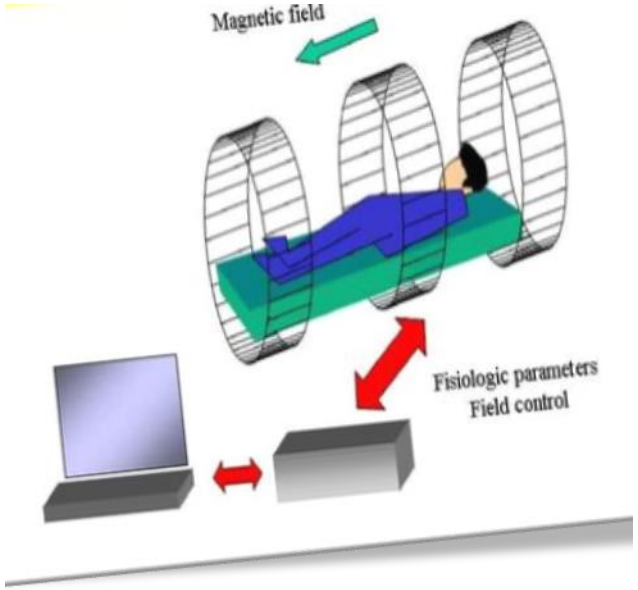


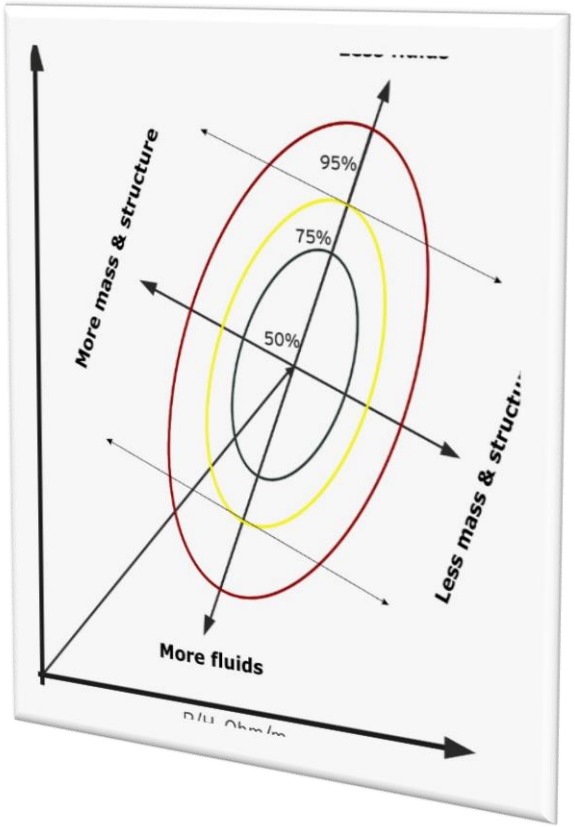
G. Barassi, E. Di Simone, M. Supplizi, L. Prosperi, C. Marinucci, R. Pellegrino, P. Galasso, S. Guerri, M. Della Rovere, A. Younes, A. Di Iorio: **Bio-Physico-Metric approach: integrated postural assessment in musculoskeletal dysfunctions** Journal of Biological Regulators and Homeostatic Agents. 2022, 36(1): 129-135.https://doi.org/10.23812/21-469-L

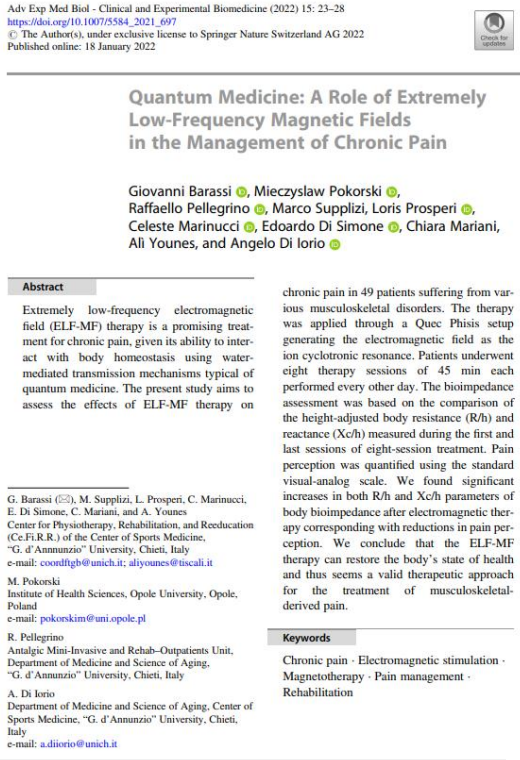
5. QUANTUM EVALUATION



QUANTUM ASSESSMENT







Adv Exp Med Biol - Clinical and Experimental Biomedicine (2022) 15: 23–28
https://doi.org/10.1007/5584_2021_697

Published online: 18 January 2022

Quantum Medicine: A Role of Extremely Low-Frequency Magnetic Fields in the Management of Chronic Pain

Giovanni Barassi, Mieczyslaw Pokorski, Raffaello Pellegrino, Marco Supplizi, Loris Prosperi, Celeste Marinucci, Edoardo Di Simone, Chiara Mariani, Ali Younes, and Angelo Di Iorio

Abstract

Extremely low-frequency electromagnetic field (ELF-MF) therapy is a promising treatment for chronic pain, given its ability to interact with body homeostasis using water-mediated transmission mechanisms typical of quantum medicine. The present study aims to assess the effects of ELF-MF therapy on chronic pain in 49 patients suffering from various musculoskeletal disorders. The therapy was applied through a Quec Phisis setup generating the electromagnetic field as the ion cyclotronic resonance. Patients underwent eight therapy sessions of 45 min each performed every other day. The bioimpedance assessment was based on the comparison of the height-adjusted body resistance (R/h) and reactance (Xc/h) measured during the first and last sessions of eight-session treatment. Pain perception was quantified using the standard visual-analog scale. We found significant increases in both R/h and Xc/h parameters of body bioimpedance after electromagnetic therapy corresponding with reductions in pain perception. We conclude that the ELF-MF therapy can restore the body's state of health and thus seems a valid therapeutic approach for the treatment of musculoskeletal-derived pain.

G. Barassi (✉), M. Supplizi, L. Prosperi, C. Marinucci, E. Di Simone, C. Mariani, and A. Younes
Center for Physiotherapy, Rehabilitation, and Reeducation (Ce.Fi.R.R.) of the Center of Sports Medicine, "G. d'Annnunzio" University, Chieti, Italy
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M. Pokorski
Institute of Health Sciences, Opole University, Opole, Poland
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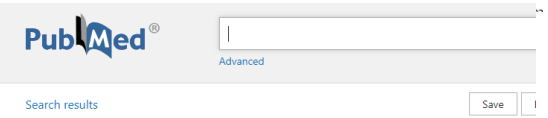
Department of Medicine and Science of Aging, Center of Sports Medicine, "G. d'Annunzio" University, Chieti, Italy
e-mail: a.diiorio@unich.it

Keywords

Chronic pain · Electromagnetic stimulation · Magnetotherapy · Pain management · Rehabilitation



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J Biol Regul Homeost Agents. 2020 May-Jun;34(3):1193-1197. doi: 10.23812/20-165-L-31.

Fibromyalgia and therapeutic integration: role of quantum medicine

G Barassi [1], A Younes [2], A Di Iulio [3], S Guerri [4], V Guglielmi [4], F Della Rovere [4], M Supplizi [1], A Di Iorio [5]

Affiliations + expand

PMID: 32627513 DOI: 10.23812/20-165-L-31

Handbook of Cancer and Immunology pp 1–24 | Cite as

Home > Handbook of Cancer and Immunology > Living reference work entry

Quantum Medicine and the Immune System

Giovanni Barassi, Maurizio Proietti, Piergiorgio Spaggiari & Antonio Colombo

Living reference work entry | First Online: 29 January 2023

44 Accesses

Italian Scientific **A**ssociation of Integrated **M**edicine between **B**iochemistry and **B**iophysics.
Italian Regional Representative:
Giovanni Barassi

EVERYTHING IS INFORMATION

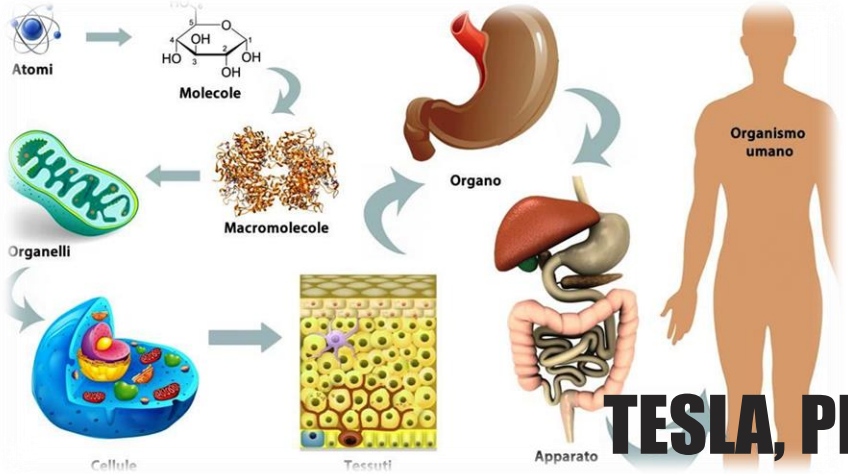
ORGANISM IS MADE OF MANY MASSES

STOMACH, LIVER, BOWELL.....

THOSE SHAPES... ARE FORMS OF ENERGY

1. ORGAN: SEEING IT AS MATTER

2. ORGAN: SEEING IT AS ENERGY AND AS...INFORMATION



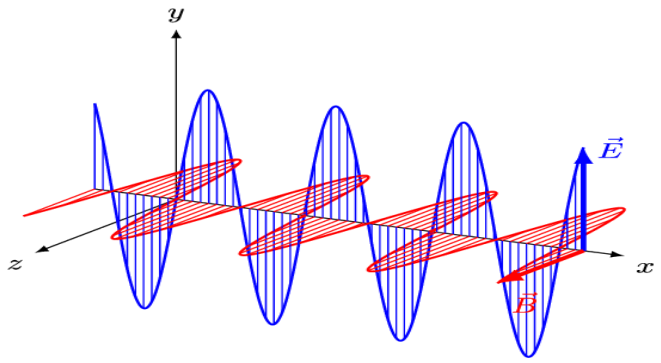
Montagnier L, Del Giudice E, Aïssa J, Lavallee C, Motschwiller S, Capolupo A, Polcari A, Romano P, Tedeschi A, Vitiello G.
Transduction of DNA information through water and electromagnetic waves.
Electromagn Biol Med. 2015;34(2):106-12. doi: 10.3109/15368378.2015.1036072.
PMID: 26098521 Review

TESLA, PLANK , EINSTEIN..

BIOLOGICAL ACT

- MOLECULES
- Enzymes
- COENZYMES
- GENETIC CODE
- BIOCHEMICAL CODE

- THE COORDINATOR IS THE MAGNETIC FIELD



Gerardi G, De Ninno A, Prosdocimi M, Ferrari V, Barbaro F, Mazzariol S, Bernardini D, Talpo G. **Effects of electromagnetic fields of low frequency and low intensity on rat metabolism.** Biomagn Res Technol. 2008 Apr 1;6:3. doi: 10.1186/1477-044X-6-3.

ELECTROMAGNETIC IMBALANCE

THE DISEASES DEPEND ON ELECTROMAGNETIC

IMBALANCE

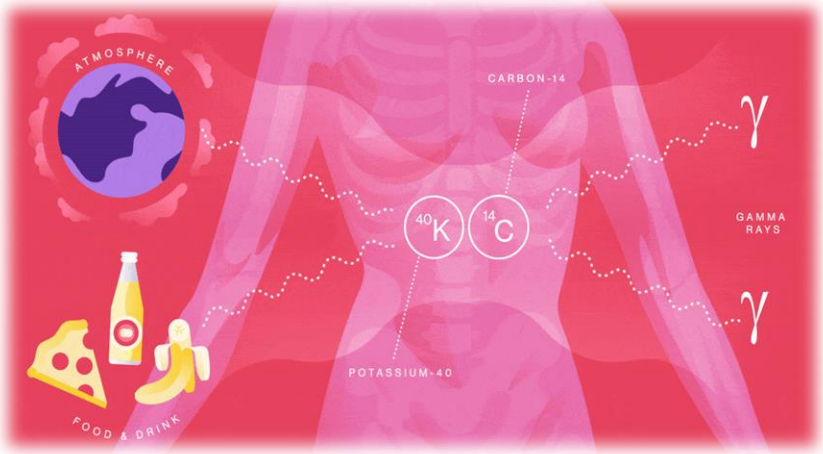
1 SECOND A CELL HAS 100,000 FUNCTIONS

PER 100,000 BILLION CELLS ????

CELL MEMBRANE -70 MV

40/50MV IN CASE OF PATHOLOGIES

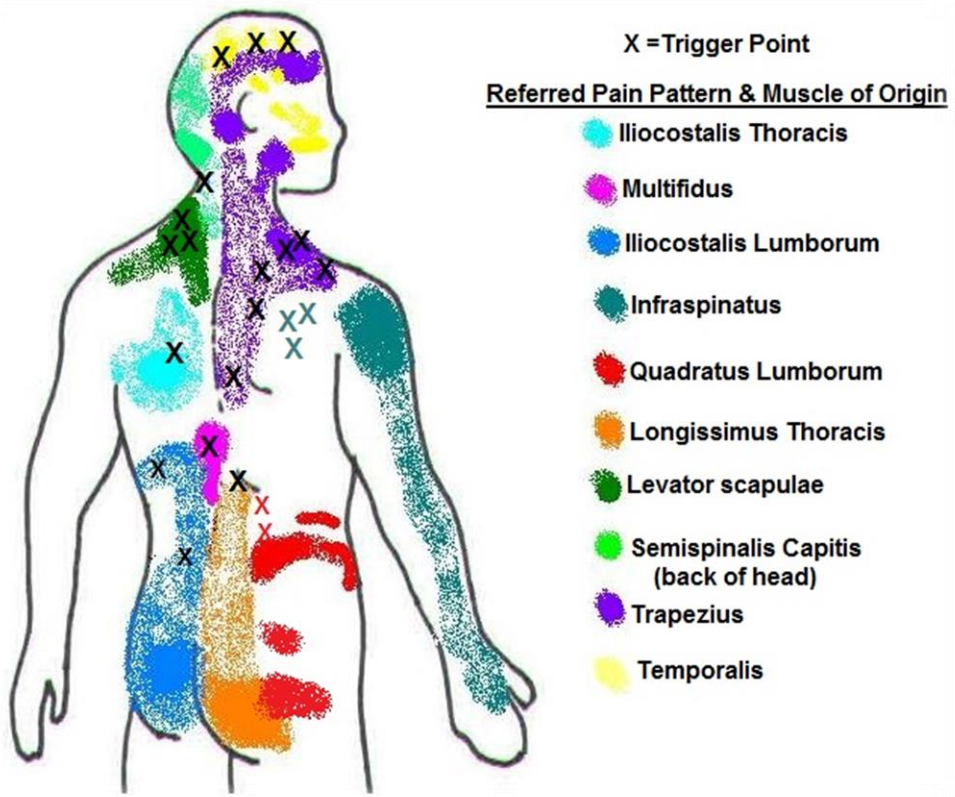
1. FIRST ELECTRICAL AND ELECTROMAGNETIC IMBALANCE
2. THEN THE CHEMICAL ONE
3. THEN THE SYMPTOM!



All together or one of these procedures

FOR THE THERAPEUTIC APPROACH, AFTER HAVING IDENTIFIED THE KEY TRIGGER POINTS PERIPHERAL sensorineural STIMULATION IS CHOSEN BY FOLLOWING THE FOLLOWING PHYSICAL PRINCIPLES:....

BFMP APPROACH IN MUSCULOSKELETAL DYSFUNCTIONS

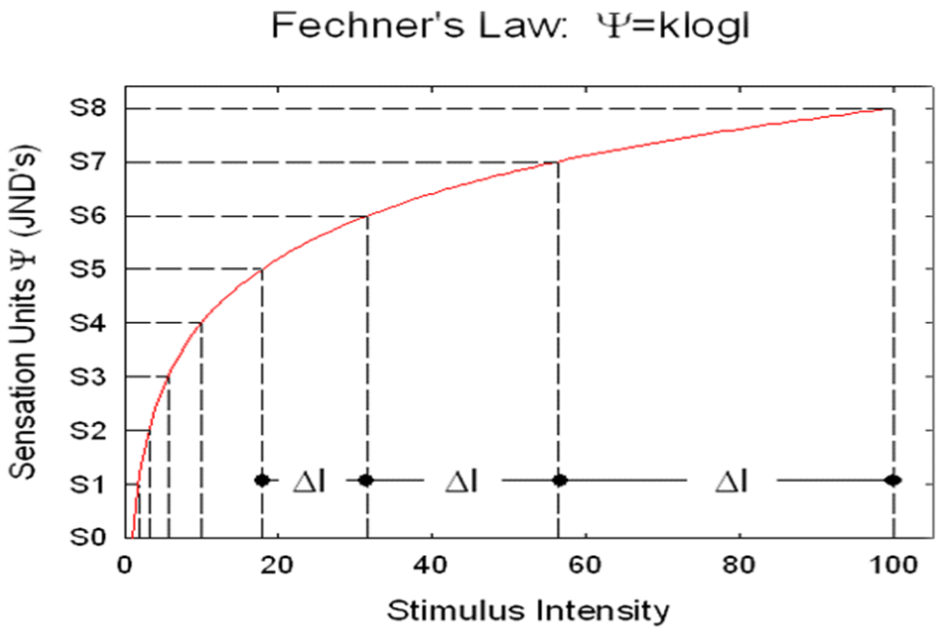


TREATMENT:

1. STIMULATIONS WITH PHYSICAL ENERGIES OF DIFFERENT NATURE (ELECTROMAGNETIC, VIBRATIONAL, MECHANICAL, MANUAL)
2. THERMAL ENVIROMENT
3. POSSIBLY MINIMAL AND TARGETED AT THE CAUSAL AREAS

Barassi G, Mariani C, Supplizi M, Prosperi L, Di Simone E, Marinucci C, Pellegrino R, Guglielmi V, Younes A, Di Iorio A.
***Capacitive and Resistive Electric Transfer Therapy: A Comparison of Operating Methods in Non-specific Chronic Low Back Pain**. Adv Exp Med Biol. 2022;1375:39-46*
*Barassi G et al..:**Somato-Visceral Effects in the Treatment of Dysmenorrhea: Neuromuscular Manual Therapy and Standard Pharmacological Treatment**. J Altern Complement Med. 2018 Mar;24(3):291-299. doi: 10.1089/acm.2017.0182. Epub 2017 Nov 14. PMID: 29135277*
*Barassi G, Obrero-Gaitan E, Irace G, Crudeli M, Campobasso G, Palano F, Trivisano L, Piazzolla V. **Integrated Thermal Rehabilitation: A New Therapeutic Approach for Disabilities.** Adv Exp Med Biol. 2020;1251:29-38. doi: 10.1007/5584_2019_465. PMID: 31933146.*

ADAPTIVE ASPECT OF PERCEPTION



WEBER-FECHNER LAW (1860)

«THE BIOLOGICAL SYSTEM IS EQUIPPED WITH THE POSSIBILITY OF MODIFYING SENSITIVITY DEPENDING ON THE ORDER OF MAGNITUDE OF THE STIMULUS»

THEREFORE WE MAY HAVE UNRECOGNIZED VERY LOW INTENSITY INCOMING STIMULI THAT LAST FOR YEARS, FOR EXAMPLE:

ANKLE SPRAIN NOT PERFECTLY CORRECTED

APPENDICULAR SCAR WITH FASCIAL TENSION

BOWEL DYSFUNCTION

DENTAL FOCALITY OR THE SCAR OF GOOD RESOLUTION OF DENTAL FOCALITY (THE SCARS CAN BE LIKE THE PRIMARY LESION FROM A NEUROIMMUNOLOGICAL POINT OF VIEW)

BUT WHAT USEFUL INFORMATION TO IDENTIFY THE CAUSAL POINT?

MRTBS 2024
1st International Conference
Modern research trends in biomedical sciences: a holistic approach to health care
Opole, Poland,17-19.04.2024

NERNST 1916

THE POSSIBILITY OF SPONTANEOUS OSCILLATIONS OF SEPARATE OBJECTS

MAY OSCILLATE IN A COMMON WAY

A COMPLEX OBJECT ACQUIRES ITS IDENTITY BECAUSE THE ATOMS OSCILLATE SYNCHRONOUSLY

THIS SYSTEM ENTERS IN A "SYSTEM RHYTHM" (PHASE)

FOR A COMPLEX OBJECT TO EXIST, IT MUST HAVE A WELL DEFINED PHASE

$$^{+}/_{Ag} + \frac{RT}{F} \ln \frac{[Ag^{+}]}{[Ag]}$$

$$^{+}/_{Ag} + \frac{RT}{F} \ln[Ag^{+}]$$

$$\overbrace{E^{\circ}_{Ag^{+}/Ag}}$$

$$^{+}/_{Ag} - \frac{RT}{F} \ln[Ag] +$$

$$^{+}/_{Ag} + \frac{RT}{F} \ln[Ag^{+}]$$

Hopper A, Beswick-Jones H, Brown AM. **The Nernst equation: using physico-chemical laws to steer novel experimental design**. Adv Physiol Educ. 2022 Mar 1;46(1):206-210. doi: 10.1152/advan.00191.2021. Epub 2022 Jan 20. PMID: 35050822.Xu Z, Ma M, Liu P. **Self-energy-modified Poisson-Nernst-Planck equations: WKB approximation and finite-difference approaches**. Phys Rev E Stat Nonlin Soft Matter Phys. 2014 Jul;90(1):013307. doi: 10.1103/PhysRevE.90.013307. Epub 2014 Jul 21. PMID: 25122410.

THE VOID AS A NON-SPATIAL OCEAN INTERACTS WITH BOATS

THANKS TO THE INTERACTION WITH THE VOID

THE BODY ACQUIRES AN INTRINSIC OSCILLABILITY

NATURE CANNOT STAND STILL

NO ONE IS FREE NOT TO OSCILLATES

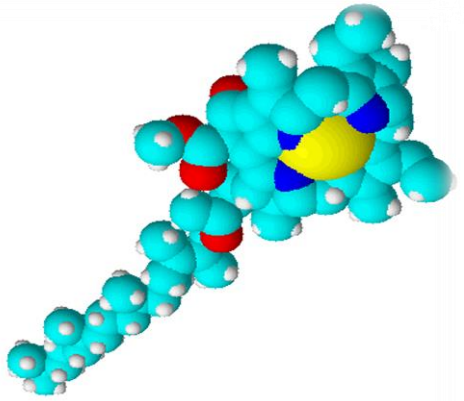
MANY OR SEVERAL OBJECTS CAN OSCILLATE IN PHASE WITH EACH OTHER

AN APPLICATION OF FORCE CAN INTERRUPT THE OSCILLATION IN PHASE

BUT WHICH MOLECULE GUARANTEES AND ALLOWS THESE OSCILLATIONS?

Donati M. **Beyond synchronicity: the worldview of Carl Gustav Jung and Wolfgang Pauli**. J Anal Psychol. 2004 Nov;49(5):707-28. doi: 10.1111/j.0021-8774.2004.00496.x. PMID: 15533199.

BIOCHEMICAL DYNAMICS IS MANAGED BY WATER

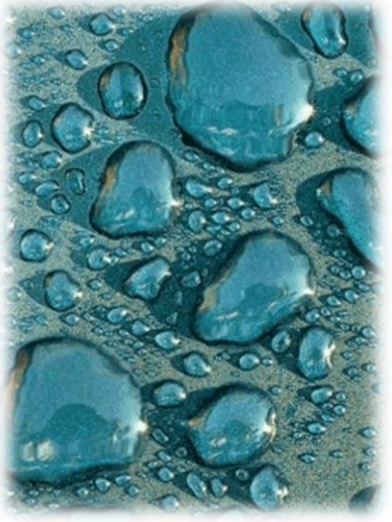


THE BEHAVIOR OF WATER IS CHARACTERIZED BY ITS OSCILLATIONS, WHICH GENERATE AN ELECTROMAGNETIC FIELD, WITH A SPECIFIC FREQUENCY ATTRACTING MOLECULES WITH THE SAME OSCILLATION FREQUENCY

THE VARIATION IN THESE OSCILLATIONS OVER TIME DETERMINES WHICH MOLECULES COME TOGETHER

WATER ACTS AS A CONDUCTOR OF MOLECULAR INTERACTIONS

ENSURING THAT THEY OCCUR IN A HARMONIOUS AND COORDINATED AND COHERENT MANNER



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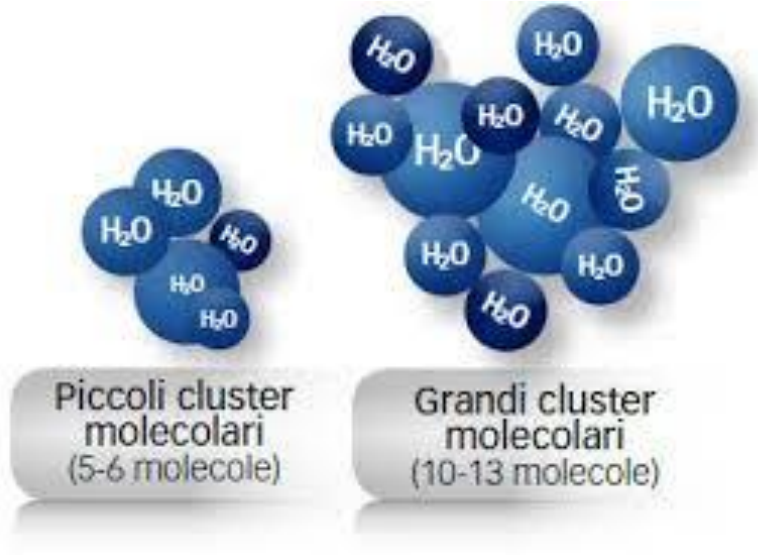
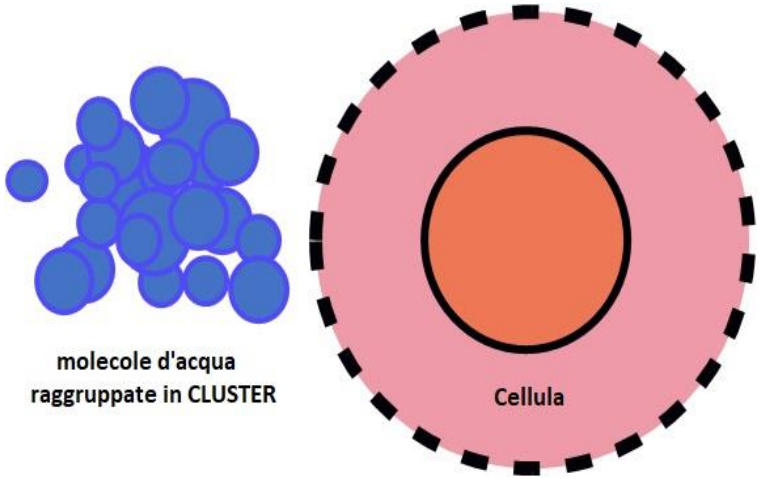
Khattar KE, Safi J, Rodriguez AM, Vignais ML. Intercellular Communication in the Brain through Tunneling Nanotubes. Cancers (Basel). 2022 Feb 25;14(5):1207. doi: 10.3390/cancers14051207. PMID: 35267518; PMCID: PMC8909287.

Smith CW. **Quanta and coherence effects in water and living systems**. J Altern Complement Med. 2004 Feb;10(1):69-78. doi: 10.1089/107555304322848977. PMID: 15025880.

COHERENCE DOMAIN

- IT HAS A SIZE: A WAVELENGTH OF THE RESPONSIBLE OSCILLATION THAT BROUGHT THE MOLECULES TOGETHER
- SIZES AND DIMENSIONS SPONTANEOUSLY EMERGE IN NATURE
- THE BIOLOGICAL OBJECT THAT DOES NOT HAVE A SIZE OR DIMENSION IS THE TUMOR/CANCER
- WHERE OBJECTS DO NOT RESONATE WITH EACH OTHER

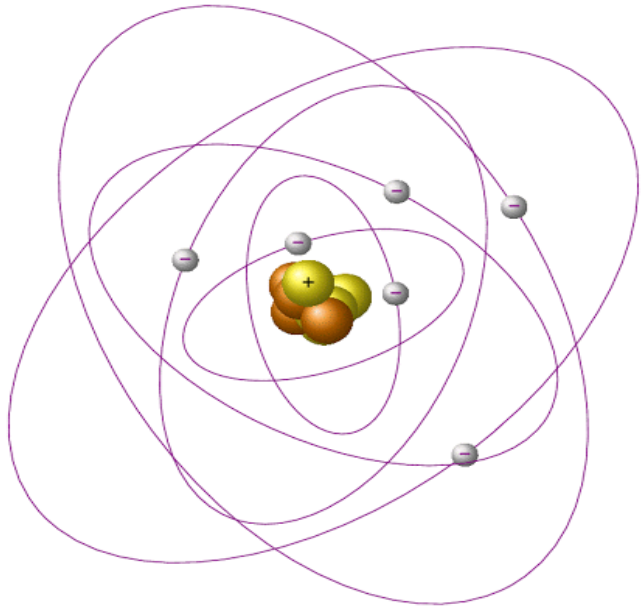




Ho MW. ***Illuminating water and life: Emilio Del Giudice.*** *Electromagn Biol Med. 2015;34(2):113-22. doi: 10.3109/15368378.2015.1036079. PMID: 26098522.*

Comisso N, Del Giudice E, De Ninno A, Fleischmann M, Giuliani L, Mengoli G, Merlo F, Talpo G. **Dynamics of the ion cyclotron resonance effect on amino acids adsorbed at the interfaces**. Bioelectromagnetics. 2006 Jan;27(1):16-25. doi: 10.1002/bem.20171. PMID: 16283642.

QUANTITY OF ENERGY



IF WE TRANSMIT A GREATER ENERGY
WE CAN ONLY FEED HIGHER LEVELS OF COHERENCE
WITHOUT AFFECTING THE LOWER ONES

ENERGETICALLY EXCITED THE MUSCULAR SYSTEM IT CAN MODIFY MUSCLE LEVELS MAY NOT AFFECT LOWER LEVELS..
“THE PRINCIPLE OF MINIMUM STIMULUS”

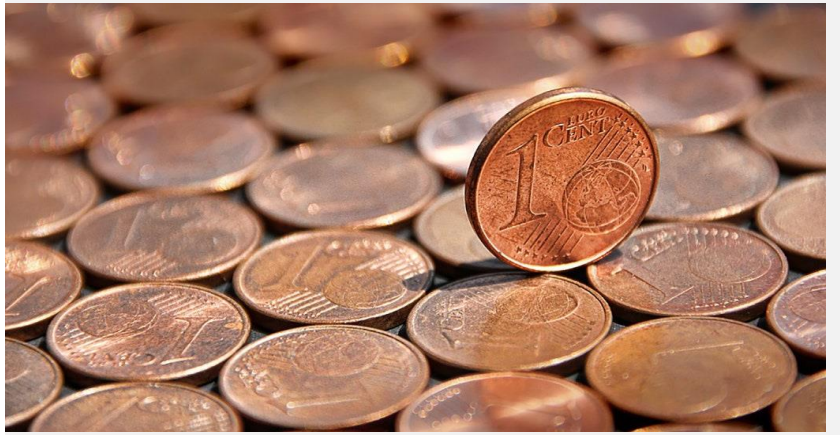
Henschler D. **The origin of hormesis: historical background and driving force**s. Hum Exp Toxicol. 2006 Jul;25(7):347-51. doi:10.1191/0960327106ht642oa. PMID: 16898162.
Del Giudice E, Fleischmann M, Preparata G, Talpo G. **On the "unreasonable" effects of ELF magnetic fields upon a system of ions**. Bioelectromagnetics. 2002 Oct;23(7):522-30. doi: 10.1002/bem.10046. PMID:

AMOUNT OF THE SMALL STIMULUS

1.PROVIDING A MINIMAL AMOUNT OF ENERGY TRIGGERS THE PROCESS

2.THE LOWER COHERENCE DOMAINS ACCUMULATE THIS ENERGY AND BEGIN TO OSCILLATE ON THEIR OWN, LATER INFLUENCING THE HIGHER LEVELS

3.AS TIME PASSES, A GREAT DEAL OF CHAOTIC ENERGY BUILDS UP, WHICH EVENTUALLY TRANSFORMS INTO HIGHLY COHERENT ENERGY



"THIS PROCESS CAN BE COMPARED TO TURNING A MILLION EUROS FROM ONE CENT COINS EACH!!"

ENERGY TO THE MUSCLES

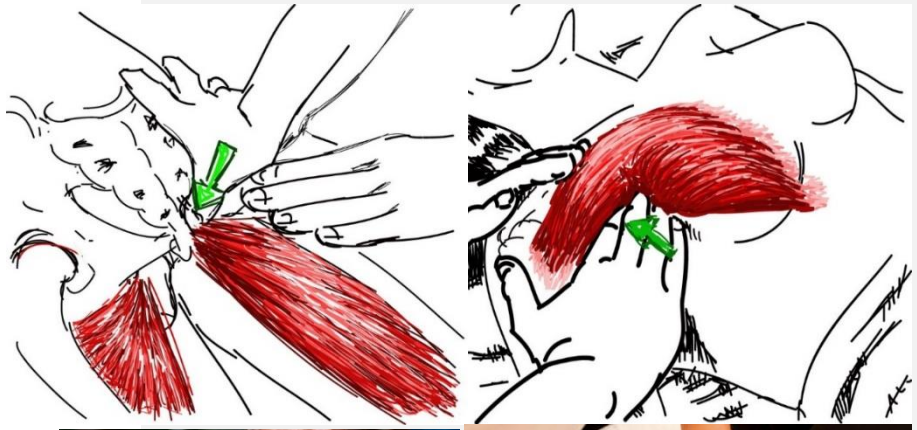
-IT DOESN'T MAKE THE ORGANISM MORE COHERENT

ACTIVATE THE VERTICAL DIRECTION INSTEAD OF THE HORIZONTAL DIRECTION

THIS PRODUCES A NOTICEABLE EFFECT WITH MINIMAL CAUSE

ACCORDING TO WEBER AND FECHNER, THE RESPONSE OF AN ORGANISM TO A STIMULUS IS NOT PROPORTIONAL TO THE STIMULUS ITSELF, BUT FOLLOWS THE LOGARITHM

THIS RESPONSE IS ORIENTED INWARD AND NOT OUTWARD, CONTRIBUTING TO THE TRANSFORMATION OF THE ORGANISM



THERAPEUTIC STIMULATION OF THE KEY TRIGGER POINT

CHARACTERISTICS

► Targeted, PHYSIOLOGICAL ► LOW INTENSITY

► LOW FREQUENCY

► CONSCIOUS PALPATION: PASSIVE, ACTIVE, LIGHT AND DEEP ► CAUSAL

EFFECTS

► LONGITUDINAL (INTERNEURON) WITH HORIZONTAL DEPARTURE AFFERENT ► SOMATIC ► LOCAL AND GLOBAL AUTONOMIC: HEART, RESPIRATORY, CIRCULATORY RATE

► ***POSTURE***

Verzella M, Affede E, Di Pietrantonio L, Cozzolino V, Cicchitti L. ***Tissutal and Fluidic Aspects in Osteopathic Manual Therapy:*** *A Narrative Review. Healthcare (Basel). 2022 May 31;10(6):1014. doi: 10.3390/healthcare10061014. PMID: 35742064; PMCID: PMC9222872.*

Barassi G, et al. ***Effects of Manual Somatic Stimulation on the Autonomic Nervous System and Posture.*** *Adv Exp Med Biol. 2018;1070:97-109. doi: 10.1007/5584_2018_153. PMID: 29435955.*

BODY AND ➡ CELL POSTURE

1.PRINCIPLE OF TENSIONAL INTEGRITY

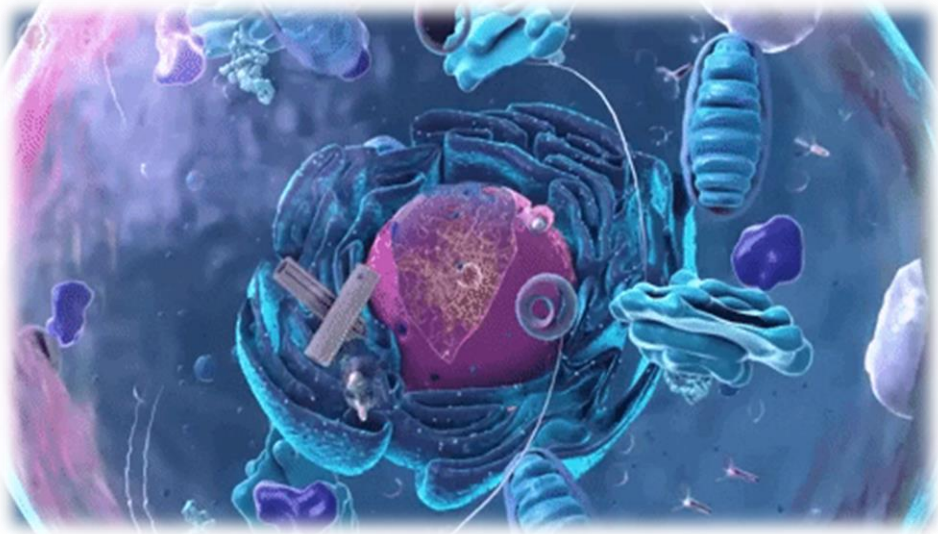
CELLULAR TENSEGRITY

CHANGING THE SHAPE OF A TISSUE MODIFIES THE BEHAVIOR

2.COMING FROM ITS INTERIOR AND FROM THE EXTRACELLULAR MEMBRANE, PROCESSING IT IN THE RIGHT WAY AND TIME

3. TO ACTIVATE THE SPECIFIC REACTION

LIVING, DYING, DIVIDING, MOVING, MODIFYING, SECRETING



Gerardi G, De Ninno A, Prosdocimi M, Ferrari V, Barbaro F, Mazzariol S, Bernardini D, Talpo G**. Effects of electromagnetic fields of low frequency and low intensity on rat metabolism.** Biomagn Res Technol. 2008 Apr 1;6:3. doi: 10.1186/1477-044X-6-3. PMID: 18380892; PMCID: PMC2362112.

MRTBS 2024
1st International Conference
Modern research trends in biomedical sciences: a holistic approach to health care
Opole, Poland,17-19.04.2024

Focused Mechano-Acoustic Vibrations in Chronic pain: bio-physico-metric path, key trigger points and posture

Authors: Giovanni BARASS I [a], Loris PROSPER I [a], Celeste MARINUCC I [a], Angelo DI IORIO [b], Maurizio PANUNZIO [c]

[a] *Center for Physiotherapy, Rehabilitation and Re-Education (Ce.Fi.R.R.) venue "G. d' Annunzio" University of Chieti-Pescara, Chieti, Italy*

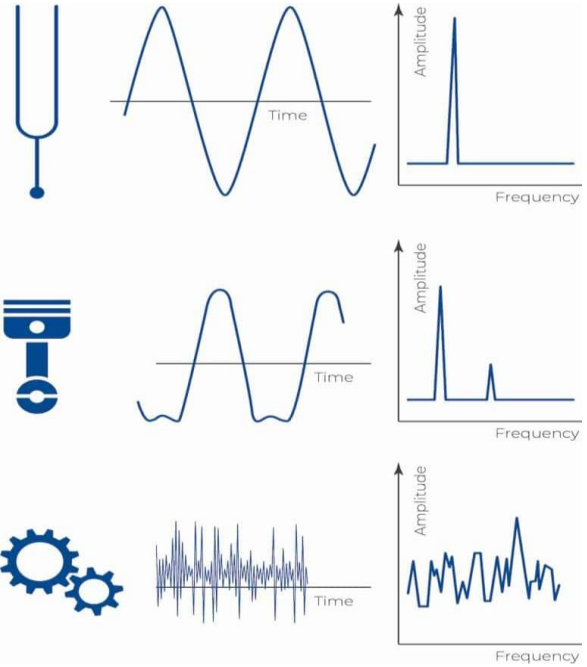
[b] *University Center for Sports Medicine, Department of Innovative Technologies in Medicine & Dentistry-"G. d'Annunzio" University of Chieti-Pescara, Chieti, Italy*

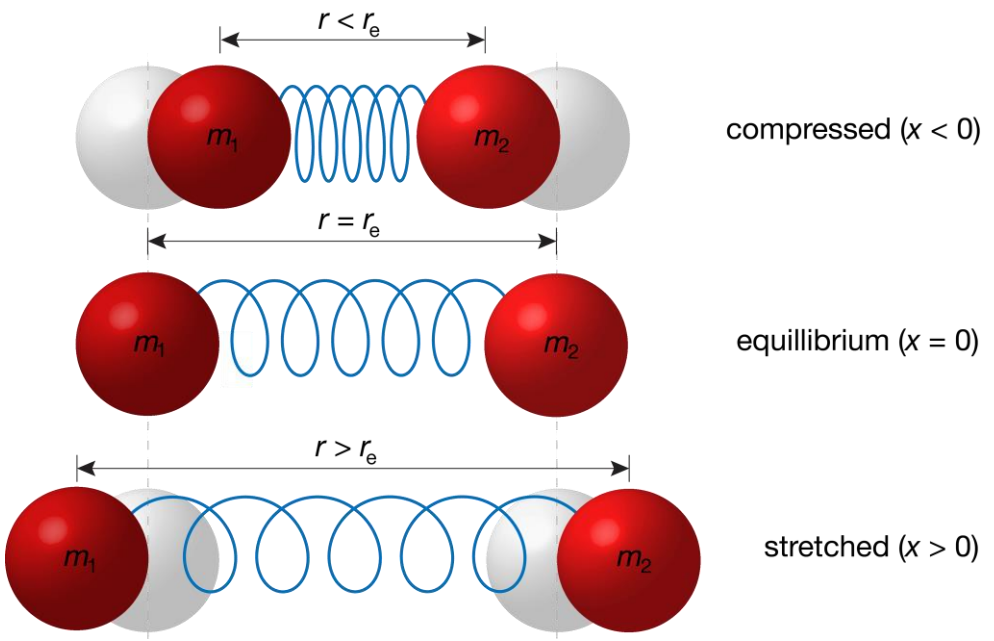
[c] *Responsible Research Hospital: Largo Agostino Gemelli 1, 86100 Campobasso (CB)-Italy*

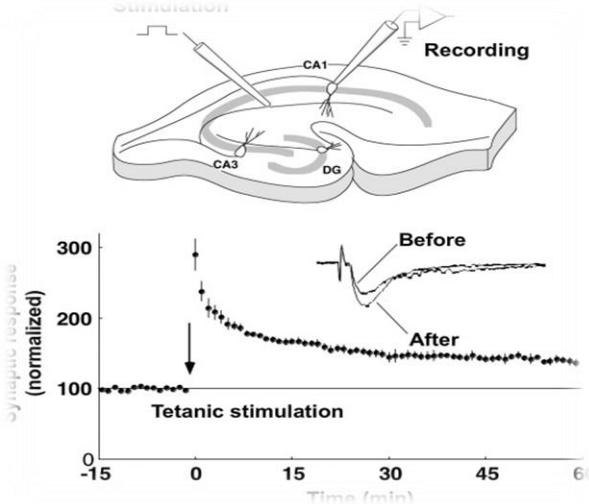
- **Introduction:**
- **To date, scientific literature has repeatedly highlighted the mutual influence between the somatic and visceral systems of the human body, which finds its maximum expression in the genesis of Myofascial Key Trigger Points (MKTrPs).**
- **It has been observed that the rebalancing of somato-visceral and viscero-somatic reflexes can occur through peripheral stimulations of MKTrPs through different techniques**

(Prosperi L. et al.-2022, Barassi G.,Pokorski M. et al.-2021)

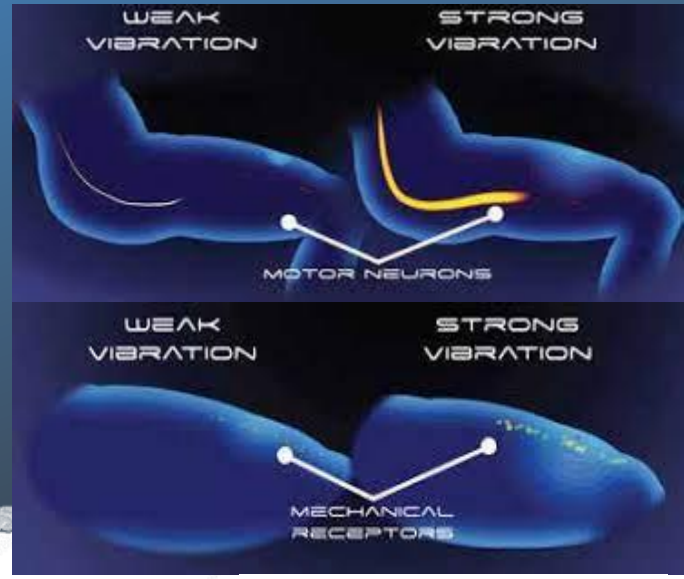
- **Aim:**
- **Our study wants to demonstrate the effectiveness of the identification and treatment of MKTrPs through Focused Mechano-Acoustic Vibrations (FMAV) Vibration Sound System (Vissman Srl– Fiano Romano -RM) in**
- **Cardiac and Cancer surviving patients affected by Chronic Low-Back Pain (CLBP)**

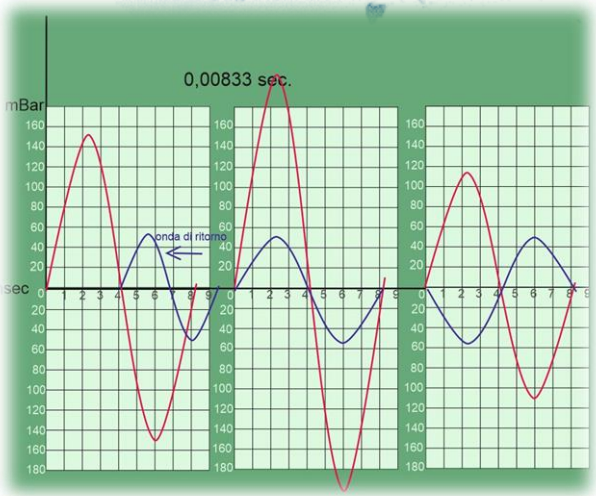




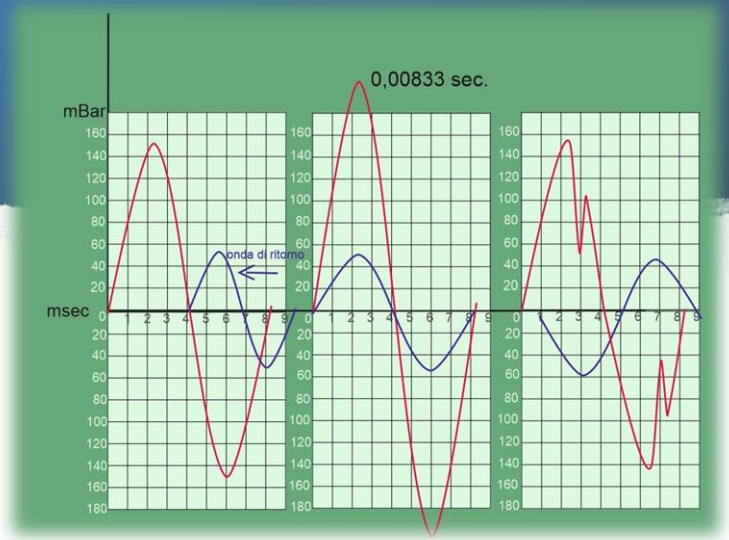


ASSONANCE – COHERENCE
Vibration Sound System





HARMONICS



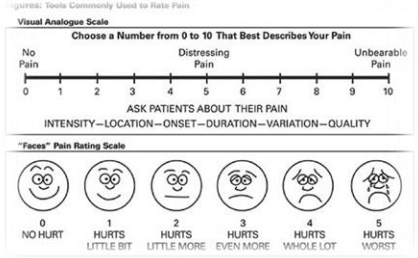
Vs/f/4*1,3,5,7, etc.

Square Wave:

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"..

With the Square Wave the pressure peak remains for a very prolonged time (about three times longer than with the sine wave)

Materials and Methods:



Clinical data of 20 subjects, examined and treated at the Ce.Fi.R.R. Rehabilitation Center: Gemelli Molise Hospital (Campobasso-Italy) and affected by CLBP, were collected and observed from January to June 2023.

The sample was composed by 12 women and 8 males, average age 48 years old.

The patients underwent FMAV treatment for a total of 8 sessions, performed with a biweekly frequency.

The evaluation systems

The VAS Score and for the Postural parameters:

DIGITIZED BIOMETRY (Diasu Health Technologies-Rome-Italy)-Biometric Postural Index (BPI) (Normal value 0-10)

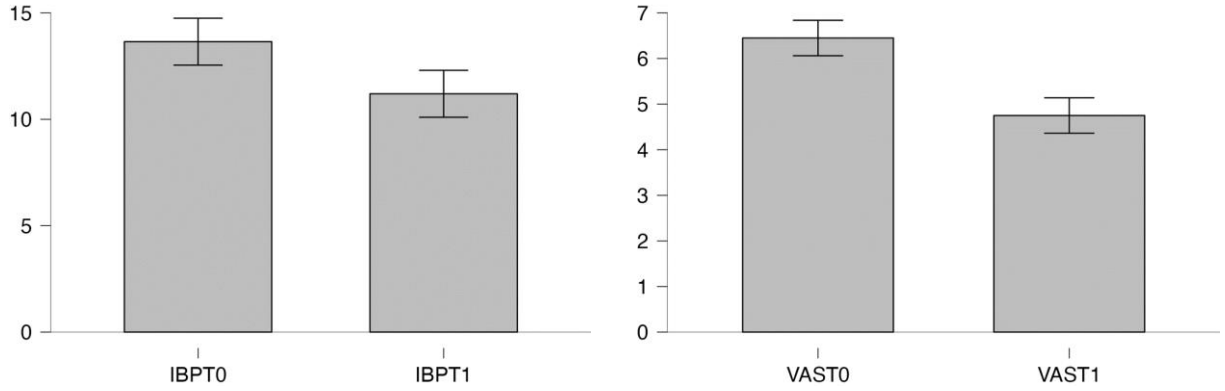
The treatment consisted in the application of FMAV for 2 minutes on each of the 4 most dysfunctional MKTrPs previously identified through the study of dermatomal skin impedance thanks to an impedence-metric device-ENF-

(Fast Therapies-25013-Carpenedolo BS, Italy).

Results:

A statistically significant reduction was detected both for the BPI (T0=13.6, T1=11.2, p=0.004)

and in the VAS scale (T0=6,45, T1=4,75, p<0.001).



Conclusions:

The study showed improvements in terms of pain and posture in patients suffering from CLBP,

consequently reflecting on the quality of life of patients without side effects, through targeted treatment,

but with systemic neurophysiological effects according to the principle of minimum stimulus and greater response

(Weber-Fechner-1860)

MRTBS 2024
1st International Conference
Modern research trends in biomedical sciences: a holistic approach to health care
Opole, Poland,17-19.04.2024

LAWS OF BIOLOGY AND SOCIETY

THE PRINCIPLE OF WISDOM IS REVERENCE FOR CREATION AND NATURE

WITH WHICH I CAN RESONATE AND SHARE...BUT...

I CANNOT RESONATE WITH THOSE WHO WANT TO COMPETE WITH ME!!

THE ECONOMY INTRINSICALLY GENERATES A PATHOLOGY

I CANNOT RESONATE WITH ANYONE BECAUSE OTHER PEOPLE CAN HURT ME

SOCIAL REGIME THAT RESPONDS TO THE LAWS OF BIOLOGY

THERE SHOULD NOT BE COMPETITION BUT COOPERATION!!!!

Prof. Emilio Del Giudice
1943-2013

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Bio-Physico-Metric-Approach in Musculoskeletal Dysfunction

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