

Supplementary Files

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Supplementary File 1. Ethical considerations

Participation in the Delphi survey is voluntary and by invitation. The questionnaire includes a beginning section to acquire consent and privacy for data processing. Participants are informed that the responses will have 'remained total confidentiality according to the Regulation on the protection of personal data' 679/2016 of the European Union, and that the results will be used for research purposes and a document shared at the corporate level¹. The interested party may be interested in the rights provided for by art. 15, 16, 17, 18, 20, 21 and 22 of the Regulation mentioned above.

Database randomization and differential privacy access were achieved. In addition, "anonymization" by generalizing was performed.² The study project and data collection were managed and anonymously entrusted by the Unit of Clinical Epidemiology of IRCCS Istituto Ortopedico Galeazzi based in Milano. The data subject cannot be re-identified and is therefore outside the scope of the data protection law³.

The row dataset was accessible to two researchers (SG, SB) excluded from participation in Delphi for the quantitative and qualitative analyses. This practice complies with the European standards for the use of aggregative data where the data subject cannot be re-identified, are not personal data and are therefore outside the scope of data protection law³. The final report only contains aggregate data. In the final document, we reported the names of the participants who have completed all rounds and gave their consent to disclose their names.

Supplementary File 2. Physical agent modalities description

1) Electrical stimulation: electrotherapeutic currents and waveforms to facilitate neuromuscular or sensory activity to improve muscle strength and reeducate muscle function.⁴

- Neuromuscular electrical stimulation (NMES): use of pulsed currents to stimulate motor nerves, which in turn produce tetanic contractions of the neuromuscular spindles, with or without joint movement.⁵
- Functional Electrical Stimulation (FES) uses electrical pulses to stimulate motor neurons or denervated muscle fibers directly to elicit a contraction during a functional activity (e.g., gait). FES is used in the treatment of orthopedic and neurological conditions.⁶

2) Neuromodulation, antalgic and interferential electrical currents : electrotherapeutic currents and waveforms to influence physiological effects on the patient's body structures and functions aiming to modulate pain.⁴

- Transcutaneous electrical nerve stimulation (TENS): delivers electrical stimulation via electrodes placed over the intact skin surface near the source of pain to produce analgesia or hypoalgesia. A wide variety of pulsed waveforms are used, with frequencies typically in the range of 1-100Hz. The intensities are set to produce sensory stimulations alone or in combination with motor stimulations to produce muscle twitches (acupuncture-like TENS).⁷
- Transcutaneous Tibialis Posterior Stimulation (TTNS): a form of neuromodulation involving the use of electrical impulses to address urinary symptoms (e.g. overactive bladder) with inhibitory action on neurons of the spinothalamic tract (S2–S3).⁸
- Interferential current (IC): involves crossing two medium frequency currents (most commonly 4000 Hz), which reportedly generates a low-frequency 'beating' (amplitude-modulated) effect at between 0 and 150 Hz in the deep tissues.⁹ These beat frequencies are believed to decrease pain, increase circulation and block nerve conduction.

3) Extracorporeal shock wave therapy: a nonsurgical treatment that uses the phenomenon of mechanotransduction (i.e., adapting cells biochemical activity, influencing cells migration, proliferation, differentiation and apoptosis)^{10 11} to treat various musculoskeletal conditions (e.g., plantar fasciitis; tennis elbow). Shock wave therapy can be either extracorporeal or radial.¹²

- Extracorporeal shock wave therapy (ESWT) involves passing sound waves (or shock waves) through the skin to the affected area. Shock waves are single pulsed acoustic or sonic waves, which dissipate mechanical energy at the interface of two substances with different acoustic impedance.¹³ They are produced by generators of an electrical energy source and require an electroacoustic conversion mechanism and a focusing

device. Three types of systems can be distinguished based upon the sound source: electrohydraulic, electromagnetic and piezoelectric systems. Various doses appear to be used, with no apparent consensus on the minimum therapeutic dose. As defined by Cacchio 2006¹⁴ as low-energy shock waves is less than 0.1 mJ/mm² and high-energy shock waves: is 0.2 mJ/mm² to 0.4 mJ/mm²).

- Radial shock wave therapy (RSWT) is generated through the acceleration of a projectile inside the handpiece of the treatment device and then transmitted radially from the tip of the applicator to the target zone. Radial shock waves show a lower peak pressure and a considerably longer rise time than extracorporeal shock waves. In RSWT, the focal point is not centred on a target zone, as occurs in focal ESWT, but on the tip of the applicator.¹⁴

4) Laser therapy: light source treatment, non-invasive, widely used to treat various musculoskeletal conditions.

- Low-level laser therapy (LLLT) generates a beam of light with a particular wavelength that can deliver light energy to tissue depths below the dermis¹⁵. Studies suggest that LLLT contributes to pain relief by reducing pro-inflammatory cytokines¹⁶. The effects of LLLT are considered to be dependent on dosage, wavelength, site and duration of treatment.^{15 16}
- high level laser therapy (HLLT): laser with an output power greater than 500 mW or 0.5 Watts. HLLT creates heat on the surface of the skin due to their higher power density (irradiance).¹⁷

5) Electromagnetic therapy: based on Faraday's law of electromagnetic induction, to promote bone healing, treat osteoarthritis and inflammatory diseases of the musculoskeletal system, alleviate pain, enhance healing of ulcers and reduce spasticity¹⁸.

- Pulsed Electromagnetic Field therapy (PEMF), which involves the delivery of pulsing (that is 'on-off') low-frequency magnetic fields through the body, which is believed to provide temporary pain relief by influencing tissue generation and cell proliferation.¹⁹

- Repetitive magnetic stimulation (rMS), which allows the transcutaneous induction of nerve stimulating electric currents. This technique requires extremely strong and sharp magnetic impulses (for example 15,000 amperes peak current; 2.5 T field strength; < 1 msec) applied by specially designed coils (< 10 cm) over the target area. Modern devices allow the repetition of up to 60 impulses per second. Mainly developed to study and influence brain functions, rMS also stimulates spinal chord fibres and peripheral nerves. Initial studies used peripheral rMS for therapeutic reasons, such as in myofascial pain syndrome²⁰. Since the resulting small electric impulses are the nerve stimulating factor, rMS effects may be similar to TENS.

6) Shortwave and microwave Diathermy

- Tecartherapy or radiofrequency diathermy (RFD) is a non-invasive therapy and consists in the emission of high-frequency electromagnetic waves which increase tissue metabolism. This process promotes tissue repair and affects pain sensitivity.^{21 22 23}

- Microwave diathermy: a deep heating modality that converts electromagnetic energy to thermal energy. Frequencies approved for therapeutic microwave are 915 MHz (wavelength 33 cm) and 2,456 MHz (wavelength 12 cm). The lower frequency has the advantage of increased depth of penetration but also the disadvantages of greater beam dispersion and the requirement of larger applicators. If muscle heating is primary objective, 915-MHz applicators are preferable to 2,456-MHz applicators. Average temperatures of approximately 41°C at a depth of 1–3 cm have been demonstrated²⁴
- 7) **Hot thermal agents:** heat transferred from an object with direct contact to the body. Heat therapy include hot packs, heatwraps, hot/warm water immersion, sauna. Heat treatment increases metabolism in tissues, promotes blood circulation and reduces pain. The temperature of the heat therapy is generally 35–40°C.^{25 26}
 - 8) **Cryotherapy:** cold is transferred from an object with direct contact to the body. Examples include cold packs, cold-water immersion ($\leq 15^{\circ}\text{C}$), ice massage, the novel modality of cryotherapy. Cryotherapy is a treatment involving very short exposures to extremely cold dry air to the whole patient or a treatment area (mean temperature of the cryotherapy chamber is at -30°C , -80 to -110°C , or $< -110^{\circ}\text{C}$). Cold treatment is thought to reduce swelling and cell metabolism, minimizing oedema, pain and injury.^{25 27}
 - 9) **Therapeutic Ultrasound:** delivers energy to deep tissue sites through ultrasonic waves (often at frequencies of 1 or 3 MHz and intensities between 0.1 watts/cm² and 3 watts/cm²) using a crystal sound head. Treatment can be delivered in two forms, continuous (non- stop ultrasonic waves) and pulsed (intermittent ultrasonic waves^{22 28}). The treatment aim to increase tissue temperature and induce non-thermal physiological changes (such as cell permeability and cell growth), which are believed to promote soft tissue healing and muscle relaxation.²⁹

Supplementary File 3. Declaration of interest

Name and Surname	Affiliation	Scientific and Technical Societies	Conflict of interest declared
Armando Perrotta	IRCCS Neuromed, Pozzilli (IS)	Società Italiana per lo Studio delle Cefalee (SISC)	none
Viviana Rosati	A.U.O. Policlinico Umberto I	Società Italiana di Riabilitazione Neurologica (SIRN)	none
Enrico Marinelli	Department of Anatomical, Histological, Forensic, and Orthopedic Sciences, "Sapienza" University of Rome	Società Italiana di Medicina Legale e delle Assicurazioni (SIMLA) - Dipartimento di Scienze Biotecnologiche e Medico-chirurgiche Università di Roma Sapienza	none
Bianca Masturzo	Obstetrics and Gynecology department. Ospedale degli infermi. Ponderano (Biella)	Associazione degli Ostetrici e Ginecologi Ospedalieri Italiani (AOGOI)	none
Mauro Roselli	ASL CittadiTorino- Ospedale Martini-S.C. Ortopedia e Traumatologia	Ortopedici Traumatologi Ospedalieri d'Italia (OTODI)	none
Stefano Vercelli	Laboratorio di Ricerca in Riabilitazione 2rLab, Dipartimento Economia Aziendale, Sanità e Sociale. SUPSI. Manno (CH)	Federazione Italiana delle Associazione Scientifiche di Fisioterapia (FIASF)	none
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Gianfranco Lamberti	Dipartimento Medicina Riabilitativa AUSL Piacenza	Società Italiana di Urodinamica (SIUD)	none
Roberto Bortolotti	UO Reumatologia Ospedale S.Chiera, Trento	Società Italiana di Reumatologia (SIR)	none
Chiara Torresetti	Paideia International Hospital	Associazione Italiana di Urologia Ginecologia e del Pavimento Pelvico (AIUG)	none
Fabio Bandini	Department of Neurology, ASL 3 Genovese, Genova, Italy	Società Italiana Neurologia (SIN)	none
Giuseppe Botta	Istituto Fisioterapico Michelangelo di Arezzo	Società Italiana di Flebologia (SIFL)	none
Giancarlo Tancredi	Pediatric Department. Sapienza Università di Roma	Società Italiana di Pediatria (SIP)	none
Luigi Nappi	Department of Medical and Surgical Sciences Policlinico Riuniti di Foggia UNIVERSITY OF FOGGIA	Società Italiana Di Ginecologia E Ostetricia (SIGO)	none
Marco Scorcu	Servizio di Medicina dello Sport e dell'Esercizio Fisico, Cagliari, ATS	Federazione Medico Sportiva Italiana (FMSI)	none

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Monica Pierattelli	Presidente SICuPP Toscana, Pediatra di libera scelta Campi Bisenzio (FI)	Societa' Italiana Delle Cure Primarie Pediatriche (SICuPP)	none
Carla Berliri	Cittadinanzattiva- APS - Sede Nazionale -Staff area Salute - Tribunale per i Diritti del Malato - Politiche della Salute-	Cittadinanzattiva - APS	none

Supplementary File 4. Panel of experts comments

ROUND	Electrical Stimulation	Neuromodulation, antalgic and interferential electrical currents	Extracorporeal shock wave therapy	Laser therapy	Electromagnetic therapy	Diathermy	Hot thermal agent modalities	Cryotherapy	Ultrasound
Round 1	My Likert Scale rating of 9 stems not only from the numerous evidence but also from the results of my clinical experience. In cases of perineal hypotonia and sphincter deficits, electrical stimulation has facilitated recovery times by enhancing manual work and proprioception during the learning phase.	The primary application of TTNS in my practice, aside from addressing bladder disorders (overactivity), is in the management of painful syndromes, such as spasms of peri-urethral muscles in patients with recurrent post-coital cystitis, vulvodynia, and pudendal neuralgia.	In this case, my assessment requires specificity: In many instances, women experiencing resistant pelvic pain may not readily accept the use of shock waves, as it is an impactful therapy that can cause initial discomfort. Among various instrumental approaches for this patient group, it would not be my first choice. On the other hand, my perspective on shock waves for the treatment of male pelvic pain or erectile dysfunction is quite different; in this case, I positively endorse the statement.	completely agree.	I cannot provide a judgment as I lack the appropriate training and experience in its use.	Thanks to the use of diathermy, I can achieve excellent results in the treatment of dermatological conditions affecting the genital mucosa, such as Lichen Sclerosus. In pelvic pain, patients appreciate the mild heat generated by the diathermy probe, allowing for more effective therapy in the area. Currently, this treatment is consistently integrated into all treatment plans, irrespective of individual clinical situations, without causing discomfort or triggering sensitivity reactions	Limited experience in menstrual pain for just the efficacy. However it is related to other type of hot thermal agents (e.g, infrared therapy)	Agreed, but the patient must be adequately instructed in advance on the use and timing of cryotherapy, for example, ice packs postpartum or in inflammatory hemorrhoidal syndromes. Discourage self ice application, and encourage the use of devices designed for healthcare purposes. It is a very useful and easily administered therapy but potentially 'dangerous' if mishandled at home, for instance, the risk of cold burns	For my expertise US is safe in pelvic disorders.
	In the absence of expertise in the pelvic-perineal and neurological domains, the opinion is limited to the musculoskeletal field	In the absence of expertise in the pelvic-perineal and neurological domains, the opinion is limited to the musculoskeletal context only.	Shock waves are not recommended in individuals during the developmental age since their tissues and cartilage are still in the developmental phase	In the absence of expertise in pelvic-perineal, lymphatic, and neurological domains, the opinion is limited to the musculoskeletal context only	In the absence of expertise in pelvic-perineal areas, the opinion is confined to the musculoskeletal context only. The indicated median score pertains to uncertainty regarding the safety of persistent use (long term), as I am not aware of literature data on adverse events for such durations. For treatment cycles falling within the time frames investigated in the	In the absence of expertise in the pelvic-perineal domain, the opinion is confined to the musculoskeletal context only. The moderate agreement with the safety statement primarily concerns uncertainties regarding the operator's safety with high daily exposure to the equipment, especially if potential risk factors are present (e.g., pregnancy or	In my experience, I have observed several cases of mild and transient skin irritations.	It is the only treatment I have seen used in younger age groups	For my expertise US is safe in pelvic disorders.

					available RCTs, the judgment is certain	the presence of oncological pathologies, even if unrecognized). I am not aware of studies monitoring the health of operators exposed to moderate or high levels of possible electromagnetic fields generated by the equipment. Regarding the equipment's safety for the patient, the judgment of agreement is certain.			
	NMES is widely used to address certain types of pharyngeal dysfunction in adults with dysphagia, but there is limited evidence demonstrating its effectiveness or appropriateness for pediatric patients. Reference: Andreoli S et al. Int J Pediatr Otorhinolaryngol 2019;127:109646. doi: 10.1016/j.ijporl.2019.109646.	NA in some pelvi-perineal and neurological disorders	NA in some pelvi-perineal and neurological disorders	Adulthood or in individuals with skeletal maturity	PEMF therapy is not recommended for children who have not yet completed their growth phases	It is not recommended for children as their biological tissues are still in the growth phase	I suggest emphasizing more strongly that the use is specifically intended for non-acute arthropathies	Risk of cold burn	Rarely used in adolescents after sports-related traumas
	NA in some perineal neurological disorders	For my experience mainly for neurological disorders		NA in some neurological and perineal disorders	NA for some perineal disorders	NA for some perineal disorders	for my expertise, uncertain in groin pain		
	For my expertise mainly in migraine			LLLT expertise in some neurological conditions (e.g, migraine)	for my expertise mainly used in migraine				
Round 2	Limited in some neurological setting	Useful also for vulvodynia, rectal spasms with anal pain	Uncertainty in some neurological disorders	limited evidence in some neurological disorders		I additionally include post-genital ulcer treatment, hypertonicity, and genital swelling in patients with pelvic pain	Limited experience in menstrual pain for just the efficacy. However it is related to other type of hot thermal agents (e.g, infrared therapy)	Cryotherapy in pelvic floor rehabilitation is used for the treatment of pain from hemorrhoidal inflammation, postpartum contusion, postpartum hypotonia with pronounced laxity, and for some patients, it	For my expertise US is safe in pelvic disorders.

									is beneficial in addressing the sensation of genital swelling in chronic pelvic pain	
				I do not have the right clinical experience to rate it with confidence. In my clinical practice, patients who have undergone LLLT have shown a greater tendency towards increased genital dryness. Therefore, the treatment requires additional measures such as enhanced hydration, for example, through the use of serums/ointments/suppositories during the treatment period, to mitigate certain side effects that may cause discomfort to the patients.						

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