Title:

Position of the Ibero-American Society of Neurourology and Urogynecology (SINUG) on the Treatment of Musculoskeletal Phenotype in Chronic Pelvic Pain Syndrome

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Abbreviations:

A-PRP	Autologous Platelet-Rich Plasma
BoNT-A	Botulinum Toxin Type A
CBT	Cognitive-behavioural therapy
CP	Chronic prostatitis
CPP	Chronic Pelvic Pain = CPPS
CPPS	Chronic Pelvic Pain Syndrome
CRMRF	Capacitive-Resistive Monopolar Radiofrequency (=TECAR)
EAU	European Association of Urology
EMG	Electromyography
ESWT	Extracorporeal Shock Wave Therapy
FDA	U.S. Food and Drug Administration
ICS	International Continence Society
MM	Myofascial Mobilization
MTrP(s)	Myofascial Trigger Point(s)
NIH	U.S. National Institutes of Health
NIH-CPSI	NIH Chronic Prostatitis Symptom Index
NRS	Numeric Rating Scale
PBPS	Primary Bladder Pain Syndrome
PCPPS	Primary Chronic Pelvic Pain Syndrome
PRP	Platelet-Rich Plasma
PTNS	Percutaneous Tibial Nerve Stimulation
QoL	Quality of Life
RCT(s)	Randomized Controlled Trial(s)
SINUG	Sociedad Iberoamericana de Neurourología y Uroginecología (Iberoamerican Society of Neurourology and Urogynecology)
tDCS	Transcranial Direct Current Stimulation
TENS	Transcutaneous Electrical Nerve Stimulation
TTNS	Transcutaneous Tibial Nerve Stimulation
UPOINT	Urinary, Psychosocial, Organ-Specific, Infection, Neurologic/systemic, and Tenderness
UPOINTS	Urinary, Psychosocial, Organ-Specific, Infection, Neurologic/systemic, Tenderness and Sexual
VAS	Visual Analogue Scale

1.INTRODUCTION

1.1. DEFINITION

The *European Association of Urology* (EAU) defines Chronic Pelvic Pain (CPP) as *chronic or persistent pain perceived* in structures related to the male or female pelvis, which is often associated with negative cognitive, behavioural, sexual, and emotional consequences, as well as with symptoms suggestive of lower urinary tract, sexual, intestinal, or gynaecological dysfunction* [1]. *The EAU specifies that "perceived" indicate that the patient and the clinician, to the best of their ability, based on the history, physical examination, and complementary investigations (when appropriate), have localized the pain as arising from a specific anatomical pelvic area.

The duration must be at least three months, although a period longer than six months may be appropriate in cases of cyclical pain. This definition and timeframe are consistent with those proposed by the *American College of Obstetrics and Gynaecology* [2].

The 11th revision of the World Health Organization's International Classification of Diseases (ICD-11) [3] distinguishes between chronic primary pain, when pain has no clear underlying cause, and chronic secondary pain, when pain is associated with a known diagnosis or condition [4]. This nomenclature corresponds to the terms primary chronic pelvic pain syndrome (PCPPS) and disease-associated CPP used in the EAU clinical guidelines [5].

1.2. PHENOTYPING

This syndrome is defined by a mixture of symptoms suggestive of originating from "any structure related to the pelvic floor," including the lower urinary tract, gynaecological, anorectal, myofascial, sexual, or psychosocial domains. This heterogeneity justifies the attempt to classify patients by phenotypes* with the aim of facilitating diagnostic and therapeutic approaches (* subgroup of patients with a condition, disease, or syndrome who share a similar expression of specific symptoms, signs, and diagnostic parameters [6]). The subdivision into phenotypes should only be used when there is adequate evidence (for example, pain localized to a specific organ) to support its application [1]. Furthermore, it should be kept in mind that patients with chronic pelvic pain syndrome (CPPS) represent a heterogeneous group of individuals with widely differing phenotypes, possibly based on distinct aetiologies and pathological processes [7].

The UPOINT classification, published by Shoskes in 2009 [8] proposed a six-domain classification system (Urinary, Psychosocial, Organ-Specific, Infection, Neurologic/systemic, and Tenderness [UPOINT]) based on the clinical phenotype as a means to improve our understanding and management of CPPS. This "clinical phenotype system" promotes a holistic therapeutic approach and potentially simplifies goal-directed multimodal treatment [9]. The reproducibility of the UPOINT system and the effectiveness of domain-specific therapy have been re-evaluated in various patient populations worldwide, including Spain [10]. Subsequently, the Sexual domain was added to this classification [11] (UPOINTS).

The EAU [1] proposes a series of successive "axes" for the diagnosis of CPP syndromes. The second axis is the system axis, which includes the previously mentioned systems (urological, gynaecological, gastrointestinal, sexological, psychological, and musculoskeletal) as well as the peripheral nervous system.

Diagnostic evaluation and identification of phenotypes cannot rely solely on clinical presentation; each aspect requires specific assessment. Impairment of function in at least two domains strongly suggests the "tenderness" phenotype. Specifically, for the topic at hand, this includes musculoskeletal examination of the pelvis, its muscles, and myofascial trigger points (MTrPs), as well as neurological evaluation of the pudendal nerve and sacral sensory and motor segments. The psychological component requires expert

evaluation to determine its involvement as either a cause or a consequence. In many countries, this skill is part of the training of specialized physiotherapists, making them essential in the initial assessment of patients with CPPS [1], even in cases of musculoskeletal phenotype as an isolated (or primary) phenomenon —such as myofascial disease-associated pelvic pain [1]— or in combination with other diagnoses of secondary CPP [3], for example, bladder pain syndrome or endometriosis with associated painful pelvic floor contracture. Therefore, a thorough physical examination is important

1.3. IMPACT ON QUALITY OF LIFE

CPPS has a major negative impact on those who suffer from it. Previous studies comparing women with and without CPPS have reported significantly lower quality of life (QoL) scores in several categories, including physical health, emotional well-being, pain, and mental health [12].

Mathias SD et al. showed decades ago that there is a strong association between CPPS and distress, disability, poor general health, low satisfaction levels, and substantial costs to health care services [13].

Individuals with CPPS tend to experience greater physical and occupational deterioration, mistrust of treatment, and a clear reduction in health-related QoL. In addition, they frequently exhibit mood disorders such as anxiety, somatization, and depression [14].

Currently, associations have been demonstrated between pain catastrophizing and the intensity of pain experience in chronic cases. Pain perception and its psychological factors vary among individuals; however, research consistently shows that catastrophizing is a strong predictor of severe pain experience. This highlights the importance for clinicians to consider and address catastrophic psychosocial components and perceptions of QoL in this population. The assessment of psychological domains should be of high importance for health professionals treating men and women with CPPS, as the potential role of catastrophizing in predicting pain outcomes in these patients justifies its systematic evaluation [12].

1.4. OBJECTIVE OF THE DOCUMENT

Considering the high prevalence of the musculoskeletal component present in CPPS, and the need for improved understanding of its management among healthcare providers, the SINUG (Iberoamerican Society of Neurourology and Urogynecology) has decided to develop this document addressing musculoskeletal management in PCPPS, based on available scientific evidence and expert contributions designated by the same group.

To gather evidence, a narrative review was conducted using four main sources: 1. The standardization document of pelvic floor terminology, following the recommendation of the International Continence Society (ICS)) [6]; 2. Information retrieved from the scientific literature published in the past five years on myofascial pelvic pain; 3. Data provided by the main clinical practice guidelines; and 4. Expert opinion from members designated by SINUG.

2. CONSENSUS DEVELOPMENT METHODOLOGY

This review followed a narrative approach, aiming to provide the conceptual and clinical foundations required for consensus development rather than to perform a systematic appraisal of the literature. Searches were conducted in major databases and key guideline documents to identify publications relevant to the musculoskeletal phenotype of CPPS and its rehabilitative management. Although the methodology did not follow systematic review procedures, a set of pragmatic selection criteria was applied to ensure the

relevance of the evidence used to inform the consensus. Publications were considered when they: 1. included adults with CPPS or myofascial/musculoskeletal pelvic pain; 2. addressed assessment, phenotyping, or mechanisms related to pelvic floor dysfunction and increased muscle tone (hypertonicity); 3. evaluated rehabilitative, physiotherapeutic, or multimodal interventions applicable to clinical practice; increased muscle tone; or 4. represented international guideline recommendations or terminology standardization documents.

No restrictions were placed on study design, and evidence from clinical trials, observational studies, reviews, and expert guidelines was accepted when deemed clinically informative. Studies outside the scope of musculoskeletal mechanisms or unrelated to the therapeutic modalities discussed in this consensus were excluded. Evidence was reviewed collaboratively by the expert panel and synthesized qualitatively, with emphasis on practical applicability, alignment with contemporary guideline recommendations, and contribution to a coherent multimodal management framework. No quantitative synthesis or meta-analysis was undertaken, in accordance with the purpose and scope of a narrative review developed to inform expert consensus.

2.1. EXPERT PANEL COMPOSITION

The consensus document was developed by a multidisciplinary panel convened by the SINUG. The panel included urologists, gynecologists, physiatrists/rehabilitation specialists, and pelvic floor physiotherapists, all with recognized clinical and academic expertise in chronic pelvic pain and pelvic floor dysfunction.

Members were selected based on:

- ≥10 years of clinical experience in CPPS,
- academic or scientific contributions in the field,
- participation in national or international consensus or guideline-development activities,
- geographical representation within the Ibero-American region.

2.2. CONSENSUS DEVELOPMENT PROCESS

The development process followed a structured, multi-step methodology inspired by modified Delphi procedures and current guideline-development standards.

Step 1. Identification of Key Topics

The core research coordination group drafted a preliminary outline comprising: definitions, phenotyping, therapeutic modalities, physiotherapy strategies, diagnostic criteria, terminology, and synthesis of international guidelines.

Step 2. Evidence Review

The narrative review described above provided the scientific foundation for the consensus statements.

Step 3. First Delphi Round (Online)

Panel members independently reviewed the draft, suggested modifications, and rated each preliminary statement using a 9-point Likert scale (1 = strong disagreement; 9 = strong agreement). Criteria for relevance, clarity, and applicability were assessed.

Step 4. Consensus Meeting (virtual)

A structured 3-hour virtual meeting was held to discuss:

- discrepancies identified in Round 1,

- terminology standardization (according to ICS),
- therapeutic indications and phenotyping criteria,
- hierarchy of interventions within the multimodal treatment model.

Statements with <75% agreement were reformulated.

Step 5. Second Delphi Round

Revised statements were re-circulated, and experts again rated agreement. Additional comments were incorporated into the final version.

Step 6. Final Validation

The final document, integrating all evidence and consensus statements, was approved unanimously by the panel.

2.3. CONSENSUS DEFINITION

Consensus was defined a priori as:

- Strong consensus: ≥80% of experts rating a statement 7–9.
- Consensus: ≥70% agreement (ratings 7–9).
- No consensus: <70% agreement.

All final statements achieved ≥80% agreement, indicating strong consensus.

3. UROGYNECOLOGICAL PAIN, INCREASED MUSCLE TONE AND MUSCULAR PAIN

3.1. DIFFERENTIAL DIAGNOSIS

CPPS is a symptomatic complex that may originate from gastrointestinal, urological, musculoskeletal, neurological, or reproductive system disorders. When the cause of pain is apparent, treatment is directed towards it, but a musculoskeletal component is almost always present. This document addresses pelvic pain and/or dysfunction originating from the pelvic floor muscles, whether in the deep layers (levator ani) or superficial ones (perineal muscles).

It is well described that the complexity of pelvic pain is exacerbated by the close relationship between visceral and somatic structures within the pelvis, the complex innervation of these structures, processes of peripheral and central sensitization, and the intimate nature of this body region, which involves psychological factors such as fear and anxiety. Such psychological states may trigger involuntary contraction and increased tone of the pelvic floor muscles. This increased muscle tone may also be responsible for the appearance of symptoms such as tension and discomfort, sexual dysfunction, and difficulty emptying the bladder or bowels [15]. Furthermore, a subset of patients continues to experience pain—often of musculoskeletal origin—despite successful treatment of the underlying cause(s).

Muscle pain generators may arise from dysfunction of the levator ani, piriformis, or perineal muscles as a result of overuse injury, strain, sprain, or postural dysfunction [16], but they may also be secondary to visceral changes (involving the lower urinary, reproductive, or anorectal tracts) or referred from other pelvic somatic (connective and muscular) structures such as the hip joint, sacroiliac joint, vertebrae, pubic symphysis, or coccyx [17].

The development and perpetuation of myofascial pain syndrome and MTrPs are hypothetically explained by a variety of mechanical, nutritional, metabolic, and psychological factors that affect muscle tension, vascularization, and pain. Mechanical factors such as direct trauma, chronic poor posture or body mechanics, ergonomic stressors, joint hyperlaxity, limb length discrepancy, scoliosis, and pelvic torsion can increase muscle tension and predispose to or perpetuate this syndrome [18].

Primary pelvic floor muscle pain syndrome (PPFMPS) shares with CPPS of various visceral origins the absence of a well-defined aetiology and clear diagnostic markers. Moreover, pelvic floor muscle dysfunction and increased muscle tone do not always imply the presence of pain, and vice versa [19].

In most cases, the reasons prompting a specialist to request a physiotherapy and/or rehabilitation consultation are related to the presence of muscle pain–induced dysfunction in the pelvic floor muscles (myalgia) or when increased tone of these muscles and/or the piriformis, gluteal, adductor, and abdominal muscles is observed. Likewise, lack of body awareness and fear of movement (kinesiophobia) should also be considered reasons for referral.

The main muscular disorders likely to cause muscle pain and/or associated with increased muscle tone are listed below, along with their main characteristics [19].

1. Pelvic floor tension myalgia: This condition is characterized by pain and increased tone of the pelvic floor musculature, often localized to the levator ani muscle.
2. Pelvic floor myofascial pain syndrome: A pelvic floor pain syndrome of myofascial origin. The diagnosis is characterized by the presence of MTrPs within a taut band (localized increase in tone). The patient may recognize the pain upon palpation of the tender spot, and a referral pattern is typically present.
3. Pelvic floor myalgia: A condition in which the pelvic floor muscles exhibit pain, discomfort, and increased tenderness on palpation in the absence of increased muscle tone.
4. Vaginismus: Spasm of the vaginal musculature that interferes with vaginal penetration. Symptoms and signs may include pain, muscle tension, narrowing or constriction of the vaginal hiatus, increased muscle tone, and inability to maintain relaxation during attempted penetration.

3.2. TERMINOLOGY FOR THE ASSESSMENT OF PELVIC FLOOR MUSCLES IN PATIENTS WITH CPPS

The recently published ICS report on terminology for the assessment of pelvic floor muscles [19] outlines the appropriate terms to describe symptoms, signs, investigations, and diagnoses related to pelvic floor muscle dysfunction. Several of these terms have been a source of variability and confusion in the medical literature, as well as among physiotherapists and rehabilitation specialists, to date.

The need for standardization of these terms, to ensure greater precision and understanding among all professionals, necessitates inclusion of this section, which precisely describes:

1. Tenderness refers to an unpleasant or painful sensation. Discomfort elicited by palpation of any tissue indicates increased sensitivity to pressure or touch. To assess pelvic floor muscle tenderness, pain threshold and pain tolerance can be measured while applying pressure to the perineal or muscular tissue externally or intravaginally. Studies have demonstrated greater sensitivity (lower pressure pain threshold) in women with CPPS compared to asymptomatic controls [17,19,20]. It has also been shown that the magnitude of palpation-induced pain, using a numerical rating scale (NRS), correlates with pressure pain thresholds and sensations measured via algometry; therefore, healthcare professionals can rely on digital palpation to assess pelvic

floor muscle tenderness in clinical settings lacking an algometer. In such cases, the location of applied pressure and the corresponding pain intensity on a NRS (0–10) should be recorded. A tender point is a localized area of tenderness that occurs in the muscle, musculotendinous junction, bursa, or fat pad. It is important to note that tenderness perceived and reported by patients in the pelvic floor muscles may occur with or without changes in muscle tone [20].

2. Pelvic floor muscle tone. Muscle tone is characterized as a state of the muscle, generally defined by its resting tension, clinically determined by the resistance to passive movement [20]. Muscle tone has two components: an active component related to neural drive (or contractile component, created by the activation of motor units), and a passive component that reflects the viscoelastic properties of the pelvic structures (e.g., the extensibility of actin and myosin, the non-contractile cytoskeleton, the connective tissues surrounding the whole muscle (*epimysium*), the muscle fascicle (*perimysium*), and the muscle fiber itself (*endomysium*), as well as the osmotic pressure of the cells). Frequently, in the evaluation of patients with pelvic pain, increased resting tone of the pelvic floor musculature constitutes a finding that indicates an alteration—either in the active or passive component. However, digital palpation cannot differentiate between these elements [20].

3. Various tools —dynamometry, manometry, electromyography (EMG), and elastography— can assess different aspects of tone —such as passive resistance, stiffness, spasm, flexibility, or relaxation— each with distinct clinical meaning. It is important to note that the term hypertonicity should be used specifically for patients with a documented neurological condition, while the term increased tone should be used for those without such a condition. Likewise, EMG is the only tool capable of specifically measuring the active component of tone, and therefore the term hyperactivity should be used exclusively when EMG is employed.

4. As mentioned, digital palpation allows assessment of the combined active and passive tone, but it has been criticized for its subjectivity. Therefore, the consensus document [19] recommends using the terms increased tone, normal tone, or decreased tone when digital palpation is used to assess muscle tone [17,19,20].

5. A transient increase in muscle tone that decreases with verbal instruction, reassurance, or gentle pressure may occur at any time during tone examination. When the contraction persists and cannot be voluntarily reduced, it represents a state of muscle spasm. Spasms may occur at irregular intervals with variable frequency and extent and, over time, can lead to increased viscoelastic stiffness and shortening of muscular and connective tissues. If the contraction is painful, it is usually described as a cramp. In vaginismus, muscle spasm interferes with vaginal penetration [20].

6. Pelvic floor myofascial MTrPs. The term refers to the presence of a tender or painful nodule within a taut band (localized area of increased tone within a muscle) and a recognized pain referral pattern. Despite widespread use in the pelvic pain literature, there is still no clear consensus regarding diagnostic criteria for MTrPs, and the underlying pathophysiological mechanisms are not yet fully understood. Given the uncertainty surrounding the characterization of MTrPs, and in accordance with the *International Continence Society* report on terminology for pelvic floor muscle assessment [19], it is recommended to describe palpation findings using the term “tender point and increased tone” when both are observed at the same site, or to use only “tender point” or “increased tone” when only one of these findings is present in the examined area.

3.3. REHABILITATION AND PHYSIOTHERAPY TECHNIQUES. SCIENTIFIC EVIDENCE

In complex patients, isolated myofascial treatment rarely results in significant improvement in symptom control. It is essential to treat the pelvic floor as part of a multimodal treatment plan that addresses both the primary pain generator (when known) and the myofascial component, which may act as a primary trigger or a perpetuating factor.

The therapeutic approach to CPPS with a musculoskeletal phenotype targets both the treatment of pain itself and the management of disorders that may cause or contribute to increased muscle tone or spasm. These two approaches are not mutually exclusive, and in many cases, the best outcomes are achieved through their combination [21]. Treatments are commonly classified as conservative, pharmacological, or surgical, with psychological therapy, rehabilitation, and physiotherapy included under conservative management [22].

The limited efficacy of different therapies when used in isolation is reflected in the wide range of available therapeutic modalities. A combination of several therapeutic options is often required to achieve more satisfactory results. In any case, the management of CPPS should be multidisciplinary, multimodal, and should include the active participation of the patient [5,21] .

Among the interventions involved in the management of CPPS, physiotherapy offers several approaches that can improve both symptomatology and perceived QoL. In this regard, and based on available evidence, this section aims to describe which physiotherapeutic interventions are used in CPPS treatment to reduce pain, improve QoL, urinary and genital symptoms, sexual function, and the psychological alterations commonly experienced by individuals with CPPS. Subsequently, the next section will discuss observable differences among major clinical practice guidelines. The description of each technique can be read in Supplementary material 1 to promote the conciseness of the document.

Typically, rehabilitation and physiotherapy management includes the following procedures aimed at maintaining and improving movement and functional capacity [17,23]:

a. Cognitive-behavioural therapy, to educate patients about pain neurophysiology, teach pain management strategies, and promote healthy habits (postural, sleep hygiene, and retraining of voiding and defecation patterns).
b. Manual therapy, including soft tissue massage, joint mobilization, MTrP release, myofascial release, stretching, and scar tissue mobilization.
c. Therapeutic exercise, including postural and breathing exercises, aerobic exercise, pelvic floor awareness exercises, relaxation techniques, and mindfulness.
d. Complementary therapies, such as biofeedback, transcutaneous electrical nerve stimulation (TENS), radiofrequency therapy, magnetotherapy, shockwave therapy, dry needling, acupuncture, and electroacupuncture.

3.3.1. Cognitive and Behavioural Strategies for Pain

After a 3-year follow-up, a study of 84 women with CPPS found that those with greater personal expectations of control over their pain experienced less depression and better physical health. Catastrophizing—assuming the worst possible outcome—is associated with greater disability, increased pain, and urinary symptoms, making it necessary to train patients in skills and strategies to reduce the impact of CPPS. Research has shown that patients of all educational levels can understand complex neuroscience concepts, leading to benefits such as immediate changes in pain perception and physical function [24].

Patients who complain of urgency but have difficulty urinating upon reaching the bathroom may benefit from relearning muscle relaxation and understanding the influence of pain and stress on these mechanisms. Recently, the meta-analysis by D. Marris et al. (2021) [25] concluded that traditional physiotherapy interventions combined with pain education strategies are beneficial in reducing pain intensity and disability in musculoskeletal-phenotype CPPS patients, compared with a control group or standard physiotherapy alone. The results of this systematic review support the efficacy of combining interventions.

3.3.2. Manual Therapy

Neuroimaging research suggests that patients living with chronic pain show marked maladaptive neuroplasticity, confirming dysfunction in the normal descending inhibitory system [26]. Moseley (2006) observed that anxiety, hypervigilance, and fear seen in CPPS patients, could further suppress this antinociceptive mechanism [27]. This should be considered and explained to patients to help them understand the need for multimodal therapy [28]. Over the past decade, myofascial therapy has demonstrated significantly better outcomes than general massage [29]. However, although previous studies have reported improvements in pain and sexual dysfunction scores [30], ischemic compression–focused MTrP therapy showed no changes in pain sensitivity in patients with a musculoskeletal phenotype [31]. Anderson & Wise demonstrated voluntary reduction in medication use among CPPS patients treated with an intensive protocol combining internal MTrP release using a wand device and paradoxical relaxation therapy. This device has been approved by the U.S. Food and Drug Administration (FDA) [30,32].

In a recent study [33], an external myofascial mobilization (MM) technique based on fascial connectivity was used to treat men with spastic-type CPPS. The MM technique focused on mobilizing the fascia around the lumbopelvic region, following the fascial connectivity of the trunk's oblique chain system and the abdominopelvic viscera. Patients reported a 69% reduction in the NIH Chronic Prostatitis Symptom Index (NIH-CPSI) scores and a 72% reduction in NRS pain scores after completing five MM sessions, suggesting that MM can improve fascial mobility and reduce pain and tension in the lumbopelvic area. However, further studies are needed to confirm these findings and determine the long-term persistence of results.

3.3.3. Therapeutic Exercise

It is evident that encouraging individuals with primary chronic pain to remain physically active has general health benefits; moreover, planned exercise has been shown to reduce pain and improve QoL—particularly when performed in group settings under professional supervision [34,35].

Some authors [30,32] recommend performing a stretching program for CPPS up to four times daily, although no specific research supports a defined number of repetitions or frequency, and most patients must adapt it to their own circumstances and routines.

Addressing movement "consciously" can be useful; methods such as Feldenkrais, meditative movement, or Jacobson's relaxation technique are examples. These methods—still under study regarding actual efficacy—encourage patients to attend to their personal tolerance or "sensory end point" [30,31], incorporating relaxation and confidence-building components.

Meanwhile, relaxation-inducing strategies such as breathing exercises, visualization, and distraction can increase the time between voiding episodes and thus improve tolerance to bladder stretching sensations. This can significantly improve QoL as confidence increases [36].

In the sexual domain, such strategies—combined with psychological therapy—can also help improve tactile tolerance, facilitate gradual exposure, and reduce anxiety associated with pain responses. Examples of how this approach works include the "Reconnection" model, developed at University College London Hospitals,

which integrates psychology and physiotherapy in pain management to support CPPS patients returning to sexual activity [28].

Mensendieck therapists have found that women with CPPS often show reduced ability to proprioceptive integration of interoceptive sensations with thoughts and emotions—a condition described as "somatic dissociation of the pelvic region"—resulting in poorer regulation of muscle tone, breathing, movement, balance, and posture [37]. A randomized controlled trial (RCT) [38] including 40 women with a mean age of 33.3 years examined the effect of this combined therapeutic approach alongside standard gynaecological care compared with standard care alone. Pain, assessed using the Visual Analog Scale (VAS) at baseline, after treatment at 3 months, and at 12-month follow-up, decreased significantly in the intervention group but not in the control group.

To assess the efficacy of aerobic exercise, a RCT was conducted in 2007 with a group of 103 men with CPPS [39]. Participants performed aerobic exercises (including isometric and strengthening routines combined with 40 minutes of brisk walking) versus stretching and mobility exercises as placebo. Both the NIH-CPSI pain domain and the VAS were used to measure pain at baseline, after 6 weeks, and 18 weeks post-treatment. In both the treatment and control groups, pain scores significantly decreased from baseline to post-treatment; however, improvements were greater in the treatment group.

3.3.4. Complementary Therapies

In this section, we refer to those techniques and procedures commonly used in association with the previously described therapies.

3.3.4.1. Biofeedback

Biofeedback is also one of several effective physiotherapy techniques used to treat myofascial pelvic pain. It is considered a treatment option for type III CP, according to the U.S. National Institutes of Health (NIH) classification [40]. The EAU guidelines on CPPS also state that biofeedback is the preferred treatment for chronic anal pain and may enhance the outcome of myofascial therapy as an adjunct to muscle exercises in patients with increased pelvic floor muscle tone (or hypertonicity) [41].

In 2020, Wagner et al. conducted a systematic review on the effects of biofeedback on pain and QoL [42], including 37 quantitative studies (4 investigated men with nonbacterial chronic prostatitis (CP) and 12 focused on female CPPS conditions such as vulvar vestibulitis syndrome/dyspareunia, pelvic floor dysfunction, dysmenorrhea, sexual dysfunction, or urethral syndrome). The results suggested that biofeedback-assisted training interventions may improve outcomes, particularly pain scores, general symptoms, and QoL. However, these findings should be interpreted with caution due to quality limitations in many of the included studies; only 9 of the 37 studies had an RCT design, and 7 of these were rated as high quality according to the PEDro scale [43]. For anorectal disorders, several landmark studies demonstrate the efficacy of biofeedback in improving overall symptoms, physiological parameters, and QoL [44].

To date, in patients with vulvar vestibulitis syndrome (vulvodynia, dyspareunia), preliminary evidence suggests that biofeedback can modify muscular abnormalities—such as altered EMG activity, elevated resting activity, and reduced contractile strength—; therefore, EMG biofeedback muscle rehabilitation appears beneficial [42]. Previous studies, such as that of Mariani [45], recommend biofeedback as a first-line treatment for moderate-to-severe vulvar vestibulitis, in combination with pharmacological and psychological therapy. Two uncontrolled studies by Glazer et al. and McKay et al. also showed promising results using portable EMG biofeedback devices for this indication [46,47]. Bergeron et al. also applied the home-based Glazer protocol in an RCT design and confirmed that EMG biofeedback, as well as cognitive-

behavioural therapy and vestibulectomy, can improve sexual function and reduce pain in both the short and long term [48,49].

3.3.4.2. Transcutaneous Electrical Nerve Stimulation (TENS)

In recent years, the use of electrotherapy techniques for the treatment of chronic pain has increased, yielding promising results. The benefits of electrotherapy in patients with CPPS have shown a positive effect on pain scores, QoL, and prostatitis-related symptoms [31].

In general, for effective pain management, TENS should be used consistently over a prolonged period (3 months or more) with daily applications. It is typically prescribed for home use and is simple, safe, and cost-effective [31].

3.3.4.3. Neuromodulation by Percutaneous or Transcutaneous Tibial Nerve Stimulation (PTNS / TTNS)

Percutaneous tibial nerve stimulation (PTNS) using needle insertion, as well as transcutaneous tibial nerve stimulation (TTNS) constitutes less invasive and more cost-effective alternatives to sacral neuromodulation [50,51]. PTNS is currently recognized as a treatment for urge incontinence, overactive bladder syndrome, faecal incontinence, and non-obstructive urinary retention. However, its actual efficacy in reducing CPPS symptoms has not yet been widely demonstrated. Until recently, few studies had shown improvement in CPPS patients treated with PTNS or TTNS.

Van Balken et al. [52] were the first to investigate the effect of PTNS on CPPS. Twelve weeks after treatment initiation, seven of the thirty-three patients (21%) experienced a 50% reduction in their VAS score—considered an objective response—while six patients (18%) had partial responses (a 25% reduction), and fourteen patients (42%) requested to continue treatment to maintain their achieved results. Since then, several studies included in the recent review by Xiang et al. (2022) [53] have shown that neuromodulation can effectively relieve pain and symptoms, thereby improving patients' QoL, with fewer adverse events, particularly in the case of non-invasive TTNS, which has been associated with minimal side effects.

3.3.4.4. Capacitive Resistive Monopolar Radiofrequency (CRMRF)

In 2022, a RCT was conducted to evaluate the effectiveness of CRMRF in reducing pain and improving QoL in patients with myofascial syndrome [54]. The study compared the effectiveness of CRMRF combined with manual physiotherapy and educational techniques versus the same protocol using simulated (placebo) CRMRF. The study found that the response in the study group was superior to that observed with the simulated treatment, supporting a broader clinical prescription of this technique. However, further studies are required to confirm these findings in more homogeneous samples and to determine the long-term durability of the therapeutic effects.

3.3.4.5. Graded motor imagery

Recent studies, such as the report by Díaz-Mohedo et al. (2023) [55], have shown significant differences in the number of correct responses between patients with CPPS and healthy control subjects: patients made more errors than healthy individuals in laterality discrimination tasks using implicit motor imagery (IMI). Moreover, higher pain intensity in CPPS patients correlated with longer reaction times during pelvic floor laterality tasks. The authors concluded that IMI might be a useful complementary tool to stimulate and reorganize cortical regions and their inhibitory mechanisms in CPPS patients through the use of pelvic floor imagery.

Other trials have demonstrated that graded motor imagery (GMI) interventions, particularly in online formats, can significantly reduce pain intensity and improve sexual function in women with genito-pelvic pain/penetration disorder [56]. Additionally, a pilot study suggests that both auditory and visual modalities

of motor imagery appear promising as home-based interventions for persistent pelvic pain, with the auditory modality showing particularly favourable results [57]. However, this therapeutic strategy remains relatively new, and robust conclusions regarding its efficacy cannot yet be drawn.

3.3.4.6. Transcranial Direct Current Stimulation (tDCS)

Neuropathic pain may occur as a consequence of central sensitization. Central sensitization is typically triggered by injury or inflammation-induced increases in nociceptive input, resulting in long-lasting changes in central nociceptive pathways. The heightened primary afferent response and increased excitability of dorsal horn neurons are closely associated with this phenomenon [58].

Evidence from multiple RCTs of low methodological quality suggests that tDCS may be more effective than sham stimulation or no treatment over six weeks in chronic pain management, though results remain inconsistent regarding neuropathic pain specifically. There is a notable scarcity of studies comparing tDCS with active control interventions, yet anecdotal evidence supports its inclusion as part of a multimodal treatment strategy [59]. Overall, current findings suggest that tDCS may represent a promising adjunctive therapy for patients with various forms of neuropathic pain [58].

3.3.4.7. Extracorporeal Shock Wave Therapy (ESWT)

The analgesic effect of Extracorporeal Shock Wave Therapy (ESWT) has emerged as an alternative treatment option for several soft tissue pain disorders. ESWT has been shown to improve pain and QoL scores, suggesting its potential use in the management of CPPS. Clinical studies have reported significant reductions in pain intensity and urinary symptoms, effects that are thought to result primarily from angiogenesis and neuromodulation of pain signalling. However, existing studies exhibit high heterogeneity regarding treatment parameters such as the number of impulses per session, total number of sessions, and weekly frequency [60].

Some studies indicate that the evidence on ESWT remains limited, with few clinical trials and short follow-up periods, whereas more recent meta-analyses include a larger number of RCTs and patients, thereby strengthening the findings. The benefits are evident in the short and medium term (4–12 weeks). Long-term efficacy (24 weeks) is inconsistent: in some analyses it is not statistically significant due to insufficient data, while others report sustained improvement. Overall, a low risk of bias and low heterogeneity are reported, except in the pain domain, where results are more variable. Most studies use NIH-CPSI, pain, and quality of life; some also include urinary symptoms, erectile function, and combinations with pharmacological treatment. While some reviews consider ESWT as a promising option that requires further standardization of parameters, others, such as Kong et al. and Franco's Cochrane review, recommend its wider use in clinical practice, highlighting that it does not increase adverse events [61–67].

All studies agree that ESWT is a safe, non-invasive and effective therapy for reducing pain and improving urinary symptoms, quality of life and NIH-CPSI scores in men with CPPS, with few adverse effects.

3.3.4.8. Minimally Invasive Treatment

First-line therapies for myofascial pain include manual therapy and muscle stretching techniques; however, when these conservative interventions fail, more interventional approaches may be required, although their scientific validity is often limited and they are generally considered second- or third-line treatments. The primary goal of these techniques is to inactivate MTrPs, thereby reducing pain and restoring normal muscle function. Combining these temporary analgesic effects with rehabilitation and physiotherapy techniques may help prolonging therapeutic benefits [68]. Similarly, Botulinum Toxin Type A (BoNT-A) acts by inhibiting acetylcholine release at the neuromuscular junction, promoting muscle relaxation and theoretically reducing MTrP contracture [69].

3.3.4.8.1. Dry Needling

Dry needling may be appropriate for CPPS patients who are highly sensitive and intolerant to direct injection therapy in their primary pain area. Reported adverse effects include post-needling soreness, hematoma, localized bleeding, and vasovagal syncope episodes. Nevertheless, when performed by adequately trained clinicians, dry needling is generally regarded as a safe intervention [70].

MTrP treatment may involve manual therapy, dry needling, or wet needling, yet the overall quality of evidence remains weak. Most studies reveal no significant differences among these techniques, though many are limited by small sample sizes and methodological heterogeneity regarding patient populations and intervention protocols [1].

3.3.4.8.2. Local Anaesthetic Block

Chronic pain resulting from pelvic floor muscle spasms has been managed through several therapeutic modalities, including local anaesthetic nerve blocks [71]. Transvaginal diagnostic and therapeutic nerve blocks using the same local anaesthetics may be particularly useful for managing vaginal apex pain. Injections targeting the levator ani muscle in patients with CPPS have been shown to produce greater than 50% symptom improvement in at least 72% of cases [71].

The role of anaesthesia in MTrP therapy has been attributed to inactivation of active MTrP and the resultant pain reduction, through several proposed mechanisms [16]:

1. Interruption of the positive feedback pain cycle.
2. Decrease in local concentrations of nociceptive substances.
3. Endorphin release.

Recommendations for infiltration procedures can be found in Supplementary Material 1.

The overall quality of evidence supporting these treatments remains weak. Multiple systematic reviews have concluded that, while needling interventions do exert a measurable analgesic effect, the evidence neither supports nor refutes their superiority over placebo [1].

3.3.4.8.3. Botulinum Toxin

BoNT-A is included among the potential second-line interventional treatments for myofascial pelvic pain, aiming to achieve muscle relaxation and provide an analgesic effect. Transvaginal BoNT-A infiltration in patients with levator ani and pelvic floor muscle spasm has shown statistically significant improvements in pelvic pain, pelvic floor pressure, and dyspareunia. BoNT-A has been employed in several pain-related pelvic floor dysfunctions, including vulvodynia, CPP, vaginismus, obstructed defecation, voiding dysfunction, urinary retention, perianal pain syndromes, and anal fissures [72].

When compared with local anaesthetic and methylprednisolone injections, BoNT-A has demonstrated superior efficacy [73]. Multiple studies have reported that BoNT-A significantly reduces pain and improves QoL as assessed through validated clinical questionnaires, although concurrent factors may influence treatment outcomes [74].

BoNT-A injections into the puborectalis and pubococcygeus muscles have been used to treat levator ani spasm. It can also be injected at the sphincter level to improve micturition or defecation, as urethral sphincter relaxation alleviates bladder outlet problems and secondary muscle spasm [1].

Clinical studies have demonstrated significant reductions in pain scores, with concurrent improvements in dyspareunia, dysmenorrhea, dyschezia, QoL, sexual activity, and pelvic floor manometry and EMG parameters [75].

BoNT-A is considered effective for reducing pelvic floor muscle pain, with acceptable adverse effects such as occasional stress urinary or faecal incontinence. However, some authors note that BoNT-A infiltration is more expensive than lidocaine and has not consistently demonstrated superior efficacy. Current reviews do not support BoNT-A injection directly into MTrPs [1].

Conclusions are limited by wide variability in BoNT-A dosage, injection sites, pain assessment methods, and small sample sizes in existing studies. Therefore, larger RCTs with higher statistical power are needed to optimize injection protocols and clarify the role of BoNT-A in CPPS management [75].

3.3.4.8.4. Platelet-Rich Plasma (PRP)

A retrospective U.S. study conducted by Runels et al. was the first to demonstrate that autologous PRP (A-PRP) injections can reduce sexual distress among women experiencing vaginal dryness and dyspareunia. The authors proposed that targeted A-PRP injections may enhance sexual responsiveness by releasing growth factors and cytokines that mediate angiogenesis, cell differentiation, and activation of pluripotent stem cells near the injection site. Consequently, A-PRP may improve vaginal vascularization and help restore physiological responsiveness in patients with vaginal atrophy [76], and has also emerged as a promising non-invasive treatment for a range of conditions, including wound healing, vulvar dystrophy, and premature ovarian insufficiency, as well as urogenital disorders such as vesicovaginal fistulas [77]. However, A-PRP injections are not without risks, which are inherent to any injection procedure, including infection, scar tissue formation, and calcification at the injection site [78].

3.3.4.9. Acupuncture and Electroacupuncture

A systematic review and meta-analysis by Yang et al. reported that acupuncture significantly improved pain, functional status, and QoL among women with pregnancy-related low back pain, without any serious adverse effects in newborns. Nevertheless, the authors emphasized the need for large-scale, well-designed RCTs to confirm these findings [79].

In women with CPPS, the combination of acupuncture and pelvic floor rehabilitation has been shown to significantly enhance treatment efficacy, reduce adverse reactions and complications, and alleviate pelvic pain and dysfunction. This integrative approach also exerts a positive impact on QoL; however, further high-quality, multicentre RCTs with larger sample sizes are warranted to validate these results [80].

Current evidence supports acupuncture as a **safe and effective option** for symptom relief in CP/CPPS, particularly for pain reduction. Systematic reviews and meta-analyses, including analyses of up to 1,455 patients, consistently report significant improvements in NIH-CPSI total and pain scores, as well as VAS/NRS pain ratings, compared with sham or medical treatments [67,81,82]. Acupuncture monotherapy has demonstrated superior pain reduction versus control interventions and may be especially beneficial for patients with refractory symptoms, medication intolerance, or psychological comorbidities [82]. However, while short-term efficacy is well supported, the long-term durability of treatment effects remains uncertain, and further high-quality studies are warranted [67].

3.4. DIFFERENCES AMONG GUIDELINES BY SPECIALTY AND COUNTRY

It was observed that most clinical practice guidelines addressing CPPS are of generally low methodological quality. Therefore, only those meeting two essential criteria were selected: quality and multidisciplinary openness.

Quality: The guideline must employ an appropriate methodology for its development and explicitly describe the methods used for evidence appraisal and synthesis.

Open multidisciplinary approach: The guideline must include contributions from physiotherapists and several medical specialties related to the pelvic floor (including rehabilitation medicine, gynaecology, urology, neurology, gastroenterology, pain medicine, psychology, and sexology). Notably, none of the guidelines incorporated expert patients capable of providing experiential input.

Based on these criteria, three key guidelines were selected: The European Association of Urology (EAU, 2024) guideline **[1]** (high quality); The Canadian SOGC guideline (Société des obstétriciens et gynécologues du Canada) **[83];** and The American College of Obstetricians and Gynecologists (ACOG) guideline **[84]** (both of acceptable quality). Additionally, the most relevant aspects of the American Urological Association (AUA, 2025) guideline for men **[85–87]** are summarized.

3.4.1. European Association of Urology Chronic Pelvic Pain Guideline (EAU, 2024)[1]

The EAU guideline is the only one that addresses CPPS in both men and women from a truly multidisciplinary and interprofessional perspective. The Interdisciplinary and Interprofessional EAU Chronic Pelvic Pain Guideline Group published a comprehensive review emphasizing the importance of considering the myofascial component as a key element in PCPPS **[88]**. The document reinforces the association between muscular dysfunction —particularly increased pelvic floor tone— and pelvic pain. It reports that the vast majority of men (92.2%) referred to tertiary centres for CPPS present with pelvic floor muscle dysfunction. Accordingly, the guideline stresses the importance of recognizing, prescribing, and properly applying pelvic floor physical therapy to address the myofascial component observed in CP, primary bladder pain syndrome (PBPS), and vulvar pain syndromes.

The EAU guideline highlights the importance of phenotyping —including musculoskeletal characterization— to guide targeted and combined treatment approaches. It recommends initiating therapy with conservative interventions, such as pelvic floor physiotherapy focused on down-training and relaxation, myofascial techniques, biofeedback (supported by robust evidence in anorectal disorders), and pain education within an interdisciplinary care model. The guideline acknowledges the short-term benefit of ESWT for primary prostatic pain, and considers TENS/peripheral neuromodulation (PTNS/TTNS), MTrP injections, and botulinum toxin infiltration as potential adjuvant treatments for refractory cases, always as part of comprehensive rehabilitation programs. It concludes that isolated interventions yield poorer outcomes compared to personalized, multimodal approaches.

3.4.2. Society of Obstetricians and Gynaecologists of Canada (SOGC, 2024)[83]

Guideline No. 445 on Chronic Pelvic Pain in Women explicitly recommends an interdisciplinary management approach that includes pain neuroscience education, pelvic floor physiotherapy (focused on increased muscle tone and relaxation retraining), cognitive-behavioural therapy (CBT) or related psychological strategies, and therapeutic exercise. The guideline underscores the importance of identifying nociplastic and central sensitization contributors and prioritizing non-invasive treatments before considering procedural interventions (e.g., MTrP injections or neuromodulation) in selected cases.

3.4.3. American College of Obstetricians and Gynecologists (ACOG, 2020) [84]

The ACOG guideline mandates multidisciplinary management, either within an integrated team or through coordinated referrals. The guideline also highlights the underdiagnosis of neuromuscular involvement in women, which is frequently overlooked, thereby prolonging patient suffering and delaying effective treatment. Furthermore, it recognizes that CPP requires longer consultation times than standard gynecologic visits, and therefore calls for appropriate billing and coding modifications.

ACOG acknowledges the lack of universal consensus on the diagnostic criteria for neuromusculoskeletal pelvic pain, and recommends referral to pelvic floor physiotherapy, sex therapy, or cognitive-behavioural therapy, either alone or in combination, to address both the myofascial and psychosocial components of CPP and associated dyspareunia **[84]**. It further recognizes the therapeutic value of MTrP injections, either as a standalone procedure or combined with other modalities, to improve pain and functional capacity in patients with myofascial CPP. The guideline emphasizes the need to simultaneously address organ-specific, muscular, sexual, and psychosocial factors through a multimodal and multidisciplinary approach **[84]**.

Pelvic floor physiotherapists employ a wide range of modalities tailored to each patient's symptoms and clinical findings, including external and internal soft-tissue mobilization, myofascial release, manipulative therapies to mobilize visceral, urogenital, and joint structures, electrical stimulation, active pelvic floor retraining, biofeedback, bladder and bowel retraining, and pelvic floor muscle stretching.

The guideline supports MTrP injections using various anaesthetic or therapeutic solutions and reserves botulinum toxin injections for refractory myofascial pelvic pain unresponsive to physiotherapy.

3.4.4. American Urological Association (AUA, 2025) – Male Guideline [85–87]

The new guideline for male CPPS (including CP/chronic pelvic pain syndrome, CP/CPPS) identifies a multimodal approach as the cornerstone of management. Core components include pelvic floor physical therapy (myofascial release, relaxation training, and management of increased muscle tone), behavioural interventions and patient education, and—according to the individual phenotype—pharmacotherapy and procedural interventions. For CP/CPPS, the guideline recommends combining lifestyle modifications and behavioural therapy with pelvic floor physical therapy and adjunctive options such as acupuncture, TENS, or MTrP injections when musculoskeletal findings are present.

The document strongly emphasizes referral to specialized pelvic floor physical therapy and close coordination with psychology and pain medicine services, underscoring the need for interdisciplinary management to address both the somatic and psychosocial components of chronic pelvic pain in men.

3.5. SYNTHESIS OF INTERNATIONAL GUIDELINES AND CONSENSUS STATEMENTS (2024–2025)

In summary, there is substantial convergence among the current international clinical guidelines:

1. Underdiagnosis of pelvic floor muscle dysfunction is widely acknowledged in both men **[1]** and women **[83]**.
2. In managing CPPS, treatment should specifically address pelvic floor hyperactivity and MTrP **[1].** Myofascial therapy has demonstrated efficacy and may therefore be applied as a first-line intervention **[83]**.

3. Biofeedback enhances the effectiveness of myofascial therapy [83]. It is recommended as an adjunctive therapy to muscle retraining exercises in patients with anal pain caused by pelvic floor hypertonicity [83].
4. Psychological therapies are essential. Sex therapy and cognitive-behavioural therapy (CBT) —alone or in combination— should be offered to address the myofascial and psychosocial causes and consequences of CPP and associated dyspareunia [84]. CBT, acceptance and commitment therapy (ACT), and mindfulness-based interventions are well-established components for improving QoL and mitigating the psychosocial and mental health impact of CPPS [83]. For insomnia symptoms, CBT is considered the first-line treatment, being safer and more effective than prolonged hypnotic use [83].
5. Electrotherapy, including intravaginal electrical stimulation and PTNS, may be beneficial in reducing pain in women with chronic pelvic pain [83]. PTNS can be administered in an outpatient setting and represents a minimally invasive technique. The analgesic benefits of a TENS cycle may persist and support the management of PBPS.
6. Treatment should be delivered by qualified physiotherapists [83,84], preferably those specialized in pelvic floor rehabilitation, with training not only in musculoskeletal aspects of pain but also in the psychological mechanisms and central nervous system (CNS) contributions involved in CPPS [1].
7. Multimodal body awareness and movement therapies —incorporating motor pattern retraining, posture, relaxation, and functional breathing— have demonstrated a significant effect on pain reduction in women with CPPS compared to standard care.
8. Education is a cornerstone of physiotherapeutic intervention within the biopsychosocial model. Pain neuroscience education leads to measurable improvements in psychological factors (e.g., pain-related fear, depressive symptoms, catastrophizing), as well as in blood flow and pain sensitivity following treatment.
9. A multimodal (simultaneous) and multidisciplinary approach from the outset, with active patient participation, is strongly recommended.

4. POSITION OF THE SINUG ON THE MANAGEMENT OF THE MUSCULOSKELETAL PHENOTYPE IN CPPS WITH REHABILITATION AND PHYSIOTHERAPY

Regarding the evaluation and physiotherapeutic management of CPPS —particularly its musculoskeletal phenotype— the Ibero-American Society of Neurourology and Urogynecology (SINUG) presents its position in this statement.

In recent decades, research on this condition has expanded exponentially due to the increasing global demand for healthcare solutions addressing this issue. There is a pressing need for the various specialties involved in CPPS to become familiar with the therapeutic possibilities offered by physiotherapy and rehabilitation, and to adopt a unified and standardized terminology. Consequently, there has been a steady rise in studies focused on identifying effective yet conservative therapeutic options. Clinical and scientific research supports that physiotherapy treatment within a multidisciplinary framework is both safe and effective.

The musculoskeletal phenotype of CPPS requires multimodal interventions including behavioural, physical, and psychological aspects, combined with multidisciplinary oral or invasive treatments targeting the pelvic floor and/or neighbouring organs. Isolated interventions tend to have limited effectiveness, and the active participation of the patient is required. Thus, treatment should be delivered by specialized physiotherapists trained not only in the musculoskeletal component contributing to pain onset, but also in the psychological

mechanisms underlying this pain process and the role of the central nervous system in chronic pain. These physiotherapists must be capable of applying behavioural, physical, and psychological techniques in a multimodal approach, not only to control pain but also to improve QoL and sexual function in affected patients. Specialized physiotherapists must also be prepared to incorporate new therapies that demonstrate scientific efficacy in the management of CPPS in the future.

Due to their key role as promoters of healthy lifestyles, pelvic floor physiotherapists are uniquely positioned to educate, maintain, and restore health, particularly in the field of urogynecology. Their access to patients across primary care, hospital settings, and private clinics enables them to intervene in both prevention and treatment, and enables them to promote and sustain patient's active involvement.

Direct communication between physiotherapists and urologists, gynaecologists, colorectal surgeons, and rehabilitation specialists is essential to coordinate and implement pharmacological or surgical (minimally invasive or otherwise) interventions as part of a multidisciplinary therapeutic plan. As in all chronic pain processes, referrals of CPPS patients to physiotherapy should occur without delay.

SINUG considers physiotherapy an indispensable therapeutic option within the multidisciplinary treatment of CPPS. Physiotherapy is clearly essential when a musculoskeletal phenotype is identified, but it is also beneficial in many other CPPS phenotypes, as these eventually develop — in fact, almost always develop— a secondary, self-perpetuating painful contracture of the pelvic floor that is amenable to physiotherapeutic intervention. Accordingly, physiotherapy is not only recommended by the UPOINT classification system, but is also endorsed by EAU in its CPPS guidelines [1], as well as by other international clinical practice guidelines [89–91].

The SINUG reaffirms its commitment to promoting specialized training, terminological standardization, and the continuous updating of clinical practice, while critically integrating new therapies that demonstrate proven efficacy for CPPS.

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Description of physiotherapeutic and rehabilitation interventions used in CPPS treatment

Cognitive and Behavioural Strategies for Pain

Physiotherapy for pain management should initially focus on improving the patient's understanding of normal pelvic function, including relaxation through education and behavioural guidance [9,23].

Recently, physiotherapists have begun incorporating pain education into their treatment protocols. Pain education aims to influence the patient's experience and understanding of their condition in order to improve, maintain, or learn to cope with impairment. Common approaches to pain education include pain neuroscience education and cognitive-behavioural therapy [24]. These findings are supported by a recent RCT showing that the combination of physiotherapy and mental therapy led to sustained improvements in QoL, pain management, and pelvic floor health in women with CPPS [25].

Physiotherapists and rehabilitation specialists are ideally positioned to explain how processes such as allodynia, hyperalgesia, sensitization, and catastrophizing affect patients. The physiotherapist should not focus exclusively on the existence of "MTrPs" and "tight muscles," but rather help patients understand their options for managing their own nervous system [26].

The manual "Explain Pain" by Butler and Moseley (2003) [27] is a widely used resource among physiotherapists to help patients understand their condition and acquire knowledge that promotes better self-management and daily coping strategies [26]. Explaining pain mechanisms can help patients understand that symptoms are not necessarily a sign of tissue damage, and encourage them to develop a variety of coping strategies rather than seek unnecessary medical care.

Manual Therapy

Manual therapy includes joint mobilization, soft tissue massage, myofascial release therapy, and ischemic compression of MTrPs. Over the past decade, myofascial therapy has demonstrated significantly better outcomes than general massage [33]. Manual therapy is thought to reduce nociceptive input by stimulating descending inhibitory activity from the brainstem [29]. It has also been proposed that passive tissue stimulation may temporarily disrupt the viscerosomatic reflex, serving as a powerful tool for pain relief [30]. However, neuroimaging research suggests that patients living with chronic pain show marked maladaptive neuroplasticity, confirming dysfunction in the normal descending inhibitory system [31]. Moseley (2006) observed that this phenomenon, coupled with the anxiety, hypervigilance, and fear seen in CPPS patients, could further suppress this antinociceptive mechanism [32].

Although previous studies have reported improvements in pain and sexual dysfunction scores [34], ischemic compression–focused MTrP therapy showed no changes in pain sensitivity in patients with a musculoskeletal phenotype [35].

Myofascial mobilization (MM) is a manual therapy technique commonly used in physiotherapy and osteopathy to treat musculoskeletal and connective tissue disorders. MM focuses on the fascia, a connective tissue structure that surrounds and connects muscles, bones, and organs. Fascia can become tight and painful due to injury, stress, or poor postural habits, which may cause pain and restrict mobility.

Therapeutic Exercise

Fear and movement avoidance are normal responses to pain. The importance of addressing this issue has been emphasized and recommended as a key component of physiotherapy's role in chronic pain management [24,38,39]. Stretching has traditionally been used to describe a sustained movement at the end of the range of motion that mechanically increases mobility by elongating soft tissues. It is the physiotherapist's role to help individuals identify activities limited by fear and, through education, adopt a gradual approach to restoring tolerance for restricted movements without fear of tissue damage.

The Mensendieck method combines elements of therapeutic physical activity (postural correction, respiratory adjustment, proper movement synergies) with psychological components such as self-perception and body awareness. The goal is to enable the individual to move using an optimized respiratory and postural pattern, fully aware of each movement until it becomes properly automated.

Biofeedback

In CPPS, there is typically an interaction between pelvic muscle activity, pain thresholds, and neural factors that modulate pain perception. Patients with CPPS are often unaware of this interaction and perceive pain as a direct indicator of tissue damage. Common responses include activity avoidance, fear, despair, and passivity. Given that the most reliable predictors of hyperalgesia appear to be anxiety, fear of movement, fear of injury, and catastrophic thinking [47], it seems logical to offer this therapeutic tool in CPPS, which is often associated with increased muscle tone and can be partially alleviated through improved self-awareness and muscle control [23,48–50].

Various biofeedback models are available on the market, including manometric, ultrasound, and electromyographic (EMG) systems. The latter can be applied intravaginally, intrarectally, or via surface electrodes (SEMG) [50].

Transcutaneous Electrical Nerve Stimulation (TENS)

There are several types of biphasic waveforms, including rectangular, sawtooth, and square waves. However, the sinusoidal current can be considered representative. Unlike galvanic current treatment, the biphasic waveform does not produce any polarity effects [58].

TENS is applied using low-voltage, low-intensity biphasic electrical currents, providing a non-invasive treatment option. Electrical stimulation helps decrease pain intensity, reduce pain frequency, and improve QoL. TENS currents create a hyperstimulation of sensory fibers, which blocks synaptic transmission of pain signals at the spinal level, activates descending inhibitory neurons, and modulates pain transmission, thereby inducing analgesia [59].

Neuromodulation by Percutaneous or Transcutaneous Tibial Nerve Stimulation (PTNS / TTNS)

Percutaneous tibial nerve stimulation (PTNS) consists of electrical stimulation of the posterior tibial nerve via the insertion of a fine needle placed approximately 3–5 cm above the medial malleolus, targeting sacral segments involved in pelvic pain modulation [60]. Transcutaneous tibial nerve stimulation (TTNS) applies the same stimulation parameters using surface electrodes placed over the tibial nerve, avoiding needle insertion and reducing invasiveness [61]. Both techniques are typically delivered in weekly sessions over 10–12 weeks and aim to modulate afferent sensory input and central pain processing pathways [60,61].

Current guidelines recognize peripheral neuromodulation as a potential adjuvant technique within multimodal rehabilitation programs for refractory CPPS [1].

Capacitive Resistive Monopolar Radiofrequency (CRMRF)

Capacitive Resistive Monopolar Radiofrequency (CRMRF) is a form of diathermy that has been widely used by physiotherapists in clinical practice for decades. It involves the application of electrophysical agents through low-frequency electromagnetic fields that increase the temperature of deep tissues and accelerate metabolism, thereby promoting healing, reducing inflammation, and alleviating pain. Also known as TECAR (from Transfer of Energy Capacitive and Resistive), as its name suggests, it is based on the transmission of capacitive–resistive energy through a unipolar configuration, meaning that it includes a signal transmitter and a return plate to close the circuit. The frequencies most commonly used in clinical practice, due to their therapeutic effects, range between 400 and 900 kHz [62].

An electrical current of 448 kHz promotes improvement and regeneration of connective tissue by increasing the number of mesenchymal and stem cells and stimulating chondrocytes, thereby contributing to the healing process of various tissue injuries and cartilage formation. The rise in temperature at both the skin surface and deeper tissue layers leads to a temporary increase in blood flow, which enhances tissue functionality, promotes repair, and contributes to pain reduction [63].

At present, several certified medical devices on the market provide this technology [62].

Graded motor imagery

Graded Motor Imagery (GMI) constitutes an emerging physiotherapeutic strategy for the management of specific chronic pain conditions. It is a non-invasive treatment structured in three progressive stages that must be performed gradually and in the correct sequence [64].

The rationale behind GMI lies in the principles of graded exposure, ensuring that the sequence of exercises prescribed by the therapist is conducted without provoking pain. Initially, GMI employs implicit motor imagery (IMI) through laterality discrimination tasks. This is followed by explicit motor imagery, which consists of the mental representation of an action without its actual performance — that is, the ability to form a vivid and detailed mental image of a movement. The final stage involves mirror therapy. Although its exact mechanisms remain under investigation, it has been observed that each stage of GMI progressively activates, without eliciting pain, increasingly larger cortical areas involved in movement control [64,65].

Transcranial Direct Current Stimulation (tDCS)

Transcranial Direct Current Stimulation (tDCS) is a non-invasive method of brain neuromodulation that involves applying a low-intensity direct current to the scalp through anodal and cathodal electrodes, thereby modulating cortical excitability and neuronal activity. Pain modulation occurs through the direct interruption of nociceptive processing at the thalamic and primary somatosensory cortex levels, as well as through the activation of the limbic system and its connections with the descending inhibitory pathways of the brainstem [68].

The primary mechanism involves subthreshold modulation of neuronal excitability. Longer stimulation periods (several minutes) induce calcium-dependent glutamatergic neuroplasticity that modulates NMDA

(N-methyl-D-aspartate) receptors and interacts with multiple neurotransmitters, including GABA, serotonin, dopamine, and acetylcholine [69].

Extracorporeal Shock Wave Therapy (ESWT)

When applied to a target organ, ESWT delivers energy that can be non-invasively focused to act at a selected depth within a specific anatomical region. The shock waves interact with target tissues and trigger a cascade of biological reactions, including the release of growth factors, which promote tissue neovascularization and improved local blood supply [71].

Several mechanisms have been proposed to explain its therapeutic effects in CPPS, including reduction of passive muscle tone, blockade of neural impulse transmission, influence on pain memory neuroplasticity, and nociceptor hyperstimulation [72].

ESWT affects tissue by transforming mechanical signals into biochemical or molecular biological signals. Modulation of pain signal transmission may occur through the generation of extracellular cavitation, activation of small-diameter fibers and the serotonergic system, and through the application of the gate control theory [73,74]. These waves are converted into biochemical signals via the process of mechanotransduction, which can hyperstimulate nociceptors and disrupt the neural impulses associated with pain memory, thereby achieving "reprogramming" and alleviating pain [59]. The combined effects of mechanotransduction, microcavitation, and thermodynamic mechanisms lead to energy transfer from ESWT that can regulate cellular signal transduction and influence intracellular protein transcription and modification [75]. The generation of cavitation bubbles produces secondary energy waves known as microjets, which exert additional mechanical forces and enhance local microvascularization [76], thereby reducing pain and promoting tissue healing. This mechanism may explain the short-term nature of shock wave effects, such as transient painful sensations [77].

Shock waves can induce extracellular cavitation as they propagate through human tissues. As a result, cavitation may damage local nerve endings. Although no consensus exists regarding its mechanism in CPPS, several considerations that may contribute to pain modulation include reducing passive muscle tone, hyperstimulating nociceptors, interrupting the flow of neural impulses, and influencing the neuroplasticity of pain memory [76].

Dry Needling

Dry needling represents an alternative therapeutic approach for the management of MTrP. Analgesic effects are achieved by inserting a fine needle—typically an acupuncture needle—into the most painful area of the affected muscle, using rapid in–out (pistoning) manoeuvres to elicit a local twitch response [86].

The theoretical basis for MTrP needling lies in the concept that needle penetration into a hypercontracted muscle fiber induces a mechanical disruption of the dysfunctional motor endplate, interrupting aberrant sensory input responsible for MTrP formation. Although prospective studies of dry needling in the pelvic region are lacking, research on other anatomical sites has shown that dry needling reduces pain and performs similarly to wet needling (local anaesthetic injection), although pain relief tends to be more durable with anaesthetic infiltration [87]. Most studies comparing dry and wet needling have shown no significant superiority of either technique. Several systematic reviews have concluded that while dry needling demonstrates a measurable analgesic effect, there is insufficient evidence to confi or refute whether this benefit exceeds that of placebo [88].

Local Anaesthetic Block

Chronic pain resulting from pelvic floor muscle spasms has been managed through several therapeutic modalities, including local anaesthetic nerve blocks [90].

MTrP injections appear to be equally effective whether performed using the “dry” or “wet” technique. Because these injections can be painful, most clinicians prefer the wet technique, which involves the administration of a local anaesthetic. Injection of small volumes (1–5 mL) of 1% lidocaine or 0.25–0.5% bupivacaine can effectively block pain arising from either an entrapped segmental nerve—such as the ilioinguinal, iliohypogastric, genitofemoral, or pudendal nerves—or from a MTrP located in the abdominal wall, vagina, or perineum. Such blocks may serve both diagnostic and therapeutic purposes [91]. Local anaesthetics work by inhibiting both afferent and efferent neural transmission within the MTrP region, thereby reducing pain and disrupting the spinal facilitation mechanisms that maintain the MTrP.

Following published recommendations, infiltration procedures should be performed as follows:

1. Needle approaches: transvaginal, paravaginal/subgluteal, or transperineal.
2. Anaesthetic agents: 2.0% lidocaine, 0.5% bupivacaine, and 0.5% ropivacaine.
3. Norepinephrine: associated with increased risk of local ischemia and MTrP formation.
4. Corticosteroids: may cause progressive muscle atrophy with repeated injections and increase the risk of muscular dimpling.
5. Technique considerations:
    a. Do not infiltrate more than 0.25–0.5 mL per MTrP.
    b. Do not infiltrate more than 3.5–5.0 mL of total solution per side of the pelvic floor musculature.
    c. Up to three sessions may be necessary before achieving a favourable response.

Repeated exposure to local anaesthetics induces hydrodissection of the connective tissue bands surrounding nerve fibers, alters sodium channel function in primary afferent neurons, and reduces levels of substance P, histamine, and other neuropeptides.

If partial improvement is observed after the initial injection, the procedure may be repeated after 2 to 4 weeks. However, if no improvement is achieved within 24 hours, additional injections are unlikely to be beneficial. Once satisfactory relief is obtained, injection intervals should be progressively extended [92].

Complications from MTrP injections are rare but can include hematoma formation, infection, and adverse drug reactions. These occur in less than 1% of cases, but patients should be informed, as such events may exacerbate pain rather than relieve it [84].

Botulinum toxin

BoNT-A acts by blocking the release of substance P and glutamate from afferent C-fibers, leading to peripheral desensitization and, indirectly, central desensitization. It produces a localized, partial, and reversible chemical denervation of the pelvic floor musculature, resulting in temporary muscle weakness or paralysis [94].

Its dual mechanism of action involves both muscle relaxation —via inhibition of acetylcholine release at the neuromuscular junction— and a direct antinociceptive effect, through the inhibition of local neurotransmitters involved in pain signalling and modulation of local inflammatory mediators. Once

injected, BoNT-A enters the presynaptic terminals of motor neurons, blocking acetylcholine release and inducing relaxation that typically lasts 3 to 6 months. The analgesic effect, related to reduced nociceptive afferent input, often precedes the muscle-relaxing effect. This dual mode of action makes BoNT-A an attractive option for managing various chronic pain syndromes, a view also supported by extensive clinical experience.

Most patients tolerate injections in an outpatient setting. Adverse effects during the first five days may include flu-like symptoms, constipation, urinary retention or incontinence, and faecal incontinence. These side effects generally resolve gradually over approximately three months, coinciding with the subsidence of BoNT-A effects.

Platelet-Rich Plasma (PRP)

Platelet-Rich Plasma (PRP) is a small volume of autologous plasma with a highly concentrated platelet count. It serves as a potential source of angiogenic and myogenic growth factors, as well as adhesive and chemotactic proteins, endowing it with regenerative and healing properties that have been widely applied across various medical specialties [98].

Autologous PRP (A-PRP)—defined as plasma containing platelet concentrations at least threefold higher than baseline—is obtained by centrifuging a patient's venous blood to concentrate platelets, after which the resulting A-PRP is re-injected into the target tissue [99].

A-PRP contains platelets that release multiple growth factors believed to reduce inflammation, stimulate mesenchymal cell proliferation, enhance tissue repair, and promote angiogenesis [100].

The therapeutic principle underlying A-PRP treatment lies in its ability to replicate natural cellular regeneration mechanisms through the sequential secretion of various growth factors, including platelet-derived growth factor (PDGF), transforming growth factor-beta (TGF-β), epidermal growth factor (EGF), vascular endothelial growth factor (VEGF), insulin-like growth factor (IGF), and basic fibroblast growth factor (bFGF). These molecules collectively stimulate cell proliferation and differentiation, angiogenesis, and extracellular matrix synthesis. A-PRP has been described as a potential tissue bioinductor, as it promotes dermal fibroblast and adipose-derived stem cell proliferation, thereby enhancing tissue augmentation and vascularization [101].

Acupuncture and Electroacupuncture

Acupuncture is one of the oldest standardized neuromodulatory therapies, commonly used in Traditional Chinese Medicine for the management of chronic pain. The insertion of fine needles into specific acupoints located near the skin surface is believed to correct imbalances in energy flow and alleviate pain symptoms [104].

Acupuncture treatment involves the use of fine, sterile, single-use needles inserted into designated acupoints. Although the exact therapeutic mechanism of acupuncture in CPPS remains unclear, its potential neuromodulatory, immunomodulatory, and anti-inflammatory effects may contribute to beneficial clinical outcomes [104]. While the analgesic mechanisms of acupuncture are not fully elucidated, multiple studies have demonstrated associations with neurohumoral modulation, particularly through the increased levels of endorphins and dynorphins in the cerebrospinal fluid following acupuncture sessions [105,106].