

PRO OSTEOPATHIC

MAGAZINE



Dyspareunia in All Its Aspects: 'A Painful Affair'

Colette Peeters D.O., MSc.

Multidisciplinary Collaboration: From Breastfeeding to Speech

Cindy de Nooijer D.O.

Osteopathic compass

Daan van Oosten, Information and Systems Scientist and René Zweedijk D.O.

Read on Your Behalf

Marc van Leeuwen D.O.

Christophe Tylleman D.O.

René Zweedijk D.O.

Raymond Mertens D.O.

"The tide retreats, the waves dance wildly, and the wind shifts at every moment. What you see today may be different tomorrow."

Daan van Oosten

FOREWORD

Foreword

Travelled a bit back and forth in Europe in recent months. Not just for fun but more to meet colleagues and contribute to the future of osteopathy on an international level. Nice to sit at a round table and exchange information and ideas with colleagues from various countries. This first round table conference was held in Luxembourg by Jo Buekens. It was a great success with colleagues from all over the world. In two years' time, we, Panta Rhei will be the organiser of this conference.

Good to see the profession developing so beautifully and well. Of course, there are challenges. Reviews and meta analysis are generally not very positive about the quality of osteopathic research. While the field faces positive feedback day in and day out and an ever-growing patient population, scientific research still often indicates that the effectiveness of osteopathy is questionable. However, these question marks do not stem from negative research results, but more from the questionable quality of osteopathic research. It is good that this, on an international level, is being worked on. Well-designed scientific studies are a necessity for our beautiful profession. We as PRO try to contribute to this.

In this edition of the magazine, you can read a number of publications of interest here. Of course, there is again the section 'read for you' with a number of summaries of publications worth reading. In addition, there are some great articles. One is about a problem many women face: dyspareunia, pain during intercourse. Another on the support of osteopathy for breastfeeding problems. It is fantastic to read that both authors have great expertise in a specific niche within our profession. In addition, they are both active in a network consisting of various disciplines that complement each other where possible and necessary. This strikes me as a sign of further professionalization of our profession. Whereas not so long ago osteopaths were almost all soloists in their own private practice, they are now increasingly becoming team players in a healthcare setting where 'patient-centered care' is the paradigm, and multidisciplinary work is a necessity.

Rafael Zagarra Parodi wrote an article about his project "Body-Mind-Spirit" foundation. In this article he explains what the aims and objectives are of his stimulating work.

Matt Hudson developed a method which is very effective in treating central sensitization which is one of the mechanisms in chronic pain. This method can be very useful for osteopaths and is published in this magazine.

In an article written by Daan van Oosten systems and information scientist and myself, we discuss a new osteopathic compass. In this compass, which is inspired by the Cynefin framework, we provide a direction for osteopathic thinking and action based on a number of cases of babies with plagiocephaly. The aim is to create a good scientific framework that is not only good for the osteopath in the field, but can also serve education and further research. Take up the 'challenge' I would say and read this carefully.

I wish you a very happy summer period where you can recharge for all that is to come. In any case, we have a lot in store for you. You will also find information about this in this magazine. As always, I greet you with the same words: "Dig On and Keep it pure".

With kind regards,

René Zweedijk, osteopaat DO



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READ ON YOUR BEHALF...

Review of craniofacial pain syndromes involving the greater occipital nerve: anatomy, clinical findings, and interventional management.

Fabry, A., Nedunchelian, M., Stacoffe, N., Guinebert, S., Zipfel, J., Krainik, A., ... & Kastler, A. (2024). *Neuroradiology*, 66(2), 161-178. | Read by Christophe Tylleman D.O.

Headache symptoms occur in about 47% of the world's adult population, with migraine considered the second leading cause of disability since 2016. Although tension headaches (such as occipital neuralgia or Arnold neuralgia) are less common, the occipital nerve major (GON: Greater Occipital Nerve) often plays a crucial role in the pathophysiology of these pain syndromes.

The reason for involving the GON in the treatment of headache is the common nociceptive innervation of the head and neck, which is achieved through the trigeminocervical complex (TCC). This complex extends anatomically from the medulla oblongata to the dorsal horns of C1 and C2. Studies clearly show the connection between nociceptive extracranial branches of the trigeminal nerve, which innervate the dura mater, among others.

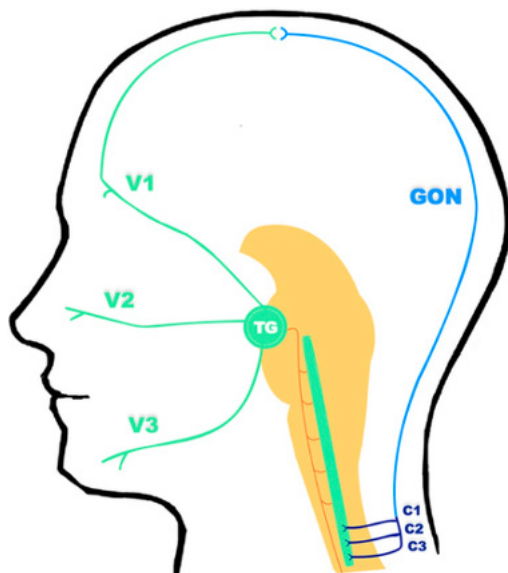


Figure 1. Trigemincervical complex. TG trigeminal ganglion and trigeminal branches (V1 mandibular, V2 maxillary, V3 ophthalmic)

In addition, the trigeminal nerve and its ganglion also innervate the cerebral blood vessels and the dura mater, with convergence occurring with the occipital nerves in the nucleus caudalis of the trigeminal nerve. This peripheral pathway is known as the trigeminovascular system and plays a key role in both migraine and cluster headaches. This also explains why many headache patients experience symptoms of occipital tenderness or stiffness.

Interventions such as a GON blockade can break the pain cycle by temporarily suppressing the nociceptive signals from the GON. This reduces not only occipital pain but also craniofacial pain via influencing the afferent input within the TCC.

This review identifies three possible vulnerable zones ('target sites') for compression or entrapment of the GON, also known as 'Arnold's nerve':

- Deep target site: at the origin of the GON, at the level of the posterior arch of C1 and the lamina of C2, just behind the facet joint of C1-C2.
- Intermediate target site: below the musculus obliquus capitis inferior, where the GON makes a sharp curve. This area is particularly sensitive to stretch, for example during flexion and heterolateral rotation of the cervical spine, where the obliquus capitis muscle comes under tension (think whiplash or cervical trauma).
- Superficial target site: at the distal trajectory of the GON, where it penetrates the aponeurosis of the trapezius muscle.

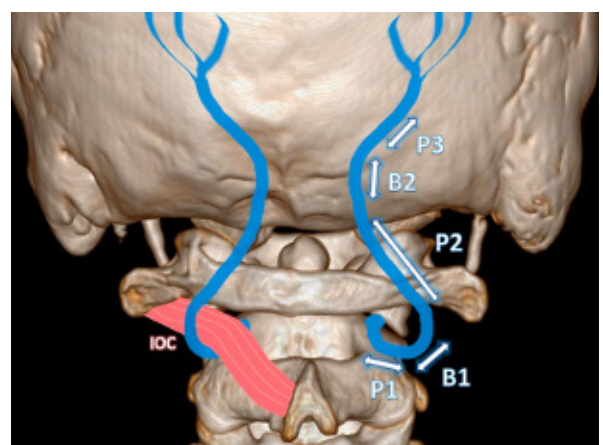


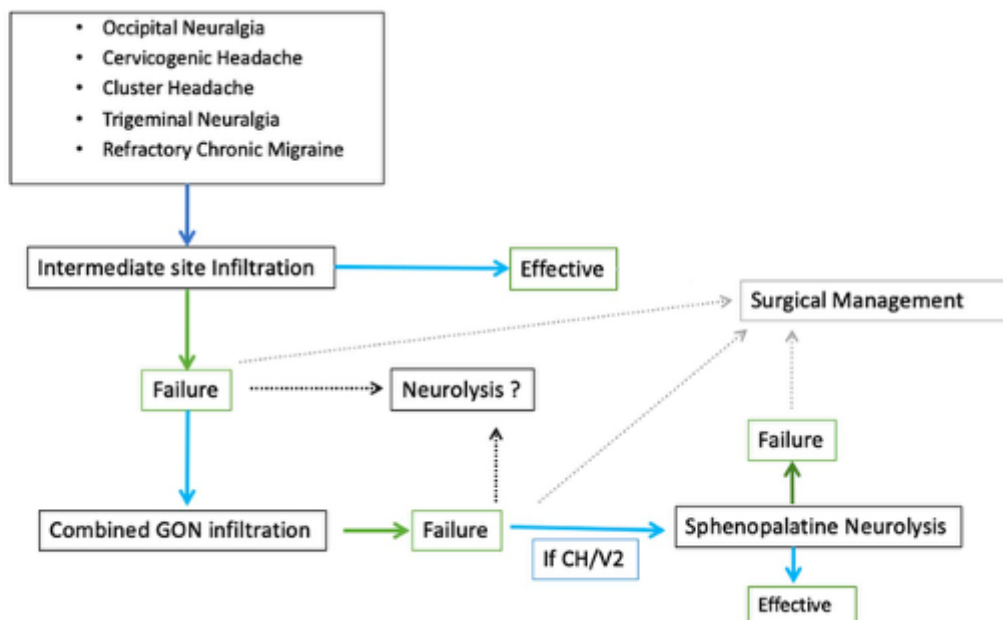
Figure 2. GON course. Three portions and two bends. (IOC) Inferior oblique capitis muscle

This review focuses on medical interventions ranging from GON blocks, infiltrations, radiofrequency, ablation, cryoneurolysis and denervation to neurectomy. These treatments are used progressively, depending on the outcome of less invasive interventions. While physiotherapy is briefly mentioned in the treatment protocol, there is no further discussion of its content or approach.

READ ON YOUR BEHALF...

All these interventions show significant reduction of craniofacial pain (ranging between 40% and 80%) in the short or longer term. Of course, there are some risks associated with these techniques, such as puncture of the arteria vertebralis or the dura mater.

Fig. 10 Management algorithm for craniofacial pain syndromes targeting the greater occipital nerve



So what does this information mean concretely for the osteopath?

A thorough knowledge of the anatomy and pathophysiology of the occipital nerve major (GON), as well as the trigeminocervical convergence complex and the trigeminovascular system, is essential. Indeed, through these structures, pain perception can be influenced, which is also relevant within an osteopathic approach.

An interesting development is the use of pulsed radiofrequency (PRF), a technique based on neuromodulation. Here, the nerve is exposed to a temperature of 42 °C for four minutes after sensory stimulation, without any destruction of the nerve tissue. By applying short electrical pulses, synaptic signalling is affected and pain signalling is altered, with minimal damage to the surrounding tissue.

Neuromodulation, in a strict sense, means the targeted influencing of the neuroplasticity of the central nervous system. From this principle, osteopathic techniques can potentially influence a recovery of disturbed nerve functions. This approach opens the door to further exploring the effectiveness of osteopathic interventions within the framework of neuromodulation and pain reduction.



Christophe Tylleman D.O.-M.R.O.B.

Christophe Tylleman is a lecturer in neurocranium and pediatric orthopedics in the pediatric osteopathy program at Pro Osteo. He runs a private osteopathy practice in Nieuwkerke, Belgium.

ARTICLE

Multidisciplinary Collaboration: From Breastfeeding to Speech

The value of collaboration between osteopaths, dentists and lactation consultants

Cindy de Nooijer, MSc. Ost., DO-MRO, DPO

Introduction: Breastfeeding: a complex process that requires a multidisciplinary approach

Breastfeeding is often viewed as something natural and self-evident, but in practice, initiating and maintaining successful breastfeeding proves to be anything but simple. Nowadays, discussions around breastfeeding frequently include the topic of a short lingual frenulum or a tight labial frenulum. This raises the question of whether such frequent intervention is truly necessary, or whether we are witnessing a temporary trend?

It is essential to understand that breastfeeding is a complex process in which multiple factors interact. Whether the frenulum is too short is only one part of the puzzle. Successful breastfeeding depends on the interplay of psychological, socio-demographic, cultural, and functional factors, as well as the quality of professional support the mother receives.

Research consistently demonstrates that maternal education level and cultural background are significant predictors of breastfeeding initiation [1]. Educational strategies that are attuned to cultural beliefs surrounding infant feeding have been shown to be more effective in promoting breastfeeding [2].

In addition, social support – both practical and emotional – provided by partners, family members, or healthcare professionals is one of the strongest predictors of breastfeeding continuation [3–5]. Even online communities, such as social media-based support groups, may contribute meaningfully to sustained breastfeeding practices [6].

Psychological determinants are equally influential. A mother's intention to breastfeed and her confidence in her ability to do so (self-efficacy) are positively correlated with long-term breastfeeding success [7, 8]. In contrast, medical conditions such as maternal obesity, as well as psychosocial stressors—such as traumatic childbirth, high-intervention deliveries, or the exposure to synthetic oxytocin—have been associated with early breastfeeding cessation [9].

In addition to psychosocial and cultural determinants, breastfeeding also involves several structural and functional prerequisites. A proper latch technique, adequate tongue mobility, efficient orofacial function, and balanced postural alignment of the infant are all essential for effective feeding. Osteopaths can play a meaningful role in this domain by treating physical tension patterns in the infant that may interfere with suckling dynamics. Motion restrictions within the cranial system, the temporomandibular region, or the cervical spine can, for instance, affect an infant's ability to generate suction or maintain a stable latch. Multiple studies have demonstrated that osteopathic treatment in infants with breastfeeding difficulties can be effective in improving the biomechanics of suckling [10–12]. Moreover, the combination of osteopathic intervention and lactation support appears to yield superior outcomes compared to lactation support alone [10]. This is further supported by a recent randomized controlled trial in which osteopathic treatment applied to both mother and infant—alongside conventional care—resulted in a significantly higher rate of continued breastfeeding at one month post-partum (84.6% versus 30%) [13].

The earlier functional problems are identified and addressed through a multidisciplinary approach, the greater the likelihood of establishing and maintaining a successful breastfeeding relationship. In cases of oral restrictions—such as a restrictive lingual frenulum—a collaborative approach involving the osteopath, lactation consultant, and dentist (with frenotomy where indicated) can significantly improve both the infant's sucking efficiency and maternal comfort during feeding [14].

Breastfeeding is therefore not merely a matter of maternal motivation or infant ability, but a complex process that is heavily influenced by the broader context in which it occurs. In this context, interdisciplinary collaboration between lactation consultants, dentists, and osteopaths—each bringing their own clinical expertise—is essential to provide optimal support to both mother and child. This model of integrated care is increasingly recommended in current literature on infant feeding and orofacial function [12].

Other healthcare providers involved in the care of mothers and infants—such as midwives, maternity nurses, well-baby clinic staff, general practitioners, and paediatricians—also play a crucial role, particularly in early recognition and timely referral. Knowledge-sharing and coordinated care between these disciplines can significantly improve outcomes in breastfeeding support, contributing to a healthier start for both mother and child.

This article highlights the collaboration between lactation consultants, dentists, and osteopaths. We explore the specific role of each discipline within the care pathway and illustrate how this collaboration is not only essential during the breastfeeding period but also remains relevant later in a child's development. An undiagnosed or functionally restrictive lingual frenulum can lead to issues at older ages, such as speech difficulties, altered jaw development, compromised breathing patterns, and even sleep apnoea [15–17].

Through a series of case studies, we aim to demonstrate how functional and structural restrictions can be identified and addressed in a timely and effective manner.

Breastfeeding: The Current Situation in the Netherlands

The World Health Organization recommends initiating breastfeeding within the first hour after birth, exclusive breastfeeding for the first six months of life, and continued breastfeeding up to two years of age or beyond, in combination with appropriate complementary foods [18]. Dutch guidelines are broadly aligned with this recommendation but include the provision that complementary feeding may begin between four and six months of age, contrary to the WHO's preference [19, 20].

Despite these guidelines, only 53% of newborns in the Netherlands are exclusively breastfed after birth. Another 23% receive a combination of breastfeeding and formula feeding, while 24% are exclusively formula-fed. By six months—the recommended duration for exclusive breastfeeding—only 31% of Dutch infants are still being exclusively breastfed. This marks a notable decline from 69% in 2018 to 53% in 2023, as reported in the most recent Peiling Melkvoeding (Milk Feeding Survey) [21]. Interestingly, the percentage of infants who receive a combination of breast and bottle feeding has increased from 7% in 2018 to 23% in 2023. Within the European context, the Netherlands ranks among the countries with the lowest rates of exclusive breastfeeding [22, 23]. These figures are in line with the European average, but far below countries such as Sri Lanka and Rwanda, where 80.9% of infants are exclusively breastfed for the first six months of life.

Reasons for Early Cessation of Breastfeeding

According to the Peiling Melkvoeding 2023, 71% of mothers cease breastfeeding earlier than they had originally planned. Two-thirds of them report feeling disappointed about the premature end of their breastfeeding journey [21]. The most cited reasons for early cessation are outlined below:

1. Perceived insufficient milk supply – Many mothers believe they do not produce enough milk or are uncertain about the quantity their infant consumes [21, 24–26].
2. Maternal pain during feeding – A substantial proportion of women experience physical discomfort while breastfeeding, which contributes significantly to early discontinuation [13, 21, 27, 28].
3. Difficulties with latch or milk transfer – Challenges with achieving an effective latch or with the infant's ability to extract milk are common contributing factors [21].
4. Maternal fatigue – Ongoing exhaustion and lack of rest can undermine a mother's capacity to maintain breastfeeding [21].
5. Concerns about medication use – Some mothers believe that pharmacological treatment is incompatible with breastfeeding. Medical advice is often based on information in product leaflets or pharmacological compendia, which tend to focus on legal disclaimers and lack evidence-based data on lactation safety. Consequently, breastfeeding may be discontinued unnecessarily. However, Dr. Thomas Hale, a leading authority in lactational pharmacology, has demonstrated that most medications enter breast milk in minimal concentrations and pose no harm to the infant [21, 29].
6. Difficulties balancing breastfeeding and work – The logistical and time-related challenges of combining breastfeeding with professional responsibilities remain a significant barrier for many mothers [21, 30].

Recent research confirms that maternal pain is the most frequently cited reason for early cessation, even in cases where standard breastfeeding support is provided [13]. In addition to the clinical and physical factors mentioned above, psychological, social, and cultural influences also play a critical role. The Peiling Melkvoeding 2023 further highlights that guidance from healthcare professionals can substantially influence breastfeeding behaviour; inadequate, inconsistent, or suboptimal counselling—such as premature recommendations to introduce formula—has been associated with a higher likelihood of discontinuing exclusive breastfeeding before the recommended duration.

From the perspective of osteopathic medicine, two of the most modifiable factors among those listed are maternal pain during feeding and infant-related difficulties with latching or milk transfer. Through gentle, hands-on techniques, osteopaths can help relieve mechanical tension, improve the infant's posture, and restore functional mobility—particularly in the cranial, cervical, and orofacial regions—which may alleviate breastfeeding difficulties and promote more effective feeding behaviour [10, 31]. In addition, osteopaths often take a broader view of care by considering the well-being of the entire family unit. This includes offering emotional support, helping parents interpret the infant's signals, and promoting confidence in the feeding process. Nonetheless, as previously stated, breastfeeding difficulties are rarely caused by a single factor and require an integrative approach. A multidisciplinary model—where osteopaths, lactation consultants, dentists, and other healthcare providers work in close collaboration—is essential to improve breastfeeding outcomes and provide mothers and infants with tailored, timely care [10, 27].

Multidisciplinary Care for Breastfeeding Problems in Clinical Practice

In the province of Zeeland, Netherlands, a multidisciplinary approach is frequently employed to address breastfeeding challenges. At the core of this collaboration are lactation consultants, dentists, and osteopaths, with additional professionals involved as needed based on the complexity of each case. This article explores the practical implementation of such collaborations and delineates the specific roles and responsibilities of the individual professionals involved.

The Lactation Consultant

Lactation consultants are specialised healthcare providers who focus on the assessment, guidance, and optimisation of the breastfeeding process. They complete accredited training programmes and are internationally certified as International Board-Certified Lactation Consultants (IBCLC). Their expertise covers the anatomy and physiology of lactation, clinical breastfeeding techniques, maternal and infant feeding pathologies, and the psychosocial dimensions of breastfeeding.

Lactation consultants often work in the home setting, either at the parents' request or following referral by other professionals, such

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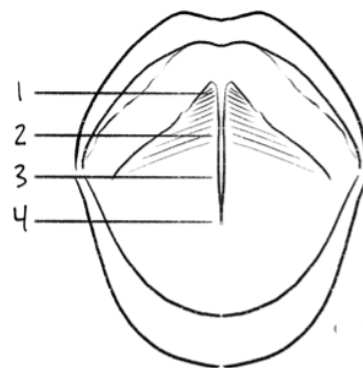
as midwives, maternity nurses, osteopaths, or youth healthcare services. A consultation typically includes a comprehensive intake, clinical examination of the mother's breasts and the infant's oral structures, observation of a complete feeding session, and pre- and post-feed weight measurements. The consultant evaluates signs of suboptimal milk transfer and examines for both visual and functional restrictions of the tongue. Based on these findings, an individualised care plan is developed following shared decision-making with the parents.

Frequently encountered issues include maternal nipple pain, insufficient milk production, or ineffective feeding behaviour in the infant. Interventions may involve optimising latch technique, providing guidance on feeding frequency or expressing, and addressing compensatory feeding strategies. The lactation consultant also determines whether any functional or structural oral restrictions—such as a restrictive lingual or labial frenulum—are present and whether further multidisciplinary intervention is indicated.

A Restrictive Lingual Frenulum: Yes, or No?

Determining whether a lingual frenulum is structurally restrictive, visually apparent, or functionally limiting is a complex process that requires clinical expertise. This assessment goes beyond visual inspection or the ability of the infant to protrude the tongue. What truly matters is the functional capacity of the tongue during feeding. For effective breastfeeding, the tip of the tongue must be able to guide the nipple into the mouth, while the lateral borders of the tongue should be able to seal around the nipple and maintain a stable vacuum against the palate. The posterior tongue must generate sufficient caudal movement to create negative pressure in the oral cavity, allowing milk to be expressed from the nipple. In addition, the infant must be able to open the jaw widely to achieve a deep latch, thereby positioning the nipple far enough into the oral cavity to prevent maternal pain caused by shallow attachment [32, 33]. The functional impact of a lingual frenulum cannot be determined based on appearance or photographs alone. A structured functional oral assessment is essential. One validated tool used for this purpose is the Hazelbaker Assessment Tool for Lingual Frenulum Function (HATLFF). This instrument includes both a functional and a morphological scoring section. Based on the results, the clinician can assess the severity of the restriction and determine whether a frenotomy—via incision or laser—is indicated [34]. When a restrictive lingual frenulum is suspected, it is standard practice to classify the type and anatomical location using the Coryllos classification [35]. This system distinguishes between anterior, and posterior tongue-ties and categorises them into four types:

Figuur 1: Typering van de tongriem (bron: www.tandartspraktijkdie-



- **Class 1: The frenulum extends to the tip of the tongue and is attached at the alveolar ridge.**
- **Class 2: The frenulum inserts just behind the tip of the tongue and attaches to the floor of the mouth, slightly behind the alveolar ridge.**
- **Class 3: The frenulum is positioned further posteriorly within the oral cavity.**
- **Class 4: The frenulum is submucosal and often not visible without palpation [17, 35].**

When a class 1 or 2 tongue-tie is identified, there is typically a direct indication for referral to a dentist with expertise in infant frenotomy. In contrast, for class 3 or 4 presentations, the initial focus is often on optimising latch technique, supporting milk production, and implementing oral motor exercises. In these cases, referral to an osteopath may be indicated as part of a conservative treatment strategy. Following osteopathic intervention, the lactation consultant reassesses feeding effectiveness within several days. Criteria for progress include the resolution of maternal pain and evidence of adequate milk intake. The latter can be assessed by pre- and post-feed weight measurements or other clinical indicators of milk transfer [36].

The Dentist Specialised in Treating Tongue- and Lip-Tie Restrictions

In Zeeland, collaboration takes place with a dentist who has undergone specialised training in the diagnosis and treatment of lingual and labial frenulum restrictions. This expertise is typically not included in standard dental or medical training. Anna Dieleman (www.tandartspraktijkdieleman.nl) is a dentist with specific experience in this field and runs a dedicated weekly consultation clinic for tongue-tie procedures. Lactation consultants Bianca Izeboud and Loes Huissen are present during these sessions to ensure interdisciplinary assessment and care. Parents are first welcomed into the treatment room by the lactation consultant. A written intake form is reviewed and expanded upon during a structured oral history. The lactation consultant then performs a clinical oral examination of the infant. Subsequently, the dentist enters the room to perform a second assessment. If clinical findings are consistent between both professionals, no contraindications are present, and the parents provide informed consent, the frenulum is released during the same visit using a soft tissue laser.

During the procedure, the infant is positioned on the parent's lap, with the head gently supported by the lactation consultant. Topical anaesthetic (Xylocaine® ointment) is applied to the frenulum and, where indicated, to the labial frenulum as well. After a short period of onset, the frenulum is released using an AMD laser. The laser provides excellent visibility, immediate haemostasis, and negates the need for sutures. Importantly, it allows the infant to begin using the tongue immediately, in part due to the absence of injectable anaesthetics. Parents are advised to give paracetamol (acetaminophen) suppositories and to feed the infant approximately one hour before the procedure.

Following the procedure, the lactation consultant assists the mother with latching to enable immediate post-release feeding. The consultant then demonstrates post-operative oral motor exercises, which are to be initiated on day three and continued for three weeks. These exercises are intended to reduce the risk of reattachment and promote functional mobility of the tongue. If necessary, paracetamol may be administered every six hours for the first 12–24 hours to relieve postoperative discomfort.

Three days after the procedure, the lactation consultant contacts the parents by phone for follow-up. Ongoing contact and support are also available via WhatsApp. When significant tension is noted in the infant's neck, head, or overall body posture during or after the procedure, parents are advised to consult an osteopath who is experienced in treating infants with breastfeeding-related dysfunctions.

The Osteopath

Although the number of studies is still limited, research suggests that osteopathic treatment may play a positive role in addressing breastfeeding difficulties in infants. In the recent study by Elleau et al. [13], gentle touch and fascial techniques ("tactile listening") were used to release tension patterns in both mother and infant. This approach led to a marked reduction in maternal pain and a significantly higher rate of successful breastfeeding after one month. Osteopathic Manual Treatment (OMT) also appears to accelerate the transition to full oral feeding in preterm infants, thereby shortening hospital stays [37]. A recent scoping review concluded that there is moderate positive evidence for the effectiveness of manual therapies in improving breastfeeding, with no serious adverse effects reported [38]. In addition, a randomised controlled trial by Herzhaft-Leroy showed that osteopathic treatment, when combined with lactation counselling, significantly improved suckling ability in infants with biomechanical dysfunctions [10].

In clinical practice, breastfeeding problems most commonly manifest as maternal pain, difficulty maintaining suction, and restricted mouth opening. Osteopaths apply the five-model framework of osteopathy [39] to assess and treat underlying dysfunctions.

Neurologically, the examination includes assessment of the innervation of the tongue, oral and pharyngeal musculature. From a biomechanical perspective, attention is given to structures involved in mouth opening (pterygoid muscles), even as the intrinsic and extrinsic tongue muscles, the temporomandibular joint (TMJ), the occipito-atlanto-axial complex (OAA), and the supra- and infrahyoid muscles. The respiratory component assesses whether the infant can breathe effectively and whether the coordination of sucking, swallowing, and breathing is intact [32].

A holistic perspective remains essential within the osteopathic philosophy. For example, an infant presenting with a right-sided spinal sidebending may find it uncomfortable to feed at the mothers' right breast, as this requires a left-sided sidebending that conflicts with the infant's biomechanical preference. This misalignment can lead to frequent detachment during feeding, increased air intake, and secondary symptoms such as reflux or abdominal cramping. It is therefore always assessed whether breastfeeding difficulties are primary (e.g. insufficient weight gain) or secondary to other dysfunctions, such as gastrointestinal discomfort.

When the infant has already been assessed by a lactation consultant, evaluation of the frenulum is usually included. If the osteopath is the first point of contact, an oral examination is performed as part of the osteopathic assessment. If a class 1 or 2 tongue-tie is suspected, referral to a dentist is discussed with the parents. In the case of a class 3 or 4 restriction, additional support from a lactation consultant may be indicated to improve latch technique and/or support milk supply.

The clinical presentation of breastfeeding difficulties in infants and older children is highly variable and requires a differentiated osteopathic approach. The treatment strategy depends on the underlying dysfunctions, and interdisciplinary collaboration with lactation consultants, dentists, and speech-language pathologists is often essential. In line with recent insights, treating mother and infant as a single functional unit appears to be a key factor in successful breastfeeding outcomes. Previous studies have shown that treating only the infant, without involving the mother, did not lead to improved results [13].

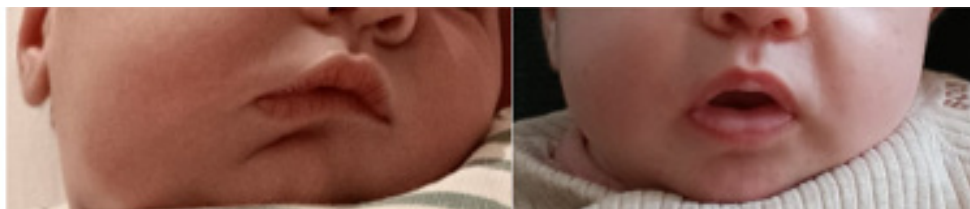
To illustrate the importance of a functional assessment and tailored multidisciplinary approach, three cases are presented. Each case highlights a different starting point and form of collaboration.

Case 1; A two-week-old infant is presented by the mother, following referral by the lactation consultant due to a restrictive lingual frenulum and lip tie. A referral had also been made to a dentist for laser treatment of the tongue-tie, but due to holiday closures, the appointment was delayed. According to the lactation consultant, there was also tension in the oral and cervical regions. As a result of this tension, the tongue was being pulled downward, limiting the infant's ability to establish an effective breastfeeding technique. The birth was marked by a rapid second stage of labour. During breastfeeding, the infant had difficulty maintaining suction at the breast and compensated by clamping. During osteopathic assessment, marked tension was found in the medial and lateral pterygoid muscles, the masseter, the entire floor of the mouth, and the tissues surrounding the hyoid bone, with fascial chains extending toward the diaphragm and the thoracolumbar junction. These structures were released using BLT principles and fascial techniques.

Case 2; A one-week-old infant is presented by the mother due to breastfeeding difficulties. The infant has trouble latching and maintaining suction. The mother is currently feeding expressed breast milk by bottle. According to the lactation consultant, the baby's mouth appears asymmetrical, which likely interferes with effective suction. There is also a pronounced positional preference to the right. The baby engaged early in utero, and during birth, the hand was positioned alongside the head. As a result, the shoulder became impacted, and traction was required during delivery. Since then, the infant has shown significant discomfort in the cranial region. Osteopathic assessment reveals an asymmetrical mandible with right sided sidebending. There is fascial tension in the floor of the mouth, the medial and lateral pterygoid muscles, and the masseter. The positional preference to the right is associated with rotational dysfunction in the upper thoracic spine, compression of the right occipital condyle, intraosseous strain in the right clavicle, and a sidebending-rotation right pattern at the sphenobasilar synchondrosis (SSB). Following osteopathic treatment targeting these dysfunctions—along with stimulation of the orofacial musculature around the mouth and cheeks—the infant can breastfeed directly at the breast. Feeding is partially supported by a nipple shield, but there is no longer any milk leakage. Several follow-up treatments were provided to address the persistent positional preference.

BEFORE AND AFTER

Figure 2: Infant before treatment with asymmetry in the oral and jaw region (left) and after treatment (right). (Image published with parental consent.)



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Case 3; A 4-year and 9-month-old boy is presented by his mother following referral from a speech and language therapist. He has difficulty articulating the letters “l,” “g,” and “k.” These issues were first identified during the routine check-up for 4-year-olds at the child health clinic. Since then, he has been receiving weekly speech therapy sessions. Despite several months of intervention, progress has been minimal, and the therapist recommends an osteopathic assessment. The general practitioner had previously examined the tongue, concluding that the frenulum was normal. Breastfeeding had proceeded without any difficulties, and there were no problems with chewing or swallowing solid food. Osteopathic examination reveals a high-arched palate with compression at the intermaxillary suture, tension in the hyoid region and floor of the mouth, fascial traction along the central axis at the level of the sternum, and a bilaterally posterior occiput. Over the course of six months, the osteopath provides several treatments. While some of the dysfunctions resolve, others recur intermittently. At that point, the tongue is reassessed, and photos of the tongue and mouth are taken. The frenulum appears to be quite short after all, and the child has difficulty lifting the posterior part of the tongue. He is referred to a dentist, where the lingual frenulum is treated with laser surgery. After several more months of speech therapy, the articulation problems resolve, and he can pronounce all sounds correctly.

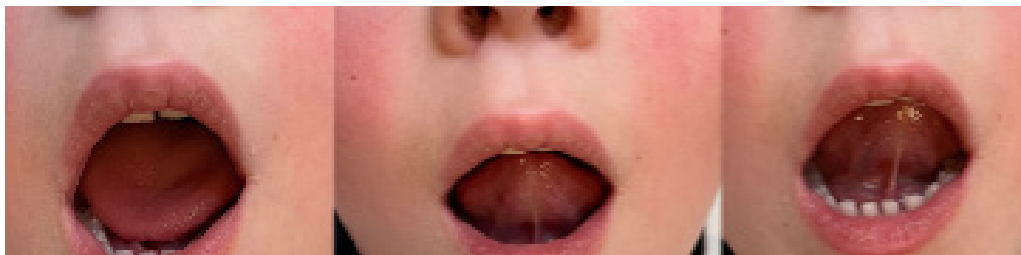


Figure 3: Boy from Case 3. Left: the tongue rests low in the mouth. Centre: the tongue cannot reach the palate when elevated. Right: with the tongue suctioned to the palate, mouth opening is limited. (Image published with parental consent.)

Conclusion

The presented case studies illustrate the wide clinical variability of breastfeeding difficulties and the need for an osteopathic approach tailored to each individual child. Multidisciplinary collaboration is essential in this context. In the Netherlands, there is ongoing debate surrounding the increasing frequency of frenotomy procedures in infants with breastfeeding problems. Since 2001, when midwives lost the authority to perform these procedures under the Individual Healthcare Professions Act (Wet BIG), uncertainty has arisen regarding who holds responsibility for clinical decision-making. In the past, frenotomy was often performed by midwives in the early postpartum period without centralised documentation, making it difficult to determine whether there has indeed been a true increase in frequency.

Several professional organisations—including the Dutch Society of Paediatrics (NVK), the Dutch Society for Otorhinolaryngology (NV-KNO), the Royal Dutch Organisation of Midwives (KNOV), and the Dutch Association of Lactation Consultants (NVL)—have called for the development of a multidisciplinary clinical guideline centred on the preservation of breastfeeding and the optimal support of both mother and infant [40]. Scientific literature further emphasises the importance of functional assessment by professionals with specific expertise in both breastfeeding and oral anatomy, as not all anatomical variants of the lingual frenulum are associated with functional limitations [41–43]. In practice, an integrated approach in which mother and infant are assessed and treated together has been shown to increase the likelihood of successful breastfeeding. Especially in persistent or complex cases, this approach offers added value, as both physical and emotional factors within the mother–infant relationship can be addressed simultaneously [13].

In addition to lactation consultants and dentists, other professionals—such as orthodontists and orofacial myofunctional therapists (OMFTs)—also play a crucial role, particularly in older children with persistent tongue-tie restrictions. Their involvement can be essential for restoring oral function and resolving long-standing compensatory patterns. Well-trained (paediatric) osteopaths clearly fulfil a relevant role within the multidisciplinary care pathway, particularly due to their specific expertise in recognising and treating functional restrictions and compensatory patterns within the orofacial and postural systems.

While it is beyond the scope of this article to explore all aspects of this complex issue in full detail, the aim has been to offer insight into how multidisciplinary collaboration can contribute to optimal care in the context of breastfeeding and oral function. A shared focus on the functional needs of the child, along with mutual understanding between disciplines, is key.



Cindy de Nooij, MSc. Ost., DO-MRO, DPO

In 2012, Cindy earned her DO diploma from the IAO and her Master of Science in Osteopathy from the University of Innsbruck. She is head of the pediatric osteopathy program at Pro Osteo and primarily treats babies and young children in her practice.

In 2017, she initiated a multidisciplinary collaboration with lactation consultants Bianca Izeboud and Loes Huissen. Since then, babies with breastfeeding difficulties have been mutually referred, including to the dental practice of Anna. In practice, this collaboration has led to noticeably better outcomes: babies release tensions and compensation patterns more quickly, which supports the success of breastfeeding.



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READ ON YOUR BEHALF...

Malfunctioning jaw– effect on the whole organism

Read on your behalf – Raymond Mertens D.O. .

R. Wander – DZA Deutsche Zeitschrift für Akupunktur 47, 4/2004

Introduction

To restore and maintain the health of our patients, more and more therapeutic efforts and avenues are required, sometimes requiring different methods to be effective. Only multilayered and holistic thinking makes treatment a lasting success. Increasing importance is given to therapy resistance or blockage, caused from the teeth and jaw area. Every disease, according to author Wander, can be caused or maintained by a disturbance field or irritation source from the teeth or jaw area.

A simple osteopathic inhibition test of the teeth and jaw area involved can demonstrate this connection to the rest of the body. The teeth are divided into 8 incisors or dentes incisivi, 4 canines or dentes canini, 8 premolars or dentes praemolares and 12 molars or dentes molares, including 4 wisdom teeth. In the inhibition test below of the right/central part of the teeth and jaw area, a spatula is placed between the left dentes canini, praemolares and molares of upper and lower jaw to investigate the influence of a disturbance field or irritation source from this part of the teeth or jaw area on an osteopathic lesion.



Fig. 1 Inhibition test right/central teeth and jaw area (© R.Mertens, 2025)

The area of the teeth and jaw region, the junction of the mandible (mandibula) with the temporal bones of the skull (cranium), presents a complex picture of bones, muscles and ligaments in a complicated neurological system. The jaw and tooth region is controlled by trigeminal nerve-filled muscles that are closely connected to the deep neck muscles and nerve roots C1,C2 and C3 via the nucleus trigeminocervicalis.

The model described by the author Wander fits very well with the existing model of the double triad, which has already been described by R. Zweedijk in his article on learning disabilities (Zweedijk, 2003) and his book (Zweedijk, 2022). Added to the model of the double triad are interference fields from the teeth and jaw area, as described in the article on eye examination in osteopathic practice by Raymond Mertens in Pro Osteo (©Pro Osteo, 2022).

Inspection and assessment

Disturbance fields from the jaw or tooth area are transmitted via the V2 and V3 branch of the trigeminal nerve via the spinal nerves C1,C2 and C3 to the pelvis, legs and feet. The starting point for the disruption in the teeth and jaw area is the occlusion or of the intactness of the arcus dentalis superior and inferior. Disturbance fields from the jaw or tooth area are transmitted via the V2 and V3 branch of the trigeminal nerve via the spinal nerves C1,C2 and C3 to the pelvis, legs and feet. The starting point for the disruption in the teeth and jaw area is the occlusion or of the intactness of the arcus dentalis superior and inferior.

READ ON YOUR BEHALF...



Fig 2. Vertical height difference during inspection occlusion (©Mertens, 2025)

A vertical bite height loss of just a tenth of a millimetre can trigger this circulus vitiosus. It can cause local headaches, migraines, tinnitus, hearing loss and dizziness or cause disturbances elsewhere in the body, manifesting as a leg length difference and/or positive Patrick Sign. Patrick's test, also known as Faber's test or Figure Four Test is an orthopaedic test to assess the hip in direction of horizontal adduction.

Osteopathic dental dysfunctions

Disturbances from the teeth can be caused by tooth decay, gum disease, dental granuloma, missing teeth or tooth shifts in the dental arches. Tooth shifts in the dental arch or "osteopathic dental dysfunction" can cause therapy resistance throughout the body and shift or compress the midline.

If, for example, in a patient with therapy-resistant lumbosacralgia, a variable leg length difference and a positive Patrick Sign persist after therapy, we can look for a persistent source of irritation that may lie in the teeth or jaw area. This can be determined by the osteopathic inhibition test of the teeth or jaw area (see Fig 1), possibly complemented by an OPG at a dentist's office. An orthopantomogram is an X-ray of the entire jaw, including the jaw joints, taken so that all teeth can be seen on it (see fig 3).



Fig. 3 Orthopentogram showing granuloma in the right mandible(© R.Mertens, 2025)

Osteopaths can treat osteopathic dental lesions, intra- or interdental and gives quick results in the functionally impaired chain and whole body. The collaboration with correspondingly trained dentists, neural therapists, chiropractors and osteopaths brings the long-term therapeutic success here.



Raymond Mertens D.O., MSc

Raymond Mertens was born in the Netherlands in 1972. After obtaining his bachelor's degree in physiotherapy in 1995, he obtained his DO Diploma in Osteopathy in Belgium from the IAO in 2002 and his bachelor/master's degree in osteopathy from the International University of Dresden in 2016. Raymond is an osteopath, posturologist and a trainer for neurovisual-auditory rehabilitation, internationally recognised Buteyko and Heartmath coach, with training in applied kinesiology. He works as an independent osteopath and trainer in the Netherlands and Germany.

COURSE OVERVIEW

Autumn 2025

SEPTEMBER 2025

- | | |
|---------|---|
| 18 - 20 | De zieke buik met Philip van Caille D.O. |
| 24 - 27 | Het Arteriële Systeem in de Osteopathie - Heers en verdeel Praktische toepassing in osteopathie met Jo Buekens D.O. |
| 26 - 27 | Advanced Spinal Manipulation Course 1 with Daryl Herbert D.O. |

OCTOBER 2025

- | | |
|--------------------|--|
| 2 - 4 | The Forgotten techniques of William Garner Sutherland: After the great pandemic, before the PRM with Jane Stark D.O. |
| 2 - 3/12 - 13 nov. | Psychologie en Psychosomatiek in de Osteopatische Praktijk met Joeri Calsius D.O. |
| 7 | Hersteld maar niet genezen met Dr. Ben van Cranenburgh |
| 8 | Positieve neurologie met Dr. Ben van Cranenburgh |
| 8 - 10 | NM: Cranial Nerves with Alain Croibier D.O. |
| 9 - 10 | Spierkracht en Spierfunctie Herstel met Ad Warmerdam D.O. |
| 30 - 31/1 nov. | The new way of fascial integration for Osteopaths with Udo Bargfelt D.O. |
| 30 - 31/1 nov. | Head Trauma and Mental Health with Jo Wildy D.O. |
| 30 - 31/1 nov. | Philosophy and Mechanical Principles of Osteopathy by AT Still: A user's Guide met Richard Douglas DO |



CROWN BUSINESS CENTER

NOVEMBER 2025

- 13 - 15 Body-Mind-Spirit Principle (BMS) in Contemporary Osteopathy with Rafael Zegarra-Parodi D.O.
- 14 - 15 Primaire Reflexen met Laurie Kolfoort D.O.
- 18 WEBINAR: 5 Unexpected Active Ingredients You Can Immediately Implement in your collaborative Osteopathic Encounters Today with Joseph Gill-Lussier D.O.
- 20 - 22 Het hormonaal systeem (endocrien systeem) en de invloed van hormonen op het menselijk lichaam met Danny van der Ven D.O.
- 20 - 22 Comprehensive Assessment and Treatment of Breathing Dysfunction with Dr. Rosalba Courtney ND, DO, PhD
- 22 Snijzaal | Abdomen | Erasmus MC Rotterdam
- 27 - 29 Fascial Distortion Model (FDM) with Thorsten Fischer D.O. - Modul 3
- 27 - 29 Osteopathic principles of Dr. Viola Frymann DO with Marc Deora D.O.

Program Start Dates

- | | |
|----------------|--|
| September 2025 | Opleiding osteopathie bij kinderen - Netherlands |
| januari 2026 | Opleiding osteopathie in Womens Health - Netherlands |
| March 2026 | Pediatric Program - Norway |

COURSE OVERVIEW

Spring 2026

JANUARY 2026

- 15 - 17 Advanced Gynecology met Colette Peeters D.O., MSc.
- 29 - 31 Oog-, Gehoor- en evenwichtsonderzoek met Raymond Mertens D.O. & René Zweedijk D.O.
- 30 - 31 Plexus lumbosacralis, lage rug- en beenklachten met Ad Warmerdam D.O.

FEBRUARY 2026

- 2 - 3 Trauma therapie bij baby's met Rien Verdult
- 5 - 7 Urogenital Manipulations for Female / Male Pelvic Disorders with Olivier Bazin D.O.
- 5 - 7 NEI in de osteopathie; de rol van het autonome zenuwstelsel met René Zweedijk D.O.
- 26 - 28 Abdominal Brain with Nathalie Camirand D.O. | LOCATION NICE, FRANCE

MARCH 2026

- 5 - 7 Masterclass in Womens Health with Monika Ebner D.O.
- 16 - 17 Geriatrics in Osteopathy with Joseph Gill-Lussier D.O.
- 19 - 21 Advanced Volumetric Approach with Joseph Gill-Lussier D.O.
- 19 - 21 Balanced Ligamentous Tension Technique with Paolo Tozzi D.O.
- 26 - 28 Fluidic approach to treatment of connective tissue with Jane Stark D.O.
- 26 - 28 Masterclass in pediatrics with Eva Möckel D.O.



APRIL 2026

16 - 18

Why and how to increase the effectiveness of osteopathy by controlling inflammation due to dysbiosis with Dr. Bruno Donatini D.O.

MEI 2026

7 / 11 jun.

Osteopathie , voeding en leefstijl met Christel Stevens

21 - 23

Osteopathic Treatment on the lumbar disc herniations with David Lachaize D.O.

21 - 23

Scientific Approach to Scars, Adhesions and the Neurobiology of Pain with Susan Chapelle D.O.

28 - 30

Een integratieve reis doorheen de viscerale osteopathie met Luc Fieuw D.O.

28 - 30

NEI in de osteopathie; de rol van het hormonaal en immuun systeem met René Zweedijk D.O.

JUNI 2026

4 - 6

Learn how to manipulate Tall and Heavy Patients with Ease by Lucia Pereira D.O.

5 - 6

Advanced Spinal Manipulation Course 2 - Advanced with Daryl Herbert D.O.

15 - 18

Het Embryo in Ons - De Mens als Embryo met Jaap van der Wal PhD

28 - 30

NEI in de osteopathie; de rol van het hormonaal en immuun systeem met René Zweedijk D.O.

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READ ON YOUR BEHALF...

How one goes through the check-out three times |

Original title: From unhealthy snacks to weight-loss drugs | René Zweedijk D.O.

Published in Ned Tijdschr Geneeskd. 2024(168:C5723)

Authors: Irene van den Berg and Mathilde de Jeu.

In the Dutch Journal of Medicine, Irene van de Berg and Mathilde de Jeu question the *modus operandi* of food giants. A number of food giants produce unhealthy food while investing in slimming products and medicines such as for people with diabetes. Big Food thus earns double, just like the tobacco industry.

US dietician Leona West Fox is cited as an example. 'Lemme Burn is the best fat burner I have seen in my career as a nutritionist,' she jubilates. 'Lemme Burn' appears to be a Unilever product. The product is said to suppress hunger pangs, burn belly fat and fight cellulite, and for about 1260 euros a year..... Unilever, a company known for products such as mayonnaise, smoked sausage and ice cream is creating its own market this way. 18% of all foods produced by Unilever are found to be able to carry the "healthy" label, according to a 2021 study by Access To Nutrition Initiative (ATNI), an independent organisation that investigates food companies.

Five of the 10 largest producers of ultra-processed food invest in products used by people who eat unhealthily or are overweight. These include weight-loss products, medical foods for diabetics and dietary supplements for digestive problems. In addition to Unilever, they include Nestlé, Mars, Danone and The Kraft Heinz Company.

Professor of diabetology Hanno Pijl calls this morally deeply reprehensible and that they are making money through the back door on an obesity epidemic that they have partly caused themselves he calls "shocking"



Passing the checkout twice

'Morally highly reprehensible,' responds Hanno Pijl, professor of diabetology at Leiden University and internist-endocrinologist at Leiden University Medical Centre (LUMC). According to him, food companies are major drivers of the obesity epidemic. People pass the checkout twice this way. We also see a similar process in the tobacco industry which makes money from substances caused or exacerbated by smoking.

The big players in the food market often produce unhealthy snacks, such as chocolate bars, pizzas and drinks that are high in sugar, but also products that you would not immediately expect to be unhealthy, such as ready-made meals, sauces, sandwiches, breakfast cereals and dairy products. 61% of the Dutch get their energy from ultra-processed food. This is high in salt, sugar and low in healthy ingredients such as fibre, protein, vitamins and good fats. This appears to be as addictive as smoking according to a conclusion published in the British Medical Journal. People who consume ultra-processed food are 50% more likely to suffer from cardiovascular disease, 22% more likely to suffer from depression and are also more likely to develop DM type 2.

Researchers found some 76 companies producing slimming products in which one of the 10 largest food firms has invested. For example, Nestlé sells a drinking breakfast called Resource Diabetic, a meal replacement, which is available in the Netherlands without a prescription. Nestlé also sells tube food for diabetic patients as does Nutricia, a subsidiary of Danone. Unilever appears to be a shareholder in a British pharmaceutical company that produces diabetes medication.

It also produces nutritional products such as 'Vital Pursuit' for Ozempic and Wegovy users.... THREE times past the cash register so.... Hanno Pijl finds it scandalous that the government is not intervening. Nestlé recorded a turnover of 95 billion euros in 2023, Danone of 28 billion.....the company is paying for the consequences of this turnover....

All in all, a very worrying development that politicians should take note of and take action against.



René Zweedijk D.O.

Immediately after graduating, René began teaching at the physiotherapy program in Vlissingen. Even after obtaining his osteopathy diploma, he was invited to teach in the basic osteopathy program. In addition to practical subjects, he taught physiology and neurophysiology. After eleven years of teaching in the basic program, René began organizing postgraduate courses in 2000. He is a highly sought-after international lecturer, frequently speaking at conferences and delivering courses and workshops. In addition, René is the editor-in-chief of the PRO Osteo magazine.

ARTICLE

Dyspareunia in al zijn aspecten: ‘a painful affair’

Osteopathy and Sexual Health Issues in Individuals with Female Bodies.

by Colette Peeters D.O., MSc

Inleidingen

Sexual health is a fundamental aspect of human well-being, yet it is often insufficiently addressed or acknowledged in both medical and osteopathic practice. In individuals with female bodies, sexual complaints such as dyspareunia—pain during sexual intercourse—frequently go underdiagnosed and inadequately treated. This under-treatment stems not only from medical shortcomings but also from cultural and historical factors that have minimized female pain and sexuality (Kedde et al., 2012; Brotto & Smith, 2014).

Although the pathologization of female emotions as "hysteria" largely belongs to the past, current approaches still fall short in addressing complex complaints lacking clear biomedical correlates. Functional pain syndromes and hormonal imbalances are often misinterpreted or ignored, leading to delayed diagnoses or suboptimal care (Mitchell et al., 2017; Nunns et al., 2006).

Dyspareunia is estimated to affect 10 to 15% of sexually active women worldwide at some point in their lives (Harlow & Stewart, 2003). Other sexual dysfunctions—such as vaginismus, anorgasmia, loss of libido, and lubrication disorders—are also common, with significant consequences for psychological well-being, relationships, and overall quality of life (Brotto et al., 2010; Reissing et al., 2004).

There is a pressing need for a broader, integrative approach to sexual pain that acknowledges the complexity of the female body and its psychosexual context. Osteopathy, with its holistic perspective and functional focus, has the potential to offer valuable complementary insights—especially when integrated within a multidisciplinary framework.

Definition: What is dyspareunia?

Dyspareunia refers to persistent or recurrent pain during sexual intercourse. This pain may be superficial—located at the vulva or vaginal introitus—or deep, felt in the vaginal apex or the pelvis during deep penetration. Both types may occur independently or simultaneously and have a wide range of causes, including infections, hormonal imbalances, visceral dysfunctions, muscular issues, neurological disorders, or psychological factors (Harlow & Stewart 2003).

A distinction is made between:

- Primary dyspareunia: pain that is present from the first sexual experience.
- Secondary dyspareunia: pain that develops after a period of pain-free intercourse, often due to trauma, surgery, infections, underlying pathology, hormonal changes, or psychosexual factors (Leusink & van Lankveld 2018).

Aetiology

The causes are often multifactorial and complex.

Superficial dyspareunia

This refers to pain experienced during initial penetration during intercourse. Inserting a tampon or menstrual cup can also be painful. Possible causes of superficial dyspareunia, which may also be present in cases of deep dyspareunia and vice versa, include:

Vaginismus

Persistent, involuntary contraction of the vaginal pelvic floor muscles that hinders penetration; often related to anxiety or sexual trauma (Reissing et al., 2004; Crowley & Trudel, 2006; Glazer et al., 1995). Treatment is multidisciplinary, involving sex therapy, cognitive behavioral therapy, pelvic floor therapy, and gradual dilation. Vaginal and anal osteopathic techniques can provide targeted stretching to the puborectococcygeus, m iliococcygeus, m coccygeus, m ischiocavernosus, m bulbospongiosus, anococcygeal ligament, piriformis, and obturator internus muscles. Success rates range from 60–90% with an integrated approach (Berghmans & van Doorn, 2007).

Vulvodynia

Chronic vulvar pain without a clear somatic cause, characterized by peripheral and central sensitization and psychosocial contributing factors (Haefner et al., 2007; Bornstein et al., 2016; Pukall et al., 2016). Pain is often described as burning, stinging, or abrasive, and may be spontaneous or triggered by touch, typically localized to the vestibule or clitoral area without visible abnormalities (Leclair et al., 2011). Diagnosis is by exclusion, often via a positive Q-tip test with a normal clinical presentation. Treatment requires a biopsychosocial approach, including education, pelvic floor therapy, cognitive behavioral therapy, pharmacological support (e.g., TCAs), and in some cases neuromodulation or local therapies (lidocaine, hormonal creams) (Pukall et al., 2016). In our osteopathy practice, we emphasize lifestyle modifications to improve the vaginal microbiome. Appropriate nutrition can

enhance vaginal and intestinal flora.

Provoked Vestibulodynia (PVD)

Pain upon touch in the vestibular area due to nociceptive hypersensitivity and local inflammation, often diagnosed using the Q-tip test (Bornstein et al., 2016; Morin et al., 2021). Treatment is multidisciplinary and may include local anesthetics (e.g., lidocaine gel), gabapentin cream (for neuropathic pain), hormonal therapy (e.g., Aacifemine cream containing estriol), pelvic floor physiotherapy, and cognitive behavioral therapy. In our practice, we use gentle internal osteopathic techniques aimed at optimizing the mobility and tone of muscles and fascial structures in the pelvis. Vaginal and anal techniques help reduce muscular hypertonicity. We also apply techniques to promote venous and lymphatic drainage in the pelvic region. These decongestive methods improve circulation and reduce vascular stagnation, with special attention to female erectile tissues (bulbus vestibuli, crura clitoridis). Restoring circulatory balance in these tissues may help relieve congestive pelvic pain and improve sexual function (Morin, M., et al., 2021). In therapy-resistant cases, vestibulectomy may be considered (Bergeron et al., 2020; Pukall et al., 2016).

Lubrication issues

Lack of vaginal lubrication, often hormonally induced (e.g., due to contraception, peri-/menopause), causes friction and pain during sexual activity (Kingsberg et al., 2019; Nappi & Palacios, 2014). In cases of atrophy (e.g., peri-/menopause), consider local oestrogens like Aacifemine cream or ovules. A good lubricant, such as KY gel by Johnson & Johnson, is essential.

Low libido in women

Hypoactive sexual desire due to hormonal, psychological, or relational factors, often interacting with dyspareunia (Clayton et al., 2018; Brotto & Luria, 2014; Kingsberg & Clayton, 2015). Treatment requires a multidisciplinary approach including hormonal evaluation, psychosexual counseling, osteopathic treatment, pelvic floor therapy, and cognitive behavioral therapy (Kingsberg & Clayton, 2015).

Orgasmic disorders

Orgasmic disorders (10–42%) may stem from neurological, hormonal, or psychological causes and significantly affect sexual satisfaction (Hayes et al., 2008; Clayton et al., 2014; Bancroft, 2009; Levin, 2011). In our practice, we emphasize sexual education, anatomical understanding (clitoral orgasm), and normalization of sexual variation (Levin, 2011). For relational or psychological causes, couples therapy, cognitive behavior therapy, or trauma treatment (e.g., EMDR) is effective. Consider dosage adjustment or medication switch in drug-related cases. Additional interventions include clitoral stimulation, improved communication, extended foreplay, osteopathic pelvic techniques, and pelvic floor therapy..

Lichen Sclerosus

Lichen sclerosus is a chronic inflammatory skin condition of the vulva that causes dyspareunia and anatomical changes, with risk of malignancy if diagnosed late (Haefner et al., 2007; Neill et al., 2010; Lee & Fischer, 2015). Patients often present in our clinic with vulvodynia, dyspareunia, and coccygodynia due to anterior pulling of the coccyx and hypertonicity of the sphincter and anococcygeal ligament. A thorough history and visual inspection are essential in osteopathic practice. This condition requires referral to a dermatologist for biopsy and diagnosis.

ARTICLE

Recurrent Vulvovaginal Candidiasis (RVVC)

RVVC (≥ 4 episodes/year) increases the risk of vulvodynia and PVD due to chronic inflammation and sensitization of vestibular mucosa (Sobel, 2007; Bohm-Starke et al., 2001; Leclair et al., 2011). Chronic candidiasis may trigger peripheral sensitization through increased nociceptor density and ongoing inflammatory responses, as well as microbiome disruption (vaginal and anal). We complement manual osteopathic treatment with lifestyle guidance and education.

Vaginal microbiome

A healthy vaginal microbiome, dominated by lactobacilli, protects against infections and dyspareunia; dysbiosis raises the risk of symptoms and subfertility (Isala, UZA).

Bacterial vaginosis (BV)

BV is a dysbiosis marked by reduced lactobacilli and anaerobe overgrowth, partially sexually transmissible, and treatable with partner therapy (Fredricks et al., 2007; Vodstrcil et al., 2025). Though not a classical STI, sexual transmission plays a role. Non-sexual factors like IUD use, smoking, and hygiene also affect risk.

Sexually Transmitted Infections (STIs)

STIs such as herpes genitalis and trichomoniasis cause dyspareunia via mucosal ulcers or superficial infections of the vagina and vulva (Workowski et al., 2021; Van der Pol, 2020). Trichomoniasis typically presents with yellow-green, malodorous discharge, irritation, and superficial dyspareunia (Van der Pol, 2020).

Scarring and female genital mutilation (FGM)

Scars from episiotomy or FGM can cause chronic dyspareunia and pelvic floor dysfunction; deeper injuries like m puborectalis tears are often missed (Fritel et al., 2010; Laws et al., 2018; Rosenbaum, 2007). A thorough postnatal osteopathic evaluation is essential when symptoms persist. FGM is a severe human rights violation with acute and chronic medical, psychosexual, and obstetric complications (WHO, 2008; Berg & Denison, 2013; Creighton et al., 2012; Behrendt & Moritz, 2005). Manual osteopathic techniques for scar adhesions and pelvic issues are critical.

Hymenal anomalies and residual tissue

Congenital or post-traumatic hymenal anomalies, such as septate or residual tissue, can cause dyspareunia or menstrual issues and may require surgical correction (Rock et al., 2011; Posner & Spandorfer, 2005; ACOG, 2018). Clinical evaluation and imaging are indicated if anatomical abnormalities are suspected.

Congenital vaginal anomalies

Congenital vaginal anomalies result from Müllerian duct development issues, ranging from hypoplasia to agenesis, often with urogenital abnormalities (ACOG, 2018). Mayer-Rokitansky-Küster-Hauser syndrome typically causes amenorrhea and dyspareunia; treatment ranges from dilation (internal osteopathic techniques) to vaginoplasty (Grimbizis & Campo, 2010; Practice Committee of the ASRM, 2017). Diagnosis includes history, gynecological exam, and imaging.

Vaginal atrophy in (peri-)menopause

Oestrogen decline in (peri-)menopause leads to vaginal atrophy with thinner epithelium, reduced lubrication, and higher dyspareunia risk (Portman & Gass, 2014; Palacios et al., 2015; North American Menopause Society, 2020). In our practice, we prioritize education on menopausal and genitourinary changes in close collaboration with gynaecologists and tertiary centers like University Hospital Ghent. We frequently recommend the writings of Prof. Dr. Depypere, who explains hormonal changes and menopausal care in a scientifically grounded, patient-accessible way.

Urinary tract infections and sexual pain

Urinary tract infections, most commonly caused by *E. coli*, can induce dyspareunia through local inflammation and mucosal irritation (Flores-Mireles et al., 2015).

Type 1 Diabetes and Dyspareunia

Women with type 1 diabetes have up to three times higher risk of dyspareunia due to vaginal dryness, fatigue, and psychosexual stress (Hashim et al., 2023; Hashim et al., 2025)

Dyspareunia in trans women after surgical transition

Trans women who have undergone vaginoplasty may experience dyspareunia due to scarring, stenosis, muscular tension, or neuropathic pain (van der Sluis et al., 2020). Regular dilation, internal osteopathic techniques to improve range of motion and vascularization, and appropriate sexual counseling are essential components of postoperative care.

Dyspareunia in ovotesticular syndrome

Ovotesticular syndrome is a disorder of sex development featuring both ovarian and testicular tissue. Anatomical variations, hypoplastic vagina, or postoperative scarring can cause dyspareunia (Lee et al., 2016). Hormonal imbalance, reduced tissue elasticity, and psychosexual factors can exacerbate symptoms. Multidisciplinary care is essential.

Deep Dyspareunia

Is experienced during deep penetration, typically during thrusting. The pain is felt in the vaginal apex, the pelvis, the lower abdomen, or even across the entire abdominal region. It may occur alongside superficial dyspareunia, but this is not always the case.

It is often caused by mechanical pressure from the penis, dildo, or fingers on structures or viscera with reduced range of motion (ROM), and thus lacking normal resilience and elasticity. This can result from, for example, a fixed uterus, various pathologies, adhesions, or fibrotic tissue. It is crucial to emphasize that this is often a mechanical issue — it does not originate “in the mind.” Of course, physical and psychological elements are frequently intertwined.

The causes of deep dyspareunia are aetiologically diverse.

his refers to pain experienced during initial penetration during intercourse. Inserting a tampon or menstrual cup can also be painful. Possible causes of superficial dyspareunia, which may also be present in cases of deep dyspareunia and vice versa, include:

Endometriosis

Endometriosis causes dyspareunia through inflammation, adhesions, and reduced pelvic organ mobility. It is frequently underdiagnosed due to delayed recognition and fragmented care (Zondervan et al., 2020; Bulun, 2009; Missmer et al., 2014). Inelasticity, anatomical deformation, and adhesions in the pelvis-abdomen significantly contribute to dyspareunia but are rarely evaluated through palpation or mobility testing by the average physician or gynaecologist. This is precisely where advanced anal and vaginal osteopathic examination techniques offer added value, supported by pathological knowledge and clinical experience. An integrated approach focusing on functional limitations and interdisciplinary collaboration is essential for timely diagnosis and effective treatment.

Adenomyosis

Adenomyosis leads to deep dyspareunia due to inflammation, fibrosis, and a poorly mobile, enlarged uterus. Hysterectomy is the only curative option in therapy-resistant cases (Vannuccini & Petraglia, 2019; Gupta & Rosenberg, 2020; Bergeron et al., 2006). Osteopathic techniques that improve uterine and ligament mobility may provide temporary symptom relief. However, manual therapy has limited effect on heavy clotting-related bleeding.

Gynaecological cancers

Dyspareunia can result from tumor growth, surgery, radiotherapy, and scar tissue formation in pelvic structures (Janda et al., 2013). HPV types 16 and 18 account for over 99% of cervical cancers and contribute to vulvar and vaginal cancers (Schiffman et al., 2007). Ovarian cancer is often detected late, leading to spread and more complex treatments (Torre et al., 2018). Osteopathy may help alleviate functional complaints such as reduced pelvic mobility (Arienti et al., 2018).

Pelvic Inflammatory Disease (PID)

PID causes inflammation and adhesions in the fallopian tubes and ovaries, leading to dyspareunia and infertility (Workowski et al., 2021; Haggerty et al., 2010). Chronic pelvic pain and anxiety exacerbate sexual dysfunction (Gottlieb et al., 2020). Asymptomatic infections, particularly with Chlamydia trachomatis, often result in delayed diagnosis and the need for IVF.

ARTICLE

Ovarian cysts

Cysts can cause dyspareunia through local compression, inflammation, or ligament stretching (Zhou et al., 2021; Kok et al., 2020). Endometriomas and dermoid cysts often lead to pressure pain or torsion. Large cysts impair pelvic organ mobility and increase deep coital pain. They may also cause ovarian torsion, which is a medical emergency.

Myomas (Fibroids, Leiomyomas)

Myomas can lead to dyspareunia through mechanical pressure from an enlarged, rigid uterus or through restricted uterine mobility (Baird et al., 2003; Berek & Novak, 2012).

Pelvic Congestion Syndrome (PCS) and postcoital pain

PCS causes postcoital dyspareunia due to increased venous pressure and varicosities varices in de.v. ovarica, v uterina, v iliaca interna, especially in multiparous women (Beard et al., 1984; Ignacio et al., 2008). Sexual arousal and orgasm raise venous pressure, leading to dyspareunia lasting hours to days. Osteopathic decongestion techniques and internal manipulations offer significant benefit in these cases.

Irritable Bowel Syndrome (IBS) and deep dyspareunia

IBS causes deep dyspareunia through visceral hypersensitivity, decreased bowel mobility, and pelvic floor hypertonicity (Lennon et al., 2010). Vaginal penetration may cause contact with a distended or firm rectosigmoid, caecum, or small intestine, triggering bowel-originating pain. Bladder pathologies like interstitial cystitis, bladder cancer, or grade 3 cystocele can also cause mechanical pain during sexual activity.

Adhesions and deep dyspareunia

Adhesions following infection, endometriosis, or surgery reduce organ mobility, leading to mechanical dyspareunia (Liakakos et al., 2001). A uterus in fixed retroversion—due to congenitally short uterosacral ligaments or adhesions from endometriosis or large posterior myomas—can cause intense deep dyspareunia, particularly in positions involving deep penetration.

Postnatal dyspareunia: An underestimated issue

Up to 62% of women experience dyspareunia within three months postpartum, with 22% reporting symptoms up to 18 months (Barrett et al., 2000). Causes include hypoestrogenism (e.g., due to breastfeeding), perineal trauma, scarring, reduced lubrication, altered visceral ROM, and psychosocial stress (Andrews et al., 2008). Often underreported, postnatal dyspareunia requires a multidimensional approach. Specialized osteopathic techniques provide added value. Postnatal care often centers on the baby, with the mother's needs being overlooked.

Human Papillomavirus (HPV)

HPV is associated with various genital and oropharyngeal cancers. Despite vaccination programs, sexual education and tailored follow-up are essential, particularly for preventing postoperative dyspareunia (Drolet et al., 2019).

Conclusion: Dyspareunia and its aetiology

Dyspareunia should be approached through a multidimensional explanatory model in which structural (anatomical and pathological), neurophysiological, psychological, and socio-cultural factors are understood as interconnected determinants.

Dyspareunia is a complex symptom arising from the interaction of somatic, neurological, psychological, and socio-cultural components. Neuropathic pain—such as pudendal neuralgia or central sensitization—can amplify the perception of pain (Petersen et al., 2017; Klifto et al., 2021).

Psychological factors including sexual trauma, anxiety, PTSD, and depression contribute to increased pelvic floor muscle tension, reduced lubrication, and avoidance behaviors (Bergeron et al., 2015). Cultural influences, such as negative sexual socialization or female genital mutilation, further exacerbate pain and shame related to sexuality (WHO, 2008; Berg & Denison, 2013).

A biopsychosocial model is essential for comprehensive assessment and effective treatment.

Diagnosis

Sexual anamnesis and Dyspareunia: A multidimensional approach

In osteopathic practice as well, a targeted sexual anamnesis is crucial for identifying underlying causes. An effective history should address multiple dimensions: physical, psychological, relational, sexual, and socio-cultural factors.

Symptom analysis and course

- Duration and progression of symptoms: are they persistent or situational?
- Specific triggers: do symptoms occur during all sexual activities or only with certain acts?
- Severity and subjective distress experienced by the patient and her partner.

Sexual function

- Assessment of sexual desire, arousal, lubrication, and the ability to achieve orgasm.
- Ability to engage in intercourse and possible fear of sexual activity, pain, STIs, or pregnancy.
- Identification of aspects of sexuality that are still functioning well.

Psychological and relational factors

- Presence of psychological stressors such as anxiety, depression, or PTSD.
- History of sexual abuse, rape, or other negative sexual experiences.
- Relationship issues and sexual dysfunction in the partner.

Medical and gynaecological anamnesis

- Previous gynaecological conditions or surgeries such as endometriosis, vulvodynia, or pelvic floor disorders.
- Use of medications, including antidepressants (e.g., SSRIs), that may affect sexual function.
- Presence of comorbidities such as diabetes mellitus or cardiovascular disease.

Socio-cultural influences

- Upbringing, religious or cultural beliefs influencing sexual perception and experience.
- Experience with female genital mutilation (FGM) and its impact on sexuality.

Specific symptom assessment

- Pain localization: vulva, introitus, deep vaginal, or lower abdominal.
- Timing of the pain: during or after intercourse, or also during other activities such as tampon or menstrual cup use.
- Presence of urinary or bowel symptoms, incontinence, or other vaginal complaints such as itching or discharge.

A systematic and empathetic approach to these domains is essential for accurate diagnosis and effective treatment of dyspareunia in our osteopathic practice.

Physical examination

A systematic and respectful physical examination is essential for identifying anatomical, visceral, neurological, or musculoskeletal causes of dyspareunia, with special attention to the loss of range of motion (ROM), which can be evaluated through osteopathic techniques. Always obtain informed consent prior to examination and treatment.

Inspection of the external genitalia

Inspect the vulva, perineum, and anus for erythema, scarring, atrophy, or lesions. If vulvodynia or vestibulitis is suspected, perform the cotton swab test.

ARTICLE

Pelvic Floor examination and palpation of all pelvic structures

A digital vaginal examination is crucial for assessing the pelvic floor muscles. Palpation of all structures within the pelvic cavity helps identify restricted ROM, muscle tension, trigger points, and asymmetry. Internal vaginal and anal osteopathic techniques are necessary for this assessment. A rectovaginal examination can be useful when posterior compartment involvement is suspected, such as deep infiltrating endometriosis. Assess the patient's ability to contract and relax the pelvic floor muscles as well.

Speculum examination and vaginal/anal examinations

In cases of dyspareunia, a comprehensive gynaecological examination is recommended, including a speculum examination, vaginal, anal, and abdominal palpation. Look for signs of endometriosis, fibroids, cervical abnormalities, and adnexal masses.

Neurological evaluation

Test sensory function in the perineal and vulvar areas to rule out pudendal neuralgia or other neuropathic pain syndromes.

Trauma-informed approach

Use clear explanations, mirror techniques, and respect patient boundaries — this is especially essential when there is a history of sexual trauma.

A comprehensive, integrative approach is essential for diagnosis and treatment planning.

Additional investigations in dyspareunia

Additional diagnostic testing is often necessary in dyspareunia, due to its multifactorial aetiology. Following thorough anamnesis and osteopathic assessment, laboratory testing (e.g., STI screening), imaging (ultrasound, MRI), vulvoscopy, hysteroscopy, or laparoscopy may be indicated.

Targeted referrals require clinical osteopathic expertise, diagnostic knowledge, and the ability to write well-founded medical referral letters.

In our practice, we collaborate closely with specialized physicians — gynaecologists, fertility specialists, abdominal surgeons, urologists, and emergency physicians — ensuring prompt and safe care for both chronic and acute complaints.

My area of expertise lies in vaginal, anal, and abdominal examinations, which allow precise identification of decreased ROM and pain points deep in the pelvis. Recognizing the punctum maximum of pain and mobility restriction enables the formulation of a targeted treatment plan using both internal and external osteopathic techniques.

When symptoms persist despite treatment, I refer patients appropriately, equipped with knowledge of the most relevant tests and medical disciplines. If no somatic cause is found, psychosexual support is recommended.

Dyspareunia and the lack of holistic care:

“Pain during sex? Just forget about it.”

Dyspareunia and the absence of holistic care

Pain during sex is widespread but too often ignored or approached solely from a medical perspective. The integration of osteopathy offers hope. It is crucial that women are not only heard medically but also emotionally and relationally. The inclusion of osteopathy is valuable, offering a broader perspective on the body.

The role of osteopathy in dyspareunia

In osteopathy, the body is approached as a functional whole, where symptoms are understood in relation to underlying restrictions in movement and functional imbalances. Dyspareunia is rarely an isolated issue. It is often the result of a combination of hormonal, neurological, vascular, and biomechanical factors, sometimes linked to a specific pathology. (Degenhardt, B. F., et al 2007 ; King, H. H., & Jänig, W. 2001).

In our practice, we have been treating patients with chronic pelvic pain, endometriosis, infertility, and sexual dysfunctions for over 29 years. This experience has shown us that osteopathy—especially when integrated into a multidisciplinary framework—can be a valuable addition to the care pathway.

Osteopathic treatment focuses on restoring the mobility and function of all structures that may be associated with sexual problems. Through gentle internal and external osteopathic techniques, loss of range of motion (ROM) in fasciae, ligaments, viscera, and musculoskeletal structures is addressed, influencing the lymphatic system, vascularization, metabolism, as well as biopsychosocial, neurological, and endocrine functions.

Because dyspareunia has multifactorial causes, treatment varies greatly between patients. Osteopathy provides a hands-on, individualized approach that not only aims for symptomatic relief but also focuses on restoring the body's functional balance. Interim evaluation is essential. By addressing the underlying physical dysfunctions, osteopathy offers a meaningful complement to conventional care in the multidisciplinary management of dyspareunia and other sexual dysfunctions.

Collaboration is key in addressing “The Dark Underside”

Making sexuality a topic of conversation is just as important as treatment. Many patients live for years with shame, misunderstanding, or a distorted perception of what is “normal.” As an osteopath, you can make a real difference by asking open, neutral, and respectful questions. This requires practice, ethical reflection, and knowledge.

An integrated approach is essential. As an osteopath, you have the advantage of being able to take time, apply gentle manual techniques to influence ROM, and build trust with your patients. The interdisciplinary collaboration within our clinic illustrates how the gap between protocol-driven and more functionally oriented care can be bridged.

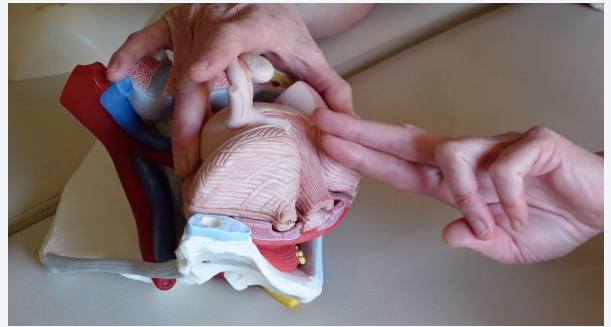


Figure 1. Internal technique to test the ROM of Douglas.

Multidisciplinary treatments

The treatment of dyspareunia requires a multidisciplinary approach, including osteopathy (as discussed above):

Pharmacological:

- Topical creams are effective in cases of vulvodynia and vaginal atrophy.
- Oestrogen therapy improves mucosal health in cases of hypoestrogenism.
- NSAIDs are used for pain relief, though with variable effectiveness (eshre.eu).
- Specific therapies are necessary for underlying conditions such as endometriosis or infections.

Physiotherapy:

- Pelvic floor therapy improves muscle function and promotes relaxation.
- Dilators and trigger point therapy help reduce tension and pain.

Psychological and Sexological Counseling:

- Cognitive Behavioral Therapy (CBT), Eye Movement Desensitization and Reprocessing (EMDR), and sex therapy support the processing of psychosexual factors (eshre.eu).
- Relationship counseling can address dynamics with the partner.

Surgical

- Indications include endometriosis, adenomyosis, gynaecological pathologies, adhesions, or anatomical abnormalities (eshre.eu).
- Laparoscopy is recommended when structural pathology is suspected.

An integrated approach significantly increases the likelihood of recovery in cases of dyspareunia.

Challenges in the diagnosis and treatment of dyspareunia

Dyspareunia is often inadequately addressed in clinical practice due to a lack of targeted knowledge, persistent myths (e.g., penetration as a prerequisite for orgasm), and insufficient recognition of the condition's biopsychosocial complexity. Non-evidence-based advice—such as stimulating libido with pornography or enhancing “romance”—is frequently inadequate, especially when physical causes like endometriosis are present.

An effective approach requires a multidisciplinary perspective that acknowledges medical, psychological, and relational factors. Osteopaths must utilize practical tools to facilitate open discussions about sexuality, with attention to safety, screening, and res

respectful communication.

Chronic pain during sex often results in avoidance, loss of desire, and a disconnection from sexual identity. Dominant cultural norms that prioritize penetration intensify these issues. In conditions like vulvodynia, endometriosis, and others, a treatment model focused solely on penetration may be counterproductive.

An inclusive approach—one that frames sexuality as a broad spectrum—can help restore sexual autonomy and well-being. The focus shifts from penetration to pleasure, connection, and self-agency in sexual experiences.

The fake orgasm as a symptom: between misconceptions, culture, and anatomy

The female orgasm is often misrepresented in media and culture, with persistent emphasis on penetration as the norm. This myth is anatomically incorrect: the female orgasm primarily depends on clitoral stimulation, not vaginal penetration (O'Connell et al., 2005). The clitoris contains over 8,000 nerve endings, while the vaginal wall is relatively insensitive.

Many women fake orgasms for social or relational reasons, such as partner-pleasing or avoiding discomfort (Muehlenhard & Shippee, 2010). This behavior reflects cultural norms that subordinate female sexuality.

The “orgasm gap”—the discrepancy in orgasm frequency between men and women in heterosexual relationships (90% vs. 30–40%)—is well documented (Frederick et al., 2018; Armstrong et al., 2012). In lesbian relationships, where clitoral stimulation and communication are more central, the rate rises to as high as 86% (Garcia et al., 2014). These differences are rooted in gender norms and sexual scripts that center around penetration.

Misconceptions such as the idea of “20 types of orgasms” create unrealistic expectations. Accurate sexual education must distinguish between pleasure and orgasm, and acknowledge the central role of the clitoris.

A culturally sensitive, anatomically accurate, and inclusive approach to female sexuality is essential to reducing the orgasm gap and promoting sexual autonomy.

Practical guidelines for osteopathic practice in the management of dyspareunia: An integrated approach. Patient-Centered Advice:

- **Communication:** Encourage open discussions with both the partner and healthcare provider about pain, emotions, and expectations. This fosters trust and prevents misunderstandings.
- **Use of lubricants:** Applying a pH-friendly, water-based lubricant can alleviate dryness or sensitivity, especially in cases of hypoestrogenism or vaginal atrophy.
- **Foreplay and arousal:** Extended arousal improves vascular response in the pelvic region and enhances vaginal lubrication, which is essential for pain-free sexual activity.
- **Intimacy over performance:** Promote a concept of sexuality focused on pleasure, connection, and safety rather than goal-oriented behaviors like penetration or orgasm.
- **Breathing and relaxation:** Diaphragmatic breathing helps reduce pelvic floor tension and supports parasympathetic nervous system activation for relaxation.
- **Body positioning:** Recommend sexual positions that minimize pressure on the pelvis and suggest the use of pillows or supports to improve comfort.
- **Pain as a signal:** Pain should never be ignored or pushed through during sexual activity. It is a protective signal that must be respected.

Guidelines for Osteopaths:

- **Validate the Patient's experience:** Acknowledge sexual pain and dysfunction, even in the absence of visible structural abnormalities on imaging. Functional limitations may still be present and clinically relevant.
- **Ensure a safe therapeutic environment:** Transparency, informed consent, and clear communication are essential, especially when using internal techniques or working with patients with a history of trauma.
- **Multidisciplinary collaboration:** Working closely with sexologists, pelvic floor physiotherapists, gynaecologists, and psychologists enhances treatment efficacy and care continuity.
- **Structured treatment and follow-up:** Dyspareunia often requires long-term care. Regular reassessment of symptoms, range of motion (ROM), and coping strategies is key.
- **Partner involvement:** When appropriate, involving the partner can improve mutual understanding, promote shared responsibility, and enhance treatment outcomes.

ARTICLE

The power of dialogue and education: Gender-Related blind spots in medical science and the need for an inclusive perspective

Medical science has historically been androcentric, resulting in the underrepresentation of women in clinical research and a limited understanding of female anatomy—particularly regarding pelvic health. Symptoms such as dyspareunia, dysuria, and menstrual pain remain underreported due to persistent social taboos, often leading to delayed diagnosis and inadequate treatment.

Cultural restrictions, insufficient knowledge about the clitoral orgasm, and the complexity of hormonal cycles further deepen this knowledge gap. Although the number of female physicians continues to grow, a fully integrated sex- and gender-specific medical model is still lacking.

A gender-inclusive approach—one that recognizes and respects sex- and gender-related differences—is essential to improving the quality of healthcare for all individuals. The development of sex-specific medicine and inclusion of these principles in research and clinical practice are crucial steps forward (WHO, 2020).

Conclusion

Dyspareunia is a frequently overlooked condition with both somatic and psychosexual components, requiring a multidisciplinary, biopsychosocial approach. Osteopathy can serve as a complementary therapy by using manual techniques to address fascial tension, visceral mobility, and pelvic function, thereby supporting recovery.

Sexual health is not a luxury—it is an essential part of overall well-being and deserves open, empathetic, and expert care. Osteopaths can play a bridging role by combining physical treatment with patient education and validation.

Acknowledging a patient's pain is often the first step toward healing: "My pain finally had a name!"

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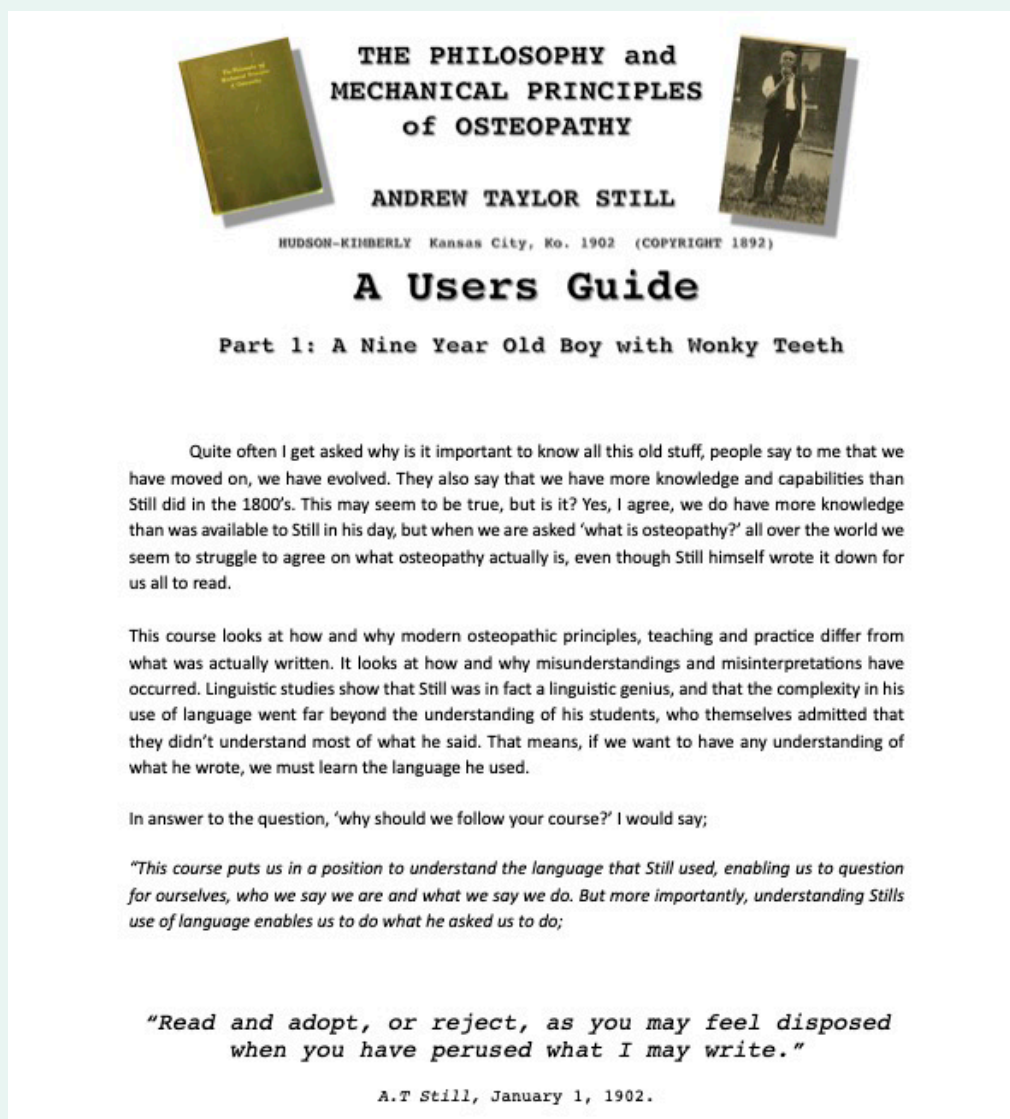
Colette Peeters D.O., MSc. Ost.

Colette Peeters (DO—MSc. Ost.) is an international authority in the osteopathic treatment of gynecology and infertility. She has nearly 30 years of experience in patient care, first as a physiotherapist (1991) and later as an osteopath (1996).

In recent years, she has conducted extensive osteopathic research involving 254 endometriosis patients. During this time, Colette has specialized in an innovative branch of osteopathy: internal vaginal and anal osteopathic treatments.

For related references and literature, please refer to:
<https://pro-osteo.com/referentie-pro-osteo-magazine/>

COURSE



Course

This course will be held at Panta Rhei on October 30 til November 1st. More information can be found on www.pro-osteo.com.

Richard Douglas D.O has been practicing osteopathy since 2008 and graduated from the full-time course at the I.A.O in Gent. I now live and work in Breda. Originally from the U.K. I left the U.K. at the age of 22 to go to the Netherlands to follow my dream of becoming a professional cyclist. After realising that it wasn't meant to be, I remained in cycling by working with the Rabo-bank cycling team from 1998 to 2008. During my time there it became clear to me there was more to be achieved than just massaging tight muscles and so I went down the path called Osteopathy.

However, Osteopathy didn't make that much sense to me, admittedly starting a full-time study at 30 years old was a struggle. I tried to be smart by reading Still's Philosophy and Mechanical Principles before I started my osteopathic training in 2002 to try to get a head start, I quickly realised that I had no clue what this book was about and that it wasn't going to help me in any way.

The book ended up on the shelf where it remained for many years. In 2011 I met this young boy, his mother, who was a dental assistant asked me if I could do anything to help her son. My only option was to say, I will have a look and see what I can do. I saw something and that gave me an idea, I changed something and something amazing happened.

I was disappointed by the explanations that modern osteopathy was trying to give for these changes that took place between June and November 2011 Changes that were clear to see. It was only by accident in 2016 that I started to reading The Philosophy and Mechanical Principles of Osteopathy again, for some strange reason it started to make sense. I began to realise that we can use Still's own work every day in our practice and that we don't realise what we're missing out on.

Years of research, not into history, but into words and what they actually meant all those years ago, opened up this world of Stills' osteopathy

READ ON YOUR BEHALF...

Neurophysiology, Neuro-Immune Interactions, and Mechanobiology in Osteopathy in the Cranial Field: An Evidence-Informed Perspective for a Scientific Rationale

| Read on your behalf Marc van Leeuwen D.O. – Msc.

Barsotti N. et al. *Healthcare* 2023, 11, 3058 <https://doi.org/10.3390/healthcare11233058>

This text discusses the role of osteopathy in the cranial field (OCF). OCF is questioned in the scientific community because of outdated models. Although recent research has examined the effects of OCF on health, the scientific evidence remains weak and inconsistent, leading to a mixed reception of this approach within the medical and osteopathic community.

Nevertheless, recent clinical findings show positive results, consistent with the satisfaction of patients undergoing osteopathic treatments, including those focused on the head area. In line with evidence-based medicine (EBM), it is not considered appropriate to reject a treatment method that produces positive patient experiences.

This article aims to contribute to the development of a scientific basis for OCF by investigating the interaction of exocranial receptors with systemic and endocranial effects. A well-founded theoretical framework could stimulate the development of new approaches for research and clinical practice in this field.

The authors focused on two main questions for the relevance of OCF:

1. Is there a documented relationship between nociception in pericranial myofascial tissues and nervous system excitability?
2. Is the innervation of cranial sutures, mechanoreceptors responsive to touch, and sensory fibres involved in the transmission of nociceptive signals (such as headache) originating from intracranial and extracranial blood vessels?

The theoretical framework was developed by a working group of experts with extensive experience in clinical osteopathy and scientific research. The literature search was conducted between October and April 2022 in the MEDLINE, EMBASE and Google Scholar databases. Search terms such as "cranial sutures", "mechanoreceptors", "headache", and "osteopathy in the cranial field" were adapted for each database. No restrictions were placed on the design, population, outcomes or publication

date of the articles. Reference lists were also consulted and a snowballing procedure was used to find more relevant articles. No validity or quality assessment was performed so as not to limit the search.

The selected results of the literature review were grouped and reported for relevance in five sections:

1. Mechanoreception sensitive to touch at craniofascial level;
2. Exo-endocranial connections mediated by mechanoreceptor systems sensitive to touch distributed at pericranial level and located in the sutures;
3. Systemic responses induced by exo-endocranial communication through the mediation of the trigeminal system and the central autonomic network;
4. Trigeminal innervation and the trigemino-vascular system in the regulation of cranial neuroinflammation;
5. Interaction of endocranial, exocranial, trigeminal and vascular pathways in the onset of cranial pain;

The authors conclude that mechanical, tactile and thermal stimulation of the craniofascial region (especially the sutures) can ameliorate painful dysfunctional syndromes and modulate neuroinflammation. This occurs through endocranial effects on the trigeminal system, meninges and autonomic nervous system. These effects are mainly caused by the stimulation of mechanoreceptors located in the exocranial nerve pathways.

This reasoning could explain the physiological and clinical effects reported in the literature. This is a typical approach in OCF and OMT. The claim is supported by studies showing clinical improvements in headache patients who were treated with local anaesthesia or botulinum toxin injection in their peripheral nerves and pericranial trigger points close to the sutures. These are particularly sensitive to chemical, thermal, mechanical, nociceptive and tactile stimulation. The article also

discusses the systemic responses mediated by the trigeminal system and the central autonomic network, which is crucial for regulating cranial neuroinflammation.

The trigeminal innervation and the trigeminovascular system play a key role in the development of brain pain. The complex interactions between endo-, exocranial systems, trigeminal pathways and vascular communication contribute to pain perception. Moreover, recent research has further revealed the role of the glymphatic system in neuroinflammation, thus explaining some of the cranial pathophysiology.

Although this article may provide a plausible, testable scientific rationale for OCF, scientific evidence on the underlying mechanisms remains limited for now. The authors therefore call for further research to better understand the effects of osteopathic treatments in OCF, taking into account the findings already presented. A new theoretical model based on scientific evidence could facilitate the development of new approaches for research and clinical practice in OCF and more broadly in OMT.

The table below lists the items to be analysed through future studies

Table 5. Key points in the proposed rationale to be examined in future studies (briefly outlining the study types).

Key Points/Objectives	Type of Studies
Whether manual touch in general and OCF, in particular, activate exocranial nerve pathways.	Basic science neurophysiological studies following manual stimulation, that is, a non-specific tactile stimulus and a tactile stimulus that resembles the kind of touch used in OCF. The study must be performed in both healthy and symptomatic populations.
Whether activation of exocranial nerve pathways through manual touch leads to the activation of endocranial nerve pathways.	Basic science neurophysiological studies following manual stimulation, that is, a non-specific tactile stimulus and a tactile stimulus that resembles the kind of touch used in OCF. The study must be performed in both healthy and symptomatic populations.
Whether manual touch in general and OCF, in particular, activate specific TRP channels present in exocranial nerve pathways.	Basic science studies following manual stimulation, that is, a non-specific tactile stimulus and a tactile stimulus that resembles the kind of touch used in OCF. The study must be performed in both healthy and symptomatic populations.

Table 5. Cont.

Key Points/Objectives	Type of Studies
Whether TRP channel activation in the cranial area is indirectly influenced by factors induced by touch, e.g., the aforementioned endocannabinoids.	Basic science studies following manual stimulation, that is, a non-specific tactile stimulus and a tactile stimulus that resembles the kind of touch used in OCF. A literature analysis should guide the choice of chemical mediator (e.g., endocannabinoids) to observe and block activation. The study must be performed in both healthy and symptomatic populations.
Whether TRP channel activation induced by OCF shows neuro-immune modulation effects.	Randomized controlled trials, OCF vs. OCF-no-TRP (see below) vs. sham, to evaluate a specific neuro-immune modulatory effect (e.g., reduced inflammation) in both healthy and symptomatic populations. In the group OCF-no-TRP, the researchers should use pharmacological agents to inhibit TRP activation.
Whether manual touch in general and OCF, in particular, influence the trigemino-vascular system.	Basic science studies following manual stimulation, that is, a non-specific tactile stimulus and a tactile stimulus that resembles the kind of touch used in OCF. The study must be performed in both healthy and symptomatic populations.
Whether manual touch in general and OCF, in particular, affect the flow of the glymphatic system.	Randomized controlled trials, OCF vs. sham, to evaluate the specific effect in both healthy and symptomatic populations.
Whether manual touch in general and OCF, in particular, act on the cranial marrow, influencing hematopoietic stem cells, conditioning the development of leukocytes and their progenitors, and affecting the release of pro- or anti-inflammatory molecules.	Randomized controlled trials, OCF vs. sham, to evaluate the specific effect in both healthy and symptomatic populations.
Whether local endocranial neuroinflammation can result in tissue distortions at the myofascial and cutaneous levels and whether these alterations can be detected and recognized through osteopathic palpation.	(1) Basic science and pharmacological studies to induce mild neuroinflammation and ascertain its effects. (2) Diagnostic studies that compare osteopathic palpation with an appropriate gold standard on subjects with induced neuroinflammation to assess myofascial and cutaneous tissue distortions.



Marc van Leeuwen D.O. – Msc. Ost.

Marc van Leeuwen graduated from the International Academy of Osteopathy (I.A.O.) and obtained his Master of Science degree in Osteopathic Medicine (MSc. Ost. Med.) in 2020 through Bucks New University (UK). Before that, he worked for over ten years as a Master Manual Therapist and Sports Physiotherapist (MSc). In 2022, he completed the specialization “Osteopathy for Children.” This two-year program provided him with extensive knowledge and new insights into examining and treating children and newborns. Since 2023, Marc has been a lecturer at PRO Osteo, teaching in the “Osteopathy for Children” program. In addition, he regularly travels to England to attend classes at the Sutherland Cranial College of Osteopathy (SCCO).

ARTICLE

Osteopathic compass

by Daan van Oosten, Information and Systems Scientist en René Zweedijk D.O.

We live in a complex world, one that is flooded with information. Finding our way through it and making sense of what surrounds us is not always easy. Fortunately, helpful tools exist to create meaning and offer structure amid the complexity. One such tool is the Cynefin (pronounced kənnəvɪn) framework, developed in 1999 by researcher and systems expert Dave Snowden.¹

Originally designed to help organizational managers interpret and navigate the challenges they face, the Cynefin framework has since become one of the most widely used tools for sense-making and decision-making. Over time, its use has expanded well beyond organizational contexts. Today, it is used across a wide range of fields, sometimes with minor adaptations to the original model.² Within osteopathy, the first tentative proposals have been made regarding how this framework might inform clinical practice.^{2,3,4}

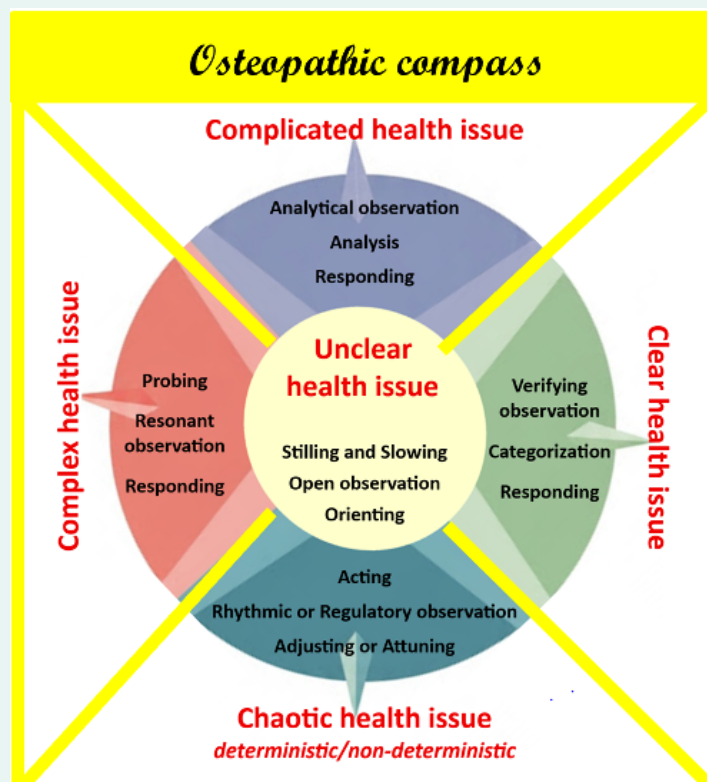
Cynefin compass

The foundational principles of the Cynefin framework may indeed be relevant for the field of osteopathy. Osteopaths frequently face the challenge of understanding the complex interactions between body systems and selecting appropriate treatment strategies in response. The framework offers a valuable compass for navigating clinical decision-making and encourages the refinement of clinical reasoning.

For educators, it also provides a valuable tool to help students move beyond reductionist thinking and adopt a more holistic view of the patient. Students should develop a solid understanding of the inherent unpredictability of biological systems.³ They should also come to recognize that emergence, where complex phenomena arise from the interaction of simpler components, is a fundamental property of such systems.^{5,6}

To make the model applicable in clinical practice, the original Cynefin framework has been modified in several aspects. This modified version better reflects the working methods and mindset characteristics of osteopathy. From this point onward, it will be referred to as the Osteopathic Compass. It is depicted in the figure below.

The Osteopathic Compass distinguishes five domains, each reflecting a different type of system state. In osteopathic practice, this means that practitioners can recognize five types of clinical situations they may encounter. These include simple problems, as well as complicated and complex cases. In addition, osteopaths may be confronted with chaotic situations, and they will occasionally face cases that initially defy clear understanding.¹



The outer edge of the compass indicates four clinical directions: simple, complicated, complex, and chaotic. These are arranged in a circular layout, not by increasing difficulty, but to reflect variations in clarity, predictability, and the corresponding clinical approach. The less clear the situation, the greater the need for a flexible attitude and the ability to adapt to what emerges.⁷

At the center lies the domain of ambiguity, a zone of disorientation and reorientation. This domain refers to situations where it is not yet possible to define the nature of the problem, let alone determine a suitable course of action.

One might say that an osteopath's diagnosis aims to uncover the nature of the cause-and-effect relationship underlying a patient's symptoms. Sometimes this is straightforward, but it can also be quite challenging, or only become clear after some reflection, so to speak. An osteopath must listen carefully to the patient and gain insight into the underlying functioning and behavior of the human system.⁸

The application of the Osteopathic Compass is illustrated with six osteopathic case examples, each focusing on the diagnosis and treatment of a baby with

ARTICLE

non-synostotic plagiocephaly. While these cases vary in nature and difficulty, they also share common elements.

Each session typically begins as soon as the baby and parents enter the practice room, with careful observation of their body language. The initial observation is usually followed by an exploratory conversation with the parents, during which the osteopath asks questions such as What have you noticed? What concerns you? When is your baby at his or her best?

Next comes a phase of quiet, attentive observation of the baby, taking place before any physical contact. The osteopath pays close attention to factors such as fixation, breathing rhythm, arousal level, movement initiation, and the baby's response to their presence.

The Osteopathic Compass links every type of clinical problem to a set of three core steps. In the context of complex situations, these are: Probing - Resonant observation - Responding. These three steps help navigate situations in which the relationship between cause and effect is ambiguous.

At the same time, the core steps provide structure in osteopathic education. They support educators guiding students as they develop skills in listening, attunement, and coping with managing uncertainty.

Clear health problem

'It is windless, and the waves roll regularly'

The Osteopathic Compass identifies five types of situations, each defined by the nature of the relationship between cause and effect. In simple problems, this relationship is straightforward: the complaint is identifiable, the cause is known, and an effective approach is well established. The general strategy for simple systems follows three steps: Verifying observation - Categorizing - Responding.

Case study: Consider a two-month-old baby brought to an osteopath with a mild flattening at the back of the head. The parents have noticed that their baby turns their head to the same side while sleeping. The pediatrician has diagnosed positional plagiocephaly and reassured the parents that it will likely improve on its own with positional advice.⁹

Verifying Observation: The osteopath takes a brief history and conducts a focused physical examination. This confirms the slight cranial flattening and the baby's preferred head position. No other concerning signs or symptoms are present.¹⁰

Categorization: The clinical presentation is consistent with asymmetrical muscle tone in the suboccipital region and the sternocleidomastoid muscle, which is considered the primary contributing factor. The asymmetry leads to skull flattening as a secondary effect of prolonged localized pressure. A positional preference is often directly linked to muscular tension or asymmetry stemming from intrauterine positioning or the birth process.¹¹ This history is typically confirmed during the anamnesis through parental observations.

Based on these findings, the osteopath recognizes a familiar pattern of mild torticollis and early-stage positional plagiocephaly. There are no indications of a more complex or more serious underlying pathology. Consequently, the case is identified as a clear example of positional plagiocephaly related to habitual head positioning.¹²

Responding: In cases involving asymmetrical muscle tone, standard osteopathic approaches are typically effective. Gentle techniques, such as soft tissue release for the neck and base of the skull, support neuromuscular balance and improve cervical mobility. The osteopath guides parents in repositioning strategies during sleep, play, and feeding to alleviate pressure on the affected side. This includes alternating the baby's head position during sleep, encouraging bilateral neck movement during play, and adapting feeding posture. Simple exercises may be prescribed to enhance neck range of motion and muscle strength. Parents are reassured about the typically favorable prognosis of positional plagiocephaly, with emphasis on the value of consistent postural care.¹³

Complicated health problem

'The tide moves grandly and slowly, but beneath the surface are counter currents that can be read with knowledge and experience.'

Osteopaths often encounter complicated cases in which the relationship between cause and effect is not immediately clear. These situations require careful reasoning, systematic observation, and sometimes collaboration with more experienced colleagues or consultation with external experts. For such complicated cases, the general approach consists of three core steps: Analytical observation - Analysis - Responding.

Case study: An 8-week-old baby is brought to an osteopath due to a marked flattening of the back of the head, more pronounced on one side. The parents are concerned about the cranial shape and possible long-term consequences. The pediatrician has diagnosed plagiocephaly, noting restricted mobility of the C0-C1 junction and significant tension in the right sternocleidomastoid muscle. The birth history further reveals that the baby was delivered with the assistance of forceps.¹⁴

This case represents a diagnostically challenging situation for many osteopaths. Although the clinical diagnosis of plagiocephaly is clear, the underlying causes and their interrelations are not immediately apparent. Understanding the dynamics behind the symptoms requires thorough analysis and specialist knowledge.

The flattening of the skull may result from intrauterine compression or from a preferred head position after birth. In this case, however, the combination of findings suggests a mechanical issue that most likely originated during the delivery.

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Special attention should be given to the restricted mobility of the atlanto-occipital junction – a vulnerable area exposed to considerable traction forces during an instrumental (forceps) delivery. Such mechanical stress can compromise the mobility of the upper cervical and cranial structures.¹⁵

This dysfunction may affect not only the range of motion but also the infant's sucking reflex, muscle tone, and broader regulatory capacity.

In summary, this case represents a multifactorial disturbance for which the solution is not immediately evident, but one that can be revealed through careful, integrative analysis.

Analytical observation: The osteopath gathers information through a comprehensive case history and thorough physical examination. The anamnesis includes questions about the birth (including vacuum extraction or forceps), the baby's intrauterine position, sleeping habits, motor development (such as a preferred head posture), and other relevant observations or parental concerns. Attention is given to the baby's general behavior, including signs of gastro esophageal reflux, restlessness, sleeping disturbances, and overstretching.

The physical examination begins with a visual assessment of the cranial shape. The osteopath also evaluates skin, tone and posture, both at rest and during motion, with particular focus on asymmetries, muscular tension, and any preferred positions.

Palpation plays a central role in the examination. The osteopath assesses the mobility and possible restrictions of the cranial bones, suturae, and synchondroses. Special attention is paid to the C0-C1 junction and cervical spine, evaluating both mobility and symmetry. Tissue quality is examined, along with the tone and mobility of other relevant structures, such as the pelvis, diaphragm, and thoracic spine. A general evaluation of the infant's motor development is also performed.

Gentle functional tests are typically conducted to assess the range of motion of the neck, trunk, and extremities, always considering the baby's age and developmental stage.^{15,16}

Analysis: The osteopath synthesizes the collected information to identify potential causes and contributing factors of the plagiocephaly. Special attention is given to key restrictions in mobility within the skull, cervical spine, and surrounding soft tissues.

A differential diagnosis is made between positional plagiocephaly and other, less common cranial abnormalities (e.g., craniosynostosis) that may require medical referral.

The potential impact of birth, particularly an instrumental delivery such as vacuum extraction or forceps, is evaluated in relation to cranial and cervical function.

The infant's preferred head posture is assessed for its contribution to cranial asymmetry.¹⁷ This includes evaluating muscle tone in the neck and shoulders. Findings may suggest muscular torticollis (e.g., due to traumatic rupture of the sternocleidomastoid, or neurological torticollis), in which asymmetrical muscle activation is secondary to restrictions in the upper cervical spine or cranium. Finally, the osteopath considers whether the plagiocephaly is affecting the infant's motor development.¹⁸

Responding: The osteopath applies carefully selected manual techniques to enhance mobility and reduce tissue tension in the affected areas. In infants with plagiocephaly and related dysfunctions, appropriate options include cranial, fascial, visceral, and mobilization techniques.

Cranial techniques aim to improve the mobility of cranial bones and normalize motion at the sutures and synchondroses, thereby potentially reducing the cranial asymmetry. Gentle mobilizations of the cervical spine, particularly at the C0-C1 junction, may help decrease neural facilitation and enhance the function of the nervous system, vasculature, and musculature.

Fascial techniques target the release of tension in the connective tissue surrounding the skull, spine, and other relevant regions. If abdominal dysfunction contributes to agitation or feeding difficulties, visceral techniques may help regulate autonomic function and support digestive processes.¹⁹

The osteopath advises parents on optimal head positioning during rest, proper lifting techniques, and simple home-based exercises to support the infant's neuromotor development and cranial symmetry.

After each session, the osteopath evaluates the baby's response and adjusts the treatment plan as needed. Multiple sessions are often required to achieve the best possible outcome. Referral to other healthcare professionals, such as a pediatric physical therapist or pediatrician, may be considered when appropriate.²⁰

In summary, the combination of plagiocephaly, C0-C1 dysfunction, facilitation, and an instrumental birth presents a complicated clinical picture. Through careful observation, thorough analysis, and gentle, targeted intervention, the osteopath can help reduce tension and restriction, thereby supporting the baby's inherent capacity for self-regulation and healing.²¹

Complex health problem

*'The tide retreats, the waves dance wildly, and the wind changes every moment
What you see today may be different tomorrow.'*

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Complex problems are challenging, and precisely because of that, deeply engaging. Unlike simple or complicated cases, there is no straightforward cause-and-effect relationship. Multiple factors interact simultaneously, and the problem emerges from their dynamic interplay. This phenomenon is known as emergence, the whole exhibits properties that cannot be fully understood by analyzing its parts.

In such systems, feedback loops and adaptation play a central role. The ongoing interaction between components results in continuous change, often leading to non-linear and unpredictable outcomes. At times, complex situations may even exhibit chaotic features – a topic we will revisit in a later section.

Addressing complexity requires a different tempo and approach than simpler problems. The osteopath follows three key steps: Probing - Resonating Observation - Responding.²²

Case study: To illustrate, we consider a baby presenting with right-sided, multifactorial plagiocephaly. During pregnancy, the intrauterine space was limited due to a bicornuate uterus and a persistent breech position. The position of the child was manually corrected by the obstetrician before birth. Labor was induced and prolonged, ultimately ending in a vacuum extraction. Postnatally, the baby exhibits mild torticollis, asymmetric arm use, and subtle asymmetries in early motor development. The parents are attentive and engaged, though understandably uncertain and sensitive to information found online. The baby is otherwise calm and well-regulated.^{8,23}

Multifactorial plagiocephaly is best understood as a complex problem. Multiple contributing factors, such as preferred posture, birth, intrauterine constraint, the birth process, and other prenatal and perinatal influences, interact in dynamic and often unpredictable ways. These factors do not operate in isolation; instead, their mutual interactions give rise to patterns that cannot be attributed to a single, identifiable cause.

Unpredictability is a hallmark of complex problems. The degree of cranial deformity and the response to treatment are difficult to predict. Two infants with seemingly similar contributing factors may follow different development trajectories and show divergent treatment outcomes.¹²

Another defining characteristic of complexity is emergence; symptoms arise from the dynamic interaction of multiple underlying factors that influence one another, leading to outcomes that cannot be understood through linear cause-and-effect reasoning. In the case of plagiocephaly, cranial asymmetry cannot be attributed to a single factor. Rather, it emerges from the interplay between muscle tone, posture, growth, parental interaction, and therapeutic interventions.

There is likewise no standard solution. In multifactorial plagiocephaly, no universal protocol that can be reliably applied to all cases.²⁴ Effective treatment requires tailoring based on the child's specific presentation and needs.

In summary, multifactorial plagiocephaly cannot be addressed through a fixed sequence of steps, as is often appropriate in complicated health problems. The approach requires a process of: Probing - Resonating Observation - Responding, with continuous attunement to what the child presents and needs. This represents an emergent practice, in which the treatment unfolds in real-time, shaped by the infant's signals and the clinical context

Probing: As always, the osteopath begins by attentively observing the baby and the interaction with the parents. In this initial stage, nothing is labeled or interpreted; instead, the focus is on body language, muscle tone, eye contact, alertness, crying behavior, and the overall rhythm, as expressed in breathing and movement patterns.^{25,8} This is followed by an exploratory conversation with the parents and a period of silent observation.

Next, the osteopath uses their hands to attune to the infant's bodily rhythm and tissue tone. This is done through subtle techniques that support synchrony with the infant's tissue rhythm. From this attunement, the osteopath explores where dysfunctions may be present. This process provides information about movement restrictions, zones of tension, or other functional disturbances in the body.^{12,26}

During and after the intervention, the osteopath carefully observes both immediate reactions and delayed responses – changes that occur during the touch as well as what resonates afterwards in rhythm, amplitude, strength, quality, muscle tone, comfort, breathing, and orientation.^{23,27}

Resonant Observation: At this stage, the osteopath pauses the active exploration. The hands become still, and attention shifts from analysis to attunement – not just to the infant's body, but to the entire context in which the child exists: the relational space between baby and parents, between the osteopath and them. The osteopath slows their internal rhythm until it is quiet enough to sense how the child's system perceives their presence, perhaps in a sigh, a change in breathing rhythm, or a subtle release of tension in a hand.

The osteopath is not a detached observer but becomes part of the field. What is being touched is not only the child, but also the dynamic field in which the child self-organizes: a network of physical, emotional, and relational signals that unfolds between the osteopath and the family.^{25,22}

This form of observation is among the most sophisticated and essential clinical skills in osteopathy, particularly relevant in complex presentations such as infant plagiocephaly, where clear cause-and-effect relationships are not readily discernible. The system reveals itself only through interaction.²⁴

Resonant observation is therefore not a task to be performed, but a way of being. It involves presence, receptivity, and embodied listening. It does not aim to diagnose or correct, but to tune in to what is emerging. It is an observation in which the osteopath's internal rhythm aligns with that of the child. This occurs within the relationship, not through analysis, but through presence, not through control, but through allowing and slowing down.²⁵

Responding: In this step, the osteopath communicates their observations to the parents in a clear and grounded manner. For

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instance: "There appears to be more openness on the left side than on the right." In doing so, the parents and the osteopath collaboratively explore potential therapeutic directions.¹⁷

It is advisable to focus on one carefully chosen intervention at a time. Based on insights from resonant observation, this might include a subtle decompression of the sphenobasilar synchondrosis (SSB), gentle contact with the diaphragm's fascia to support respiratory dynamics, or support to a cranial structure that shows limited adaptability.²⁶

The osteopath intervenes only where the system reveals a readiness for change, in line with Still's principle: "Find it, fix it, and leave it alone, so that nature can do its work."

Active parental involvement is essential. Rather than being passive observers, parents are invited to participate as co-regulators in the therapeutic process. Their presence and engagement contribute significantly to the coherence and effectiveness of the treatment field.

Emergence also plays a central role in intervention itself. The osteopath remains attuned to subtle signs of systemic change, such as shifts in breathing, sighing, changes in tone, or a quieter movement pattern, which indicate the organism's attempt to reorganize.²²

Rather than working from a predetermined treatment plan, the osteopath works from an emergent practice; an approach that develops in real-time through interaction with the child and their context. It is characterized by continuous observation, adaptive response, and clinical presence.

This stepwise and layered clinical practice is especially suited to complex presentations. It avoids linear protocols and instead supports the infant's intrinsic capacity for regulation and healing.²⁷

Deterministic chaotic health problem

'In a raging tidal current, the waves beat rhythmically but powerfully; it seems random, but if you move at the right time, you surf along to the rhythm of the chaos.'

Complex problems may occasionally display features of chaotic dynamics. However, it is useful to consider situations with chaotic behavior as a separate category, as they require a distinct clinical approach.

Chaotic problems are characterized by high instability and unpredictability. As an osteopath, you may observe an initially positive response to a treatment, followed by sudden disorganization. This volatility makes such cases particularly challenging. They require an approach that is both deeply attuned to what arises in the moment and flexible enough to navigate ongoing instability.

It is useful at this point to distinguish between deterministic and non-deterministic chaos. Non-deterministic chaos refers to systems that exhibit unpredictable behavior, with no stable or consistent relationship between intervention and response.²⁸ We will return to this distinction later.

Deterministic chaos, on the other hand, refers to systems that are highly sensitive to small variations in initial conditions.²⁹ In osteopathy practice, this can be seen in an infant with preferential head posture who seemingly without any clear external change, suddenly develops pronounced plagiocephaly. The difficulty in this type of chaos lies not in the absence of order, but in the fact that the underlying order is non-linear.³⁰ It is not possible to reason in terms of a simple cause → effect → solution chain. Instead, what is required is a continuous process of action, observation, and adaption. This is best approached as a cyclical process of the three core steps: Acting - Rhythmically Observation - Adjusting. These steps offer orientation when navigating deterministic chaos.

Case: A 3.5-month-old infant is presented to an osteopath with a medical history of preterm birth at 36 weeks, prolonged suppression of labor, and vacuum-assisted delivery. Current parental concerns involve flattening of the left occiput region and a consistent preference for trunk rotation to the right. Clinical observation reveals marked cervical extension and elevated muscular tone in the neck region. The parents report that when their baby begins to relax, they quickly return to a hyperextended posture, which may be linked to persistent vestibular or proprioceptive imbalance.

This is an example of deterministic chaos. A seemingly stable pattern, such as postural preference, asymmetry, or cervical extension, elicits a reflexive response when disrupted. However, this response is not a restorative adjustment, but rather a mild opisthotonus-like extension pattern: a sustained tonic tension suggestive of overstimulation in brainstem structures and a reduced capacity for systemic regulation.³¹

Even minor corrective efforts, such as gently tilting the head, can provoke a disproportional return of the asymmetry or trigger signs of frustration. Although the system may appear predictable, it is inherently unstable: small perturbations evoke strong reactions or rapidly reestablish the original tension. This self-amplifying feedback loop is characteristic of deterministic chaos.³² The baby appears to respond in the same way each time, but this predictability is deceptive; it reflects a fragile, automatic mode of adaption that is highly sensitive to disruption.

Acting: Osteopath then engages with the infant's movement and tension patterns, focusing on subtle, rhythmic, or compensatory dynamics.³⁰ These patterns often reflect attempts at self-organization in response to internal or external stressors, such as birth trauma or sustained positional asymmetry. The goal is not to impose correction, but to gently interrupt maladaptive dynamics, allowing latent functional patterns to emerge, or new adaptive ones to arise.

From a biodynamic perspective, the osteopath listens and responds to the body's inherent rhythms and motility, supporting

intrinsic regulation rather than directing.²⁵

Treatment may begin by fostering autonomic balance via structures like the diaphragm, the coeliac plexus, and the vagus nerve.²³ Many infants in a hypertonic or overstimulated state exhibit increased sympathetic drive. Supporting parasympathetic activity, particularly vagal tone, can facilitate regulation of heart rate, respiration, muscular tone, and sensory processing. This parasympathetic shift an initial entry into a more regulated state.

In parallel, the osteopath addresses biomechanical contributors, such as cervical restrictions or asymmetrical tension, especially where these maintain or amplify stress responses. Enhancing mobility and reducing mechanical strain create a physiological basis for improved integration at both physical and neurological levels.

This therapeutic process is neither fixed nor prescriptive; it unfolds through ongoing attunement, guided by the system's own feedback and responsiveness. Each intervention is part of a responsive, dynamic cycle of acting, sensing, and adjusting. Especially in presentations shaped by deterministic chaos, the system's sensitivity to small changes demands subtlety and flexibility. Here, the osteopath's role is not to direct the system toward an outcome, but to accompany it, as balance emerges from within.³⁴

Rhythmic Observation: When addressing health problems shaped by deterministic chaos, rhythmic observation becomes a key clinical mode of engagement.³² The osteopath interacts with the body's functioning by attuning to its intrinsic rhythms and responsive patterns, without directing, manipulating, or imposing outcomes. While the hands are the interface, the core of the work lies in resonance and attunement.

Rhythmic observation is a cyclical way of perceiving. It involves entering a temporal relationship with a living system, one that expresses itself through recurring sequences of tension, release, reorganization, and recovery. The osteopath follows these patterns patiently, gently, and without agenda. This approach is vital as such systems do not operate through linear, cause-and-effect mechanisms; they exhibit dynamic, nonlinear, emergent behavior.

In a baby with plagiocephaly, for instance, the osteopath attunes to autonomic rhythms mediated by the vagus nerve, diaphragm, and associated connective structures. These rhythms are not provoked or imposed; they are awaited, sensed, and followed as they naturally unfold. Along the cervico-thoracic axis, the practitioner tracks changes in muscle tone – not to fix, but to accompany. The hands listen for a phase shift, when tissue transitions spontaneously from tension to release, or vice versa. This is not a mechanical change, but a moment of intrinsic reorganization, a subtle window through which the system opens to transformation.

Such moments are not created by the practitioner, but permitted by the system itself. The osteopath's role is to be present, attuned, and responsive – a witness to emergence, not its director.³⁶

Adjusting: This step unfolds through subtle engagement with the body's ongoing physiological rhythms, drawing on sensing, tuning, and minimal intervention. In deterministically chaotic situations, such as fluctuating muscle tone or autonomic dysregulation, it is not about correction, but about creating conditions that support the body's capacity for reorganization.³⁷ The osteopath offers gentle guidance that invites the system to move toward improved adaptation through its own dynamics.

Sometimes a system becomes "stuck" in repetitive cycles without progression. In such cases, adjusting may help: not through force, but by offering finely tuned tactile cues. These might include a light stretch, a rhythmic extension of the breathing or cranial cycle, or positional input subtly shifts the balance. Timing is crucial; like with rocking, one must wait for the right moment within the rhythm.

In a baby with plagiocephaly, for example, this might involve gently following the cranial rhythmic motion around the SSB, applying a slight stretch at the thoracic inlet toward the more yielding side, or supporting chest expansion precisely as the baby initiates a sigh. The practitioner seeks that subtle momentum, for the 'push' that allows the system to slide into a "valley" of relaxation. Adjustment occurs only when the system is receptive, marking a shift in the practitioner's role: from observing and following to gently guiding the process, always attuned to the body's intrinsic timing and capacity for change.

A treatment process for deterministically chaotic problems can sometimes require considerable time. Its duration depends on the system's resilience and the number of fixations that must be addressed. At times, however, a sudden reset may occur; an abrupt reorganization in which the system shifts into a new configuration. A new behavioral pattern (attractor) may emerge, allowing the system to stabilize in a different state.

Yet even in such moments, repetitions do not guarantee integration. Reflexive reactions may continue to dominate, undermining stability. This is why rigid protocols are counterproductive. What is needed instead is a sensitive, attuned approach, intervening with precision and timing, only when the system shows readiness for change.

Non-deterministic chaotic health problem

*'When the tide recedes and no wave follows,
only intuition remains to keep the boat straight.'*

A health problem marked by non-deterministic chaos presents a situation in which no discernible pattern emerges. The relationship between cause and effect is obscured or entirely absent, leaving the system unstable, incoherent. In such cases, the practitioner lacks a reliable entry point for meaningful intervention.

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Case: An 8-week-old baby, with a corrected age of 2 weeks, was born at 28 weeks' gestation. The infant spent an extended period in the neonatal intensive care unit, receiving ventilation, tube feeding, and various drug interventions. Muscle tone fluctuates unpredictably between hypotonia and extreme hypertonia. Sleep is shallow and frequently disrupted by startle responses, with no discernible sleep-wake rhythm. The baby appears emotionally and sensorially hardly accessible, evoking profound feelings of helplessness in the parents. Although no structural abnormalities have been diagnosed, the medical team notes "worrying neuroregulation after prematurity and intensive care trauma."³⁸

The baby described is experiencing a non-deterministic chaotic health problem. The relationship between cause and effect is unclear, no recognizable pattern emerges, and both stability and rhythm are absent. Responses to intervention are either missing or highly unpredictable. The system functions like a closed loop, making attunement or reciprocal interaction difficult to establish.⁸

For such cases, the following steps can be helpful: Acting - Regulating observation - Attuning. These steps enable the practitioner to create a framework in which some calming of the chaotic processes may become possible.²³

Acting: To such patients, it is advisable to foster a sense of calm in the physical environment by moderating light, sound, and temperature.³⁶ As a therapist, you can support this atmosphere by regulating your breathing, by speaking softly and slowly, and using gentle, unhurried movements when making contact. The baby should be positioned to feel gently supported and safely held, without any sense of restriction.

What matters most is your steady, quiet presence: your hands rest without intention to act, simply offering contact. In words of Sutherland: "be still and know"; a direct quote from Psalm 46:10 in the Bible. The goal is not to solve anything, nor to provoke a response, but to be fully present with focused attention and a receptive attitude. This expectant presence is the essence.²² Such receptivity echoes the spirit of A.T. Still, who said, "To find health should be the object of the doctor. Anyone can find disease."⁴⁰

Regulatory Observing: At this stage, the therapist begins to observe at a micro level. No biological system is completely chaotic.³ Therefore, the therapist looks for subtle signals of emerging organization - traces of rhythm, responsiveness, or coherence. This involves listening with the hands, sensing whether the system shows signs of seeking rhythmic expression. These signs can be minimal: micro-movements, variations in breathing, shifts in temperature, and changes in tone. Recurrent asymmetries may also offer valuable cues.

The focus is not on structure, but on behavior, on how the system moves, responds, or begins to exhibit signs of self-regulation.

The therapist adopts a fully receptive attitude, without the urge to intervene. Observation itself becomes a regulatory act. One might say: by being perceived, the system begins to organize.²⁵ This aligns Still's perspective: the goal is not to correct dysfunction, but to recognize, accompany, and give space to what is healthy.⁴⁰

Attuning: Tuning involves minimal responsive interaction. The goal is to resonate with the emerging rhythm, without disturbance.³⁵ That means carefully observing subtle adjustments arising from contact.

As a therapist, provide gentle support wherever the system reveals itself, whether at the thorax, occiput, or diaphragm. Follow the movement or rhythm, and reinforce what is already present. Sometimes, maintaining with the rhythm itself constitutes a form of adjustment.

Use very gentle fascial techniques or an embryological approach, always respecting the system's tolerance.³⁷

As a therapist, you are not the driving force but rather an amplifier of the body's internal capacity for reorganization. Trust the body, even if the changes you observe amount to only 1%.

Stop treatment as soon as you sense the system is saturated. When evaluating progress with parents, focus not on isolated symptom level, but on the system as a whole. Ask questions like, "Did the baby seem to respond faster or more clearly?" or "Was the baby calmer, or more connected?"

In summary, within the realm of non-deterministic chaos, "doing nothing" is often the wisest action. As a therapist, you work not with symptoms but with creating conditions for coherence. And that begins with safety, patience, and above all, trust.⁴⁰

Unclear health problem

"The tide is noticeable and the waves hit the hull of the boat, but the direction is hidden in the fog..!"

An unclear health problem remains as long as it is not evident what type of issue is involved. Such cases call for careful, systematic observation and a deliberate avoidance of premature categorization. The following case study illustrates this approach.

Case study: A 4-month-old baby is brought to an osteopath due to a misshapen head: the left posterior side is flattened, and the right frontal bone appears more prominent, consistent with a likely positional plagiocephaly. The baby consistently turns the head to the right, appears alert, but is easily upset. Since birth, the baby has been restless, with episodes of overstretching and poor sleep. Growth and weight gain are progressing well. The pediatrician suspects a positional preference; the child health center raises concerns about developmental delay. The parents, having read online about torticollis and craniosynostosis, are worried. The osteopath is consulted with the vague request to "just check if something can be loosened."

The osteopath is thus confronted with an unclear problem. Is it a postural issue, a neurological dysfunction, or a visceral stress response? At its core, the physician suspects a complex anatomical or neurological cause. The consultation clinic consi-

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ders it a simple postural issue that could be resolved through positioning. Meanwhile, the parents experience unpredictability and chaos.

For such cases, where the perspectives on the problem diverge and the underlying cause is ambiguous, a phased approach is recommended. As with other types of health problems, this consists of three key steps: Stilling and slowing - Open observation - Orienting.

Stilling and slowing. Osteopathic work on unclear problems begins with stilling and slowing down.²² This is not passivity, but a deliberate act creating space before any form of intervention. No therapeutic action is taken until there is a fundamental understanding of the system being engaged, that is, the patient within their physical, neurological, physiological, and relational context.

Slowing down means resisting the impulse to correct or treat too quickly. It involves taking time to listen, not only with your hands, but with your full perceptive awareness.

Stilling refers to the therapist's inward attunement to the system's rhythm.⁴¹ It is a state of presence without agenda, allowing the patient's body, the tissue dynamics, and the broader context of the child and parents to reveal themselves.

Together, slowing down and stilling open a window to meaning. They create space for an initial non-directive, yet systemically attuned observation.

Open observation: After stilling and slowing down comes the step of open observation. This means: observing broadly and without judgment, refraining from premature conclusions.²² The osteopath opens up to what reveals itself and looks for patterns that are consistent and reproducible, which may indicate a simple or complicated problem.⁴² Alternatively, if variation and changeability depend on the context, this may point to a complex issue.

It is essential that the osteopath shares this uncertainty with the parents. It must be emphasized that the nature of the problem cannot yet be clearly defined, and it must be explained that careful, broad observation is needed before any treatment direction or strategy can be determined.

Orienting: After stilling and open observation, the osteopath begins initial orientation in action. This involves formulating a preliminary plan based on what the system has revealed so far.

The first step is not corrective intervention, but rather broad screening. This may include exploring muscle tension, fascial tension lines, and visceral stress responses. Additionally, the osteopath observes whether the system exhibits cyclical behavior or rigidity. Is there adaptation and resilience, or stagnation and blockage?

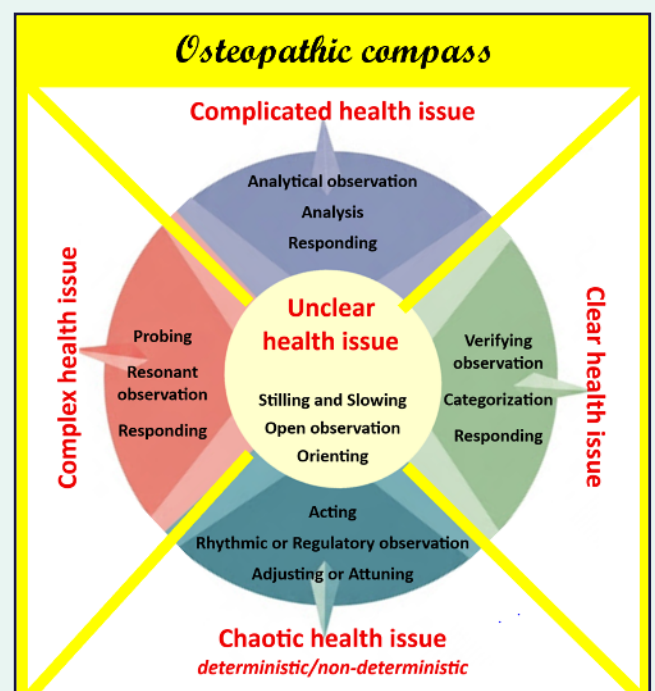
A key element of this phase is involving the parents in the process. Transparency about what is known and what remains uncertain is important for building shared understanding and trust. In this dialogue, the Osteopathic Compass can serve as a useful tool to reflect with the parents on the nature of the problem: is it predictable (simple), expertly analyzable (complicated), understandable only in interaction (complex), or is it a situation where patterns are difficult or impossible to discern (chaos)?

Finally, choose a treatment style suited to both the nature of the problem and to the system's current response. Depending on what emerges, consider approaches that focus on calmness, resonance, refinement, or support¹⁹.

Back to the beginning

All types of problems identified through the Osteopathic Compass have now been discussed. The table below briefly summarizes the core characteristics of each category of health problem and outlines the corresponding didactic focus for osteopathy teachers when addressing these problems in their teaching

	Feature	Case study	Didactic focus
Simple	Clear cause-and-effect Predictable. "Best practice" works.	Baby with mild preferred posture after unilateral position in utero. The standard technique helps immediately.	Teaching established procedures, basic skills, and standard treatment.
Complicated	Cause-and-effect is present, but it is not easy to recognize. Analysis and expertise needed.	Baby with reflux and intestinal cramps; the cause may be in feeding, diaphragm, or vagus nerve dysfunction.	Clinical reasoning, hypothesizing, and exploring multiple solutions.
Complex	No direct cause-and-effect. Patterns emerge only after the fact. Emergent behavior.	A premature baby with hypersensitivity and stressed parents. Small steps and evaluation per session.	Systemic thinking, experimentation, reflection, and co-regulation.
Deterministic Chaotic	Seems random, but is sensitive to initial conditions. Hindsight explainable.	Baby reacts violently to gentle technique; hindsight reveals a prenatal stressor (e.g., umbilical cord around neck).	Working very carefully, observing first, recognizing triggers.
Non-deterministic Chaotic	No logic or pattern. Complete instability.	Baby with severe crying without cause, no consistent responses to treatments.	Stabilizing, non-doing, systemic safety over treatment goal.
Unclear	Uncertainty about the nature of the system you're dealing with. Confusion prevails.	Baby with vague symptoms, unclear signs. An osteopath focuses on settling the situation and scanning for patterns.	Reflection on own actions, learning to discern systems before intervening.



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The positioning of the unclear domain at the end discussion and in the table may give a misleading impression. In reality, every health problem begins in this domain. When an osteopath meets a new patient, there is typically not any clarity yet about the nature of the problem or therefore also not about which approach is appropriate.

The initial phase is marked by confusion and not-knowing.²² And it is precisely this that requires a different attitude: stilling, slowing down, open observation. Only by taking the time to truly attune to the patient's system, by listening, observing, and refraining from premature intervention, can a first orientation begin to take shape.⁴³ That orientation offers a direction along which further action may become meaningful. Treatment is often initiated before a sufficient understanding of the problem has emerged.

In conclusion

The Osteopathic Compass can be a valuable tool within the field of osteopathy. While it does not offer ready-made solutions, it can prove useful across various subfields.

Clinical reasoning: The compass helps osteopaths to recognize and acknowledge complexity. It highlights when complaints belong to the complex domain, such as in cases of chronic pain, infants with vague symptoms, or patients with multiple comorbidities.⁴⁴ This prevents the frustrating and ineffective application of linear, cause-and-effect approaches to situations that are inherently non-linear.⁷

Recognizing the different types of healthcare questions allows osteopaths to tailor their intervention strategies.² In the complex domain, this leads to a more exploratory approach, characterized by Probing – Resonating observation – Responding. Here, gentle techniques and following the patient's individual response through observation take precedence over rigid protocols.³⁶ This approach fosters an emergent practice, with actions evolving in response to the clinical situation.

The compass provides a framework for dealing with the inherent uncertainty of complex cases. It normalizes the idea that the best approach is not always apparent in advance, and that learning through patient interaction with is essential.

It also offers a language to explain the complexity of a case to both patients and colleagues.⁴⁵ This helps manage expectations and justifies a more exploratory treatment strategy.⁴⁶

Moreover, the Osteopathic Compass encourages a broadening of the Evidence-Based Practice paradigm.⁴⁷ It challenges the sometimes overly narrow focus on linearly interpreted randomized controlled trials (RCTs) for complex conditions.⁴⁸ Instead, the compass emphasizes the value of observational data, case studies, and clinical experience within the complex domain, supporting a patient-centered care.⁴⁹ At the same time, grounding clinical practice in solid evidence remains essential. RCTs continue to be a powerful and valuable tool for testing and refining knowledge.

Development of expertise: The Osteopathic Compass also serves as a powerful tool for reflection. It enables osteopaths to review both successful and less effective interventions, and to analyze in which contextual domains certain treatments tend to be more or less effective.⁵⁰

While working with complex cases, the compass invites practitioners to deepen their understanding of physiological dynamics, regulatory patterns, and systemic interactions.⁴⁴ In doing so, it contributes to the continuous development of clinical expertise and supports a mindset of lifelong learning.

Curriculum development and lesson planning: The Osteopathic Compass provides valuable support for integrating complexity and chaos into osteopathic education.⁵¹

It enables teachers to select teaching strategies that align with the level of uncertainty in the subject matter. For instance, structured and didactic instruction may be well-suited to teaching biomechanical principles, while complex clinical cases benefit more from problem-based learning, case analysis, and reflective teaching approaches.⁵²

Additionally, the compass offers a coherent framework for developing students' clinical reasoning across a broad spectrum of case types, from straightforward presentations to atypical and multifactorial problems.⁵¹ It supports learning when broad diagnostic exploration is appropriate and how to interpret the systems' response in a nuanced context-sensitive way.⁵⁴

Teaching methodology: By encouraging a shift away from linear causality, the Osteopathic Compass helps students develop a systems perspective on biological functioning.⁴⁵ It creates space for reflection on underlying assumptions, uncertainty, and context-sensitive reasoning.⁵⁵ Through case-based teaching aligned with the different compass domains, students learn to flexibly adapt their clinical approach to the nature of each situation.⁵⁶

Assessment strategies can also benefit from this model. Instead of focusing solely on factual recall, educators can design evaluations that reveal how students navigate ambiguity, change, and complexity.⁵⁷ In this way, they become familiar with emergent practice: a professional way of working that takes shape in the moment, guided by perception, attunement, and responsiveness, rather than by predetermined steps.

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Professional Development: Among osteopathic educators, the Osteopathic Compass provides a shared vocabulary for discussing both teaching and clinical situations.⁵⁸ It fosters collaborative reflection and professional dialogue, supporting a deeper appreciation of the interconnected factors at play in education and patient care. The model can inspire the development of innovative educational strategies, such as simulation-based learning, interprofessional collaboration, and adaptive assessment methods.⁵⁹

Philosophical and scientific grounding: Osteopathy has long operated within a tension between its classical principles and the demand for scientific legitimacy. The profession continues to draw from the foundational ideas of A.T. Still and W.G. Sutherland, while also seeking alignment with contemporary scientific frameworks. A systemic perspective, with the Osteopathic Compass as one of its elements, offers a promising bridge. It reveals how different forms of knowledge and decision-making each have their place. In doing so, it helps reconcile principle-based-thinking with evidence-informed practice, supporting a more mature and reflective osteopathic paradigm.

While working with complex cases, the compass invites practitioners to deepen their understanding of physiological dynamics, regulatory patterns, and systemic interactions.⁴⁴ In doing so, it contributes to the continuous development of clinical expertise and supports a mindset of lifelong learning.



Daan van Oosten Information and Systems Scientist

He studied physics and mathematics at Delft University of Technology, followed by computer science and information science at Eindhoven University of Technology, and psychology and philosophy at Erasmus University in Rotterdam. He is fascinated by the meaning of information, particularly in relation to biological systems. Information plays a fundamental role in the processes that shape such systems. Biological systems are complex systems that continually adapt, doing so on the basis of the triad of information processing, information transport, and information storage.



René Zweedijk D.O.

Immediately after graduating, René began teaching at the physiotherapy program in Vlissingen. Even after obtaining his osteopathy diploma, he was invited to teach in the basic osteopathy program. In addition to practical subjects, he taught physiology and neurophysiology. After eleven years of teaching in the basic program, René began organizing postgraduate courses in 2000. He is a highly sought-after international lecturer, frequently speaking at conferences and delivering courses and workshops. In addition, René is the editor-in-chief of the PRO Osteo magazine.

ARTICLE

Could Emotional Memory Images Disturb Sleep and Drive Pain?

Barsootti N. et al. *Healthcare* 2023, 11, 3058 <https://doi.org/10.3390/healthcare11233058>

By Matt Hudson

Could Emotional Memory Images Disturb Sleep and Drive Pain?

Sleep is one of the most vital physiological processes human beings undertake, playing a crucial role in physical and mental health, cognitive function, and immune regulation. The quality and quantity of sleep significantly impact overall well-being, yet many individuals struggle with sleep disturbances, often without understanding the underlying cause. Those with mental health conditions such as post-traumatic stress disorder (PTSD) and depressive disorders frequently experience Emotional Memory Images (EMIs) related to past trauma. However, a far larger proportion of the global population has suffered adversity—a lesser stress disorder than PTSD but still highly prevalent—leading to similarly profound disruptions in sleep.

Common sleep disorders associated with EMIs include insomnia and sleep apnoea. Symptoms often range from difficulty falling or staying asleep to irregular breathing patterns that disrupt sleep cycles. A key factor in these disturbances is pre-sleep hyperarousal, where the brain remains hyper-alert to subconscious threats, making relaxation difficult and preventing sustained deep sleep. This heightened state of alertness can lead to frequent awakenings throughout the night, preventing the body from achieving restorative sleep.

This article proposes that EMIs of adverse life events are a major contributor to pre-sleep hyperarousal, perpetuating sleep disturbances that compromise both mental and physical health. Left unresolved, these disturbances not only affect cognitive and emotional well-being but also have serious physiological consequences, particularly in driving inflammation and chronic pain. The therapeutic application of the Split-Second Unlearning (SSU) model may provide an effective approach to clearing EMIs, improving psychophysiological health.

Case Vignette: The Client who was More Flexible After Guided Meditation.

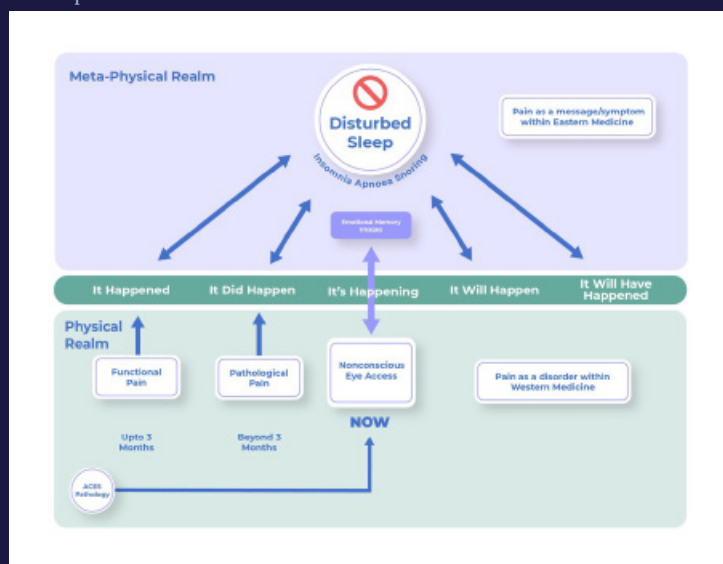
Client Z mentioned that they awoke each morning stiff and in pain, it would take until lunchtime before he felt he could move around comfortably. He then remarked “On Wednesday’s I’m pain free and flexible all afternoon, thanks to my guided meditation class”. How could one hour of guided meditation give him three hours relief from osteoarthritis? Why doesn’t he awaken flexible after eight hours sleep? Could it be that he was in a freeze stress response while sleeping, flooding his body with cortisol and inflammation? These are the thoughts that ran through the authors mind, and I invite you to hold them in yours as you read on.

What is the Split-Second Unlearning Model?

The Split-Second Unlearning model (SSU) proposes that first-time traumatic, adverse or emotionally overwhelming experiences, real or imagined create EMIs. These EMIs remain within the mind’s eye, activating a freeze response whenever a similar context or situation occurs. SSU is the process by which a practitioner can identify the subtle non-verbal cues, indicating EMI access, and interrupt this connection. SSU suggests long-term EMI triggering leads to chronic pain and disease as the continuous firing of the stress response takes its toll on the body.

Definition and Attributes of Emotional Memory Images

“Trauma induced, non-conscious, contiguously formed, multimodal mental imagery, which triggers an amnesic, anachronistic, stress response within a split-second.”



The definition identifies an EMI as:

1. an emotional memory stored inside the mind.	2. characterised by multimodal mental imagery.
3. originally created as a result of an actual or imagined adverse experience (trauma induced).	4. formed as part of a traumatic, spatio-temporal.
5. an event, which triggers one-trial learning.	6. triggered whenever the person is exposed to contexts similar to the original context(s) that created the EMI.
7. producing a 'stress' response within a split-second.	8. an 'ouldated' (anachronistic) stress response.
9. hidden within a deletion filter/mental amnesic state, outside of a person's conscious awareness (non-conscious).	10. a triggered stress response manifesting most commonly as micro eye movements, eye fixation, pupil dilation and or sharp peripheral peeks.

Note: Point 9, above identifies why a client can never present with an EMI as their issue. The practitioner must therefore proceed to support the client to bring the EMI into their conscious awareness.

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How Emotional Memory Images Affect Sleep

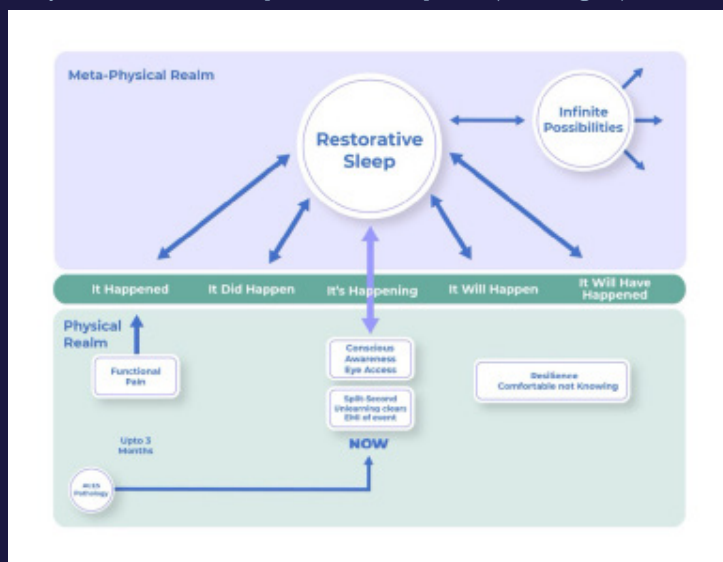
When we experience stress while awake, the body often responds with a sharp intake of breath, a hallmark of the fight/flight/freeze survival mechanism. This reaction prepares us to confront danger, flee from it, or remain perfectly still in hopes of evading detection.

During sleep, however, it has been proposed that the same survival response manifests differently. When an EMI resurfaces, the mind conjures a metaphysical predator—an imagined threat that the brain believes is approaching. In response, the freeze mechanism activates, momentarily halting breathing to immobilise the sleeper. This brief apnoea may have evolved as a defence mechanism, keeping the body still to avoid detection while simultaneously arousing the sleeper to prepare for escape.

While this survival strategy may have served our ancestors well, in the modern context, it creates a cascade of problems. Unresolved, these split-second pauses in breathing can extend into longer apnoea/hypoxia events, disrupting the restorative processes of sleep and perpetuating conditions such as insomnia, chronic fatigue, other sleep-related health disorders as well as pathological pain.

The Role of Split-Second Unlearning in Pathological Pain

Pathological pain can be closely linked to EMIs and the SSU framework through the way past experiences influence the perception and persistence of pain. If an EMI is associated with a past injury or distressing event, the brain may continue to reproduce the pain response even after the physical cause has healed. This can lead to pain without ongoing tissue damage, reinforcing the cycle of pathological pain (see image 1). Clearing EMIs can transform pathological pain. SSU removes these outdated patterns, allowing the body to return to an adaptive stress response (see image 2).



From Sharp Intakes of Breath to Apnoea in Sleep

The transition from waking stress responses to sleep-related apnoea reveals the brain's adaptive survival mechanism. During waking moments, a sharp intake of breath signifies the body's readiness to act. During sleep, however, the same physiological fear response shifts into momentary breath-holding, an unconscious attempt to maintain stillness and evade the predator in the mind's eye. The standard Apnoea/Hypoxia Index (AHI) measures the number of apnoea events lasting over ten seconds per hour. These longer events are clinically significant, but what about the countless shorter ones that go unnoticed? SSU shifts the focus to these micro-events, revealing how even fleeting disruptions—which may be caused by EMIs—grow from molehills into mountains within the meta-physical realm.

While the freeze response immobilises the body, it also perpetuates arousal. This elevates cortisol and systemic inflammation, reinforcing the PAIN (Past Adversity Influencing Now) framework (image 1 & 2). PAIN contends prior negative experiences can keep individuals trapped in a specific time perception, affecting their pain experience. This keeps

the nervous system in a heightened state of vigilance, increases pain sensitivity, and impairs emotional regulation, decision-making, and recovery—critical for high-performance individuals like athletes and executives—while perpetuating a cycle of poor sleep and distress.

Testing the Sleep Pain Hypothesis

Five client's in private practice were invited to test the following hypothesis - Can clearing EMIs enhance physiological recovery, reduce pain perception and promote overall health. Participants wore a Fitbit device for a month and data was captured via BioRICS gold standard sleep algorithm. Three clients completed the process with the following observations:

1. Sleep Improvement Reduces Inflammation

- Better sleep is linked to lower cortisol levels, reducing chronic inflammation. Deep sleep triggers growth hormone release, essential for tissue repair and pain relief. Post SSU sleep scores increased especially after 1st March. A positive indication

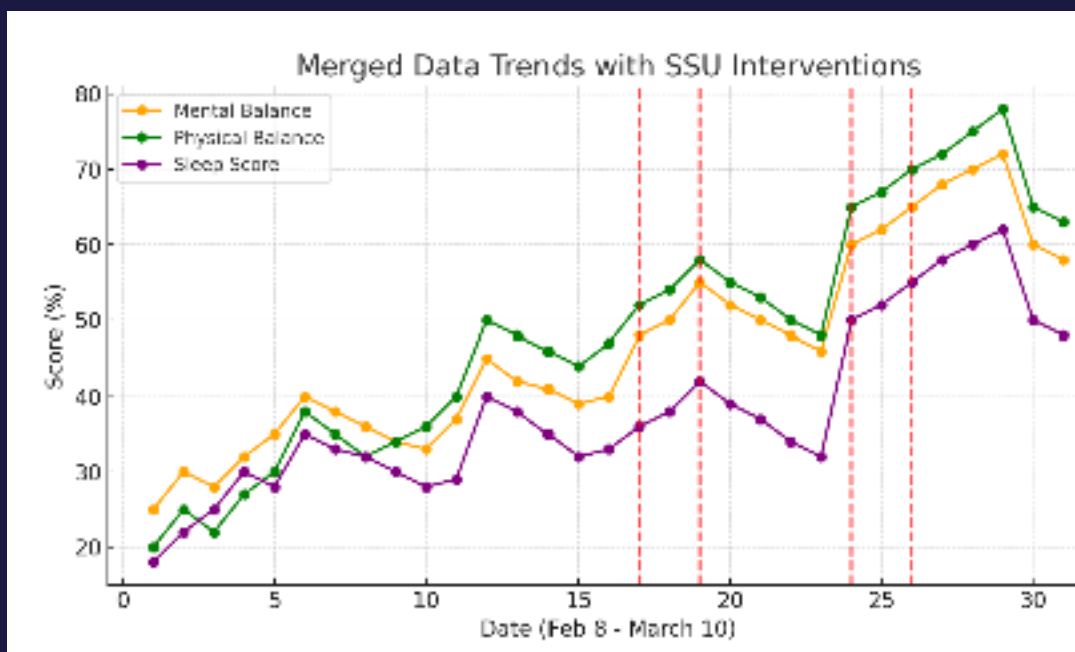
2. Clearing EMIs Lowers Stress & Pain Perception

- EMIs drive autonomic nervous system dysregulation, keeping the body in fight-or-flight mode. Clearing EMIs via SSU unburdens the nervous system, lowering pain sensitivity and preventing stress-induced inflammation.

3. Physical Recovery & Pain Reduction

- Higher physical balance scores post-SSU suggest reduced systemic stress and better recovery. Inflammatory cytokines (IL-6, TNF- α) are suppressed when stress and sleep debt decrease, leading to less joint/muscle pain.

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Conclusion

The trend of improved sleep following SSU sessions aligns with a decrease in stress-related inflammation and pain. This supports the hypothesis that clearing EMIs enhances physiological recovery, reducing pain perception and promoting overall health. Objective data to corroborate client feedback. More research is needed.

A New Perspective on Pain and Sleep

Osteopaths work with the body's innate ability to self-regulate and heal, yet unresolved EMIs can act as hidden barriers to recovery by perpetuating hyperarousal and disrupting sleep quality. This cycle of psychophysiological dysfunction sustains chronic pain and systemic imbalance. Integrating the SSU model into osteopathic practice offers a holistic approach to breaking this cycle—restoring coherent sleep patterns, enhancing autonomic balance, reducing inflammation, and optimising musculoskeletal recovery. By addressing the subconscious triggers underlying pain and poor sleep, osteopaths can provide deeper, longer-lasting relief and expand their therapeutic reach, offering new hope to those trapped in persistent pain and disrupted sleep.

Matt Hudson



My history as a person has lead me to be able to help many people overcome the troubles within their mind that themselves and other doctors/professionals may have not known about.

Years ago, I had surgery on my ears, in post op with the doctor who performed the surgery he said to me "how do you speak the way you do?" I found out he wasn't referring to my Geordie (Newcastle, UK) accent! He was astonished that I could even speak given the state of my ears! This led me to realise that when I was communicating with people, I wasn't using my ears, I use other forms of subtle non-verbal communication; watching the hands move, small facial twitches. The finite communication that I am able to pick up on is connected to your neurology... this is what I base my work on.

SEPTEMBER
18-19, 2026

**INTERNATIONAL
CONFERENCE**
DEEP WITHIN:
INNOVATIONS AND
INSIGHTS IN VISCERAL
OSTEOPATHY



We are thrilled to announce our upcoming
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Join us as we delve into the latest advancements and discoveries in the field of visceral osteopathy. This event promises to be a gathering of minds, offering new perspectives, innovative techniques, and a chance to connect with leading experts in the field.

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Date: September 18-19, 2026

Location:

The Ruwenberg, Den Bosch, The Netherlands

Keynote speakers:

Dr. Frank Willard (USA)
Nathalie Camirand, DO (CA)
Colette Peeters DO MSc. Ost. (BE)
Jaap van der Wal, MD, PhD (NL)
Philip van Caille BSc, DO (BE)

and many more...

ARTICLE

Shaping the Future of Osteopathic Education: An Interview with Rafael Zegarra-Parodi on BMS Formation's Integrative Approach

Who are you?

I am of French and Peruvian origin and have been practicing osteopathy since 1997. I am a registered member of the General Osteopathic Council (GOSC) in the UK and has been practicing in Paris, France since 1999. Active in both osteopathic education and research, I have authored 34 peer-reviewed publications (h-index = 10) and have been a research affiliate at the A.T. Still Research Institute in Kirksville, Missouri (USA) since 2014, following a full-time research tenure there from 2012 to 2014. From 2014 to 2024, I served as an Associate Editor of the International Journal of Osteopathic Medicine (IJOM), the leading journal in the field, and I currently contribute to the Executive Committee of DO-Touch.NET, the premier practice-based research network for osteopathic physicians in the USA. I also collaborated extensively with traditional healers from Native American tribes across North and South America, where health and disease models differ significantly from those of Western paradigms. These experiences provide valuable insights and an epistemological framework for exploring the non-physical aspects of the body in both health and disease, as reflected in the body-mind-spirit osteopathic tenet, which has Indigenous origins and was reintroduced in the USA in 2002. In addition to my clinical expertise in managing chronic and acute neuromusculoskeletal conditions and supporting psychotrauma, I strive to advance person-centered, culturally sensitive, and evidence-based osteopathic practices. To that end, I co-founded BMS Formation, a French continuing professional development (CPD) organization dedicated to promoting these values by helping healthcare professionals develop skills within an integrative framework.



Tell us more about the creation of BMS Formation

BMS Formation is a certified Qualiopi CPD course provider founded in France in 2019. I co-founded this organization with my friend Dr. Guillaume Renaud de la Faverie, MBA, EMBA, DBA, whose expertise outside the healthcare field brings a pragmatic and rational perspective to our work. Our mission is to provide high-quality continuing education for osteopaths and other healthcare professionals, promoting ethical, inclusive, and evidence-informed therapeutic practices. Through BMS Formation, we strive to support practitioners in developing their skills within an integrative framework aligned with contemporary scientific advancements and person-centered care principles.

The foundation of our CPD course provider is rooted in the 2002 update to osteopathic principles, which introduced a tenet that recognizes the individual as a dynamic interaction of body, mind, and spirit. However, the definitions and professional skills required for practical applications remain unclear and are subject to individual interpretation by both patients and practitioners. This tenet embodies the integration of Indigenous healing perspectives with Western biomedical principles, thus uniquely positioning osteopathy within the broader healthcare landscape. Emerging evidence on body representations in osteopathic care has led us to refine the "spirit" component of the body-mind-spirit framework, grounding it in physiological changes linked to bodily lived experiences. This shift has enabled its integration into secular clinical practice, moving beyond abstract philosophical constructs. It also helps explain why the body-mind-spirit tenet resonates with some patients but not others, emphasizing the need to respect individual preferences in person-centered care, an important pillar of evidence-based medicine. Unlike conventional Western healthcare practices, we believe that osteopathic practitioners have a unique opportunity to draw from the profession's Indigenous heritage, embracing non-materialistic, person-centered models. In these models, the body is viewed not only as an object of treatment, but also as an interconnected whole, with health understood as a dynamic balance. This core tenet of body, mind, and spirit is also an inspiration for the name of our CPD provider company.

What is unique to BMS Formation?

For us, osteopathic care uniquely bridges contemporary biomedical science with its early Indigenous influences, offering a truly holistic approach to health. However, promoting this perspective within mainstream osteopathic organizations remains a challenge, as many prioritize conventional evidence-based models, particularly musculoskeletal care within the biopsychosocial framework. Although valid, this focus is already well established in fields such as physiotherapy and chiropractic care. Our vision is to preserve and expand what distinguishes osteopathy by integrating its rich heritage with modern advancements. Through our CPD programs and research initiatives, we integrated both materialistic and non-materialistic perspectives on the body in health and disease, a distinction that we consider fundamental to the osteopathic profession. While recent scientific research is beginning to explore human experiences traditionally associated with spirituality and philosophy through a Western lens, these concepts have long been central to Indigenous healing systems, which emphasize non-materialistic views of the body. By bridging these perspectives and using patients' bodily experiences as the starting point for our reflections, we aimed to advance clinical practice and ensure the ongoing contribution of osteopathy to health and well-being.

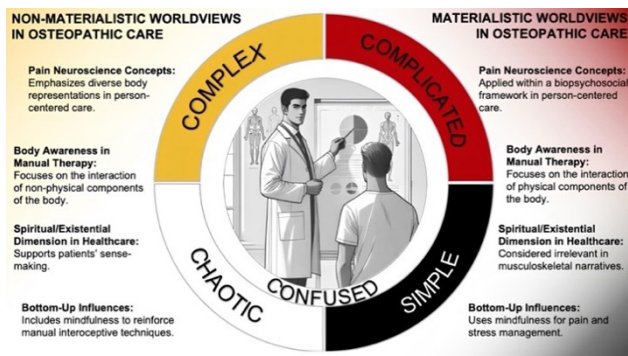
Over the years, our team of CPD educators has expanded to include colleagues from a wide range of cultural, clinical, and academic backgrounds. This diversity enriches our programs by incorporating multiple worldviews and tailoring content to meet the needs of different sectors of the osteopathic profession.

BMS Formation was founded to address gaps in osteopathic education, particularly in integrating person-centered care, emerging scientific research, and cross-cultural perspectives. While Western medicine often focuses on musculoskeletal conditions, osteopathy has historically addressed broader health dimensions including consciousness, body awareness, and therapeutic relationships. By combining these elements, we aimed to refine clinical models and highlight the unique role of osteopathy in healthcare. Our courses and events incorporate historical, anthropological, scientific, and clinical perspectives to equip practitioners with evidence-informed approaches in regulated Western healthcare settings. We also emphasize the importance of diverse cultural views on health and healing, recognizing that individuals' perceptions of their bodies shape their physiological responses and interactions with manual therapy. Rather than relying solely on theoretical models, we focused on lived bodily experiences shaped by culture and personal life events. This approach respects both materialist and non-materialist perspectives, promoting a more inclusive, person-centered model of care that enriches clinical practice and strengthens the therapeutic alliance.



What are you proposing to the clinicians?

From the beginning, we recognized that our exploration of the relevance of the current body-mind-spirit osteopathic tenet in contemporary care would likely provoke curiosity at best and often face rejection or disregard. Given that this was a largely uncharted area in peer-reviewed literature, we chose to prioritize the publication of research materials to ensure that the content of our courses could be critically appraised. As with any field in healthcare, our goal was to provide references that could be rigorously examined rather than relying solely on practitioners' personal experiences to inform clinical practice. We are not anchored to any particular ideology; instead, we seek to understand and respect diverse worldviews, a process that can be challenging, particularly when it comes to defining the non-physical components of the body.



Over the years, our work has explored key areas, including the bio-psycho-social-spiritual model, Native American roots of the Body-Mind-Spirit tenet, and development of a structured roadmap to investigate this tenet in clinical practice. We also introduced the concept of epistemological flexibility and advanced the application of the Cynefin framework, originally adapted for osteopathic care by our Italian colleagues Christian Lunghi and Francesca Baroni, as a decision-making tool to support practitioners in navigating clinical complexity and engaging more effectively with the diverse values and expectations of our patients.

Our CPD programs emphasize the importance of critical thinking grounded in our peer-reviewed papers. This ensures that all course content is open to discussion and does not rely solely on expert opinion. We value diversity, including non-materialist perspectives, and are committed to fostering interdisciplinary collaborations. Our goal is to advance the distinctiveness of osteopathy in an ever-evolving healthcare environment by applying evidence-based medicine models that integrate three key elements: patients' values and expectations, scientific evidence, and practitioners' experiences.

Our courses are designed to develop a broad range of professional skills that osteopaths use and that are valued by patients. Available in person, through virtual classrooms, and via e-learning, our programs address the diverse needs of practitioners. We now offer eight distinct courses for osteopaths, including four blended learning formats (combining in-person and remote components), and four fully remote courses. The content is informed by current research in pain neuroscience, neuroscience of perception, and the diversity of body representations shaped by cultural and experiential frameworks. Our core aim is to promote patient health and well-being by equipping practitioners with tools to deliver holistic, evidence-informed care tailored to individual needs.

Key Projects and International Collaboration

Our early academic contributions represent a substantial investment, particularly for a small company like ours that operates without external funding. Nevertheless, these efforts have been integral to our growth. To date, we have published 13 peer-reviewed papers in collaboration with colleagues from diverse disciplines, including anthropology, science, and clinical practice, across continents including Africa, South America, North America, and Europe. This global collaboration highlights the diversity of perspectives on how individuals perceive their bodies in health and disease. These foundational contributions have allowed us to establish credibility in the field, leading to invitations to present at national conferences in Belgium, Brazil, Canada, the USA, the UK, Switzerland, France, Spain, the Netherlands, and Italy. As more professionals recognize that a narrowly musculoskeletal focused approach may limit the long-term potential of the profession, many are joining our initiative. We offer a practical, evidence-informed approach that equips clinicians with tools to enhance their clinical practice, strengthen patient communication, and support interdisciplinary collaboration while remaining aligned with the historical foundations and distinct identity of osteopathic care. Over the years, our work has explored key areas, including the bio-psycho-social-spiritual model, Native American roots of the Body-Mind-Spirit tenet, and development of a structured roadmap to investigate this tenet in clinical practice. We also introduced the concept of epistemological flexibility and advanced the application of the Cynefin framework, originally adapted for osteopathic care by our Italian colleagues Christian Lunghi and Francesca Baroni, as a decision-making tool to support practitioners in navigating clinical complexity and engaging more effectively with the diverse values and expectations of our patients.

Despite facing professional, legal, and economic challenges, we have remained committed to preserving our independence, allowing

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A notable example of interdisciplinary and international collaboration is the recent creation of a unique artistic project inspired by the ancient Indigenous legend of the Eagle and the Condor. This video celebrates the harmony between worlds, featuring the graceful artistry of Hugo Marchand, Étoile dancer of the Paris Opera Ballet, the soulful sounds of Mose, and the voiceover of Jason Haxton, director of the Museum of Osteopathic Medicine in Kirksville. Supported by « Ostéopathes de France », a French professional organization recognized by the Ministry of Health, exemplifies the power of cross-disciplinary partnerships in fostering global dialogue and promoting the values of osteopathy. Furthermore, we explored opportunities for how these interdisciplinary efforts can support the full expression of osteopathic distinctiveness within our regulated healthcare environment.

In addition to our courses and collaborations, we are proud to host The BMS Podcast, where we interviewed professionals from diverse fields and backgrounds. Through these conversations, we aim to explore a wide range of perspectives from science and healthcare to philosophy and culture. The podcast serves as a platform for critical dialogue, where we delve into topics that challenge conventional thinking and broaden our understanding of osteopathy. Each episode emphasizes interdisciplinary learning, encourages listeners to consider different viewpoints, and integrates new knowledge into their own practices. This initiative further reflects our commitment to fostering a holistic, evidence-informed approach and nurturing global conversation about the future of osteopathy.

What are your current projects?

We are dedicated to advancing the field of osteopathy by bridging the gaps between scientific research, clinical practice, and diverse global perspectives. Our ongoing projects reflect this commitment and aim to promote integrative approaches and enhance the practice of osteopathic care.

- **Online, Self-Paced E-Learning Courses:** Available worldwide in French, English, and Spanish, our courses are designed for osteopaths and accredited by professional organizations in Belgium and Canada. These programs focus on enhancing therapeutic alliances through manual interoceptive approaches, allowing practitioners to develop more effective patient relationships.
- **Workshops and Masterclasses:** Our sessions explore the application of osteopathic principles in managing complex patient cases, with a particular emphasis on neuroscience. These workshops highlight how understanding body representations and pain perception can improve clinical decision making and patient outcomes.
- **Collaborative Research on Body Awareness and Consciousness:** Our research efforts are pushing the boundaries of clinical models and providing insights into how body awareness shapes pain perception and impacts therapeutic outcomes. This collaborative work deepens our understanding of the mind-body connection and contributes to the evolution of osteopathic practice.
- **Conferences and Special Events:** Notably, our 2022 international event at the Grand Rex in Paris brought together experts to examine the body-mind-spirit tenet through a historical, scientific, and clinical lens. By integrating diverse perspectives, we will continue to inform and shape modern osteopathic practices.

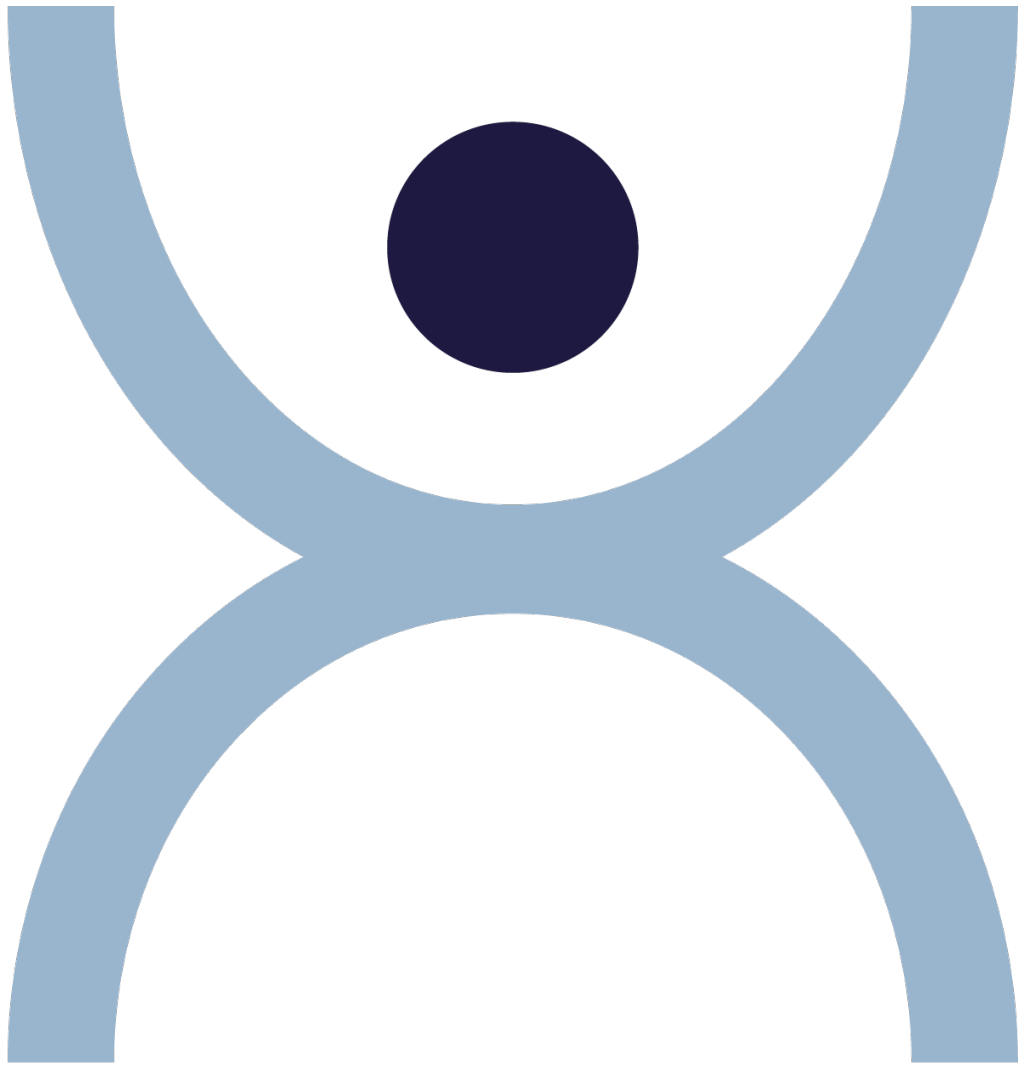
Our collaboration with European organizations, particularly Panta Rhei in the Netherlands and other partners worldwide, highlights our commitment to advancing osteopathy on a global scale. These partnerships strengthen the profession by integrating scientific rigor to refine clinical models that reflect the full scope of osteopathic practices.

Looking ahead, we aim to expand osteopathy beyond its predominant musculoskeletal focus, which some colleagues see as the most pragmatic path forward. However, our priority is to strengthen its scientific foundation through interdisciplinary research and to highlight its distinctiveness with the available evidence. By integrating broader concepts of body awareness and consciousness, we aim to enhance clinical applications and ensure that osteopathic care remains a relevant and valuable component of patient-centered care in an evolving medical landscape.



Course

This course will be held at Panta Rhei on November 13 till 15. More information can be found on www.pro-osteo.com.



PRO

www.pro-osteo.com
