NORDIC OSTEOPATHIC JOURNAL 2025

NORSK OSTEOPATFORBUND

Svenska Osteopatförbundet

Suomen Osteopaattiliitto ry · Finlands Osteopatförbund rf

Danske Osteopater

OSTEÓPATÍA

Osteópatafélag Íslands

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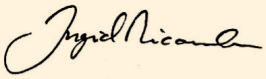
Words from the editor

Dear readers and Colleagues,
We are proud to present this year's edition of the Nordic Osteopathic Journal. Our goal is to offer a publication that provides both informative and engaging content, and we hope we have succeeded in doing so. Within these pages, you will find a variety of articles that we believe will appeal to your professional interests and curiosity.

Once again, the Nordic Osteopathic Journal represents a collaborative effort between all the Nordic countries, and we would like to extend our sincere thanks to all contributors for their commitment and enthusiasm.
I hope you enjoy reading this issue as much as we enjoyed creating it.

Warm regards,

Ingrid Nicander
Osteopath and editor



Nordic Osteopathic Alliance

Viktor Steinn Bonometti
President of the Icelandic Osteopathic Association

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Regulated since: 2005
Number of members: 20
and a few more pending

Tanja Kakko
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Regulated since: 1994
Number of members: 200
including students

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Regulated since: 2022
Number of members: 475
including students

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Number of members: 247
including students

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Regulated since: 2018
Number of members: 417
including students

Nordic Osteopathic Alliance

Stronger together!

We are committed to creating a sustainable and unified osteopathic profession across the Nordic countries.

Dear colleagues,

What an experience it was to organise the 6th Nordic Osteopathic Congress in Reykjavik, Iceland.

A great venue centrally located in beautiful Reykjavik, top notch lecturers from the Nordics, Europe and even from down-under (Australia) delivering topics of great interest and relevance for osteopathic practice, and networking with osteopaths and other healthcare professionals from the Nordics and beyond. And those who managed to allocate some time to explore Iceland, could add amazing views and experiences including diving into spas and pools, in addition to exclusive and exotic dining. To meet and share, discuss and reflect, and just to spend time together are core values for us as human beings and as healthcare professionals. A therapeutic alliance between healthcare professionals and their patients, also benefits from the good quality of spending time together.

This year´s edition of the Nordic Osteopathic Journal is a good example of teamwork and what happens when you allow things to develop over time. We are proud to deliver a journal packed with articles that will help osteopaths and health professionals to reflect and develop their practice. Still, the journal takes pride in being accessible to the broader public and we encourage anyone interested in health to give it a read. We believe in the value of sharing and will continue to deliver the Nordic Osteopathic Journal as open access. You can find and read all editions of the Nordic Osteopathic Journal via our website.

The 7th Nordic Osteopathic Congress will be in Gothenburg, Sweden, 12-13th September 2026. Make sure to save the date and to be ready for a couple of days of networking and professional development, in addition to exploring the wonderful city of Gothenburg. Why not spend a couple of extra days and explore Liseberg or other great places? The congress is open to osteopaths and other licensed healthcare professionals, from the Nordics and beyond. Stay tuned for updates via our website – registration will open early 2026.

The NOA leaders:
Tanja Kakko, Finland
Emmelie Hansen, Sweden
Hanna Tómasdóttir, Danmark
Tomas Collin, Norway
Viktor Steinn Bonometti, Iceland

Scan the QR-code to visit our website!

nordicosteopathicalliance.org

News and Updates from Osteopathy Europe

Text: Hanna Tómasdóttir

As President of Osteopathy Europe, I am pleased to share an update with our community in the Nordics. Not all of you may be familiar with our organisation, so let me begin with a short introduction.

Who we are

Osteopathy Europe (OE) is the umbrella organisation for osteopathic associations and regulators across Europe. We are an organisation of organisations, and together we represent 23 member countries in Europe, with over 28,000 osteopaths in our community. Our mission is to support our members to gain statutory regulation, and general recognition of osteopathy as a primary contact healthcare profession. Our vision is the universal recognition of osteopathy across all countries in Europe, with harmonised standards and the right to practise across borders.

The Board of OE consists of seven elected members, supported by our Chief Executive. Our work is supported by a close collaboration with our Research, Policy, Education and Appointments Committees, as well as our Communications Task Force. Our organisation is highly member-oriented, and in all Committees there is a broad representation of delegates from across Europe. This flat organisational structure has been developed over the past few years and has proven to strengthen the organisation significantly. We also bring our community together through two annual in-person events: our Spring Conference & General Meeting and the Autumn Conference & General Meeting.

Looking ahead in our leadership

At our Spring Conference & General Meeting in Mallorca in March 2025, the membership approved the introduction of a President-Elect role, in order to effect an ordered transition from one President to the next. It is therefore my great pleasure to announce that Tomas Collin, President of Norsk Osteopatforbund, has been appointed President-Elect of Osteopathy Europe. Tomas will take over the Presidency when I complete my seven-year mandate in March 2026, at our Spring Conference in Salzburg, Austria.

Our strategy for 2026–2028

Looking forward, the Board has developed a new Strategic Plan for 2026–28, building on the achievements of the current plan. The plan focuses on five key priorities:

• Strengthen alignment – advancing standards, education, and regulation across Europe, with a stronger focus on supporting countries working towards statutory recognition.

• Support and promote best practice – expanding our research agenda with ongoing data collection through Patient Reported Outcome Measures (PROMs), a paediatric HVLA survey, and a Delphi study on Osteopathic Identity. Together, these initiatives will strengthen evidence-informed practice and provide a foundation for the next stage of development.

• Build a stronger, more engaged community – supporting members more closely in their national journeys towards statutory regulation and growing recognition, while also growing our community by welcoming new members and regulators.

• CEN Review 2026–28 – leading the revision of the European Standard for Osteopathy, initially published in 2015 by the Comité Européen de Normalisation, and ensuring it reflects our professions evolution and shared identity.

Hanna Tómasdóttir
President Osteopathy Europe

• Engaging interest-holders and strengthening our relationships with international partners, including the OIA, WHO, and educational providers, as well as other relevant organisations within the healthcare sector.

Delivering the strategy

The Research Committee is currently leading two key projects: the international paediatric HVLA mapping study and a Delphi study on Osteopathic Identity. The Delphi study will provide an important foundation for the upcoming CEN review, ensuring that future standards are informed by a shared professional identity which is aligned across Europe.

Our four committees and the Communication Task Force each play a vital role in advancing OE's agenda, encompassing research, policy, education, appointments, and communication.

The Research Committee's focus is on dissemination of robust research, and good practice, and where critical and practical, to invest in key evidence gathering that supports the mission of the OE and members. The Policy Committee supports OE's member organisations in their efforts to achieve statutory regulation and in striving for greater professional recognition.

The Education Committee focuses on strengthening and harmonising standards within osteopathic education, preferably as state-accredited and recognised programmes. The Appointments Committee looks to ensure that those who serve on the OE Board and in key roles have appropriate skills and motivation for these critical positions, as well as helping to advise on matters of good governance. The Communication Task Force enhances our visibility and collective voice, ensuring members and external partners remain engaged and well-informed.

All committees and the Communication Task Force are driven by volunteers from member organisations across Europe, reflecting the diversity and collective strength of our community. Together, these groups provide essential leadership in their domains and are central to delivering on OE's mission and vision.

Our community

As we reflect on what we have achieved together and the goals we continue to pursue as a strong European community, I would also like to highlight the engagement of the Nordic Associations, all of which are members of OE. The Nordic Osteopathic Alliance (NOA) stands as an inspiring example of extraordinary leadership and community spirit. I wish the Nordic Osteopathic Alliance – and all of you reading this – the very best for the future from Osteopathy Europe.

I look forward to continuing this important work with all of you as we move towards the next stage of our shared journey.

Warm regards,
Hanna Tómasdóttir
President, Osteopathy Europe

The Board of Osteopathy Europe

Osteopathy Europe

Common Injuries, Different Meanings:

A Relational Analysis of Lateral Ankle Injuries in Healthcare Practitioners' Narratives

Text: Pontus Dahlström

This master's thesis explores how lateral ankle injuries (commonly understood as ankle sprains) are articulated, understood, and enacted in clinical treatment and teaching contexts. By analysing the interplay between formalised protocols, professional judgement, and material-semiotic practices, the study demonstrates how an apparently simple injury is rendered complex through its situated enactments.

Background

Lateral ankle injuries are among the most common musculoskeletal injuries worldwide, particularly in sports [1]. Partly because of their prevalence, they are often considered simple, routine injuries that heal quickly. This perception risks obscuring the complexity of their treatment and teaching. Research shows that treatment protocols are frequently based on anecdote and tradition rather than robust scientific evidence[2]. Consequently, a tension arises between evidence-based medicine (EBM), which prioritises formalised, standardised protocols, and the professional judgements that clinicians make in practice. This tension is heightened by the low hierarchical status of ankle injuries, which often leads them to be deprioritised compared to more serious conditions.

To illuminate this tension, the thesis focuses on two professional groups frequently involved in ankle injury treatment: physiotherapists (a licensed profession in Sweden) and osteopaths (an unlicensed profession in Sweden). Their contrasting statuses and epistemic traditions provide an opportunity to explore how ankle injuries are conceptualised and treated differently across professional contexts. The thesis also addresses teaching practices in sports medicine to understand how simplification in pedagogy may reinforce reductive conceptions of the injury.

Theoretical Framework

The study draws on two central theoretical orientations, first from Annemarie Mol's theory of multiple ontologies that stipulate that diseases and injuries are not singular, stable entities but are enacted differently across practices and contexts[3]. Thus, an ankle injury is not one, but many versions of an injury depending on clinical, pedagogical, and temporal settings. By also drawing on John Law's material semiotics where social reality is co-constituted by material and semiotic elements[4]. For instance, artefacts, protocols, and clinical tools have symbolic meanings that shape practices, by inducing a sense of security to patients when artefacts are meticulously applied.

This approach enables an analysis of how formalisation and judgement are mediated through material practices, such as taping, acronyms (PRICE, POLICE, PEACE & LOVE), or rehabilitative exercises. The acronyms represent formalised procedures, each letter stands for a specific step, prescribing a sequence of events that the treatment is expected to follow. These frameworks foreground the relational and dynamic constitution of injuries and highlight how knowledge is produced in the interplay of protocols, practitioners, patients, and material artefacts. Formalisation is the structuring of treatment through standardised protocols or acronyms, aiming to reduce arbitrariness and increase transparency[5]. Judgement becomes here the situated evaluations and adaptations that practitioners make in response to individual patients and contexts. Judgement often reintroduces variability, highlighting the limits of rigid formalisation[6]. Together, these tools allow for an exploration of how protocols are never applied in isolation but are constantly adjusted, reinterpreted, and negotiated in practice.

Methodology

The empirical material consists of seven semi-structured interviews with physiotherapists, osteopaths, and one sports medicine educator. The interviews explored four themes: perceptions of ankle injuries, treatment and teaching practices, the role of professional experience, and tensions between literature and practice. The interviews were transcribed and analysed using thematic analysis, with inspiration from abductive approaches[7]. Codes and themes were developed iteratively, highlighting both convergence and divergence across participants' accounts.

Results

The analysis identifies several interconnected themes that reveal how lateral ankle injuries are made more complex than their reputation as simple conditions suggests. Although protocols such as PRICE, POLICE, and PEACE & LOVE are commonly used by the informants, they are not rigidly applied. Instead, practitioners constantly adapt them to the temporal stage of the injury, whether acute or rehabilitative, and to the needs of individual patients. This interplay between formalisation and judgement illustrates the dynamic character of treatment. Among the in-

formants, professional approaches also diverge. Physiotherapists, as licensed practitioners, presumes to rely more heavily on formalised guidelines and the discourse of evidence-based medicine, while osteopaths emphasise holistic and individualised methods. Yet despite these differences, both groups adjust formalised tools through professional judgement, which underscores the inevitability of variation across clinical practice[3].

Another recurring theme is the centrality of trust. Trust can be understood as

something created through relational practices such as clear communication, manual treatment, and even through the use of artefacts like tape. These interactions show that healing is never purely biomedical; it is also relational and symbolic[4], shaped by the confidence and reassurance established between practitioner and patient. The informants describe how ankle injuries frequently are described in teaching contexts in simplified ways, reinforcing the perception of them as routine and straightforward. Such pedagogical simplifications help the practitioners to grasp core ideas, while the practitioners grasp the core ideas they also recognise that simplifications often downplay complexities such as pain variability, long-term consequences, and competing treatment logics[8]. While practitioners and teachers seem to recognise the usefulness of simplification for didactic purposes, they also acknowledge the risk of obscuring the injury's multiplicity. Finally, the study highlights gaps between literature and practice. Evidence supporting treatment protocols is often weak, anecdotal, or inconsistent, particularly for injuries like ankle sprains that are assigned relatively low status within medicine[2]. As a result, the informants sometimes privilege clinical experience and tacit knowledge over formalised evidence, while also critiquing acronyms for being overly context-dependent and simplified.

Clinical Implications

Drawing on the notion previously made, it becomes plausible to understand that this arbitrary lateral ankle injury is enacted through relations with artefacts and human actors in certain situated practices, which demonstrates the performative nature of this injury. Lateral ankle injury is just an example of a much broader theme, a theme where different epistemic traditions arise while managing lateral ankle injuries (standardisation and professional judgment). And these different epistemic traditions can further be seen as representations of the even broader ideals of EBM and person-centred care.

The epistemic ideals of EBM and person-centred care, which also can be argued for representing different views of knowledge production, are not passive models awaiting enactment - but rather performative ideals that regularly depend on certain conditions to be sustained in practices post-treatment. This insight can elucidate how to understand the dynamics of care encounters, and how to describe and maintain evidence-based practices. Trust emerges here as a relational effect, continuously enacted within the material and semiotic practices that constitute clinical realities[3-4]. It may be presumed that trust precedes the practices in which it is enacted, however, trust is rather dependent on normative frameworks and hierarchical relations in order to either be renegotiated or dissolved. Trust is therefore neither a static or a singular phenomenon, but given through relational enactments.

Ontological politics[3] explicate that EBM and person-centred care is a result of priorities and choices that creates the conditions for what a lateral ankle injury is allowed to be in clinical and teaching situations. Standardisation, which is theoretically associated with uniformity and rigidity, stands in contrast to person-centred care, which emphasises variation and individualisation. When either approach is being idealised in isolation, it risks obscuring the dynamic relationships that are essential for understanding how trust is constituted within healthcare. I argue that recognising the ontological politics at play is essential for the continued development of healthcare practices. If the diverse ways in which clinical practices shape realities are reduced to a singular, standardised framework, the complexity, multiplicity and situatedness of healthcare cannot be adequately addressed.

This study can provide practitioners with an alternative perspective on how seemingly trivial clinical conditions, in fact, are embedded within complex web-like structures of relational processes. Rather than understanding clinical conditions as pre-given or self-evident, this study contributes with a nuanced understanding of how the 'obvious' unfolds through relational processes and the constitution of trust. In doing so, it challenges taken-for-granted assumptions and advances a more situated and processual view of clinical practice.

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Pontus Dahlström
Osteopath D.O
MSc Evidence-Basing in Practice & Theory of Science

Osteopathic intraprofessional characteristics

A qualitative study

Text: Anu Maria Kallio

The different forms of osteopathic profession have been debated for decades. Several studies have described different interpretations of principles, training and how evidence-based medicine should be integrated to osteopathic profession. The tensions are widely acknowledged, but caution should be exercised in interpretation, as the differences may not be as great as commonly assumed. These differences may be a strength of the profession as part of modern healthcare.

Introduction

There are many variances within the osteopathic profession, including, e.g., interpretations of history and principles, identity perceptions, differences in education, and in how evidence-based practice is perceived. Consensus on definition of osteopathy is not defined and historically the definitions have been changing.[1] Old tenets are not always thought as complete, but that they have evolved with the times they have been written.[2,3] Conceptualisations and definitions show both regional and intra-professional variation.[4] Osteopathic identity has been investigated by several authors.[5,6,7,8] Educators' attitudes towards osteopathic principles vary in a large scale.[9] Tensions were described to be between traditional methods and evidence-based practice, which seemed not to be totally compatible with one another.10 This is consistent with article written by Phillips (2022)[6], which discussed the difficulties combining evidence-based practice and the prioritisation of osteopathic principles.
These examples are just a few osteopaths are discussing within the profession. Professions' self-reflection is vital for it to develop, and this master's thesis wanted to shed even more light to how osteopaths perceive their own profession and some of its variations.

Method

Thesis was conducted with qualitative method with phenomenographic approach. Participants were recruited with an online form which was sent to different national associations. Osteopaths who the author know personally were also contacted directly. Osteopaths with >5 years of experience practicing in Europe and in other non-US context were included. Osteopaths unable to express themselves in English, and those practicing in Sweden were excluded. Results were analysed with inductive content analysis.

Results

History

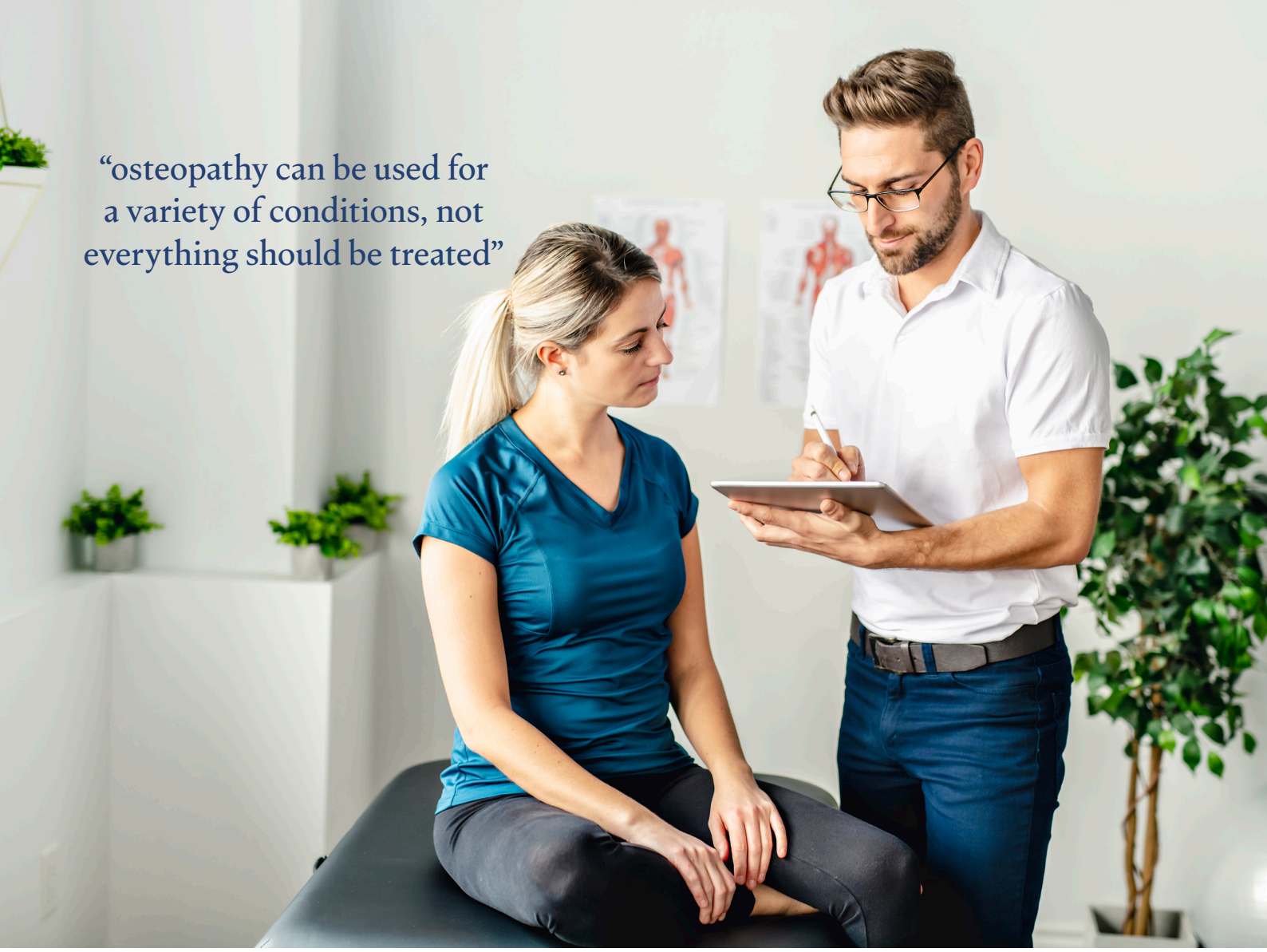
Some of the participants described osteopathy as something better than other health care during the time osteopathy was grounded. Glorification of historic osteopathy is not without some negative implication when mentioned as something that other osteopaths do. Pillars and concepts in historic view are seen problematic since interpretation of them is not straightforward. Division between "old" and "new" osteopaths could be somewhat artificial, since the consensus drawn from interview data is that history should be remembered. Data seems to point towards that differences within the profession are because of osteopaths' perception if the historical aspects of the original ideas should be implemented in the present or not.

History is a valuable tool to remember where osteopaths come from but that's all it is. I don't think history should be directing where osteopaths are going. (Participant 3)

Description and principles

None of the participants could answer the question what osteopathy is and several of them indicated that the question was difficult to answer. Participants stated that common definition would make it easier for all the actors: patients, osteopaths, and to the health care context.

Participants pointed out that osteopathy is not just an approach or principle. It is not enough to treat just with one approach, but the combination of tools and approaches used to treat every aspect of the patient is seen as essential. Osteopathy is thought to be more than just techniques, and the outcome for the patient is perceived as something that describes the essence of osteopathy better than the means that are used to get there.



I would not go defining osteopathy by with its techniques. (Participant 3)

Patient’s perspective was mentioned from different angles, and it seemed to be more common to refer to what patients get from osteopathy when trying to define what osteopathy is. Holistic perspective is also seen as an important aspect on what osteopathy is.
Choice and perception of principles seem to be at least partly about preference. Some osteopaths might be better in one of the three approaches, cranial, visceral or structural, which makes them more prone to choose one of them. Some mentioned that feeling is guiding how the treatment is conducted, there is nothing predetermined, but the osteopath-patient relationship is guiding which approach is chosen for the treatment.
Patient safety was important to all participants. Several participants mentioned that there are limitations to osteopathy and even though osteopathy can be used for a variety of conditions, not everything should be treated.

It is very important to know my limits. (Participant 6)

Diversity

Interview data showed that diversity is both seen as an opportunity and as a threat when as the same time some of the participants point out that there might not be that big of a diversity after all. Participants mentioned that when there is diversity it is easier to adapt to patient and to different contexts.

It is about getting a good match between patient and osteopath. We should embrace that diversity or broadness of our scope. (Participant 2)

Diversity among the profession was recognised by all the participants. Participants pointed out that the division seen in social media platforms and other discussion forums might not be as universal as it might seem. Platforms might be creating the tensions, since the interaction is not happening face to face. One participant mentioned the tensions are often created by the same persons. The big mass of osteopaths is not conflict seeking but it may seem that way because the loud ones are taking place.

Regulation

Several participants mentioned that regulation may be seen as a constraint since it might dictate which kind of osteopathy is allowed to be practiced, but the negative aspects were mostly described as perceived by other osteopaths, not the participants themselves. Standards and rules are generally seen as something positive to patient safety since there is a governing organ which takes care of the profession’s quality. Regulation is seen mostly as a guarantee of patient safety, and all the participants agreed on that patient safety is fundamental. Standards were also perceived as something that helps osteopathy as a profession to get more unified and as something that helps to guide the profession. There is a hope that osteopathy will be seen as a whole with all its parts and pillars. How these standards should be developed is not clear.

Education and evidence

According to interview data, education is seen as an important part of osteopathy’s future on both how osteopathy will turn out to be and how osteopathy can evolve in the modern health care context. Education was mentioned by the

participants as one of the main reasons inducing diversity and differences within the profession.

We are sensors shaped by our education. (Participant 1)

According to participants, osteopathic education institutions are directing which kind of osteopathy is taught and the perception is that osteopathy which is taught varies sometimes significantly between institutions even within the same country. Participants described that osteopathic education might also be given in course format, which means, according to participants, that students do not get the whole picture of osteopathy. This aspect, which is described as a threat by several participants, could add in the division described by the participants.

Impressions of evidence were not part of the interview questions, but several participants mentioned aspects of evidence in osteopathic profession. Several participants stated that osteopathy is hard to describe with scientific methods. There are a lot of factors when two people meet, and these factors are hard to reproduce with quantitative research methods which were mentioned as the "better evidence". Greater appreciation of qualitative research could affect osteopaths' attitude towards evidence, since many of the participants mentioned difficulties while measuring effects of osteopathic treatment with quantitative methods. Qualitative methods were mentioned by participants as a suitable research method for osteopathy.

Development

Some participants pointed out that development could be seen as a threat. Some participants mentioned that the "devolving" of osteopathy results in that osteopathy is going to be less than before, and that the concept of osteopathy itself is changing and only some pillars of the pillars might perish, which might result that osteopaths are not osteopaths any longer.

Despite this, several participants expressed that development is a necessity for osteopathy to survive and without it osteopathy could potentially get obsolete in modern context. According to several participants, stagnation in historic principles do not function in modern health care.

Osteopathy is a little bit stuck. Osteopathy is not modern enough anymore, we are using principles from one hundred years ago, we need to try to find a modern way to treat. (Participant 4)

Despite this, according to interview data, history could be used as a reminder, not something that should be erased.

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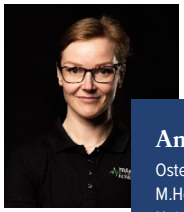
Other professions

Osteopathy was seen as an addition for other health care professions with shared goals and means. Other health care professions are generally not seen as a threat, but as different compared to osteopathy according to participants. Differences were not seen as something undesirable, but as something that brings broadness to health care. Osteopathy could, and should, be integrated to health care systems as its own profession.

Conclusion

Diversity among osteopaths is widely described by participants. Patient safety and variety of different treatment modalities are important, and patient is described to have a vital role in definition of what osteopathy is. According to participants, variety is inevitable, and it should be embraced. Tensions are a common part of the profession, and these tensions seem to be amplified when persons are not talking to each other. This suggests that the osteopathic profession is not as divided as it might seem. Evidence is perceived differently in the profession, which might affect the perception how regulation and evidence-based practice is integrated with osteopathy, but the general perception of evidence seems to be seen as positive.

These findings support previous findings made by other authors and they add nuance to the discussion. More information of the solutions to the division would be appreciated, specifically when variance is commonly seen as a strength. Evidence-based practice is an important part of the modern health care system, and integration of evidence-based treatment modalities are vital in the development of osteopathy. Education system might play a part in this since knowledge of research methods could increase understanding of evidence, as well as the number of osteopathic researchers. This could support osteopathy as a profession in ambition to unify and develop in a meaningful way as a part of modern health care context.



Anu Maria Kallio
Osteopath in Sweden
M.Hc. from Metropolia University of Applied Sciences.

Her thesis 'Osteopathic intraprofessional characteristics' can be read here:

NOC2026 GOTHENBURG

12.-13. SEPTEMBER

Venue:
Quality Hotel Waterfront
Adolf Edensvärds Gata 10,
41451, Göteborg

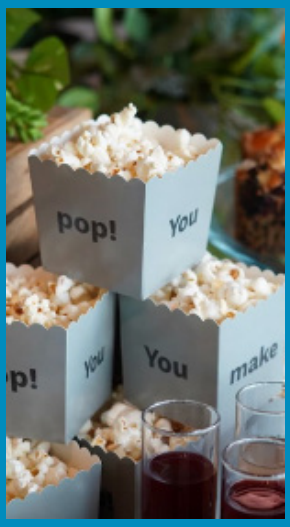
Gothenburg, Sweden

12-13th September 2026

Beautifully located where the city meets the ocean, Waterfront Hotel will be the location for the Nordic Osteopathic Congress 2026. The congress room offers 200 square meters with a view of Göte River.

- Morning & Afternoon Coffee Breaks featuring something savory, sweet, fresh, and energizing.
- Conference lunch including table water, salad, bread, and coffee/tea.
- This also includes coffee/tea, popcorn, and soft-serve ice cream!

NORDIC OSTEOPATHIC ALLIANCE



Read more about the congress and stay tuned for more information.

Osteopathy's adjunctive role in chronic respiratory care

A personal perspective

Text: Johan Suhonen

Introduction

Interest in conservative, non pharmacologic support for respiratory conditions is growing, and osteopathic care has long addressed the mechanics of breathing—rib cage mobility, diaphragmatic function, and circulation—as an adjunct to standard treatment[1]. Historical reports from the 1918 influenza pandemic describe osteopaths' involvement in respiratory care, though these accounts are observational and hence cannot establish systematic efficacy[2].
In Finland (2023), approximately 1 in 5 adults lived with a diagnosed pulmonary disease or reported intermittent dyspnea, according to The Organization for Respiratory Health in Finland[3]. This burden underscores the value of non invasive, mobility focused care integrated within multidisciplinary management of respiratory conditions.

What is COPD?

Chronic obstructive pulmonary disease (COPD) is a long term lung disease which often encompasses emphysema and chronic bronchitis. COPD mainly affects the lungs but also has other downstream effects on the musculoskeletal system and mental health. COPD is marked by breathlessness, chronic cough, wheeze, and periodic phases of worsening. It develops due to airway inflammation and lung damage; with the major risk factors including tobacco smoke, exposure to other forms of smoke, ambient air pollution, workplace related exposures, such as fine dust from agriculture, and in some cases COPD is caused by a rare alpha 1 antitrypsin deficiency. As populations age, chronic respiratory diseases are on the rise, and COPD is now one of the leading causes of death worldwide. The diagnosis is best confirmed by spirometry, while COPD isn't curable, symptoms can be managed by smoking cessation, reducing pollution exposure, vaccination, using inhaled bronchodilators (with or without steroids), pulmonary rehabilitation, and oxygen when needed.[4]
A recent systematic review pooling 162 population based studies from 65 countries estimated that, by Global Initiative for Chronic Obstructive Lung Disease (GOLD) criteria, COPD affected about 10.3% of adults aged 30–79 years—around 392 million people—and 7.6% by the lower limit of normal (LLN) definition—about 292 million. Most people with COPD live in low and middle income countries, although prevalence is slightly higher in high income countries, likely reflecting older age structures.[5]
The total number of people living with COPD is estimated to rise to 600 million worldwide and from 36,5 million to almost 50 million by 2050 in Europe[6,7].
In Finland the annual cost of COPD to society are estimated to be around 100 million euros and is expected to rise by 60% by 2030[8]. COPD is also one of the leading causes of disability adjusted life years (DALYs) and causes approximately 74.4 million DALYs in 2019.[9,10].

My path into the topic

I came to this topic, respiratory health, by chance while translating an article into Finnish. The piece—a single case report on idiopathic pulmonary fibrosis—described improvement after osteopathic manipulative treatment (OMT). This sparked my interest and led me to more deeply explore the literature, around the physiology and anatomy of breathing[11].
From 2023 to 2025 I focused on my bachelor's thesis regarding the possibilities of osteopathy in regards to COPD, emphasizing health related quality of life (HRQoL). HRQoL shows how a disease affects daily physical, psychological, and social functioning[12]. As I searched for information on treating breathing problems with OMT, I was surprised to find there were no osteopathic clinics in Finland tailored specifically to respiratory complaints, despite multiple other specialized clinics existing (e.g. women, children, athletes).

What my review found (and why breathing mechanics matter)

In an integrative literature review I conducted on osteopathic care for COPD (bachelor's thesis, Metropolia University of Applied Science's, 2024) I found signs of short term benefit when OMT was used as an adjunct to standard care: patients reported both less breathlessness and improved health

status on validated, disease specific questionnaires. Some studies showed longer 6 minute walk distances and greater chest wall expansion. Several patients described immediate subjective ease of breathing after muscle energy techniques (MET). Effects on spirometry results were inconsistent, and adverse events were generally mild (transient muscle soreness). Notably, in mild COPD, long term added benefits on exercise capacity and quality of life were not evident. Taken together, these findings support OMT as a potential adjunct to guideline directed care, while highlighting the need for larger, well controlled trials.[12]

Breathing sits at the intersection of movement, posture, sleep, and mental well being. When mechanics are restricted, patients may feel it beyond oxygen exchange. This is where osteopathy's systems based approach may contribute: by improving chest wall mobility, supporting diaphragmatic function, and reducing subjective feelings of dyspnea. OMT as an adjunct may hence reduce symptom burden in chronic respiratory disease. Emerging studies suggest potential benefits for comfort and improved daily function when OMT is used as an adjunct to other treatments, but unfortunately, high quality evidence remains limited.[12]

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Learning, collaboration, and closing thoughts

A few months after my graduation I attended the Nordic Osteopathic Congress in Iceland and met Dr. Roger Engel, whose studies informed my thesis. We had several valuable conversations about breathing and COPD. The congress also offered a rare chance to connect with osteopaths from across the Nordic countries and to share insights on osteopathy around various topics. AS research expands, careful integration of OMT with established respiratory care may help improve daily function and comfort for people living with all sorts of breathing difficulties. In conclusion a routine translation task unexpectedly led to a project that ended up completely reshaping my clinical focus as an osteopath. It is worth embracing unexpected opportunities—you never know where they might lead you.

Disclosure: The author of this article is also the author of the bachelor's thesis cited in this article.

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Microbiota, Obesity, and Type 2 Diabetes

Text: Ida Olaussen Bryn

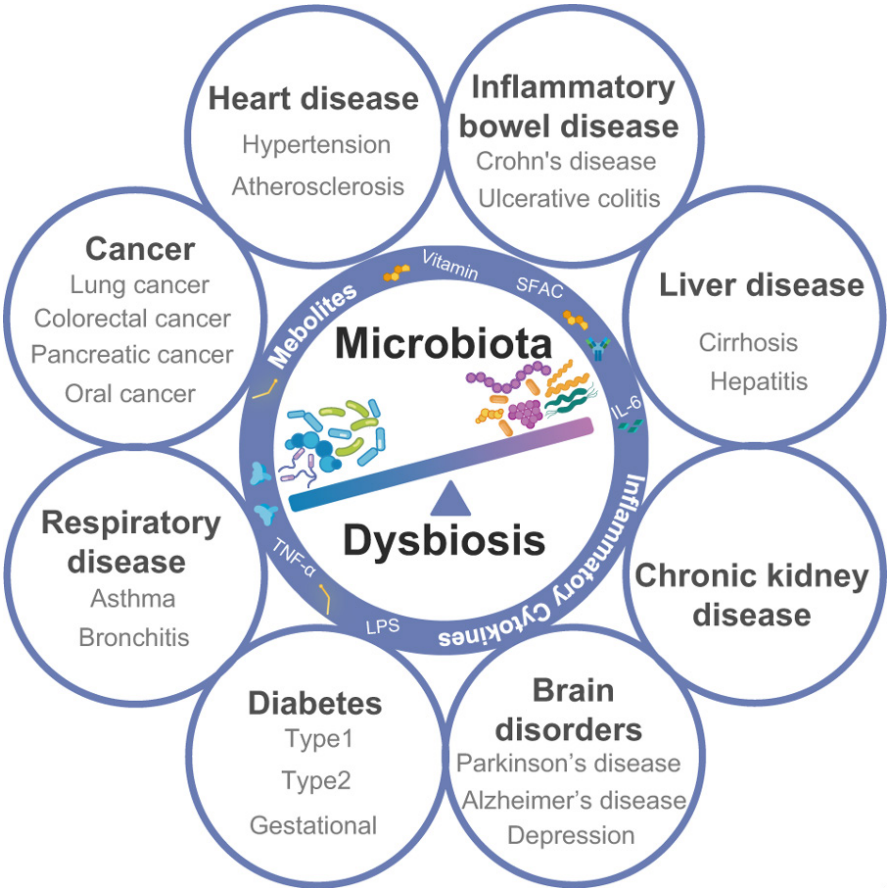
The connection between microbiota, diet, and health is a fascinating field, with a wealth of new information and knowledge emerging in recent years. We now know more about the importance of microbiota than we did a few years ago and its impact on our health. Microbiota refers to the community of various bacteria, viruses, fungi, and other microorganisms that naturally reside in the gut[1].

It plays a crucial role in digestion by releasing energy from food and enhancing nutrient absorption. Additionally, it serves as an important barrier against disease-causing microorganisms, contributes to the breakdown of toxic substances, and is vital for the development and function of the immune system. Microbiota is most abundant in the lower part of the small intestine and the large intestine[2]. There is constant communication between the gut and the brain through hormones and other signaling molecules. Recent research shows that diet influences microbiota, which in turn affects everything from digestion to mental health. We know that prebiotics and probiotics support a healthy microbiota. Prebiotics are food for bacteria, such as fiber-rich foods, while probiotics are beneficial bacteria found in fermented foods like yogurt, kefir and sauerkraut[3]. These can help restore balance in the microbiota and potentially reduce the risk of insulin resistance and weight gain.

Recent studies have shown that microbiota varies significantly between individuals, meaning that a "one-size-fits-all" diet is not always effective[4]. For example, some people may respond better to a high-fiber diet than others, depending on their existing gut bacteria. Research on personalized nutrition based on microbiota analysis (microbiome testing) is growing[5].

A healthy microbiota is characterized by a high diversity of bacteria and strong resilience to external influences, quickly returning to its original state[6]. A risk of significant disruption is that the microbiota may not return to its natural state, potentially leading to permanent dysbiosis (microbial imbalance) in the bacterial composition and function[7].

Several factors can negatively affect microbiota, such as illness, stress, changes in diet, and antibiotic use[8].

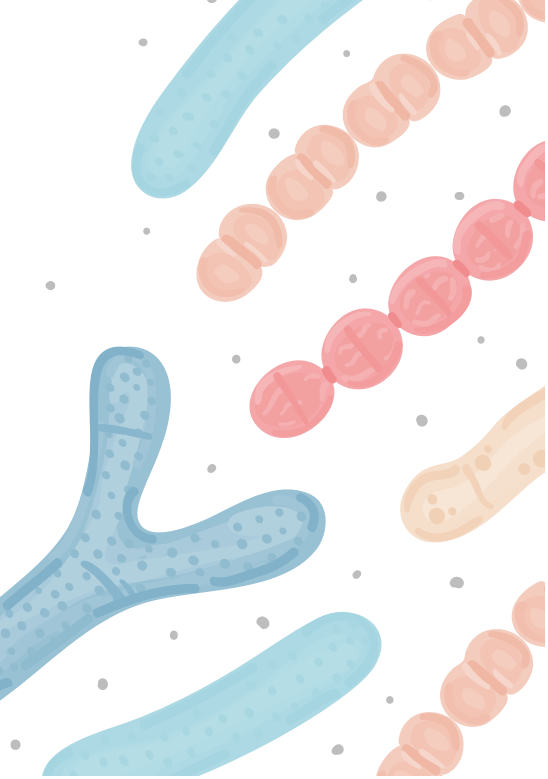


The composition of microbiota also varies across different parts of the world, influenced by factors like genetics, diet, culture, and lifestyle. Dysbiosis occurs when the gut's composition is disrupted. Such an imbalanced microbiota can lead to low-grade inflammation in the body, which may promote fat storage and insulin resistance[9]. Dysbiosis has been linked to several conditions, including allergies, cardiovascular diseases, type 2 diabetes, and inflammatory bowel diseases (e.g., ulcerative colitis and Crohn's disease)[10]. The microbiota is also associated with psychiatric disorders such as anxiety, depression, schizophrenia, and autism spectrum disorders[1]. Further research is still needed to fully understand these connections.

[8]

This text explores the potential connection between microbiota and the risk of developing obesity and type 2 diabetes.

Obesity and overweight are characterized by an excess of body fat and body



mass index (BMI). A BMI between 25 and 30 is defined as overweight, while a BMI above 30 is classified as obesity[11]. This is a widespread issue in today's society, and several metabolic diseases, such as cardiovascular diseases and type 2 diabetes, are linked to obesity. Recent studies have observed a connection between less diverse microbiota and obesity, making microbiota an important environmental factor that can contribute to increased fat storage. Most studies so far have been conducted on germ-free mice. It has been observed that transplanting microbiota from obese mice and humans to germ-free mice led to increased fat tissue storage in the germ-free mice compared to those receiving gut flora from lean mice and humans[6].

Type 2 diabetes is a condition caused by reduced insulin production and decreased insulin effectiveness in the body's cells (insulin resistance)[12]. This results in the patient requiring more insulin than the body can provide[13]. In patients with type 2 diabetes, similarities in microbiota have been observed, and it is believed that these similarities may affect insulin sensitivity. Specifically, these patients tend to have high levels of Lactobacillus and low levels of Roseburia, two types of gut bacteria that are beneficial for gut health[14].

In other studies where microbiota from lean individuals was transplanted into people with metabolic syndrome, the patients showed improved insulin sensitivity and higher levels of Roseburia and other butyrate-producing microbes in their microbiota. This supports the indication that these bacteria are important for regulating insulin sensitivity[15].

Gram-positive bacteria (a classification of bacteria) are also associated with improved insulin sensitivity. This was demonstrated in patients with lower insulin sensitivity (metabolic syndrome) who were treated with vancomycin, an antibiotic that primarily targets gram-positive bacteria. These patients experienced even poorer insulin sensitivity and lower levels of secondary bile acids in their plasma after treatment[6]. This discovery has prompted further investigation into the potential use of gram-positive bacteria and secondary bile acids in treating patients with reduced insulin sensitivity[14].

There is substantial evidence that microbiota plays a critical role in digestion. As mentioned earlier, it also serves as an important barrier against disease-causing microorganisms and is essential for the development and function of the immune system.

The Western diet contains several components that weaken the diversity and function of microbiota, which has been linked to obesity. Nutritional components such as probiotics and prebiotics have a beneficial effect on the diversity and health of microbiota. There is currently extensive research on whether the composition of microbiota can play a role in treating obesity and insulin sensitivity. Research indicates that microbiota can influence hunger regulation, satiety, nutrient absorption, inflammation, and fat storage. While these findings cannot be directly applied to humans, they help us understand some of the connections between microbiota and metabolism. Research on microbiota is still in its early stages, and cause-and-effect relationships are not always clearly established. For example, it remains unclear whether changes in microbiota are a cause or a consequence of obesity and type 2 diabetes. Therefore, more human-based research is needed moving forward to apply this knowledge to humans and potentially use it in the treatment of various diseases.

Osteopathy looks at the body as a whole, and your gut plays a big role in your overall health. New research tools, like metagenomics (which studies your gut bacteria without needing to grow them in a lab)[15] and artificial intelligence, can give a clearer picture of what's happening inside your digestive system. In the future, this could mean more personalized treatments, combining osteopathic care with advice that supports a healthier gut and, in turn, a healthier body.

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Diagnostic Challenges in Gut Health

– Osteopathy and the Role of Breath Testing

Text: Jakob Bjerring Langkjær

Introduction
This article addresses the challenges of diagnosing gut related disorders and the role of breath testing in this context. It is based on a master's thesis, Diagnostic Approaches for SIBO: A Scoping Review on Breath Testing[15], completed at Metropolia University of Applied Sciences.

The scoping review systematically analysed ten studies published between 2004 and 2024, comparing non-invasive breath testing with the traditional gold standard, jejunal aspirate culture. The findings showed that hydrogen and methane breath tests are the most widely used, while hydrogen sulfide testing is emerging but still insufficiently validated. Glucose-based tests generally provide higher specificity, whereas lactulose-based tests show greater sensitivity. However, major methodological variation in substrates, dosages, test duration, sampling intervals, and diagnostic thresholds reduces overall accuracy and hinders comparability across studies. The review described breath testing as a less invasive, more cost-effective, and more practical method than jejunal aspiration, while also emphasising the need for international standardisation to improve its clinical reliability.

Gut related diseases a widespread challenge

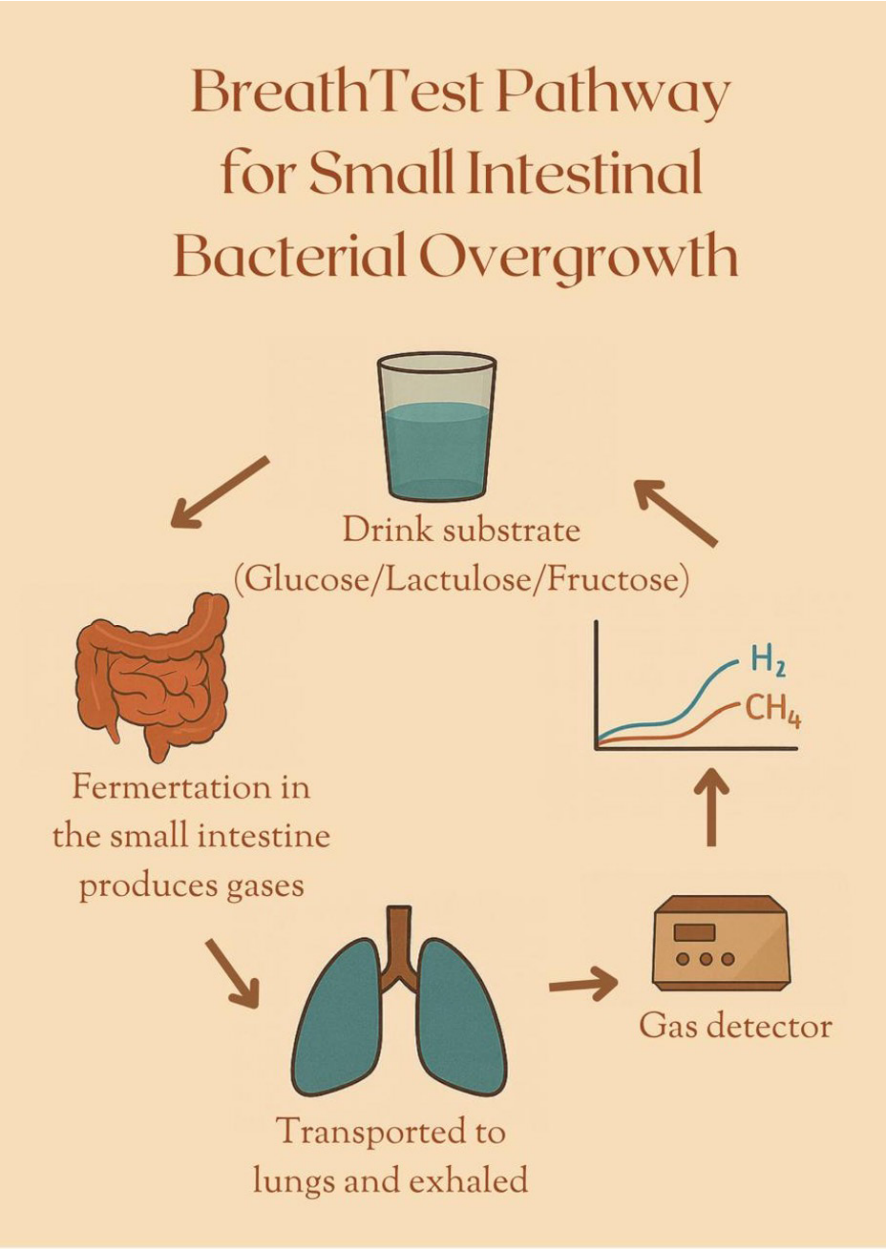
Functional and inflammatory bowel diseases affect close to one million people in Denmark, and the prevalence is rising across the Nordic countries[1,2]. Conditions such as irritable bowel syndrome (IBS), chronic diarrhoea, gastroesophageal reflux disease (GERD), Crohn's disease and ulcerative colitis represent a major health burden. The societal cost in Denmark alone is estimated at around 8 billion DKK annually[3].
Despite the high prevalence, diagnosis is often delayed or uncertain[4]. Symptoms such as bloating, abdominal pain, altered bowel habits, reflux, and fatigue are unspecific and may be underestimated or normalised by patients themselves[5,6]. Many people experience stigma and frustration when seeking care, which highlights the need for improved diagnostic strategies and early support[6].

Emerging evidence suggests that alterations in the gut microbiota may play a central role in many of these gastrointestinal disorders. One condition that has gained increasing attention is Small Intestinal Bacterial Overgrowth (SIBO) a state where excessive bacteria accumulate in the small intestine. SIBO has been linked to symptoms such as bloating, abdominal discomfort, and altered bowel habits, and may coexist with or mimic disorders like IBS and inflammatory bowel diseases[7].

Small intestinal bacterial overgrowth (SIBO)

SIBO is increasingly recognised as a condition that can mimic or aggravate IBS and other functional gut disorders [7,8]. It occurs when excessive numbers of bacteria colonise the small intestine, leading to fermentation of carbohydrates and production of gases such as hydrogen, methane, and hydrogen sulfide[9].

Dysfunction of the ileocecal valve, which normally prevents backflow of colonic contents into the small intestine, may further exacerbate SIBO by facilitating bacterial migration[7]. The role of the ileocecal valve in preventing bacterial overgrowth is well documented, particularly in patients with Crohn's disease or



following surgical resections[7].
Impaired immune function is a key factor influencing the regulation of microbial populations in the gut. Conditions such as HIV/AIDS, immunodeficiency disorders, and chronic inflammatory diseases, including celiac disease and inflammatory bowel disease, can compromise the host's capacity to control bacterial colonisation in the small intestine[7]. Similarly, reduced gastric acid secretion whether due to achlorhydria or prolonged proton pump inhibitor (PPI) use creates an environment that favours bacterial survival and growth. When gastric sterilisation is impaired, more bacteria are able to reach and proliferate within the small intestine.
Dysbiosis, defined as an imbalance in the gut microbiota, also predisposes individuals to bacterial overgrowth. Factors such as antibiotic use, PPI therapy, and dietary alterations can disrupt microbial homeostasis, creating conditions favourable for SIBO[7,8,9]. When combined with impaired immune defence or intestinal inflammation, the host's ability to regulate bacterial colonisation becomes further compromised[7].
Diagnosing SIBO remains challenging. The gold standard is jejunal aspirate culture, but it is invasive, costly, and rarely used in clinical practice[10]. Breath testing, which measures exhaled hydrogen and methane after ingestion of substrates such as glucose or lactulose, is increasingly applied as a non-invasive and patient-friendly alternative[10,11,12]

How osteopaths identify the problem

With the increasing strain on the healthcare system caused by lifestyle-related diseases, gut related disorders can add a further substantial burden that the system might struggle to manage alone. Many individuals live with digestive problems for years without seeking help, often due to uncertainty, embarrassment, or the persistence of taboos surrounding bowel symptoms. As a result, these conditions are rarely detected by general practitioners until symptoms have become highly debilitating[4,5,6].
Although osteopaths primarily see patients with a broad spectrum of musculoskeletal complaints, during a detailed case history and physical examination they may identify signs suggestive of underlying gastrointestinal dysfunction [16]. Through palpation and observation, findings such as abdominal distension, tenderness, or restricted thoracic and abdominal mobility can indicate digestive involvement and justify further medical evaluation. In this context, osteopaths play an important role in recognising digestive symptoms early and guiding patients toward appropriate diagnostic assessment.
A recent meta-analysis found that osteopathic manipulative treatment (OMT) may alleviate symptoms of irritable bowel syndrome (IBS), particularly abdominal pain and constipation. However, due to the overall low quality of evidence, these results should be interpreted with caution. Consequently, OMT should be regarded as a complementary and symptom-relieving intervention rather than a curative approach[17].

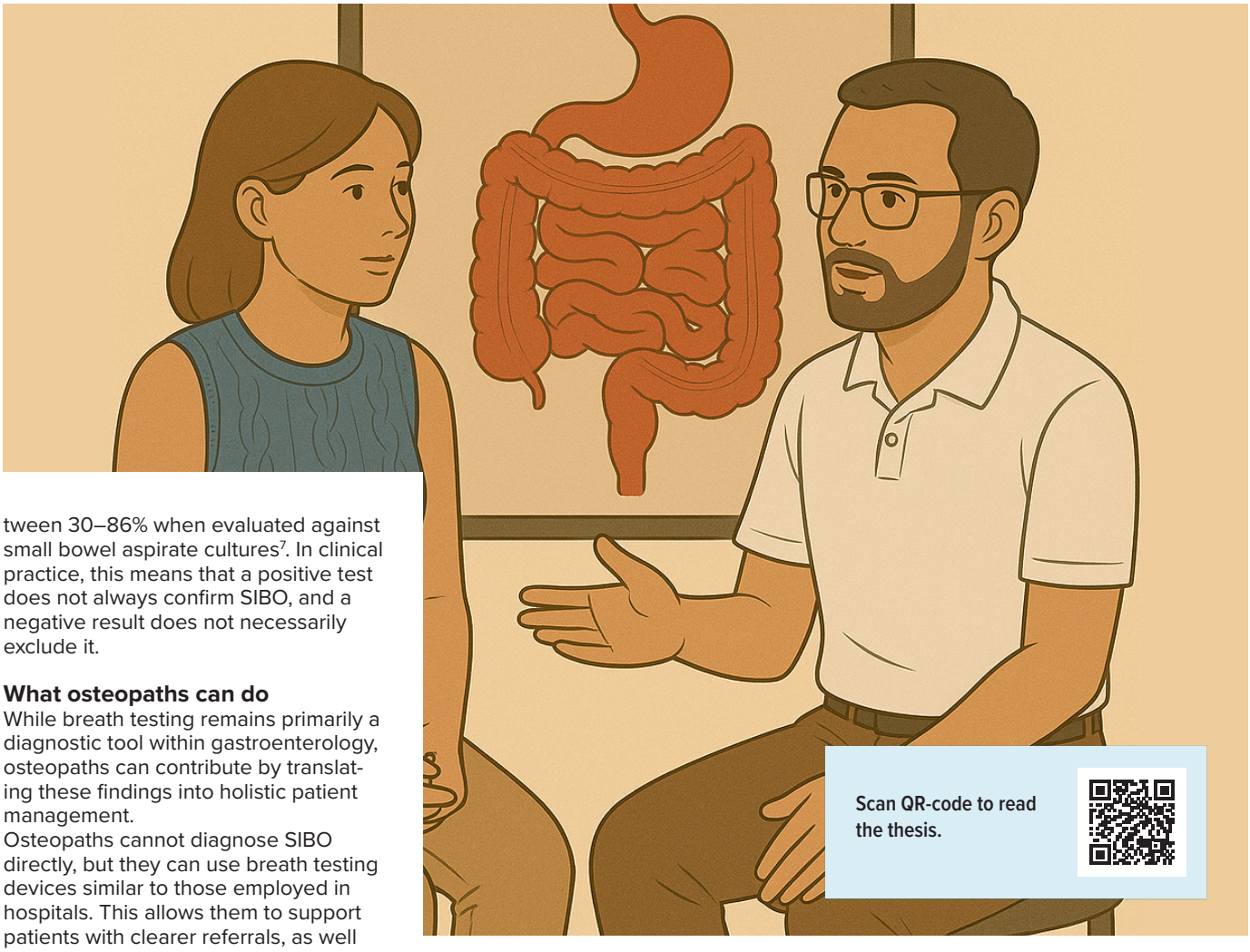
Breath testing in clinical practice

In Denmark, several hospitals and clinics have already implemented breath testing protocols, including Aalborg University Hospital, Randers Regional Hospital, Hvidovre Hospital, and private gastroenterology centres[13].

Diagnosing SIBO has historically been challenging due to the lack of a universally accepted gold standard test[14]. Traditional approaches, such as small bowel aspirate culture, allow direct sampling of the small intestine but are invasive and impractical for routine use, limiting their application primarily to research contexts.

In contrast, breath testing has emerged as a promising non-invasive alternative that provides a simpler diagnostic option. The method measures the production of hydrogen (H_2) and methane (CH_4) in exhaled air, gases generated by bacterial fermentation in the small intestine after ingestion of a substrate such as lactulose or glucose[7]. Despite its advantages, breath testing also presents challenges. A lack of consensus remains regarding the optimal testing methodology, including the apparatus used, gases measured, fasting protocols, testing intervals, and substrate selection[14].
Such inconsistencies in methodology influence the accuracy, reproducibility, and standardization of breath testing, contributing to variability in results and diagnostic uncertainty[14].

Reported sensitivity for the lactulose breath test has ranged between 31–68%, with specificity values from 44–100%[7]. In comparison, glucose breath testing has demonstrated sensitivities spanning 20–93% and specificities be-



tween 30–86% when evaluated against small bowel aspirate cultures[7]. In clinical practice, this means that a positive test does not always confirm SIBO, and a negative result does not necessarily exclude it.

What osteopaths can do

While breath testing remains primarily a diagnostic tool within gastroenterology, osteopaths can contribute by translating these findings into holistic patient management.

Osteopaths cannot diagnose SIBO directly, but they can use breath testing devices similar to those employed in hospitals. This allows them to support patients with clearer referrals, as well as to provide guidance on nutrition and lifestyle interventions while monitoring changes in symptoms and test results. With sufficient understanding of breath testing and its limitations, osteopaths are able to explain the procedure to patients and help them navigate the healthcare system, thereby reducing uncertainty and anxiety around unexplained symptoms[2,3,17].

Beyond referral and education, osteopaths contribute to patient care by addressing lifestyle, dietary, and stress-related factors that influence gut health. Guidance on meal patterns, fibre intake, sleep, and stress management can support better outcomes. Combined with manual treatment, case history, and physical examination, this integrative approach enables osteopaths to assist patients in managing symptoms and improving quality of life[18].

Scan QR-code to read the thesis.

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Proactive Care and Osteopathy

Expanding Our Role in Modern Healthcare

Text: Hazel Mansfield

The current landscape of healthcare across the Nordic countries, and indeed the world, faces significant challenges related to the rising prevalence of chronic, lifestyle-related conditions and symptoms such as musculoskeletal pain, cardiovascular disease, type 2 diabetes, and obesity[1].

These place huge burdens on not just the individual dealing with them but also those working within healthcare, the healthcare systems themselves, and society at large. Conventional healthcare systems utilise reactive frameworks where something must go wrong before intervention or advice is triggered[2,3]. Yet, an individual may be experiencing symptoms long before this point, and will not receive the support they need if tests and analyses are normal. Osteopaths are frequent witnesses to the frustration and lack of support individuals feel when such a reactive system is focused on downstream markers of disease. It also leads to larger "future cost of failure" due to not acting early enough. Clearly, current systems and approaches are failing to tackle rising poor health and are insufficient. This is recognised by researchers, experts and politicians who are calling for a change in approach to address this urgent problem. Osteopathy, with its holistic frameworks and person-centred approach, is excellently placed to be part of this change and a shift towards proactive care.

This article outlines what proactive care means, why it is important, and how osteopaths can integrate it into clinical practice to improve patient outcomes and contribute to a more effective form of modern healthcare.

What is Proactive Care?

Proactive care refers to support and interventions that aim not only to address existing dysfunction and symptoms but also to prevent and reduce risk of future problems, build resilience, help someone cope and feel better with an existing disease, and promote wellness and longevity[4,5]. Importantly this approach is collaborative and involves empowering individuals to understand more about their health so they can maintain good health and age well by directly addressing the factors that drive their health status. It reflects a shift from focusing on "what is wrong with you" to "what is strong with you" and what can keep a person well[6].

In practice, strategies and techniques that address more upstream markers of health and major determinants of health through behaviour changes are a key part of proactive care and help move these drivers towards positive health. This is all delivered via a strong therapeutic relationship that guides, supports and strives to understand the person as an individual, how they live and what matters to them[7]. Further, supporting behaviour change is a major part of proactive care and practical tools to achieve this is critical for those delivering proactive care.

Proactive care does not replace existing healthcare treatments or frameworks; it extends and compliments them by broadening the scope and impact of clinical practice and enables healthcare providers to more effectively support the health of those seeking their care. For an osteopath, this means being proactive by adapting the lens through which to decide how and where to focus their treatment and support. Existing osteopathic skill sets can be optimised for proactive care via specific education, experience and training within the rapidly-growing field of lifestyle medicine so that they can develop more effective, structured evidence-based strategies for assessing and supporting the major determinants of health.

Why Proactive Care Matters

1. The burden of chronic disease

Chronic symptoms and diseases are rising with the sharpest rise in the prevalence of metabolic diseases[1]. Musculoskeletal disorders are a leading cause of years lived with disability globally[8] and the economic cost is staggering. Around 25% of health spending is on the top four chronic diseases (including diabetes, cardiovascular disease)[9]. In Sweden the cost of sick days due to back pain, stress, diabetes have each increased by around 40% between the years 2021-2024[10]. For back pain, this is an increase of nearly €181M, and for

stress fatigue syndrome €362M. Yet, most chronic diseases are preventable and are caused and strongly influenced by how we live: modifiable factors such as how we sleep, eat, move, connect, deal with stress, and toxins we are exposed to[11,12,13,14]. Indeed, nutrition is one of the leading modifiable risk factors in global mortality according to the Global Burden of Disease 2019[15]. Without being able to effectively address these upstream determinants of health, healthcare providers including osteopaths are not equipped to act early and effectively and an individual is at risk of sliding towards more dysfunctions, symptoms and diseases along with the social and economic burden this brings.

2. Evidence for lifestyle interventions congruent to Osteopathy

The growing field of lifestyle medicine has shown through substantial high-quality research that sustainable changes in behaviour focusing on modifiable lifestyle factors can prevent, manage and in some cases, reverse chronic disease[16,17,18,19,20,21,22]. These are highly congruent and align naturally with osteopathic frameworks that are holistic in the sense they consider multiple physiological systems and view health as a complex interaction between an individual and their environment.

3. More than just find it and fix it: Wellness and longevity

Longevity and long-term wellbeing are increasing in public awareness and individuals increasingly seek healthcare practitioners not just to deal with acute complaints but also to be empowered and to get the information and tools to look after their own long-term wellbeing[23]. Osteopaths can be trusted partners in a proactive approach that strengthens the therapeutic alliance, and supports ongoing health through good advice, techniques and behaviour change.

Why Osteopathy is a Natural Fit for Proactive Care

The key principles that Osteopathy has long emphasised - including the inter-relationships between different body systems, self-regulation and the capacity for health[24,25] - align naturally with a proactive care approach. Additionally, the way in which osteopaths practice lends itself to delivering proactive care effectively through regular patient contact and longer sessions, strong therapeutic alliance and a broad, holistic, health perspective. Osteopaths are well placed to integrate structured, proactive strategies in their assessments, advice and treatments.

Practical Applications in the Clinic

Incorporating proactive care into osteopathic clinic does not demand radical changes, and is an opportunity for most osteopathic approaches, treatment styles and ways of working. Just by widening the scope of information gathering and organising it within a proactive care approach is very effective to then guide what and where and when the osteopathic treatment approach should focus. For example, being able to guide treatment towards stress reduction in someone with back pain through more recovery-based techniques[26]. Additionally, integrating lifestyle medicine into osteopathic consultations can be done via small changes in lifestyle behaviours such as ensuring balanced physical activity[27], supporting healthier diets that lower inflammation, increase energy or microbiome balance[28] or better supporting sleep[29]. A good adage is to start small and go slow. Further knowledge and training is strongly recommended in order to specialise and use the most effective strategies and tools, not least in supporting behaviour changes. Seeking out high quality providers of training such as the BSLM and others is imperative to elevate clinical standards, ensure better outcomes and to assist in collaboration of proactive care across different professions[16,30,31]. Such training is necessary for those particularly interested in proactive care, where standalone consultations supporting lifestyle medicine is also an option.

Challenges and Considerations

Certain challenges are good to be aware of when adopting a more proactive approach. Osteopaths need to be aware of and remain in their scope of practice, knowing when to collaborate

and refer to other professions such a psychologists, nutritionists and doctors. Building networks and referral pathways is strongly recommended when working in this way.
Secondly, there is often a concern about the time it takes to accommodate proactive conversations and interventions. This may call for a need to adapt and adjust how we structure and deliver consultations, moving beyond a one size fits all and offering light or deeper-dive proactive care through longer sessions, or dedicated consultations. Research supports integrating small lifestyle changes into existing sessions[32]. The use of resources and handouts - for example a checklist for better sleep, sources of fermented food, or ideas on "exercise snacks" - can be invaluable here in optimising proactive care in the session time you have to give.

Looking Forward: The Role of Osteopathy in Proactive Healthcare

Osteopathy is well placed to contribute to the future of healthcare that demands more proactive, preventive, sustainable and person-centred models[33]. Integrating lifestyle medicine and behaviour change support into consultations is a perfect fit for osteopathy's core principles and will enhance the relevance of osteopathy in modern healthcare that is proactive and sustainable.

By embracing proactive care, osteopaths can be part of a modern form of healthcare that demands a responsibility to address more prevention and positive health promotion. Osteopaths can improve patient outcomes more effectively and beyond just relief of the presenting issue or dysfunction, reinforce their professional identity as proactive healthcare practitioners, and contribute to a more effective health system that can reduce the burden of chronic conditions and diseases.

Actively developing tools and providing education that support osteopaths and other healthcare practitioners in delivering proactive care approaches
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Osteopathic treatment of whiplash

A mechanistic link between determinants of health and somatic pain

Text : Jukka Pasanen (translation: Mia Eriksson, Jukka Pasanen)

Whiplash injury is a common occurrence following motor vehicle accidents and affects 235-300 people per 100 000 yearly worldwide. Even though some people recover quickly, only 29–40% recover within a short amount of time, and around 23% are still affected by symptoms a year later[1].

Whiplash is defined as an injury occurring due to rapid velocity changes affecting the head and neck region compared to the rest of the body. This typically occurs in the event of a motor vehicle collision. The injury results from exerting energy on the tissues of the neck that exceed the capacity of said tissues' ability to absorb. This usually results in tissue damage, ranging from mild muscle and soft tissue sprains to more serious damage such as tears, joint dislocations, bone fractures, or spinal cord injuries[3].

A new model for whiplash injuries

Previous models, that only take into account the biomechanics of whiplash, have been proven insufficient to predict recovery. Research has shown that clinical findings in tissues only explain the prolonged symptoms in around 40-45% of patients. This indicates that a significant number of patients suffer from symptoms arising from more complex mechanisms[3].

The new model views whiplash as a multifactorial phenomenon, where biomechanical, physiological, psychological, and social factors interact[3]. The whiplash injury functions as the primary stressor, but the response of the individual depends on many factors such as genetic prevalence, previous experiences, culture and possible tissue injuries[2,3]. Chronic injury can sustain itself through a vicious cycle in which harmful stress responses and tissue damage combine with fear, isolation, and disability. This multifaceted model explains why similar injuries can lead to such differing end results[3].

According to Bussières et al. (2016), treatment recommendations for acute and chronic whiplash injuries are based on a multifaceted approach that includes manual therapy, self-care guidance, and exercise, all tailored to the individual's condition[1].
This model and treatment framework provide a context in which the role of osteopathic care warrants examination. My thesis examined osteopathic treatment and its effects on whiplash injuries. The goal of my thesis was to broaden the available knowledge regarding osteopathic treatment of people recovering from whiplash injuries, and to highlight the use of osteopathic treatment and its effects in these cases. An integrative literature review was used to find answers to two research questions: "What is osteopathic treatment for whiplash injury?" and "What are the effects of osteopathic treatment for whiplash injury?"

Results

This section is based on the results of the integrative literature review of the thesis, which included four articles: Three case studies and one intervention study.

Regarding the first research question, the literature highlights that during the primary visit osteopaths perform an extensive interview and physical exam. Osteopathic treatment of whiplash is founded in being mindful of the osteopathic principles throughout the treatment process. Treatment is based on the osteopathic assessment, and each patient is given an individualized treatment plan. Examinations are based on assessments of somatic dysfunctions in different regions of the body, especially the areas of the skull and the spine. Treatments are based on the findings in the areas of the spine, tongue and skull. The osteopath may give instructions to the client during treatment.

Regarding the second research question, the results of the literature review show that osteopathic treatment has versatile positive effects on clients' well-being. These effects include alleviation of pain immediately after treatment as well as during the treatment period, increased range of motion, alleviation of dysfunctions, alleviation of symptoms, relaxation of tissues, as well as both physical and emotional improvement of quality of life. In the intervention study, the majority of clients rated osteopathic treatment for whiplash injury as excellent or good, and all participants recommended the treatment based on their experiences. Osteopathic treatment very rarely had any negative effects, and the few nega-

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tive effects that occurred were short-term tiredness or mild post-treatment discomfort that subsided on its own.

Practical significance

For some individuals, prolonged symptoms after whiplash injury may be due to clinical findings, but for others the pain may remain unexplained. Osteopathy provides an integrative approach that combines biomechanical healing, the body's innate ability to self-regulate, and psychosocial support. The therapeutic alliance that can be fostered between the patient and the osteopath can facilitate the return of trust in the body's ability to perform, reduce fear and improve resilience. In practice, this manifests as alleviation of pain and dysfunction, reduction of stress, as well as the body being supported in a holistic manner. Touch, interaction, and guided movements support regulation of stress responses, support tissue healing, and bring together the mind and the body[2,3]. As only a minority of individuals with whiplash injuries recover rapidly, osteopathic care as treatment for those with prolonged symptoms should be seriously considered in light of this evidence.

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Mild Traumatic Brain Injury Diagnosis and guidelines

Text: Nikolaj Kaufmann

Introduction

In Denmark, as well as international, there is a strong focus on Concussion/ mild Traumatic Brain Injury (mTBI) and there has been a continuous development in its management and treatment.

Previous general advice on rest and waiting until the patient was symptom-free has been replaced by a more graduated active approach with an individualized balance between graduated activity and rest. Patients are no longer advised to rest in a dark room until they recover[1].

In recent years, new guidelines and international consensus have emerged, which have helped to change the approach to patients with mTBI [2,3,4].
It happens that the patient may seek out an osteopath before their general practitioner after an injury that may have caused a mTBI. Therefore, it is important that the osteopath is familiar with the correct clinical tools to evaluate a mTBI, as well as any other potential injuries.

What is mTBI?

Concussion, Commotio Cerebri, and mild Traumatic Brain Injury (mTBI) are all terms for the same type of injury. In this article, the term mild Traumatic Brain Injury (mTBI) will be used, as this term implies that there has been an injury to the brain.
The diagnosis of mTBI is associated with a range of physical, cognitive, and emotional symptoms, which typically include headache, dizziness, sound and light sensitivity, difficulty concentrating, memory problems, and sleep disturbances. MTBI can also lead to psychological symptoms such as anxiety and depression [1,5].

Concussive Event

It is a common misconception that a patient's head must make contact with an object for an mTBI to occur. Today, it is recognized that an injury event without direct trauma to the head can lead to an mTBI. The term concussive event is used to describe an injury where a patient can sustain a mTBI, as well as other potential injuries, for example, in the musculoskeletal system, spine, and/ or the vestibular organ[6].

Mild Traumatic Brain Injury can result from a concussive event that involves the following:
• A direct blow to the head from an object
• The head hitting a hard surface or object
• The head being exposed to accelerating and decelerating movements without direct contact between the head and an object or surface
• Exposure to a blast injury and a pressure wave that propagates through the brain tissue generated by an explosion[7].

If the osteopath is the first point of contact after a concussive event, it is essential for the osteopath to be able to perform safety tests to exclude possible brain injury or skull fracture. If the initial examinations show no indication for referral to a doctor or emergency room, further tests can be performed for mTBI and other potential injury. This is to ensure that other possible injuries that may be causing the patient's symptoms are not overlooked.

How is mTBI diagnosed?

With the introduction of new international consensus and a revised diagnostic approach, mTBI can now be diagnosed based on the patients' symptoms and clinical findings [1, 7]. The osteopath's systematic anamnesis should gather all details about the time of the injury and the following days. If the patient has been exposed to a concussive event and presents with symptoms that cannot be explained by other factors (such as alcohol, drugs, or another injury event etc.), the diagnosis is made based on the following criteria:
1. The patient has at least one or more clinical signs of acute impaired brain function related to the concussive event.
2. The patient has experienced at least two symptoms within 72 hours after the concussive event, and at least one clinical or laboratory-based finding can be attributed to the concussive event.
3. Imaging findings from a CT or MRI scan documenting an intracranial injury corresponding to an mTBI.
As patients with mTBI may experience short-term or long-term amnesia following a concussive event, it can be advisable for them to bring a companion or a family member to the consultation. A companion who knows the patient or witnessed the injury can, in some cases, provide valuable insights into behavioral changes, offering important information for the osteopath's assessment of potential impairment in brain function following the injury.

1: When examining for clinical signs of acutely impaired brain function, the following are questioned:
• Change in mental state, including impaired or inappropriate reactions to external stimuli, a slow response to verbal stimuli, inability to follow instructions, agitated behavior, disorientation in relation to time, place, or situation.
• Partial or complete post-traumatic amnesia for less than 24 hours: the patient does not remember details of events leading up to the injury or immediately after.
• Loss of consciousness for less than 30 minutes immediately after the physical trauma.
• Other acute neurological signs: Motor incoordination, seizure, rigid posture[7].

2: Symptoms and clinical findings
• Acute subjective change in mental state: a feeling of being confused, disoriented, or dazed.
• Physical symptoms: Headache, nausea, dizziness, impaired balance, impaired vision, increased light and/or sound sensitivity.
• Cognitive symptoms: Feeling foggy, mentally slow, problems with concentration, memory impairment.
• Emotional symptoms: Uncharacteristic emotional lability and/or irritability.
• Clinical or laboratory findings of cognitive impairment, balance impairment, oculomotor or vestibular impairment,

symptom provocation during vestibulo-oculomotor screening, or elevated levels of a blood-based biomarker[7].

3: Imaging findings from a CT or MRI scan:
The decision to perform a CT or MRI scan in the acute phase after an injury is based on a professional medical assessment. This assessment considers several factors, including the Glasgow Coma Scale score, visible signs of injury, and the patients' overall condition following the event[8]. In patients with mTBI, these types of imaging often show unremarkable findings[9].

The osteopath who sees patients with mTBI in the clinic must be able to evaluate symptoms and diagnose mTBI and other potential injury mechanisms from a concussive event. It is essential that the osteopath is familiar with vestibular screening procedures and capable of differentiating between central and peripheral origins of dizziness. The osteopath should screen for oculomotor and balance disturbances, cognitive impairments, and signs of anxiety or depression[10, 11]. Through the foundational osteopathic education, the osteopath should be trained in testing cranial nerves and cervical dysfunctions. Examining the neck after a concussive event is important, as prolonged neck pain can extend the patient's symptoms[12].

For a systematic approach to evaluating mTBI, especially in sports injuries, the Sport Concussion Assessment Tool 6 (SCAT-6) can be used within the first 7 days (ideal within 3 days) for patients over 13 years old. The Sport Concussion Office Assessment Tool (SCOAT-6) can be used in the period 3-30 days after a concussive event. For children 12 years or younger, the Child SCAT-6 or Child SCOAT-6 can be used for this purpose [10-11].

Recommendations

The new guidelines recommend relative rest for the first 24-48 hours, rather than total complete darkening of the room or strict bed rest as previously advised [1,2,3,4]. After 48 hours, it is recommended that the patient gradually resumes their usual daily activities, both at home and outside their home. Light physical aerobic activity should gradually be started after the first 48 hours following the injury event[13, 14]. In the following stages of the patient's recovery the focus should be on graduated rehabilitation and gradual exposure at a pace and intensity that does not create new or significantly worsen existing symptoms[14].

For the patient's well-being and recovery, it is essential that the osteopath creates a safe environment and provides guidance on appropriate exposure and return to daily activities, helping the patient avoid fear-avoidance behavior, that may prolong recovery time[15].

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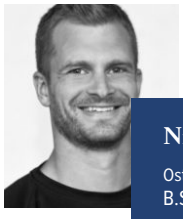
As the causes of sequelae and long-term consequences after mTBI are multifactorial, it should be considered whether the patient may benefit from participation in a multidisciplinary program involving other health professionals such as a physician, physiotherapist or optometrist[14,16].
A failure to manage possible underlying causes of the patient's symptoms can potentially result in a lack of improvement in the treatment or rehabilitation process.

Conclusion

The field of mTBI management has received increasing attention and has evolved significantly in recent years. The new guidelines for diagnosing and managing mTBI place high demands on the osteopath's competencies in this area. For a successful treatment process, it is crucial that the osteopath can conduct a thorough and systematic anamnesis, perform accurate and systematic evaluation, testing, diagnosis and provide appropriate guidance on graded and gradual exposure. Furthermore, it is essential to have knowledge of the long-term consequences after mTBI, which this article has not addressed.

Specific knowledge about mTBI requires specialized further education. Currently, it is up to the individual osteopath to seek out knowledge on the subject and thereby acquire the relevant clinical tools to help patients with mTBI. To ensure that future osteopaths are well equipped to manage patients with mTBI, consideration should be given to incorporating this subject into the osteopathic undergraduate curriculum. Given that mTBI is an actively developing field, educators in osteopathic programs must ensure they remain current with the latest research, guidelines and international consensus.



Nikolaj Kaufmann
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Poke into pain?

Text: Lau Saugman Hansen

Patients with musculoskeletal pain often seek clear guidance regarding physical activity: "Can I ride my bike with knee pain? Am I damaging my back if I continue Pilates, even though it hurts?" Traditionally, such questions have been met with caution, with recommendations to avoid or minimize pain during activity[1].

This perspective rests on the assumption of a linear relationship between structural damage and pain. However, recent literature demonstrates that the association between tissue changes and pain is limited, and far more complex[2]. Pain has a multifactorial origin, with nociception being one of the most significant factors in the experience of pain[3]. Several interventions can be applied to modulate nociceptive activity, habituation being one of them.

Habituation

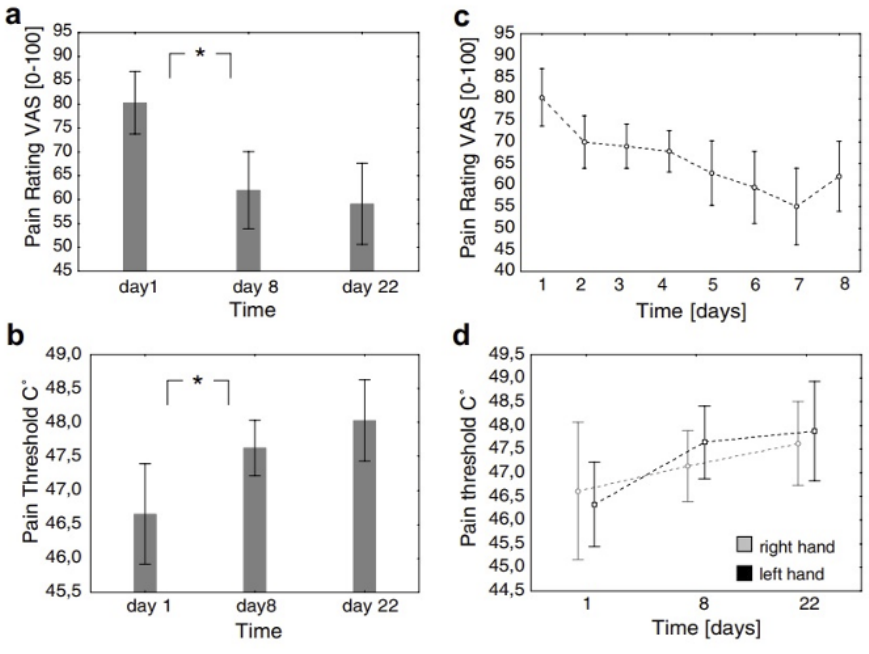
Pain can be induced experimentally, for example, by applying heat to the skin. At a certain threshold, heat-sensitive nociceptors depolarize[4]. Several studies have examined what occurs when healthy individuals are repeatedly exposed to the same painful heat stimulus across multiple days[4]. Specifically, participants received 20 minutes of painful heat stimulation (delivered in intervals) per day for 8 consecutive days, with the temperature kept constant. Participants rated pain intensity on a visual analogue scale (VAS) during and after the intervention period. Over time, pain intensity ratings decreased significantly despite identical stimulation, indicating habituation. This effect is thought to involve activation of the antinociceptive system[4]:

"... we found that pain-related responses in the rACC, specifically the subgenual anterior cingulate cortex (sgACC), significantly increased over time. Given this area's predominant role in endogenous pain control, this response pattern suggests that habituation to pain is, at least in part, mediated by increased antinociceptive activity."

This system is now more commonly referred to as the descending pain modulatory system (DPMS)[5]. In short, nociceptive input may trigger DPMS activity, which is primarily mediated through the brainstem. From here, descending projections target the dorsal horn of the spinal cord, where nociceptive transmission can be inhibited pre- or postsynaptically[5,6]. Additionally, repeated nociceptive stimulation is associated with reduced activity in cortical regions involved in pain perception[7]. Different definitions of habituation have been made but the neurophysiology explained here encapsulates what most authors agree on with regards to pain and nociception: "Habituation in pain/nociception is the reduction of the perceived intensity or physiological response to repeated painful stimulation, due to adaptive central processing rather than peripheral receptor changes"[9].

The opposite phenomenon, sensitization, also occurs. As shown in[4]: "Inspection of the single subject data revealed that even among healthy volunteers, habituation to pain is not a uniform process. Rather, 4 of our subjects did not display any behavioral habituation and one even showed sensitization over time...."

In other words, not all individuals habituate identical nociceptive stimulation. Some exhibit increasing pain intensity, potentially due to impaired DPMS function. The reasons for this variation remain unclear.'



Form [4]

Habituation in clinical practice
This knowledge can be applied when osteopaths or other clinicians advise patients on physical activity. Consider a patient with knee pain as a result of osteoarthritis, with red flags excluded. The patient asks whether walking is harmful, even if it causes pain during the activity. Since osteoarthritic joints are not damaged by moderate loading[8], walking can be safely recommended. From a habituation perspective, patients may be encouraged to “poke the pain” — for instance, by walking at an intensity where pain peaks at no more than 3–5 on a numerical rating scale (NRS), provided the pain does not worsen the following day. This strategy supports habituation: nociceptors are activated, but also the DPMS, thereby offering the possibility of reduced pain over time.

This dual approach provides reassurance that walking does not worsen osteoarthritis, while promoting habituation, but it requires thorough patient education. The patient must understand that pain does not necessarily equate to tissue damage. In some cases, healthcare professionals may need to provide ongoing support between consultations if pain escalates excessively and further guidance is required.

Because research demonstrates considerable inter-individual variability in habituation and sensitization responses [9], a detailed history and examination are essential before intervention. Clinical interviews reveal how pain is managed, what aggravates or alleviates it. Patients can be categorized based on their behavioral responses to pain, such as avoidance copers or endurance copers [10].

Avoidance coping (also described as fear avoidance) is characterized as follows[11]:

“...Catastrophic misinterpretations of pain as being harmful may give rise to pain-related fear, which in turn can initiate avoidance behavior intended to avert bodily threat. When protective action serves to reduce genuine bodily threat, it is highly adaptive, but when pain persists beyond healing time and turns chronic, it may paradoxically increase suffering and disability.”
Endurance coping (also referred to as overactivity) is less consistently defined, but the concept remains clear. From[10]: “...who used the term “overactivity” to refer to individuals who habitually engage in an excessive amount of activity that is only halted by periods of severe pain and incapacity...”

Clinically, an avoidance coper with knee osteoarthritis may express concerns such as: “I’m afraid of making it worse; loading worsens the arthritis; I’ve stopped walking because I think it aggravates the condition.” Their response is characterized by avoidance and worry. Conversely, an endurance coper may continue activities despite escalating pain, using distraction strategies: “I keep walking despite the pain, even if it increases; I stay constantly active so I don’t focus on the pain; the pain will not dictate what I can do.”

Although these categories are often presented as opposites, in practice, behavior is more fluid. Both avoidance and endurance patterns may coexist depending on context[10,11]. From a habituation perspective, avoidance copers may be more suitable candidates than endurance copers. For the avoidance coper, reassurance that mild pain during walking is not harmful provides a foundation for habituation. Such individuals are unlikely to self-test habituation strategies and may underutilize their DPMS. In contrast, endurance copers may already overload their DPMS, risking sensitization rather than habituation, and may not benefit from further exposure-based interventions.

Habituation can be learned over time[12]. Evidence from fibromyalgia supports this notion[13]. Early in exercise interventions for fibromyalgia, increased pain is commonly observed. From[13]:

"It was expected that there would be an increase in post-exercise pain during the initial phase of the exercise program due to dysfunctions in peripheral and central pain mechanisms in FM, and a temporary increase of pain was reported by several patients at exercise sessions..."

Fibromyalgia involves dysfunction in both central and peripheral nociceptive systems, yet improvements in pain are often reported over time despite initial exacerbation[13]. Clinically, this underscores the importance of health professionals possessing sound pain science knowledge and providing appropriate guidance. In many cases, engaging in activity despite mild pain is not only acceptable but may be beneficial, particularly in long-term pain conditions, as habituation can contribute to reduced pain perception over time. It should be noted that habituation is only one piece of the puzzle with regards to pain relief in fibromyalgia. Other peripheral and central factors are important, and all cannot be explained via habituation[14].

Conclusion

Habituation and sensitization within the nociceptive system likely contribute to the weak association between structural imaging findings and pain and may also underlie the variability in patient responses to exercise and other therapeutic interventions. Some individuals exhibit radiographic findings such as osteoarthritis, disc degeneration, protrusions, or meniscal tears without pain, while others experience pain—habituation versus sensitization may contribute to these discrepancies. As mentioned, with regards to fibromyalgia, it should be noted that habituation (or lack of) is only a part of the puzzle with regards to pain relief in any pain presentation.

Lau Saugman Hansen

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Chair of the Danish Osteopathic Research Committee

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Nordic Osteopathic Congress 2025, Reykjavik

Text: Frederik Jahr

After several attempts to gather in Iceland, we finally did, and with great success! Not without reason, the theme for the annual conference this year was the long-term patient. This patient group is large and costly for the society, the individuals suffer significant loss of health, and it is a patient group that often consult osteopathic care.

The congress provided up to date insight in pain science, whole-person osteopathic approaches to care, as well as research on specific diagnoses. And we received talks from no less than three new Ph.D.'s from the Nordic countries.

The presentations fit very well together. They demonstrated a sort of change of paradigm and an interesting development in osteopathy. We talk more about communication and patient involvement in pain management.
- Dr. Niklas S. Sposato.

COPD from an osteopathic perspective
Although COPD is a chronic disease, Dr. Roger Engel demonstrated the effectiveness of adding manual therapy and exercise, as a supplement to standard care, on respiratory function. In the pre-congress, participants dived into the research on the topic, as well as the clinical considerations in managing these patients. We also got to work hands on with relevant techniques. Engel is a leading researcher on the topic, so having him present at the conference was of big value to the audience.

Pain science and manual therapy
Providing person centered care and having a bio-psycho-social approach to treating patients is at the core of the osteopathic profession. Pål Andre Amundsen, PhD-candidate, gave a thorough lecture in pain science and provided valuable insight on how we can apply it to our long-term complex patients. Christian Fossum, associate professor, demonstrated the effect mechanisms of osteopathic treatment and how this relates to pain science, through a whole-person framework. Steven Vogel continued the series of lectures with a great presentation on communication in persistent pain management.

Specific conditions
Niklas S. Sposato PhD, presented his research on cystic fibrosis, a part of his thesis work. The participants were given evidence-based tools to manage the condition. It was a great lecture that integrated Dr. Engels presentation on COPD in a wonderful way.

Mia D. Eriksson, DO, PhD, presented her research on depression, and presented us with her take on how osteopaths can provide help to this group of patients. Osteopaths communicate in multiple ways, and by using our manual work in addition to standard care can be of value for these patients.

Finally, we were presented with Jósep Ó.Blöndal, MD,MDT, and his take on chronic low back pain and his emphasis on multidisciplinary team work when working with these patients. Through an impressive career he has worked with global teams and developed valuable experience that the audience could learn from.

Social venue and regional collaboration
The conference is the result of the extensive collaboration among the osteopathic associations in the Nordic countries. This collaboration and knowledge sharing across our borders greatly contribute to our development as a profession. At the conference, experienced clinicians, researchers, students and more attended. This mix contributed to knowledge sharing and strengthened our community.
A group of recent graduates, now osteopaths, stated:
The trip to Iceland marked an inspiring start to our journey as osteopaths — a chance to learn, connect, and bring new insight into our future practice.
– Bendik Bergei, Sine Dal, Hanne Aurebekk.

In 2026, the conference will be held in Gothenburg, Sweden. Save the weekend of September 11-13!

Frederik Jahr
Osteopath

Osteopathic Treatment and Running Economy

Evidence from Two Clinical Studies

Text: Bo Egeberg

Abstract

Running economy (RE) is a key determinant of endurance performance, reflecting the integrated efficiency of metabolic, cardiorespiratory, biomechanical, and neuromuscular systems. While training interventions, such as resistance and plyometric exercise, are known to influence RE, the potential role of osteopathic treatment has been scarcely investigated. The two studies presented here were part of my master's thesis, which examined whether osteopathic treatment could positively alter RE in trained endurance runners. Both standardised and individualised ("black box") osteopathic interventions were compared to control groups using submaximal treadmill testing and heart rate monitoring, or 3D markerless motion capture, as proxies for energy cost. Across both projects, results consistently indicated a 4–9% improvement in running economy in the treated groups compared with the controls, with effects lasting up to one week post-intervention. The best results were found in the Black box group. These findings suggest that osteopathic care may serve as a valuable adjunct in optimising endurance performance; however, methodological limitations and small sample sizes necessitate further research with larger cohorts and gold-standard measures of gas exchange.

Keywords: Running economy, endurance performance, osteopathy, manual therapy, sports optimisation

Introduction

Running performance depends on several interrelated factors. In 2015, Barnes & Kilding [1] made a scheme of what they considered the most influential parameters. This is shown in Figure 1 and includes maximal oxygen uptake (VO_2max), lactate threshold, and running economy (RE). Besides the well-known physiological factors, they examined metabolic efficiency, cardiorespiratory efficiency, biomechanical efficiency, and neuromuscular efficiency. All of these are factors that we as osteopaths should be able to alter[2,3,4].

Even though VO2 max is probably considered the most important factor among runners and trainers, it is interesting, that one of the world's most successful female runners, Paula Radcliffe (PR) has had approximately the same VO2 max over a period of 11 years from 1992 to 2003 (70 mL.kg-1.min-1), while her running speed at VO2 max has increased from 20,5 km/h to 23,5 km/h [5].

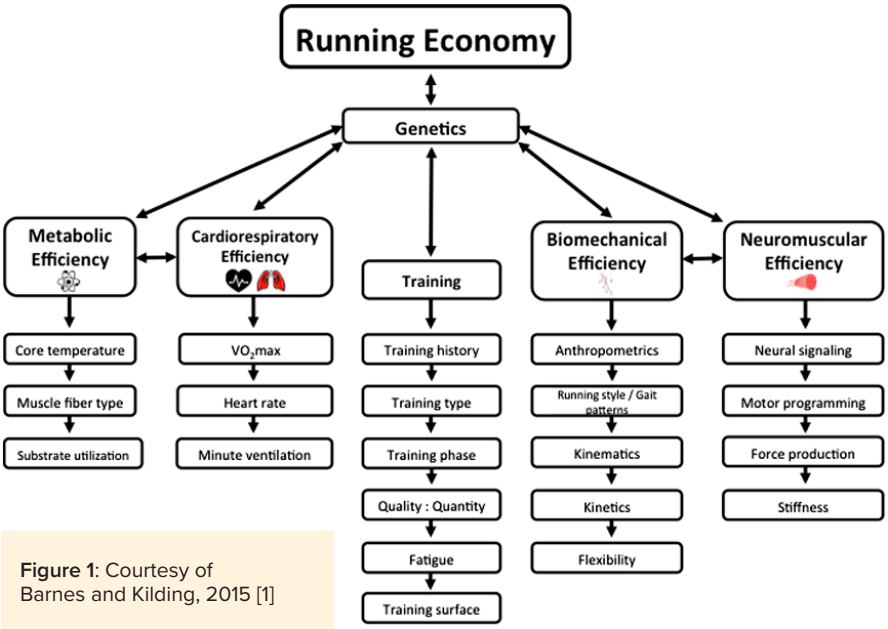


Figure 1: Courtesy of Barnes and Kilding, 2015 [1]

This also led Joyner and Coyle to state that: "The primary determinant of RE remains unclear" [6]. An interesting example is that it is possible to increase your RE by adding functional inspiration exercises to your normal running exercises [7]

RE, typically defined as the steady-state oxygen consumption at a given submaximal velocity, may vary by up to 30% among trained runners with comparable VO_2max [8]. Numerous interventions, ranging from resistance training to altitude exposure, have been shown to modulate RE [1, 8, 9, 10]. However, the potential contribution of osteopathic treatment—a holistic manual therapy that addresses somatic dysfunctions and physiological function—remains underexplored.

This article summarises two clinical projects investigating whether osteopathic treatment can positively influence RE in trained endurance runners [11,12].

Methods

Participants:

Both studies recruited local recreational and club runners (age range 26–71 years; minimum weekly mileage ≥10 km). Participants were randomly assigned to control, standardised treatment, or individualised "black box" osteopathic treatment groups.

Testing Protocol:
Submaximal treadmill running at speeds below the lactate threshold. Primary outcome: Article 1: Mean heart rate over 12 minutes, serving as a proxy for energy cost. Article 2: Running economy measured via 3d markerless motion capture.
Testing sessions were conducted at baseline, immediately after treatment, and one week after treatment.

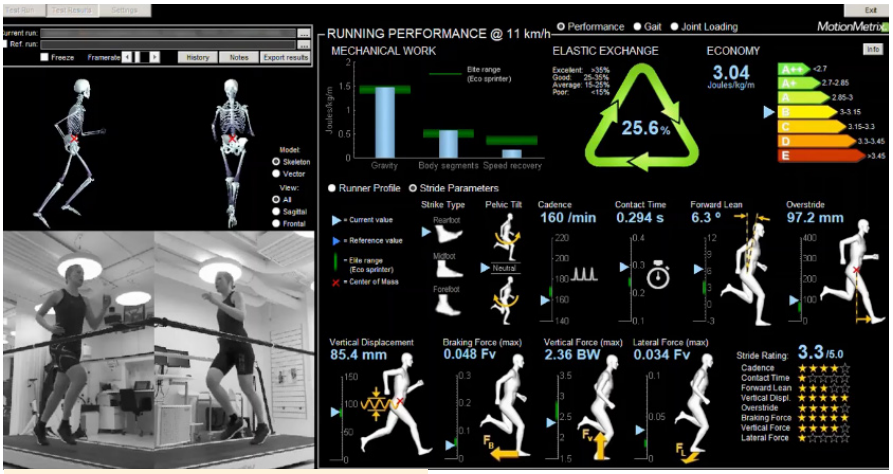


Figure 2: Example of output from MotionMetrix ©

Interventions:
Standardised protocol: mobilisations and myofascial techniques targeting the lower extremities, thorax, and diaphragm. Black box protocol: individualised osteopathic treatment based on full structural assessment, including visceral, cranial, and spinal components when indicated.
In the first study, the control group was considered a placebo group, where participants received a superficial back massage. Study number two was based on 30 minutes of rest between the two initial tests.

Results
Control groups consistently showed increased heart rate and lower RE between test sessions, indicating higher energy demand at the second test. These differences were within the typical error margins, and the differences may well be the measurement variability. Standardised treatment groups demonstrated modest but consistent improvements, averaging ~3% reduction in heart rate during identical workloads. Black box treatment groups exhibited the most robust improvements, with reductions of 4–9% that were sustained at the one-week follow-up.
Effect sizes exceeded the typical error margin for RE measurement (≈2.4%), suggesting true physiological effects rather than measurement variability. In the Black box group, not everybody responded equally well. 9,5% responded negatively. 23,8% responded within the typical error margin, and finally, 14 out of 21 responded positively beyond the threshold. The entire group responded with an average improvement of RE of 7.66% immediately after the treatment and a 7.22% improvement after one week.

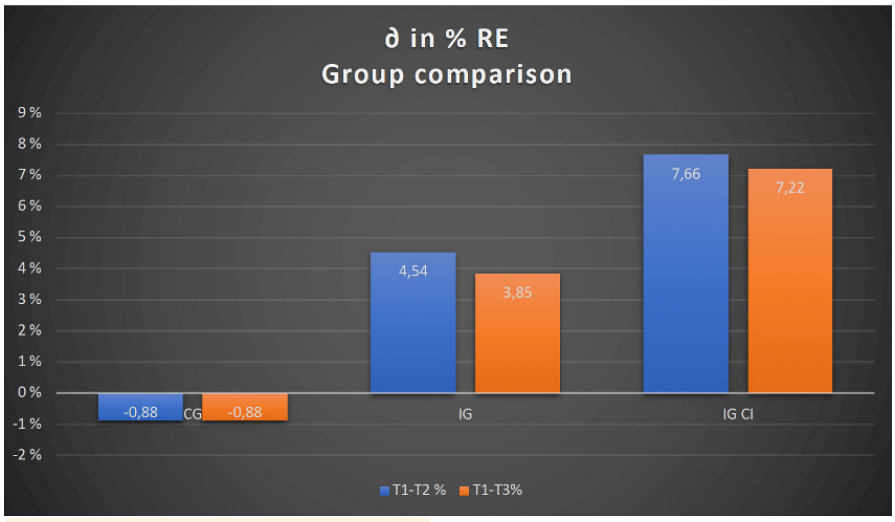


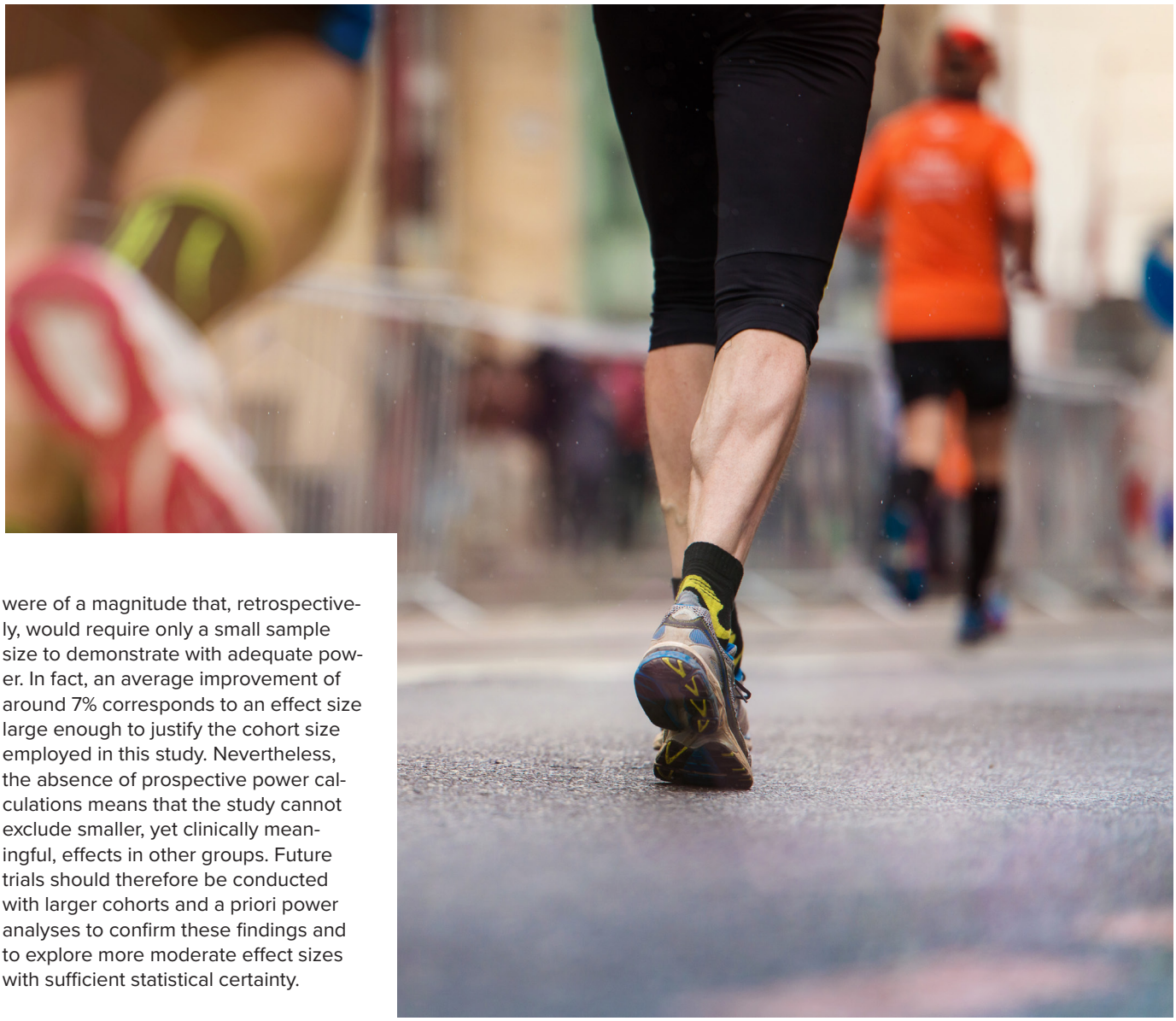
Figure 3: Changes in Running Economy – Second article
T1-T2 = Baseline test-Immediately after treatment. T1-T3 = Baseline test – One week after.
CG: Control Group, IG: Intervention Group, IG CI: Intervention Group Positive responders

Discussion
The findings from both projects provide preliminary evidence that osteopathic interventions can positively influence running economy. This effect appears most pronounced following individualised treatments, where the holistic assessment may better address the specific somatic dysfunctions limiting performance.
These results align with the broader sports science literature, which demonstrates that interventions that optimise neuromuscular coordination, stiffness regulation, and cardiorespiratory efficiency can enhance RE[13]. Osteopathic treatment, by addressing mechanical restrictions in the thorax, pelvis, and lower limbs, may facilitate similar adaptations.

Shortcomings
Methodological limitations must be emphasised: small sample sizes, use of heart rate / markerless motion capture rather than direct gas-exchange measures, lack of blinding of the primary investigator, bias according to beliefs and of course, only one osteopath who can´t be equally good at treating all the different problems that the athletes presented with. Future research should employ randomised controlled designs with larger cohorts, blinded assessments, and VO_2-based measurement of RE. Longitudinal studies across full training seasons could clarify whether repeated osteopathic care confers sustained performance benefits.

Statistical considerations
Although the observed changes in running economy were consistent and in several cases exceeded typical measurement error, the studies were not designed with formal power calculations, and detailed statistical analyses were not performed. Given the relatively small sample sizes, the findings should therefore be regarded as preliminary. Future trials with larger cohorts and a priori statistical planning will be crucial in determining whether these results can be confirmed and generalised.

Statistical power and effect size considerations
Although no a priori power analysis was performed, the observed improvements in the individualised “black box” group

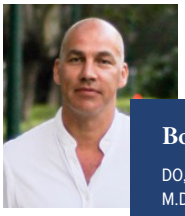


were of a magnitude that, retrospectively, would require only a small sample size to demonstrate with adequate power. In fact, an average improvement of around 7% corresponds to an effect size large enough to justify the cohort size employed in this study. Nevertheless, the absence of prospective power calculations means that the study cannot exclude smaller, yet clinically meaningful, effects in other groups. Future trials should therefore be conducted with larger cohorts and a priori power analyses to confirm these findings and to explore more moderate effect sizes with sufficient statistical certainty.

Conclusion

Across two independent projects, osteopathic treatment was associated with meaningful improvements in running economy in trained endurance runners. Both standardised and individualised approaches were effective, with the latter producing the strongest results, suggesting the importance of an individualised treatment plan versus a standardised treatment.

While preliminary, these findings suggest that osteopathy may be a promising adjunct in optimising sports performance. Further high-quality research is warranted to confirm and expand upon these results.



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The Osteopathic International Alliance

The Osteopathic International Alliance (OIA) unites the osteopathic profession globally in support of high standards for education and regulation by connecting schools, regulatory bodies, and professional associations, including the Norwegian Association of Osteopathy. The OIA launched in 2003, and has served as the official voice of the profession within the World Health Organization since 2018, when it was admitted into "official relations."

As part of its official relationship with the WHO, the OIA maintains a collaborative program of work, which includes the following projects:

1. Update the 2010 **Benchmarks for Training in Osteopathy** – the OIA is working to update the 2010 document to reflect updates in osteopath training, and add information about osteopathic medicine;

2. Update the 2013 and 2020 **Global Reviews** of the Osteopathic Profession to showcase current data about the education and regulation of osteopathic professionals around the world; and

3. Publish an international Glossary of Osteopathic Terminology to ensure that regulators, clinicians and patients are able to communicate effectively about osteopathic practice and care.

In addition to the OIA's official relationship with the WHO, the organization is actively working with the following additional groups to amplify our reach and raise awareness about the benefits of osteopathic care:

1. World Rehabilitation Alliance (WRA) – the OIA was recently admitted as a member of the WRA, which is a WHO global network of stakeholders focused on promoting rehabilitation as an essential health service. The WRA invites members to participate in one or more "workstreams" of particular relevance to their organization, and the OIA has identified the Workforce, Primary Care, Research and External Relations workstreams as areas of greatest interest.

The Osteopathic International Alliance (OIA) board members.

2. International Association of Medical Regulatory Authorities (IAMRA) – the OIA was also admitted as a Partner member of IAMRA this year, which fosters scientific, educational, and interprofessional collaborative activities in order to encourage best practices among the world's MRAs.

3. Global Self Care Federation (GSCF) – the OIA is involved in the GSCF, which promotes evidence-based solutions and empowers individuals to take greater control of their health, leading to improved health outcomes and increased healthcare system optimization.

The OIA also recently submitted a proposal for a Special Interest Group "Disseminating and Promoting Evidence – Osteopathic Contributions in Global Health" to the Brazilian Academic Consortium of Integrative Health (CABSIN), which recently hosted **the 3rd World Congress on Traditional, Complementary and Integrative Medicine** (WCTCIM) on October 15-18,2025 in Rio de Janeiro, Brazil. The OIA application was accepted and OIA Chair Philippe Sterlingot presented on the proposal at the WCTCIM conference.

In regulatory news, one of the member associations of the Canadian Federation of Osteopaths (an OIA member) successfully petitioned the government of New Brunswick to regulate manual osteopathy, becoming the first province to do so! Upon achieving regulation, the Association of Osteopaths of New Brunswick became the regulatory College of Osteopaths of New Brunswick ("College"), and the College is now in the process of promulgating regulations to support uniform, high standards for the practice of manual osteopathy in the province.

The Dance of the Eagle and the Condor

Exploring the Diversity of Body Representations in Osteopathy through Medical Anthropology and Integrative Health

Text: Rafael Zegarra-Parodi

1. Integrative Perspectives on Osteopathy

The National Center for Complementary and Integrative Health in the US defines integrative health as the deliberate combination of conventional medicine and evidence-based complementary approaches within a whole-person framework, addressing not only disease but also the biological, psychological, social, and experiential dimensions of health [1]. Medical anthropology, broadly defined as the study of health, illness, and healing in their cultural and social contexts, reinforces this perspective by showing that representations of the body are not universal but are shaped by sociocultural frameworks and individual life experiences. These representations shape how patients interpret symptoms, decide when and how to seek care, and participate in therapeutic processes within physical therapy [2]. A parallel can be seen in osteopathy, where the discipline's founder, Andrew Taylor Still, integrated the biomedical knowledge of anatomy and physiology available in his time with perspectives that resonate with non-Western understandings of health.

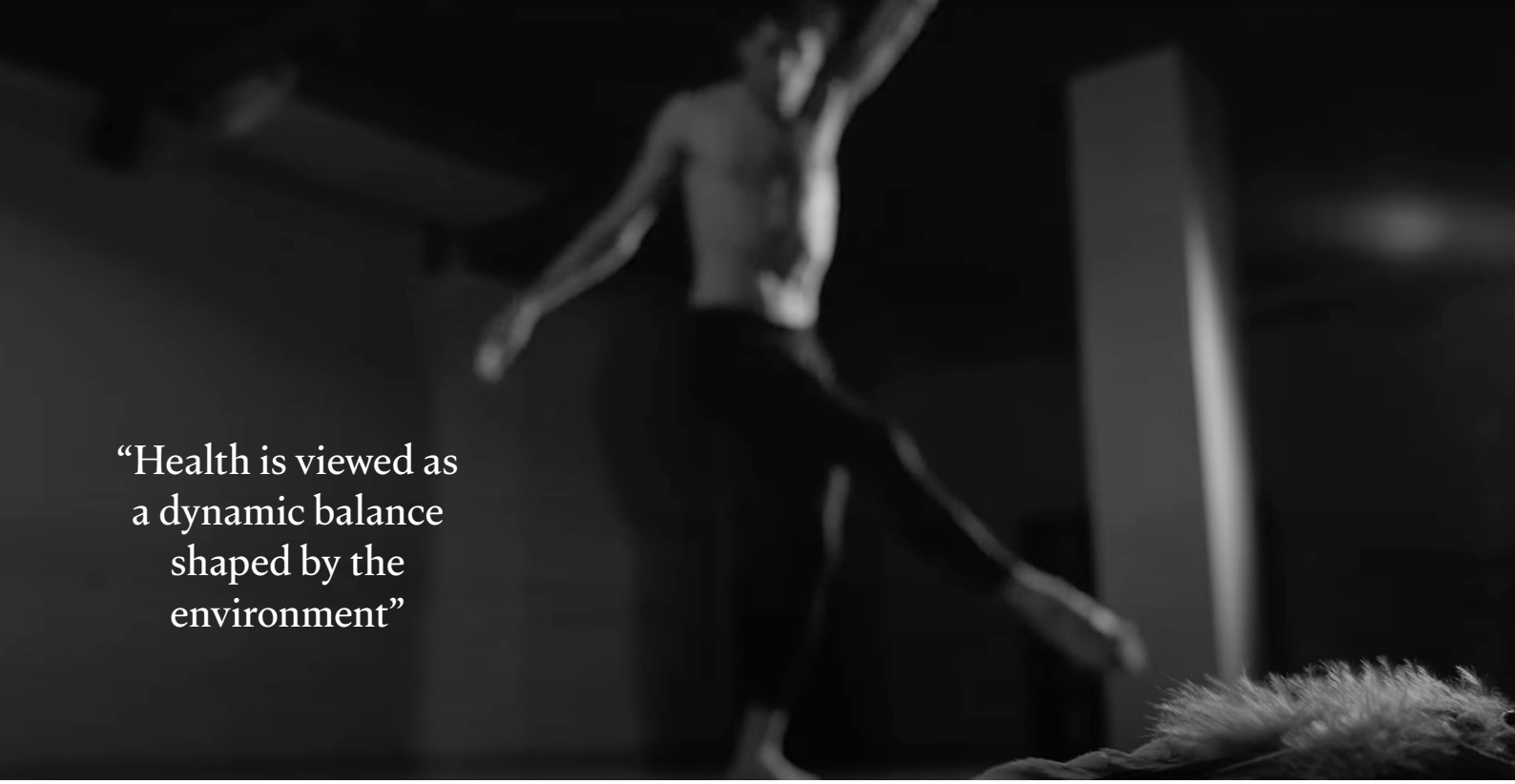
This article expands on these historical and conceptual foundations by revisiting Still's possible interactions with Indigenous Native American traditions and their influence on key osteopathic principles, including holism, the body's intrinsic self-healing capacities, and the interrelationship between the body, mind, and spirit [3, 4]. Indigenous peoples have developed healing practices over millennia that can be described in terms of polyphasic cognition, which means the use of multiple modes of consciousness and brain function—including waking, dreaming, trance, and meditative states—that contrast with the predominantly monophasic orientation of Western scientific thought[5]. Such practices often involve shifts in consciousness and brain frequency modulation, experienced by both patients and practitioners, and are now recognized as mechanisms capable of reshaping body representations and altering subsequent perceptions of health and disease [6]. For individuals without direct experiential exposure, these states may be difficult to interpret, creating challenges in person-centered care when clinicians encounter patients whose health beliefs are grounded in diverse cultural or experiential frameworks.

To illustrate this concept, we developed a video featuring Hugo Marchand, an étoile dancer at the Paris Opera Ballet. His performance demonstrates how the same physical body can be interpreted in notably different ways depending on the worldview through which it is perceived. This example highlights the importance of epistemological flexibility—understood as the capacity to work across different systems of knowledge and ways of knowing—in person-centered care, particularly when addressing patient needs and clinical contexts that extend beyond the musculoskeletal domain [7]. Such flexibility represents a central contribution of osteopathy to contemporary healthcare.

The accompanying video is accessible on YouTube via the following link:

2. Indigenous traditions, A. T. Still, and the Body–Mind–Spirit osteopathic tenet

The origins of osteopathy are historically connected to Indigenous healing traditions in the United States. Still was likely influenced by holistic systems that emphasize interconnectedness, oral transmission, and a non-reductionist view of the body [3, 4]. These perspectives resonate with the current Body–Mind–Spirit tenet, formally introduced in 2002, which identifies holistic care as a distinctive feature of osteopathic care [8]. However, this tenet remains vague and has not been systematically integrated



"Health is viewed as a dynamic balance shaped by the environment"

into clinical competencies, creating difficulties in regulated health systems. This presents challenges and opportunities for osteopathic clinicians. Without precise competencies linked to the Body–Mind–Spirit framework, practitioners risk applying the concept inconsistently, leading to potential ethical concerns. Integrating Indigenous representations of the body, where health is viewed as a dynamic balance shaped by the environment, community, and spirituality, may strengthen the clinical relevance of this tenet within a secular environment [7, 8, 9]. In practice, such perspectives could strengthen the therapeutic alliance by supporting the choice of meaningful narratives, promoting person-centered approaches, and guiding clinicians in making shared decisions about manual interventions within patients' sociocultural and experiential contexts.

3. Neuroscience of body awareness and manual care

Recent advances in neuroscience have provided insights that resonate with long-standing Indigenous observations[5]. Research on interoception, proprioception, and altered states of awareness has shown that shifts in consciousness influence body perception and pain modulation [6]. These findings offer biomedical plausibility for clinical effects that are difficult to explain through purely mechanical models, making them directly relevant to manual therapy [2, 8].

For osteopathic clinicians, this is particularly significant when applying interoceptive manual approaches, such as cranial, visceral, and myofascial techniques, which often employ light touch. Traditional explanatory models for these approaches are increasingly being questioned, as linear cause-and-effect mechanisms often lack biological plausibility [10]. By integrating Indigenous knowledge on body representations, contemporary findings in neuroscience, and the principle of epistemological flexibility, osteopathy has the opportunity not only to revisit its historical roots but also to strengthen its distinct position within manual medicine through approaches adapted to complex person-centered care [7]. Research in the neuroscience of perception may help update models of practice by suggesting that multisensory integration, interoceptive awareness, and autonomic regulation are possible mechanisms underlying the observed clinical effects [8, 9]. Such hypotheses allow practitioners to situate these interventions within a provisional evidence-informed framework while maintaining alignment with osteopathy's holistic orientation, which remains valued by patients and the general public.

4. Complexity in osteopathic care

Osteopathic practitioners frequently manage complex and nonlinear clinical presentations, particularly in chronic pain. The Cynefin framework provides a structured approach for navigating the complexity and uncertainty of clinical decision making [11]. It encourages practitioners to move beyond reductionist reasoning and incorporate diverse perspectives, including Indigenous body representations that emphasize interconnectedness and context [9]. This framework guides clinicians in adapting strategies to the level of complexity, with five domains defined by different cause-and-effect relationships: clear, complicated, complex, chaotic, and disorder, and supports adaptive strategies rather than rigid ones [9, 11]. Applied to osteopathic care, it reinforces person-centered practice by helping clinicians integrate empirical evidence with patient narratives, values, and cultural backgrounds. This pragmatic flexibility is particularly important in conditions where linear cause-and-effect reasoning fails to capture the complexity of lived health experiences.

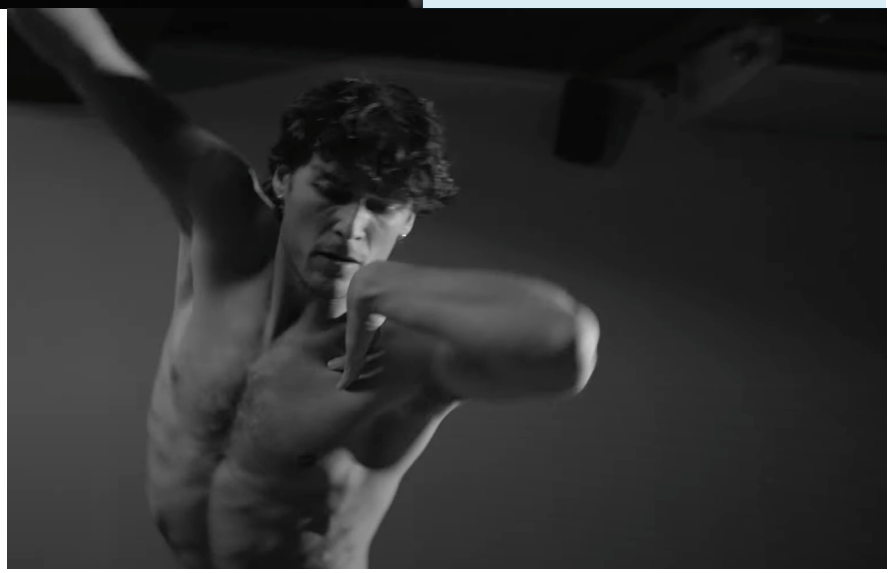
5. Sociocultural adaptability and the Eagle and Condor prophecy

Effective osteopathic care requires sociocultural adaptability and respect for diverse health perspectives of patients. Indigenous epistemologies emphasize narrative, oral tradition, and lived experience, similar to osteopathy's reliance on patient history and personal narratives [8, 9]. Acknowledging these dimensions can enhance the therapeutic alliance by validating patients' cultural and experiential worldviews, promoting a more collaborative clinical environment, and ensuring that treatment strategies remain aligned with patients' values, narratives and lived experiences.

The Indigenous prophecy of the Eagle and Condor offers a metaphor for integrating different worldviews. In this narrative, the Eagle represents Western analytical reasoning and technological progress, whereas the Condor embodies Indigenous wisdom, intuition, and

About the Author

Rafael Zegarra-Parodi, a French-Peruvian osteopath and researcher (h-index = 12), has integrated clinical practice with academic work since 1997. His research explores how sociocultural and experiential frameworks shape health experiences by bridging neuroscience, medical anthropology, and manual therapy. As the director of BMS Formation, he promotes integrative and evidence-informed education.



interconnectedness. Balance is achieved when the Eagle and the Condor fly together [12]. For osteopathy, this metaphor illustrates the potential to combine biomedical rigor with Indigenous perspectives on body representations to construct a more inclusive and effective model of care [9]. Importantly, this is not only a philosophical construct but also reflects the lived and embodied experiences through which patients perceive their health. For clinicians, this involves validating patients' sociocultural and experiential worldviews while upholding evidence-informed standards. In line with the principles of person-centered care, this integrative approach positions osteopathy as a discipline that bridges scientific knowledge with the diversity of lived human experiences and enhances clinical effectiveness by recognizing patients' values, narratives, and embodied perspectives.

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