



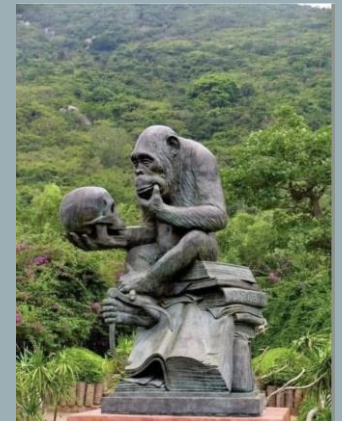
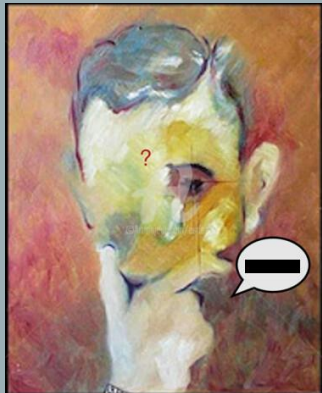
# *A single model for osteopathy or several?*

Andrée Aubin, DO (Québec)

9<sup>th</sup> OsEAN Open Forum 2024, 7 & 8 November

Osteopathic models – Between tradition and evidence-based practice

Saronno, Italy



# **A SINGLE MODEL FOR OSTEOPATHY OR SEVERAL? PLAN**

- How can we make informed choices about the models that are available?
  - Diversity of reasons for osteopathic consultation and osteopathic field of practice
  - Resisting the temptation of one-size-fits all
- To be able to choose, we must also take into account:
  - Therapist/patient encounter
  - Palpation and touch
  - Theoretical models
- In conclusion:
  - What should be taught?
  - What legacy to leave?

# DIVERSITY OF REASONS FOR OSTEOPATHIC CONSULTATION



# FOR WHOM OSTEOPATHY?

## For pregnant women

DE GRUYTER

J Osteopath Med 2022; aop

Musculoskeletal Medicine and Pain

Clinical Practice

Kaori Morimoto\*, BA, Alisha Harrington, BS, MAOM, Claudia Nelson, MS and  
Brian Loveless, DO

## Osteopathic approach to sacroiliac joint pain in pregnant patients

<https://doi.org/10.1515/jom-2021-0231>

Received September 21, 2021; accepted January 6, 2022;  
published online February 18, 2022

**Abstract:** This paper aims to provide a comprehensive review of the management of sacroiliac (SI) joint pain in pregnant patients. Although SI joint pain is highly prevalent among pregnant patients, the unique anatomy of the joint is rarely discussed in a clinical setting. This paper provides comprehensive review of the epidemiology, anatomy, alarm findings, standard treatment, osteopathic assessment, and osteopathic manipulative treatment (OMT) of the SI joint, and it provides a general and in-depth understanding of the SI joint pain in pregnant patients and its management.

**Keywords:** osteopathic manipulative medicine; pregnancy; SI joint pain.

abdominal and intrauterine pressures due to the growth of the fetus, and laxity of the spine and pelvic structures due to the hormone relaxin, SI joint pain is prevalent in the pregnant female population [5–7]. In a study of 1,789 pregnant women in their third trimester, 22.6% of the women reported daily pelvic girdle pain. Among those patients, 53.8% reported unilateral or bilateral SI joint pain. Furthermore, 2.8% of those who reported having SI joint pain suffered from daily symptoms up to two years post-delivery [5]. Therefore, medical providers need to understand the unique pathophysiology of the SI joint and all treatment options.

When the SI joint pain is due to the musculoskeletal etiology, assessing for somatic dysfunctions through the osteopathic lens and treating those with osteopathic manipulative treatment (OMT) can be highly beneficial for long- and short-term symptomatic relief [8]. Specifically for



# FOR WHOM OSTEOPATHY?

## For autonomic markers and physiological arousal in preterm infants



Article

### Osteopathic Manipulative Treatment Regulates Autonomic Markers in Preterm Infants: A Randomized Clinical Trial

Andrea Manzotti <sup>1,2,3</sup>, Francesco Cerritelli <sup>1,\*</sup>, Erica Lombardi <sup>1,3</sup>, Elena Monzani <sup>1</sup>, Luca Savioli <sup>1</sup>, Jorge E. Esteves <sup>1,4</sup>, Matteo Galli <sup>1,3</sup>, Simona La Rocca <sup>1,3</sup>, Pamela Biasi <sup>1,3</sup>, Marco Chiera <sup>1</sup> and Gianluca Lista <sup>2</sup>

- <sup>1</sup> RAISE Lab, Foundation COME Collaboration, 65121 Pescara, Italy; andreamanzotti@soma-osteopatia.it (A.M.); lombardi.fisio@gmail.com (E.L.); osteopataelenamonzani@gmail.com (E.M.); lucasavioli.osteopata@gmail.com (L.S.); osteojorge@gmail.com (J.E.E.); tgalli@hotmail.it (M.G.); geoglobulo@gmail.com (S.L.R.); spapam1982@gmail.com (P.B.); marco.chiera.90@gmail.com (M.C.)
- <sup>2</sup> Division of Neonatology, “V. Buzzi” Children’s Hospital, ASST-FBF-Sacco, 20157 Milan, Italy; gianluca.lista@asst-fbf-sacco.it
- <sup>3</sup> Research Department, SOMA, Istituto Osteopatia Milano, 20126 Milan, Italy
- <sup>4</sup> Research Department, Malta ICOM Educational, GZR 1071 Gzira, Malta
- \* Correspondence: fcerritelli@comecollaboration.org

**Abstract:** Osteopathic manipulative treatment (OMT) has been found to be effective in the context of premature infants. Nonetheless, no studies have investigated the immediate effects of OMT on heart rate variability (HRV). As altered HRV reflects poor or worsening newborn’s clinical conditions and neurodevelopment, should OMT improve HRV fluctuations, it could become a relevant intervention for improving the care of preterm newborns. Therefore, this study aimed to evaluate whether OMT could affect HRV. The study was carried out at the Buzzi Hospital in

**Citation:** Manzotti, A.; Cerritelli, F.; Lombardi, E.; Monzani, E.; Savioli, L.; Esteves, J.E.; Galli, M.; La Rocca,



Contents lists available at ScienceDirect

Developmental Cognitive Neuroscience

journal homepage: [www.elsevier.com/locate/dcn](http://www.elsevier.com/locate/dcn)



### Dynamic touch reduces physiological arousal in preterm infants: A role for c-tactile afferents?



Andrea Manzotti<sup>a,b,c,1</sup>, Francesco Cerritelli<sup>a,1,\*</sup>, Jorge E. Esteves<sup>d,e,f,g</sup>, Gianluca Lista<sup>b</sup>, Erica Lombardi<sup>a,c</sup>, Simona La Rocca<sup>a,c</sup>, Alberto Gallace<sup>h</sup>, Francis P. McGlone<sup>i,j</sup>, Susannah C. Walker<sup>i</sup>

<sup>a</sup> RAISE Lab, Clinical-Based Human Research Department, Foundation COME Collaboration, Pescara, Italy

<sup>b</sup> Division of Neonatology, “V. Buzzi” Children’s Hospital, ASST-FBF-Sacco, Milan, Italy

<sup>c</sup> Research Department, SOMA, Istituto Osteopatia Milano, Milan, Italy

<sup>d</sup> Gulf National Centre, Foundation COME Collaboration, Riyadh, Saudi Arabia

<sup>e</sup> MYO Osteopathy, Riyadh, Saudi Arabia

<sup>f</sup> University College of Osteopathy, London, UK

<sup>g</sup> Instituto Piaget, Lisbon, Portugal

<sup>h</sup> Department of Psychology and Milan Center for Neuroscience (NeuroMI), University of Milano-Bicocca, Milan, Italy

<sup>i</sup> Research Centre for Brain & Behaviour, School of Natural Sciences & Psychology, Liverpool John Moores University, UK

<sup>j</sup> Institute of Psychology, Health & Society, University of Liverpool, UK

# FOR WHOM OSTEOPATHY?

## For children who have otitis media

Morin et al. *BMC Pediatrics* 2012, **12**:181  
<http://www.biomedcentral.com/1471-2431/12/181>



### RESEARCH ARTICLE

### Open Access

# Suture restriction of the temporal bone as a risk factor for acute otitis media in children: cohort study

Chantal Morin<sup>1\*</sup>, Dominique Dorion<sup>2</sup>, Jean-Marie Moutquin<sup>3,4</sup> and Mélanie Levasseur<sup>1</sup>

# FOR WHOM OSTEOPATHY?

## Promoting children's futures by touch or presence

Communiquer par le toucher avec le bébé

prise en charge

## Le toucher en ostéopathie, une ouverture au dialogue et à la relation

■ Un bébé en retrait relationnel peut participer activement à un dialogue avec une main qui écoute, comme celle de l'ostéopathe ■ Ce dialogue peut devenir un facteur d'organisation pour les tout-petits à risque de trouble du neurodéveloppement, pour lesquels les mouvements généraux s'avèrent souvent perturbés ■ Un jeune enfant dont la motricité est désorganisée suscitera malgré lui une augmentation des touchers non affectueux ■ La qualité du dialogue corporel mis en place sera susceptible de contribuer à l'harmonisation du développement du bébé et à l'ouverture d'un nouvel espace de relation.

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Mots clés – bébé ; douleur ; mouvement général ; ostéopathie ; trouble du neurodéveloppement

ANNIK BEAULIEU  
Docteure en psychopathologie,  
psychanalyste, ostéopathe,  
chercheuse associée

Centre de recherche  
Psychanalyse, médecine  
et société, Institut  
des humanités, sciences  
et sociétés, Université  
Paris-Cité, Bâtiment Olympe-  
de-Gauguin, 8 place Paul-  
Ricoeur, 75013 Paris, France

**Touch in osteopathy, an opening to dialogue and relationship.** A baby in relational withdrawal can actively participate in a dialogue with a listening hand, such as the osteopath's. This dialogue can become an organizing factor for toddlers at risk of neurodevelopmental disorders. for whom general

Beaulieu, A. 2022. Le toucher en ostéopathie, une ouverture au dialogue et à la relation. Soins pédiatrie-Puériculture, 329, 21-23.



frontiers

Frontiers in Psychology

TYPE Original Research  
PUBLISHED 02 October 2023  
DOI 10.3389/fpsyg.2023.1253355

Check for updates

### OPEN ACCESS

#### EDITED BY

Paola D'Adamo,  
National Scientific and Technical Research  
Council (CONICET), Argentina

#### REVIEWED BY

Darren J. Edwards,  
Swansea University, United Kingdom  
Giacomo Rossetini,  
University of Verona, Italy

#### \*CORRESPONDENCE

Jorge E. Esteves  
✉ osteojorge@gmail.com

RECEIVED 05 July 2023

ACCEPTED 12 September 2023

PUBLISHED 02 October 2023

#### CITATION

Accardi C, Cerritelli F, Bovo L and  
Esteves JE (2023) The osteopath-parent-child  
triad in osteopathic care in the first 2 years of  
life: a qualitative study.  
*Front. Psychol.* 14:1253355.  
doi: 10.3389/fpsyg.2023.1253355

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## The osteopath-parent-child triad in osteopathic care in the first 2 years of life: a qualitative study

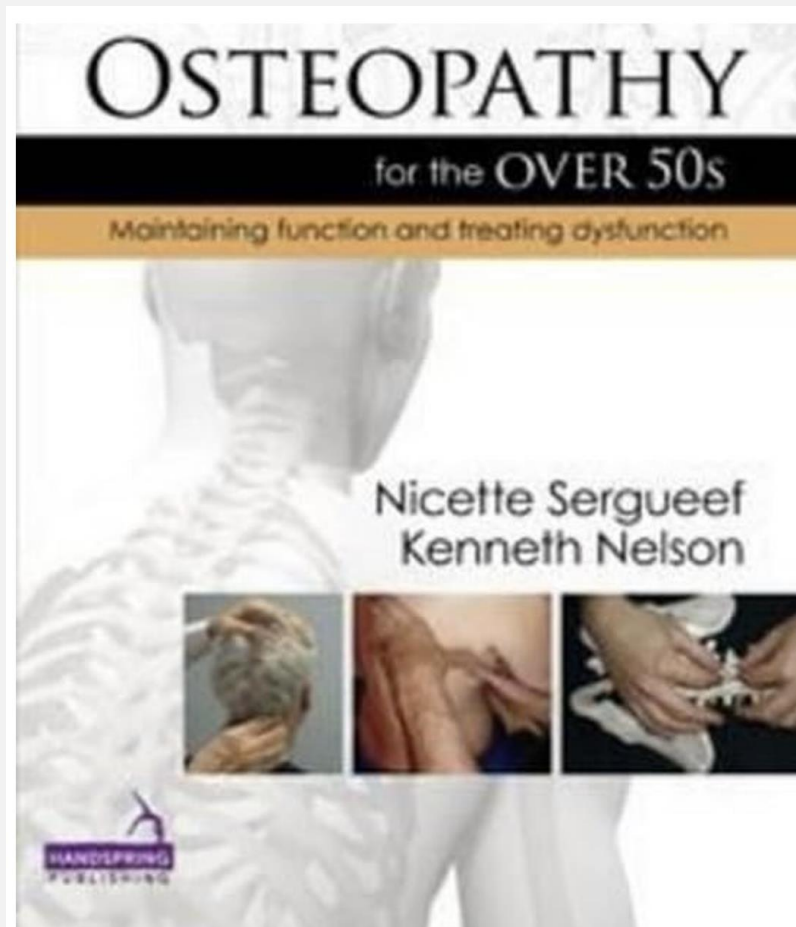
Caterina Accardi<sup>1,2</sup>, Francesco Cerritelli<sup>1</sup>, Lorenza Bovo<sup>1,2</sup> and  
Jorge E. Esteves<sup>1,2\*</sup>

<sup>1</sup>Foundation COME Collaboration, Clinical-Based Human Research Department, Pescara, Italy, <sup>2</sup>Malta ICOM Educational Ltd., Gzira, Malta

**Background:** Enactivism and active inference are two important concepts in the field of osteopathy. While enactivism emphasizes the role of the body and the environment in shaping our experiences and understanding of the world, active inference emphasizes the role of action and perception in shaping our experiences and understanding of the world. Together, these frameworks provide a unique perspective on the practice of osteopathy, and how it can be used to facilitate positive change in patients. Since the neonatal period is a crucial time for development, osteopaths should aim to create a therapeutic relationship. Arguably, through participatory sense-making, osteopaths can help the baby build a generative model (with positive priors) to deal with stress and needs throughout their life.

# FOR WHOM OSTEOPATHY?

## For the elderly



DE GRUYTER

J Osteopath Med 2021; 121(5): 503–511

Neuromusculoskeletal Medicine (OMT)

Original Article

Alicia A. King, DO, MPH, Jayme Cox, BS, OMS III, Shalini Bhatia, MS and  
Karen T. Snider\*, DO

## Characteristics and treatment of geriatric patients in an osteopathic neuromusculoskeletal medicine clinic

<https://doi.org/10.1515/jom-2020-0220>

Received August 24, 2020; accepted November 19, 2020;  
published online February 19, 2021

primary insurance (7,246 [79.2%]), with private insurance  
the most common secondary insurance (8,440 [92.2%]).  
The total number of presenting concerns was 12,020, and

# FOR WHOM OSTEOPATHY?

## For « special » cases

### Osteopathic Approach to the Treatment of a Patient With an Atypical Presentation of Coccydynia

Karlbuto Alexandre, OMS IV; Millicent King Channell, DO, MA

A 21-year-old man with atypical coccydynia that radiated bilaterally to his thigh and lower back came for treatment 10 years after coccyx trauma. Pertinent review of systems showed unintentional weight loss of 20 lb over the past 1 to 3 years, a body mass index of 14.94, significant depression, and poor concentration. In addition to treating his pain, we addressed the weight loss and depression that he was experiencing by advising a balanced diet, discovering the origins of what the patient believed caused his depression, and using osteopathic manipulative treatment. The patient was treated with osteopathic manipulative treatment to alleviate somatic dysfunctions diagnosed in the head, cervical, thoracic, lumbar, and sacral regions. At follow-up visits, the patient described a reduction in his pain symptoms from an initial 5 out of 10 to 3 out of 10 on his third visit. This case report outlines the importance of using a holistic approach when treating patients and advocates for using osteopathic manipulative treatment as a viable treatment option for patients with coccydynia.

*J Am Osteopath Assoc.* 2019;119(6):395-400  
doi:10.7556/jaoa.2019.069

### Somatic Dysfunctions of Hip and Pelvis Overlooked in a Case of Vulvodynia

Athina Giovanis, DO; Stephanie Zeszutek, DO

Vulvodynia is chronic perineal pain in women. Repercussions of this disorder can have a negative effect on women's health and lifestyle. The origin is often multifactorial, including pelvic and lower extremity somatic dysfunctions. If left untreated, these somatic dysfunctions can directly alter ligamentous tension on the pelvic floor and surrounding regions, resulting in perineal pain. Management of vulvodynia must be individualized due to the multifactorial etiology and complicated structure and function of the pelvic floor muscles. The authors present a case of vulvodynia in which osteopathic manipulative treatment was an effective management technique.

*J Am Osteopath Assoc.* 2020;120(11):792-795. Published online October 6, 2020.  
doi:10.7556/jaoa.2020.140



# FOR WHOM OSTEOPATHY?

## For cases to understand better

### [ VIEWPOINT ]

ANNINA B. SCHMID, PT, PhD, MManipTher<sup>1</sup> • LOUISE HAILEY, PT, MSc<sup>1,2</sup> • BRIGITTE TAMPIN, GradDipManipTher, MSc, PhD<sup>3-6</sup>

## Entrapment Neuropathies: Challenging Common Beliefs With Novel Evidence

*J Orthop Sports Phys Ther* 2018;48(2):58-62. doi:10.2519/jospt.2018.0603

## In the spine or in the brain? Recent advances in pain neuroscience applied in the intervention for low back pain

J. Nijs<sup>1-3</sup>, J. Clark<sup>1,2,4,5</sup>, A. Malfliet<sup>1-3,7</sup>, K. Ickmans<sup>1-3</sup>, L. Voogt<sup>1,2,6</sup>, S. Don<sup>1,2,6</sup>, H. den Bandt<sup>1,2,6</sup>, D. Goubert<sup>1,2,7</sup>, J. Kregel<sup>1,2,7</sup>, I. Coppieters<sup>1,2,7</sup>, W. Dankaerts<sup>8</sup>

Nijs, J. & al. 2017. Clinical and Experimental Rheumatology, S-108-S-115.



### CASE REPORT

## Psoas Syndrome: A Frequently Missed Diagnosis

Andrea Tufo, OMS IV  
Gautam J. Desai, DO  
W. Joshua Cox, DO

Psoas syndrome is an easily missed diagnosis. However, it is important to consider this condition as part of the differential diagnosis for patients presenting with low back pain—particularly for osteopathic physicians, because patients may view these practitioners as experts in musculoskeletal conditions. The authors describe the case of a 48-year-old man with a 6-month history of low back pain that had been attributed to “weak core muscles.” The diagnosis of psoas syndrome was initially overlooked in this patient. After the correct diagnosis was made, he was treated by an osteopathic physician using osteopathic manipulative treatment, in conjunction with at-home stretches between office treatments. At his 1-month follow-up appointment, he demonstrated continued improvement of symptoms and a desire for further osteopathic manipulative treatment.

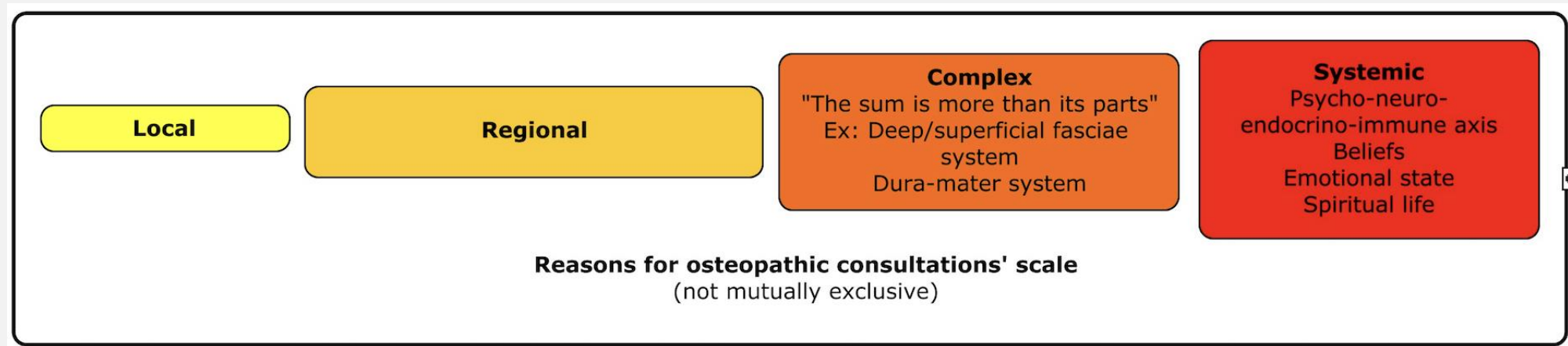
*J Am Osteopath Assoc.* 2012;112(8):522-528

Psoas syndrome may manifest as any of a variety of clinical scenarios involving low back pain and often poses a diagnostic challenge. However, many patients have certain symptoms in common, including pain in the lumbosacral region when sitting or standing, delay or difficulty in achieving a fully erect posture, pain in the contralateral gluteal region, and radiation of pain down the opposite leg (generally stopping proximal to the knee).<sup>1</sup> Symptoms may mimic those of a herniated nucleus pulposus.<sup>1</sup> In the differential diagnosis, other musculoskeletal and visceral causes of pain, such as colon cancer, colon diverticulitis, femoral bursitis, hip arthritis, prostatitis, salpingitis, and ureteral calculi, must be ruled out as the source of low back pain.<sup>2</sup>

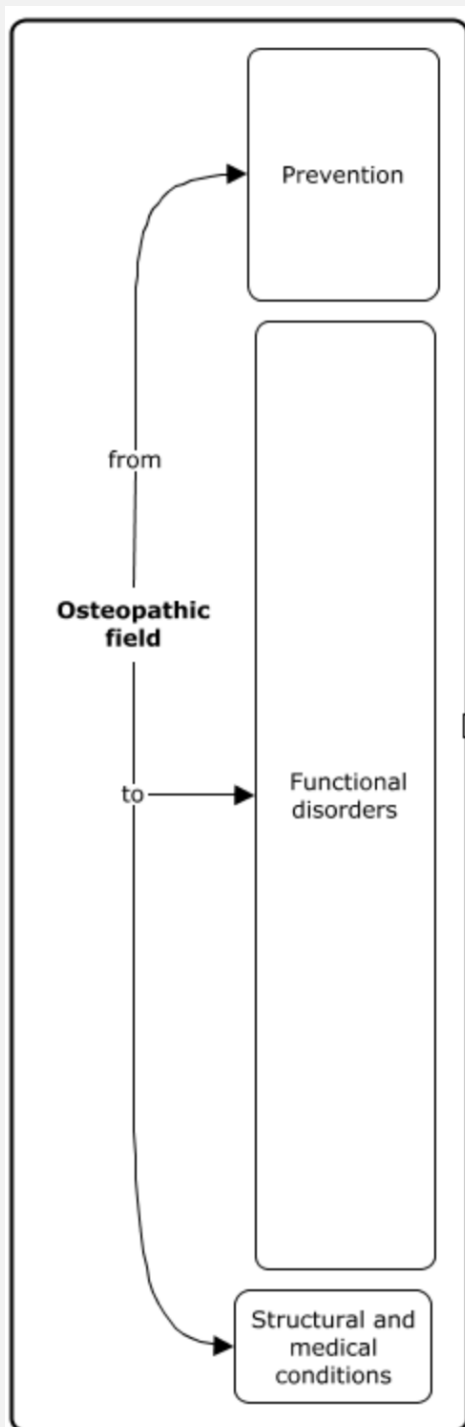
It is important to remember the existence of fascial connections when treating patients with psoas syndrome. Fascia envelops the psoas muscle as well as the adjacent



# REASONS FOR OSTEOPATHIC CONSULTATIONS' SCALE

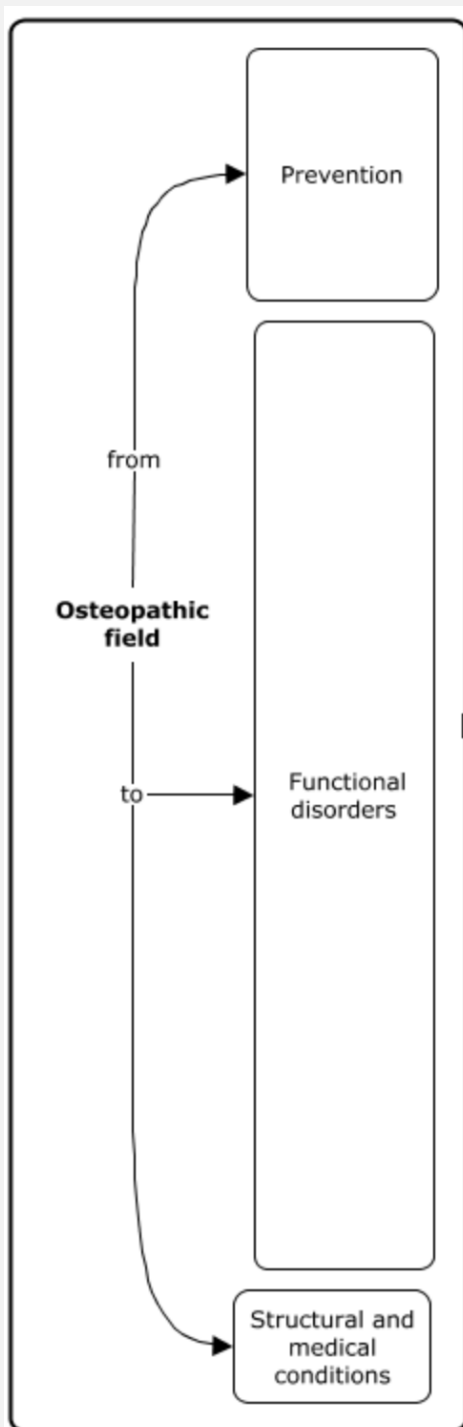


# OSTEOPATHIC FIELD



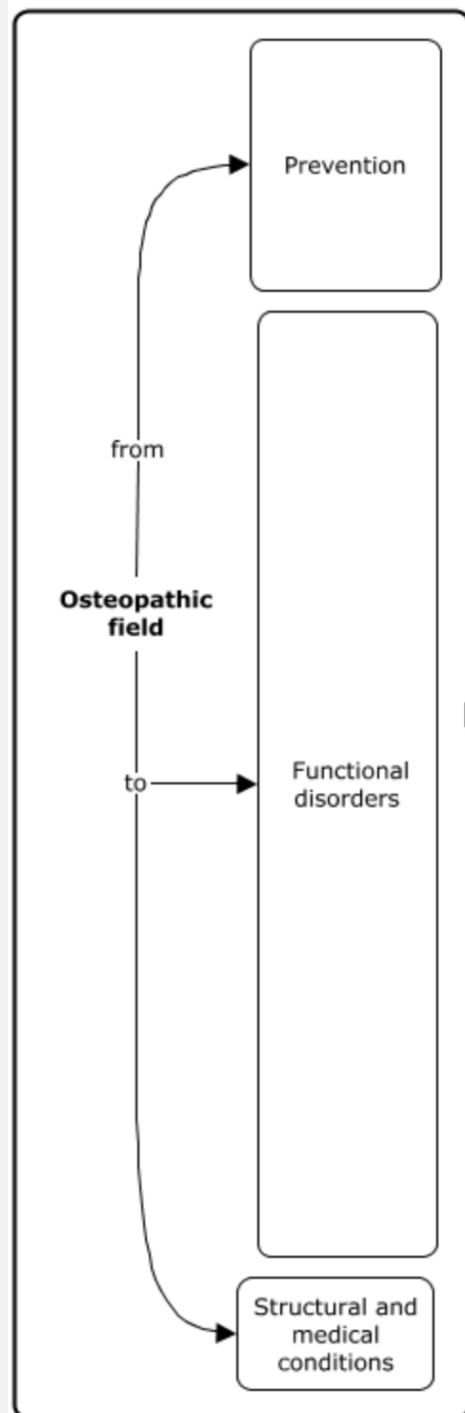
Osteopaths must be competent, efficient, ethical and..... **cautious**.

# OSTEOPATHIC FIELD



**Limitations due to structural condition** (some conditions are reversible) - "**Medically unexplained symptoms**" (MUS)

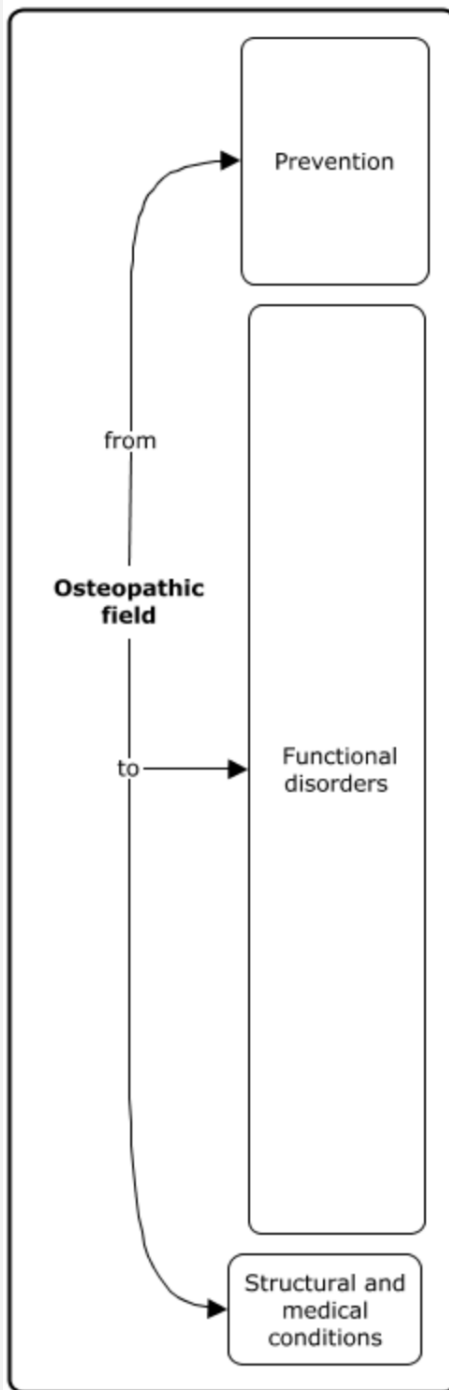
**Red flags (and other colors):** Contraindications to osteopathic practice



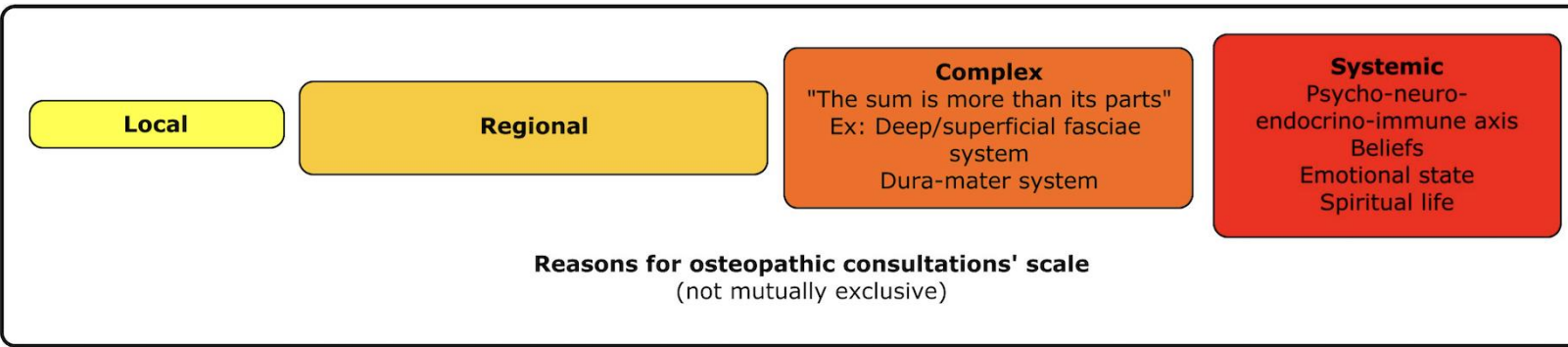
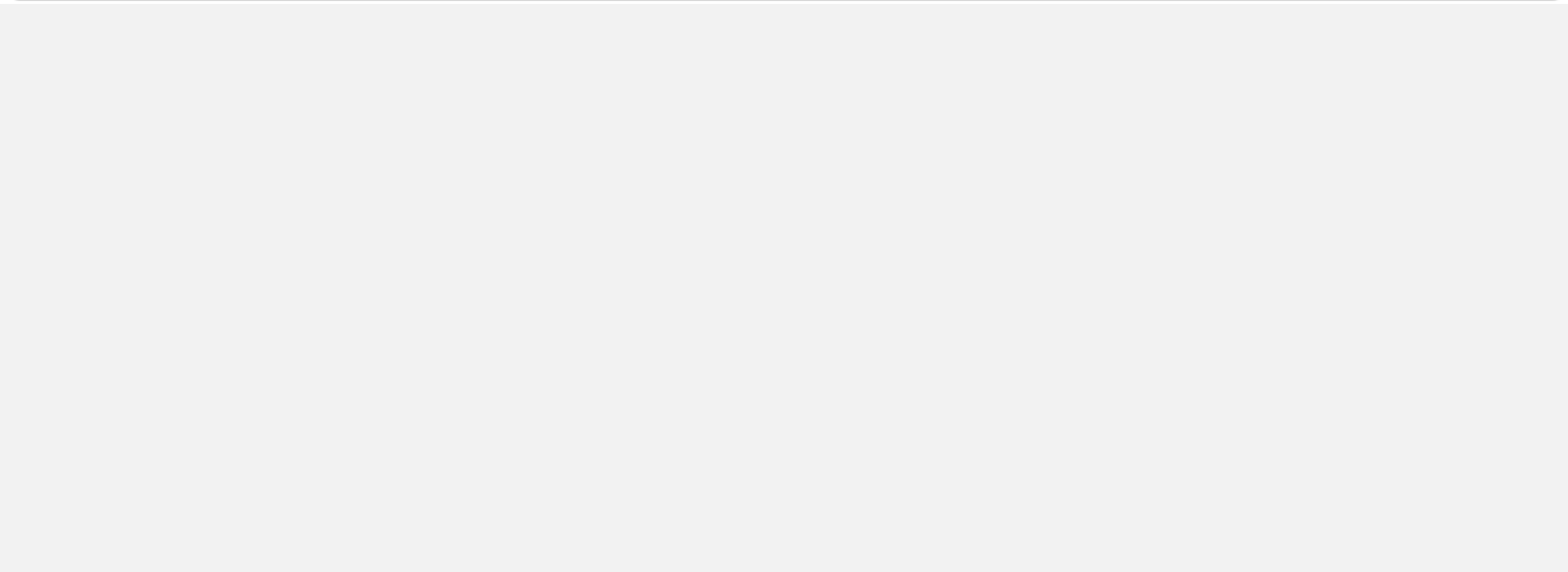
- Determinants of health**
- Allostatic load management
  - Quantity and quality of sleep
    - Diet
    - Physical activity
  - Quality of social relations
  - Cultural and socio-economic environment

**Limitations due to structural condition** (some conditions are reversible) - "**Medically unexplained symptoms**" (MUS)

**Red flags (and other colors):** Contraindications to osteopathic practice



- Determinants of health**
- Allostatic load management
  - Quantity and quality of sleep
    - Diet
    - Physical activity
  - Quality of social relations
  - Cultural and socio-economic environment



**Limitations due to structural condition** (some conditions are reversible) - **"Medically unexplained symptoms" (MUS)**

**Red flags (and other colors):** Contraindications to osteopathic practice

BUT...

- « One of the key intellectual challenges of doctors (or osteopaths...) is the ability to **bring together heterogeneous pieces of information** to construct a **coherent ‘picture’ of a specific patient.** »

vanBaalen, & Boon, M. 2014. An epistemological shift: from evidence-based medicine to epistemological responsibility, Journal of Evaluation in Clinical Practice, 1-7. doi:10.1111/jep.12282.

- To achieve this, in osteopathy:
  - 1\* There must be an **encounter** between the osteopath and the person who consults
  - 2\*\* **Touching** patients to know them better
  - 3\*\*\* Integrate the information gathered using the **right model** to provide the best care



# \*THE ENCOUNTER

## **Therapeutic relationship (non specific effects)**

- Patient-centred
- Empowerment of patients  
(prevention of negative and/or passive effects of manual approaches)
- (En)active inference  
(Esteves)
- Narrative medicine  
(Charron)
- Placebo and nocebo effects
- Efficacy of CR processes:  
Coherent picture of a specific patient, managing of uncertainty, etc.

“Person-Centered Medicine is an affordable biomedical and technological advance to be delivered to patients within a humanistic framework of care that recognizes the importance of applying science in a manner that respects the patients [sic] as a **whole person** and **takes full account of [their] values, preferences, aspirations, stories, cultural context, fears, worries and hopes** and thus that **recognizes and responds to [their] emotional, social and spiritual necessities in addition to [their] physical needs.**”

## PERSON-CENTERED APPROACH

Well-known model, but...



*Therapeutic Advances in Musculoskeletal Disease*

*Letter to the Editor*

### Person-centered *versus* body-centered approaches in osteopathic care for chronic pain conditions

Gerard Alvarez , Rafael Zegarra-Parodi and Jorge E. Esteves

**Keywords:** osteopathy, fibromyalgia, chronic pain, patient-centered care

*Ther Adv Musculoskel Dis*

2021, Vol. 13: 1–3

DOI: 10.1177/  
1759720X211029417

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# (EN)ACTIVE-ECOLOGICAL MODEL

Based on F.Varela's work and K.Friston's work  
Proposed by Esteves & Cerritelli



healthcare



Communication

## An Enactive–Ecological Model to Guide Patient-Centered Osteopathic Care

Francesco Cerritelli <sup>1,\*</sup> and Jorge E. Esteves <sup>1,2</sup>

**Citation:** Cerritelli, F.; Esteves, J.E.  
An Enactive–Ecological Model to  
Guide Patient-Centered Osteopathic  
Care. *Healthcare* **2022**, *10*, 1092.  
[https://doi.org/10.3390/  
healthcare10061092](https://doi.org/10.3390/healthcare10061092)

“ Osteopathy is a form of care centered on the person, and as such, osteopaths need to take their modus operandi away from a reliance on etiological models **to critically appraising the importance of appropriate forms of communication, the education of patients and affective and cognitive reassurance to deliver psychologically informed osteopathic care.** (...) Instead, they should enable patients to restore their ability to ignore and reappraise irrelevant signals, as means of returning to a natural state of rendering, where appropriate, things invisible.”

Esteves, J.E. & al. 2022. Osteopathic care as (En)active Inference: A Theoretical Framework for Developing an Integrative Hypothesis in Osteopathy. *Frontiers in Psychology*, 13, 1–17.

# NARRATIVE MEDICINE

## Rita Charron- Stephen Tyreman (OsEAN 2016)

### THE PATIENT-PHYSICIAN RELATIONSHIP

## Narrative Medicine

### A Model for Empathy, Reflection, Profession, and Trust

Rita Charron, MD, PhD

**M**S LAMBERT (NOT HER REAL name) is a 33-year-old woman with Charcot-Marie-Tooth disease. Her grandmother, mother, 2 aunts, and 3 of her 4 siblings have the disabling disease as well. Her 2 nieces showed signs of the disease by the age of 2 years. Despite being wheelchair bound with declining use of her arms and hands, the patient lives a life filled with passion and responsibility.

"How's Phillip?" the physician asks on a routine medical follow-up visit. At the age of 7 years, Ms Lambert's son is vivacious, smart, and the center—and source of meaning—of the patient's world. The patient answers, Phillip has developed weakness in both feet and legs, causing his feet to flop when he runs. The patient knows what this signifies, even before neurologic tests confirm the diagnosis. Her vigil tinged with fear, she had been watching her son every day for 7 years, daring to believe that her child had escaped her family's fate. Now she is engulfed by sadness for her little boy. "It's harder having been

The effective practice of medicine requires narrative competence, that is, the ability to acknowledge, absorb, interpret, and act on the stories and plights of others. Medicine practiced with narrative competence, called *narrative medicine*, is proposed as a model for humane and effective medical practice. Adopting methods such as close reading of literature and reflective writing allows narrative medicine to examine and illuminate 4 of medicine's central narrative situations: physician and patient, physician and self, physician and colleagues, and physicians and society. With narrative competence, physicians can reach and join their patients in illness, recognize their own personal journeys through medicine, acknowledge kinship with and duties toward other health care professionals, and inaugurate consequential discourse with the public about health care. By bridging the divides that separate physicians from patients, themselves, colleagues, and society, narrative medicine offers fresh opportunities for respectful, empathic, and nourishing medical care.

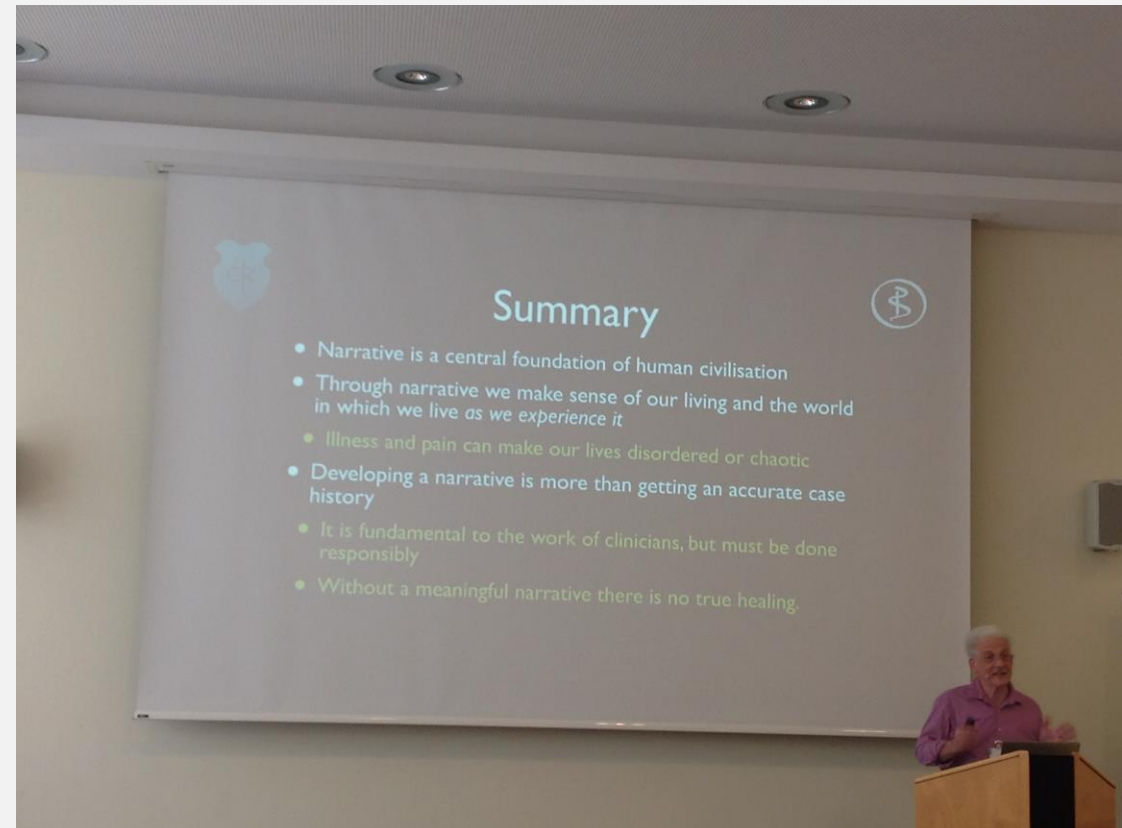
JAMA. 2001;286:1897-1902

www.jama.com

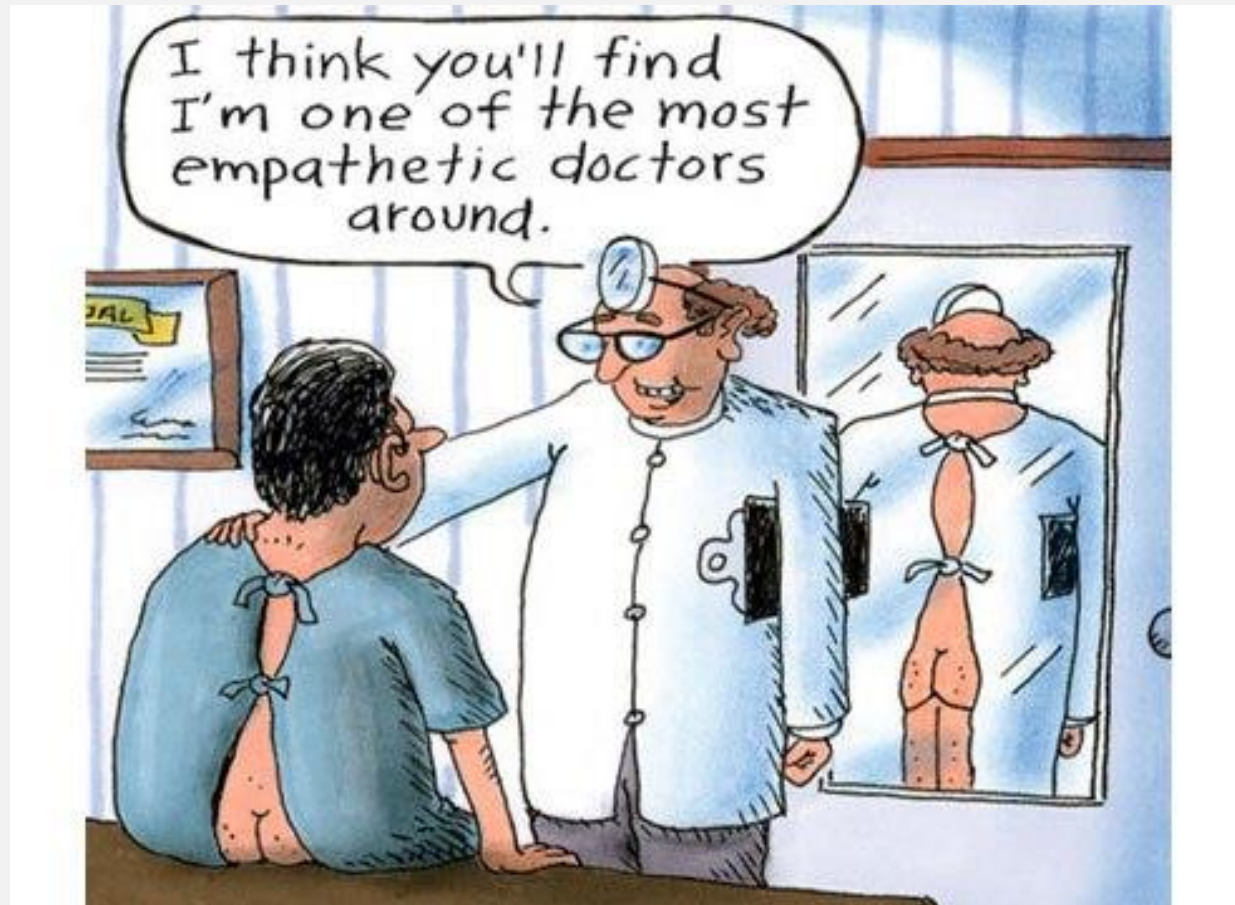
medical problems, and accompany them through their illnesses. Despite medicine's recent dazzling technological progress in diagnosing and treating illnesses, physicians sometimes lack the capacities to recognize the plights of their patients, to extend empathy toward those who suffer, and to join honestly and courageously with patients in

reflection, professionalism, and trustworthiness.<sup>3</sup> Such a medicine can be called *narrative medicine*.<sup>4</sup>

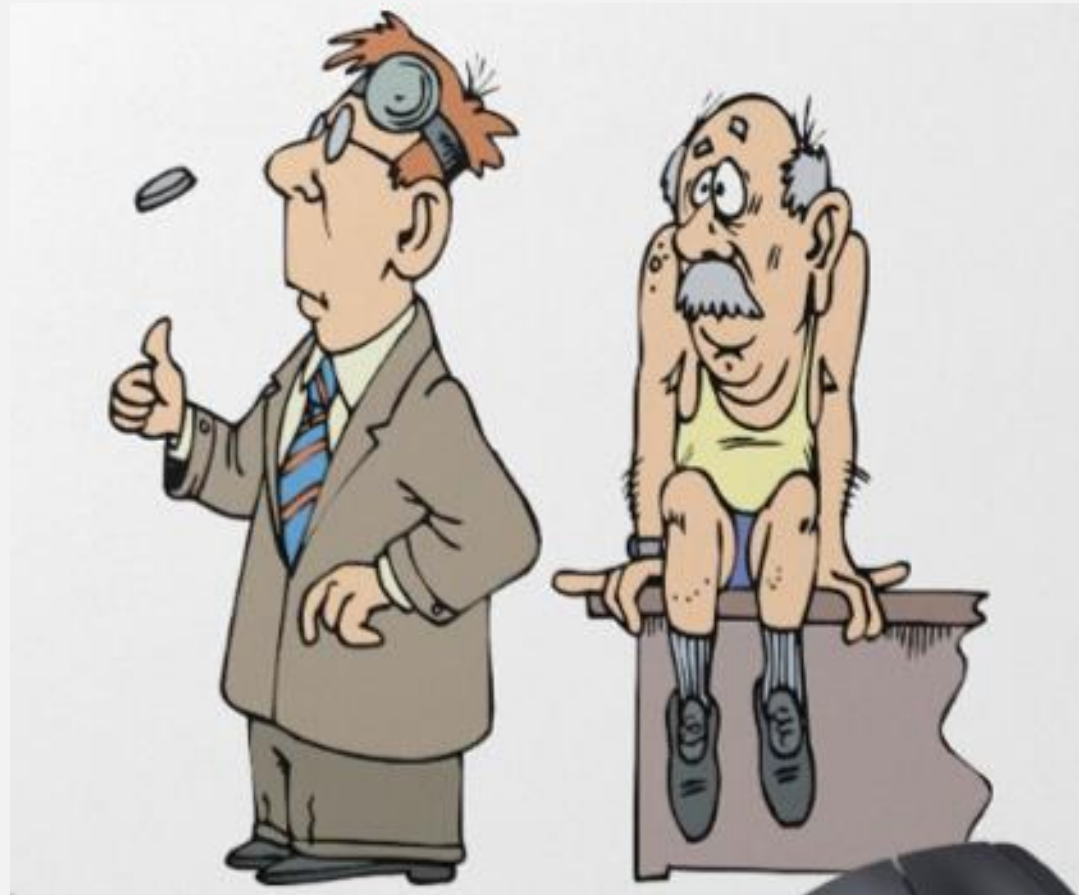
As a model for medical practice, narrative medicine proposes an ideal of care and provides the conceptual and practical means to strive toward that ideal. Informed by such models as biopsychosocial medicine and patient-centered



## PLACEBO EFFECTS (AND NOCEBO)



# CLINICAL REASONING PROCESSES





## \*THE ENCOUNTER

### Therapeutic relationship (non specific effects)

- Patient-centred
- Empowerment of patients  
(prevention of negative and/or passive effects of manual approaches)
- (En)active inference (Esteves)
- Narrative medicine (Charron)
- Placebo and nocebo effects
- Efficacy of CR processes:  
Coherent picture of a specific patient, managing of uncertainty, etc.

- Therapeutic relationship generates non-specific effects
  - Effects on efficacy
  - Relevance of a model may vary from patient to patient, from osteopath to osteopath
  - Can be used strictly or in combination
- Since we still don't know which role the therapeutic relationship plays in the effectiveness of osteopathy, what characteristics are essential for the practitioner to develop?
  - Can we really easily ask them to identify and influence all the patient's characteristics: emotions, psychology, beliefs, profession, lifestyle, socio-economic status, etc.?
    - **Difficult to transmit, see the case of professionalism**
- And, beyond the encounter, what to do? and how?

### Therapeutic relationship (non specific effects)

- Patient-centred
- Empowerment of patients (prevention of negative and/or passive effects of manual approaches)
- (En)active inference (Esteves)
- Narrative medicine (Charron)
- Placebo and nocebo effects
- Efficacy of CR processes: Coherent picture of a specific patient, managing of uncertainty, etc.

### Osteopathic field

from

to

Prevention

Functional disorders

Structural and medical conditions

### Determinants of health

- Allostatic load management
- Quantity and quality of sleep
  - Diet
  - Physical activity
- Quality of social relations
- Cultural and socio-economic environment



Local

Regional

### Complex

"The sum is more than its parts"  
Ex: Deep/superficial fasciae system  
Dura-mater system

### Systemic

Psycho-neuro-endocrino-immune axis  
Beliefs  
Emotional state  
Spiritual life

Reasons for osteopathic consultations' scale  
(not mutually exclusive)

Limitations due to structural condition (some conditions are reversible) - "Medically unexplained symptoms" (MUS)

Red flags (and other colors): Contraindications to osteopathic practice

## **\*\*TOUCHING PATIENTS TO KNOW THEM BETTER**

- Essential characteristic of osteopathy
- Will probably last, whatever the models used
- At the heart of clinical concerns

**INFORMATION FROM PALPATION, AND INDUCED BY TOUCH**

**Therapeutic relationship (non specific effects)**

- Patient-centred
- Empowerment of patients (prevention of negative and/or passive effects of manual approaches)
- (En)active inference (Esteves)
- Narrative medicine (Charron)
- Placebo and nocebo effects
- Efficacy of CR processes: Coherent picture of a specific patient, managing of uncertainty, etc.

Osteopathic field

from

to

Prevention

Functional disorders

Structural and medical conditions

**Determinants of health**

- Allostatic load management
- Quantity and quality of sleep
  - Diet
  - Physical activity
- Quality of social relations
- Cultural and socio-economic environment

**INFORMATION FROM PALPATION, AND INDUCED BY TOUCH**

**Local**

**Regional**

**Complex**

"The sum is more than its parts"  
Ex: Deep/superficial fasciae system  
Dura-mater system

**Systemic**

Psycho-neuro-endocrino-immune axis  
Beliefs  
Emotional state  
Spiritual life

**Reasons for osteopathic consultations' scale**  
(not mutually exclusive)

**Limitations due to structural condition** (some conditions are reversible) - **"Medically unexplained symptoms" (MUS)**

**Red flags (and other colors):** Contraindications to osteopathic practice

# PALPATION

- « **Clinicians should remember that manual techniques are not tools to fix the patient's body, rather they provide the opportunity to communicate with the patient's brain similar to words. »**
- Geri, T. & al. 2019. Manual therapy: Exploiting the role of human touch. Musculoskeletal Science and Practice, 44, 1-4.

# TOUCH

## The patient's perspective

International Journal of Osteopathic Medicine (2016) 19, 3–12



International  
Journal of  
Osteopathic  
Medicine

[www.elsevier.com/ijos](http://www.elsevier.com/ijos)

### ORIGINAL ARTICLE

## Knowing hands converse with an expressive body — An experience of osteopathic touch

Seth Consedine <sup>a,\*</sup>, Clive Standen <sup>b</sup>, Elizabeth Niven <sup>c</sup>

<sup>a</sup> Private Practice, 306 Brunswick St, Fitzroy, VIC 3065, Australia

<sup>b</sup> Private Practice, 66 Constable Rd, Muriwai, Waimauku, Auckland 0881, New Zealand

<sup>c</sup> Department of Osteopathy, Unitec Institute of Technology, Private Bag 92 025 Victoria St West, Auckland 1142, New Zealand

Received 11 August 2014; revised 21 May 2015; accepted 2 June 2015



### Implications for practice

- Touch has been identified as a powerful and distinctive form of communication and consequently is an important area of practise for all physical therapists.
- This research suggests that touch may not be merely a byproduct of examination and technique but is the foundation in which care and attention as well as professional attitudes and competence are communicated to the patient.
- As many complaints about health professionals can be traced back to the quality of communication, practitioners need to be thinking about the role of touch within their own practise.



RESEARCH

Open Access



# “What you feel under your hands”: exploring professionals’ perspective of somatic dysfunction in osteopathic clinical practice—a qualitative study

Lorenzo Arcuri<sup>1</sup>, Giacomo Consorti<sup>2,6</sup>, Marco Tramontano<sup>3,4</sup>, Marco Petracca<sup>5</sup>, Jorge Eduardo Esteves<sup>1</sup> and Christian Lunghi<sup>1,6\*</sup> 

## Abstract

**Background:** Despite controversy regarding its validity and clinical usefulness, manual examination findings still have an important role for manipulative therapies. As an example, somatic dysfunction (SD) remains central to osteopathic practice. This study aims to explore the experienced osteopaths’ attitudes concerning SD and its role in osteopathic practice. This qualitative research could contribute to building a consistent paradigm for manual intervention in all musculoskeletal manipulations.



# Therapeutic Alliance as Active Inference: The Role of Therapeutic Touch and Biobehavioural Synchrony in Musculoskeletal Care

*Zoe McParlin<sup>1</sup>, Francesco Cerritelli<sup>1</sup>, Giacomo Rossettini<sup>2</sup>, Karl J. Friston<sup>3</sup> and Jorge E. Esteves<sup>1,4,5\*</sup>*

*<sup>1</sup> Clinical-Based Human Research Department, Foundation COME Collaboration, Pescara, Italy, <sup>2</sup> School of Physiotherapy, University of Verona, Verona, Italy, <sup>3</sup> Institute of Neurology, Wellcome Centre for Human Neuroimaging, London, United Kingdom, <sup>4</sup> Malta ICOM Educational, Gzira, Malta, <sup>5</sup> University College of Osteopathy, London, United Kingdom*



# Effect of Continuous Touch on Brain Functional Connectivity Is Modified by the Operator's Tactile Attention

Francesco Cerritelli<sup>1,2,3</sup>, Piero Chiacchiaretta<sup>1,2\*</sup>, Francesco Gambi<sup>1,2</sup>  
and Antonio Ferretti<sup>1,2</sup>




## Touching the Lived Body in Patients with Medically Unexplained Symptoms. How an Integration of Hands-on Bodywork and Body Awareness in Psychotherapy may Help People with Alexithymia

Joeri Calsius<sup>1\*</sup>, Jozef De Bie<sup>2</sup>, Raf Hertogen<sup>3</sup> and Raf Meesen<sup>1</sup>

<sup>1</sup> Rehabilitation Research Center – Biomedical Research Center, Faculty of Medicine and Life Sciences, University of Hasselt, Hasselt, Belgium, <sup>2</sup> Department of Psychiatry, Ziekenhuis Oost-Limburg, Genk, Belgium, <sup>3</sup> Independent Researcher, Hasselt, Belgium

### Theoretical Or Review Article

## Neural basis of affective touch and pain: A novel model suggests possible targets for pain amelioration

Larissa L. Meijer<sup>1\*</sup> , Carla Ruis<sup>1,2</sup>, Maarten J. van der Smagt<sup>1</sup>, Erik J. A. Scherder<sup>3</sup> and H. Chris Dijkerman<sup>1</sup>

<sup>1</sup>Utrecht University, The Netherlands

<sup>2</sup>University Medical Centre Utrecht, The Netherlands

<sup>3</sup>Vrije Universiteit Amsterdam, The Netherlands

# PALPATION

- What information to collect, quantitatively and qualitatively:
  - Review the definition of what an osteopath is looking for?
  - Beyond the START definition?

# SEVEN-STEP PALPATION METHOD – STEP 6

International Journal of Osteopathic Medicine (2014) 17, 66–72



International  
Journal of  
Osteopathic  
Medicine  
[www.elsevier.com/ijos](http://www.elsevier.com/ijos)

## The seven-step palpation method: A proposal to improve palpation skills

Andrée Aubin <sup>a,\*</sup>, Karine Gagnon <sup>a</sup>, Chantal Morin <sup>a,b</sup>

**KEYWORDS**  
Cognitive-load theory;  
Motor learning theory;  
Osteopathy;  
Palpation;  
Palpation skills;  
Perception;  
Teaching practice;  
Visualization

**Abstract** Palpation skills are fundamental in osteopathy because they affect clinical results. However, palpation is a complex task that requires the right combination of knowledge, skills, and attitude thus making it a real challenge to teach. This article describes a seven-step palpation method that promotes the development of palpation skills by gradually mastering their complexity. This innovative teaching approach is based on well-known cognitive and motor learning theories and addresses technical as well as perceptual considerations. For the last three years, the Seven-Step Palpation Method has been used at the *Centre Ostéopathique du Québec*. The advantages and challenges of its implementation are discussed along with the main issues of osteopathic palpation.  
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Table 1: Seven-Step Palpation Method

Table 1: Seven-Step Palpation Method			
Step			Description
Step 1 to 5: Automation of motor component			
1	P	Position	Comfortable positioning of the clinician
2	A	Anatomy	3D anatomic visualization
3	L	Level	Depth of tissue contact
4	P	Purpose	Clear identification of intention
5	A	Ascertain	Initiate motion with a relative point of reference
Step 6: Addition of perceptual component			
6	T	Tweaking	Fine-tuning of the five previous steps and perceptual exploration
Step 7: Application of motor and perceptual skills in osteopathic technique			
7	E	Evaluate or normalize	Apply technique parameters

# SEVEN-STEP PALPATION METHOD

- Focus on process rather than outcome:
  - Go beyond the "true or false" question
- Automate the motor components of the task (steps 1 to 5)
- To preserve part of the cognitive space for:
  - **Allow systematic exploration of perceptual components and build repertoires of sensations (step 6)**
  - **Interpret the tissue information gathered**
  - **Feed clinical reasoning processes, including representation of the reason for consultation**
- To detect unfamiliar situations
  - The difference between experienced non-experts and "real" experts
    - Moulton, C. & al. 2007. Slow down when you should: A New Model of Expert Judgement. Academic Medicine, 82(10), S109-115.
- Then add the components linked to test execution and standardization techniques

## STEP 6: PERCEPTUAL EXPLORATION

- Quantitative aspects of movement
  - Amplitude
  - Asymmetry
  - Intensity of dysfunction: +, ++, +++
- Qualitative aspects of movement:
  - End feel
  - Tissue surface
  - **Sensitivity/pain, speed allowed for stretching, hypersensitivity, reactivity to touch (defense or greeting), etc.**
  - **Texture, as density, fibrosis, rigidity compliance, resistance, elasticity, warmth, vitality, etc.**
  - **Is touch welcomed? Does it provoke fear? Does it provoke discomfort? Etc.**
  - **Is the structure that was treated is happy? (Liem)**

## BEFORE/AFTER TRAINING RESULTS (Unpublished results)

Interpretation (Landis & Koch)  
of the Kappa value:

Less than 0.00, poor

0.00 to 0.20, slight

0.21 to 0.40, fair

0.41 to 0.60, moderate

0.61 to 0.80, substantial

0.81 to 1.00, almost perfect

More than 0.40 is considered  
clinically acceptable

Structure	Before training	After training
<b>Temporal bone</b>	<b>n=58</b>	<b>n=42</b>
Fleiss' Kappa [CI 95%]	0.172 <b>Slight</b>	0.666 [0.491-0.841] <b>Substantial</b>
Average pairwise % agreements	58.6%	84.1%
Average prevalence		25.7 (61.1%)
<b>Parietal bone</b>	<b>n=58</b>	<b>n=42</b>
Fleiss' Kappa [CI 95%]	0.190	0.774 [0.600-0.949]
Average pairwise % agreements	59.8% <b>Slight</b>	89.0% <b>Substantial</b>
Average prevalence		19.3 (43.6%)



# PALPATION

- To change things for the better and build on existing evidence, we also need to improve the way palpation skills are taught in osteopathic training programs:
  - Theories may change, but the reality of the body's tissues remains
  - Tissue responses are more important than the technique
- **Why not combine palpation information with a relevant model in order to produce real clinical meaning?**

## « DOUBLE BIND »?

- "According to Bateson, at the root of schizophrenia formation lies an inconsistency between verbal and non-verbal communication on the part of the parents (...). For example, the parents address the child with encouraging words, but accompany them with negative bodily signs of rejection or aversion. Bateson calls this type of interpersonal communication "**double bind**". This incongruity creates confusion for the child in learning the correct interpretation of both non-verbal and verbal language."
- Hennel-Brzozowska, A. 2008. La communication non-verbale – Perspective d'une psychologue. Synergies Pologne n°5, pp. 21-30.
- **In osteopathy, could it be possible to create contradictory effects between intentions/actions and a true respect of tissues/palpation?**
- **Hence the importance of specific palpation training to link palpation information with a precise model of practice**

# \*\*\* MODELS

## Models supporting osteopathic interventions

(not mutually exclusive)

**Biomechanical model**  
**Mechanoreceptors**

**Tensegrity**  
**Proprioception/coordination**

**Body as a systemic organization**  
Interoception  
Sensitization  
Models of chronic pain and BPS  
Predictive brain model (Friston)  
Self-healing capacity (and placebo effect)  
Homeostasis and allostasis

underpin the choice of a model

**INFORMATION FROM PALPATION, AND INDUCED BY TOUCH**



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Contents lists available at ScienceDirect

## Manual Therapy

journal homepage: [www.elsevier.com/math](http://www.elsevier.com/math)



### Original Article

# The mechanisms of manual therapy in the treatment of musculoskeletal pain: A comprehensive model

Joel E. Bialosky<sup>a,\*</sup>, Mark D. Bishop<sup>a</sup>, Don D. Price<sup>b</sup>, Michael E. Robinson<sup>c</sup>, Steven Z. George<sup>a</sup>

<sup>a</sup> University of Florida, Department of Physical Therapy, Gainesville, FL 32610-0154, United States

<sup>b</sup> University of Florida, Department of Dentistry, Gainesville, FL 32610-0154, United States

<sup>c</sup> University of Florida, Department of Clinical and Health Psychology, Gainesville, FL 32610-0154, United States

### ARTICLE INFO

#### Article history:

Received 28 August 2007

Received in revised form 8 August 2008

Accepted 23 September 2008

#### Keywords:

Manual therapy

Rehabilitation

Pain

### ABSTRACT

Prior studies suggest manual therapy (MT) as effective in the treatment of musculoskeletal pain; however, the mechanisms through which MT exerts its effects are not established. In this paper we present a comprehensive model to direct future studies in MT. This model provides visualization of potential individual mechanisms of MT that the current literature suggests as pertinent and provides a framework for the consideration of the potential interaction between these individual mechanisms. Specifically, this model suggests that a mechanical force from MT initiates a cascade of neurophysiological responses from the peripheral and central nervous system which are then responsible for the clinical outcomes. This model provides clear direction so that future studies may provide appropriate methodology to account for multiple potential pertinent mechanisms.

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# BIOMECHANICAL MODEL

Journal of Bodywork & Movement Therapies (2016) 20, 784–799



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

**ScienceDirect**

journal homepage: [www.elsevier.com/jbmt](http://www.elsevier.com/jbmt)



## HYPOTHESIS

# The biomechanical model in manual therapy: Is there an ongoing crisis or just the need to revise the underlying concept and application?



Christian Lunghi, DO, ND <sup>a,b</sup>, Paolo Tozzi, MSc Ost, DO, PT <sup>a,b,\*</sup>,  
Giampiero Fusco, DO, PT <sup>a,b</sup>

<sup>a</sup> School of Osteopathy C.R.O.M.O.N, Rome, Italy

<sup>b</sup> C.O.ME. Collaboration, Pescara, Italy

Received 2 October 2015; received in revised form 4 January 2016; accepted 15 January 2016

# TENSEGRITY

- **Harmony is more important than the mobility of a single segment or structure.**



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)



International Journal of Osteopathic Medicine 11 (2008) 80–89

Research report

## A model of the cranial vault as a tensegrity structure, and its significance to normal and abnormal cranial development

Graham Scarr\*

60 Edward Street, Stapleford, Nottinghamshire NG9 8FJ, UK

Received 20 September 2007; received in revised form 5 January 2008; accepted 27 March 2008

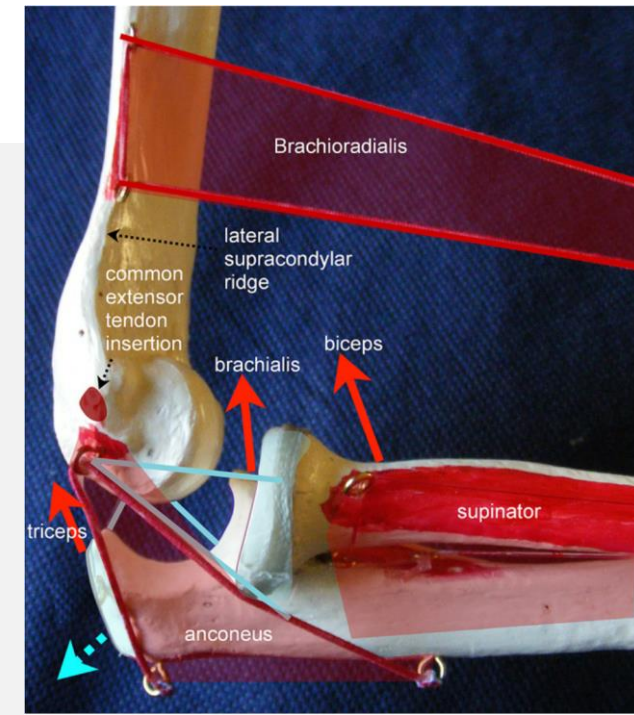
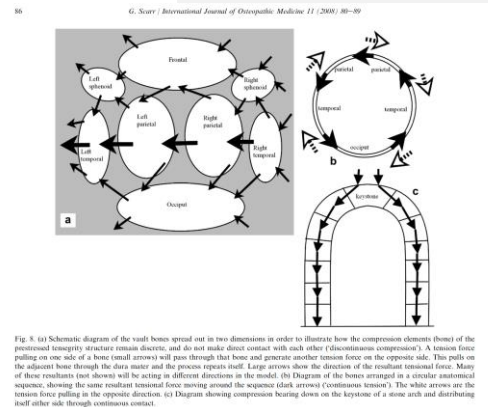
International Journal of Osteopathic Medicine (2012) 15, 53–65



REVIEW

## A consideration of the elbow as a tensegrity structure

Graham Scarr\*



International  
Journal of  
Osteopathic  
Medicine

[www.elsevier.com/ijos](http://www.elsevier.com/ijos)

# BIO-PSYCHO-SOCIAL MODEL (BPS)

G. Fryer / International Journal of Osteopathic Medicine xxx (2017) 1–12

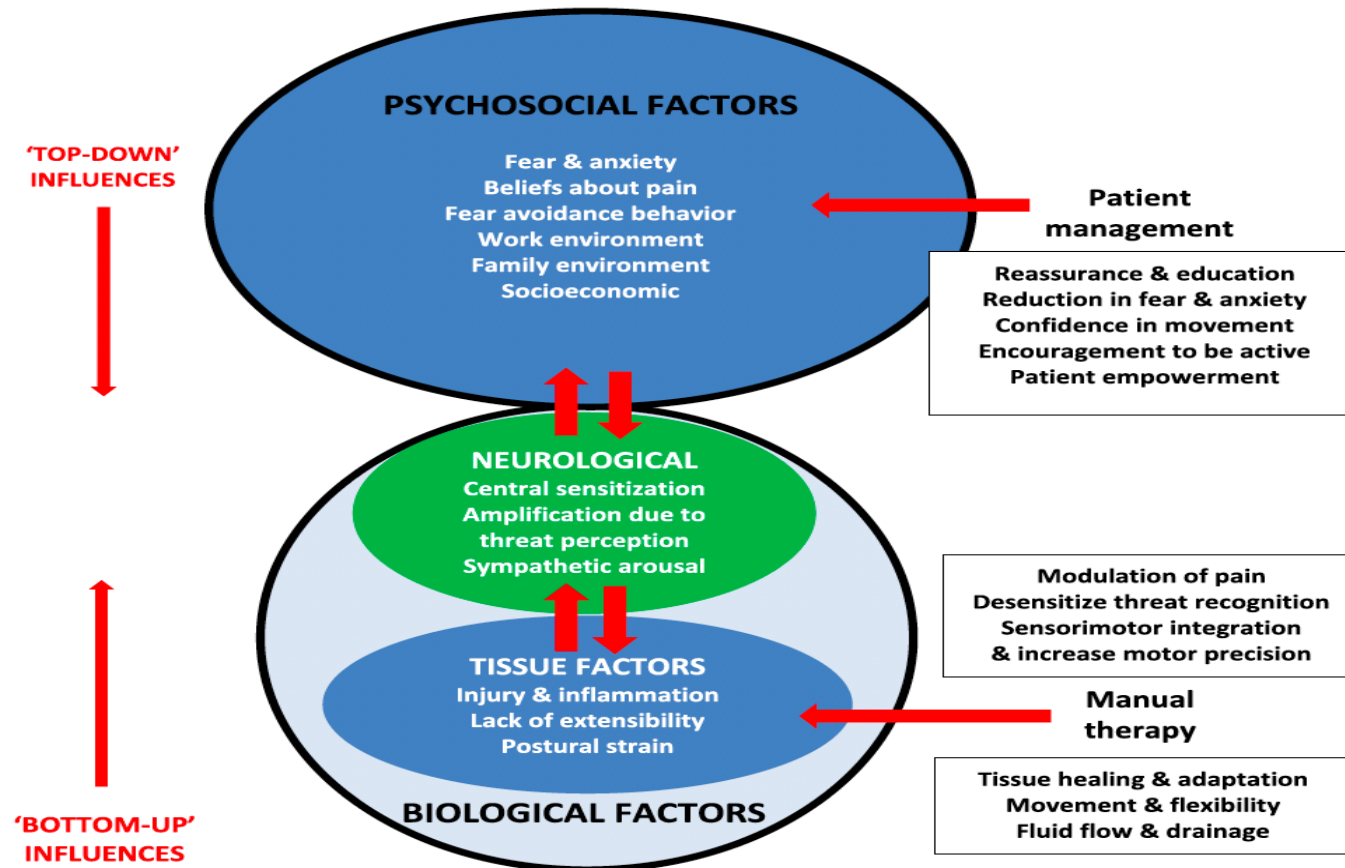


Fig. 1. Psychosocial and biological factors in somatic pain and aims of osteopathic management.



# BPS MODEL

## Introducing spirituality dimension



Contents lists available at [ScienceDirect](#)

International Journal of Osteopathic Medicine

journal homepage: [www.elsevier.com/locate/ijosm](http://www.elsevier.com/locate/ijosm)



### Refining the biopsychosocial model for musculoskeletal practice by introducing religion and spirituality dimensions into the clinical scenario

Rafael Zegarra-Parodi<sup>a,b,c,\*</sup>, Jerry Draper-Rodi<sup>d</sup>, Francesco Cerritelli<sup>b</sup>

<sup>a</sup> A.T. Still Research Institute, A.T. Still University, 800 W. Jefferson St., Kirksville, MO, 63501, USA

<sup>b</sup> Clinical-Human Research Department, Non-profit Foundation COME Collaboration, Via A. Vespucci 188, 65126, Pescara, Italy

<sup>c</sup> Private Practice, 7 rue Georges Ville, 75116, Paris, France

<sup>d</sup> Research Centre, University College of Osteopathy, 275 Borough High Street, London, SE1 1JE, UK

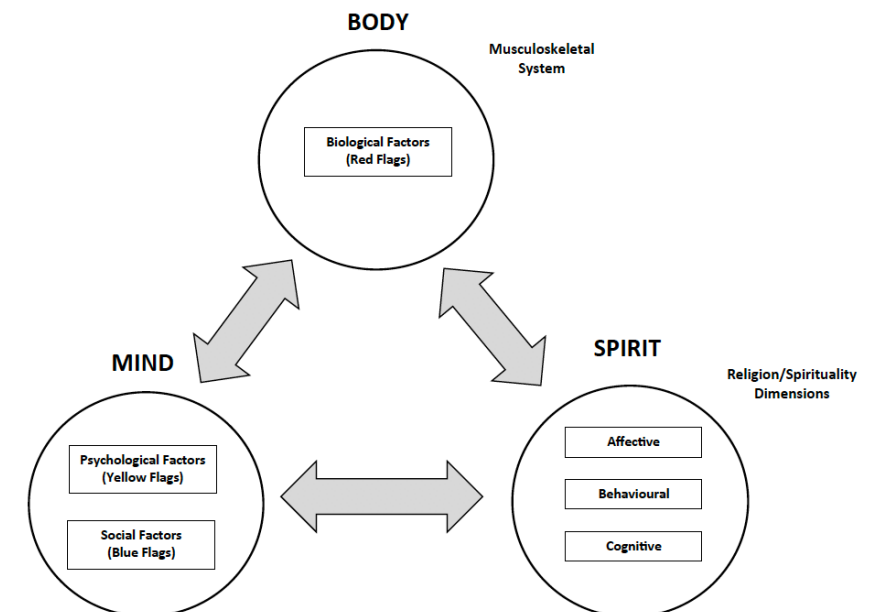
#### ARTICLE INFO

##### Keywords:

Biopsychosocial  
Manual therapy  
Musculoskeletal care  
Religion  
Spirituality

#### ABSTRACT

Addressing religion and spirituality (R/S) dimensions may be uncomfortable for patient cause they refer to intimate beliefs about existence, vary across the globe and cultures, shared in the modern therapeutic scenario. Often, R/S dimensions are overlooked in practice despite associations with attitudes and behaviour that directly affect quality of life. Inclusion of basic R/S dimensions in the therapeutic alliance may optimise care and establish as interactors within the biopsychosocial model. The purpose of this commentary was to provide definitions of R/S that are useful for managing care of MSK patients, describe how they may be linked to health status, and indicate how R/S dimensions could be discussed in clinical practice.



# LIMITS OF THE BPS MODEL?

Medicine, Health Care and Philosophy  
<https://doi.org/10.1007/s11019-023-10150-2>

SCIENTIFIC CONTRIBUTION



## The biopsychosocial model: Its use and abuse

Alex Roberts<sup>1</sup>

Accepted: 31 March 2023  
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### Abstract

The biopsychosocial model (BPSM) is increasingly influential in medical research and practice. Several philosophers and scholars of health have criticized the BPSM for lacking meaningful scientific content. This article extends those critiques by showing how the BPSM's epistemic weaknesses have led to certain problems in medical discourse. Despite its lack of content, many researchers have mistaken the BPSM for a scientific model with explanatory power. This misapprehension has placed researchers in an implicit bind. There is an expectation that applications of the BPSM will deliver insights about disease; yet the model offers no tools for producing valid (or probabilistically true) knowledge claims. I argue that many researchers have, unwittingly, responded to this predicament by developing certain patterns of specious argumentation I call "wayward BPSM discourse." The arguments of wayward discourse share a common form: They *appear* to deliver insights about disease gleaned through applications of the BPSM; on closer inspection, however, we find that the putative conclusions presented are actually *assertions* resting on question-begging arguments, appeals to authority, and conceptual errors. Through several case studies of BPSM articles and literatures, this article describes wayward discourse and its effects. Wayward discourse has introduced into medicine forms of conceptual instability that threaten to undermine various lines of research. It has also created a potentially potent vector of medicalization. Fixing these problems will likely require reimposing conceptual rigor on BPSM discourse.

Phenomenology and the Cognitive Sciences  
<https://doi.org/10.1007/s11097-019-09624-7>

## An enactive approach to pain: beyond the biopsychosocial model

Peter Stilwell<sup>1</sup> • Katherine Harman<sup>2</sup>

Published online: 30 April 2019  
© Springer Nature B.V. 2019, corrected publication 2019

# INTEROCEPTION



## Sensitization and Interoception as Key Neurological Concepts in Osteopathy and Other Manual Medicines

Giandomenico D'Alessandro<sup>1,2</sup>, Francesco Cerritelli<sup>1,3,4\*</sup> and Pietro Cortelli<sup>5,6</sup>

<sup>1</sup> Clinical-based Human Research Department, Centre for Osteopathic Medicine Collaboration, Pescara, Italy, <sup>2</sup> Accademia Italiana Osteopatia Tradizionale, Pescara, Italy, <sup>3</sup> Department of Neuroscience, Imaging and Clinical Sciences "G. D'Annunzio" University of Chieti-Pescara, Pescara, Italy, <sup>4</sup> ITAB-Institute for Advanced Biomedical Technologies, "G. D'Annunzio" University of Chieti-Pescara, Pescara, Italy, <sup>5</sup> Department of Biomedical and Neuromotor Sciences, Bellaria Hospital, University of Bologna, Bologna, Italy, <sup>6</sup> IRCCS Istituto delle Scienze Neurologiche di Bologna, AUSL di Bologna, Bologna, Italy

« These facts (on **interoception**) strongly support a comprehensive perspective on the physical and emotional health of each patient, and they provide **a rational basis for complementary approaches, for example, therapeutic touch.** »

Craig, A.D. 2013. Cooling, pain, and other feelings from the body in relation to autonomic nervous system – Chapter 9. Handbook of Clinical Neurology, 117, 103-109.

D'Alessandro, G., Cerritelli, F., Cortelli, P. 2016. Sensitization and Interoception as Key Neurological Concepts in Osteopathy and Other Manual Medicines. Frontiers in Neuroscience, 10, Article 100, 12 pages.

# SENSITIZATION AND CHRONIC VISCERAL PAIN

## Masterclass

### Recognition of central sensitization in patients with musculoskeletal pain: Application of pain neurophysiology in manual therapy practice

Jo Nijs<sup>a,b,c,\*</sup>, Boudewijn Van Houdenhove<sup>d</sup>, Rob A.B. Oostendorp<sup>e</sup>

<sup>a</sup> Department of Human Physiology, Faculty of Physical Education & Physiotherapy, Vrije Universiteit Brussel, Belgium

<sup>b</sup> Division of Musculoskeletal Physiotherapy, Department of Health Care Sciences, Artesis University College Antwerp, Belgium

<sup>c</sup> Department of Physical Medicine and Physiotherapy, University Hospital Brussels, Belgium

<sup>d</sup> Faculty of Medicine, Katholieke Universiteit Leuven, Belgium

<sup>e</sup> Research Centre of Allied Health Sciences, Scientific Institute for Quality of Healthcare, Radboud University Nijmegen Medical Centre, The Netherlands

## ARTICLE INFO

### Article history:

Received 8 June 2009

Accepted 18 October 2009

### Keywords:

Pain  
Musculoskeletal disorders  
Central sensitization  
Clinical reasoning  
Manual therapy

## ABSTRACT

Central sensitization plays an important role in the pathophysiology of numerous musculoskeletal pain disorders, yet it remains unclear how manual therapists can recognize this condition. Therefore, mechanism based clinical guidelines for the recognition of central sensitization in patients with musculoskeletal pain are provided. By using our current understanding of central sensitization during the clinical assessment of patients with musculoskeletal pain, manual therapists can apply the science of nociceptive and pain processing neurophysiology to the practice of manual therapy. The diagnosis/assessment of central sensitization in individual patients with musculoskeletal pain is not straightforward, however manual therapists can use information obtained from the medical diagnosis, combined with the medical history of the patient, as well as the clinical examination and the analysis of the treatment response in order to recognize central sensitization. The clinical examination used to recognize central sensitization entails the distinction between primary and secondary hyperalgesia.

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Douleurs Évaluation - Diagnostic - Traitement (2010) 11, 65–74



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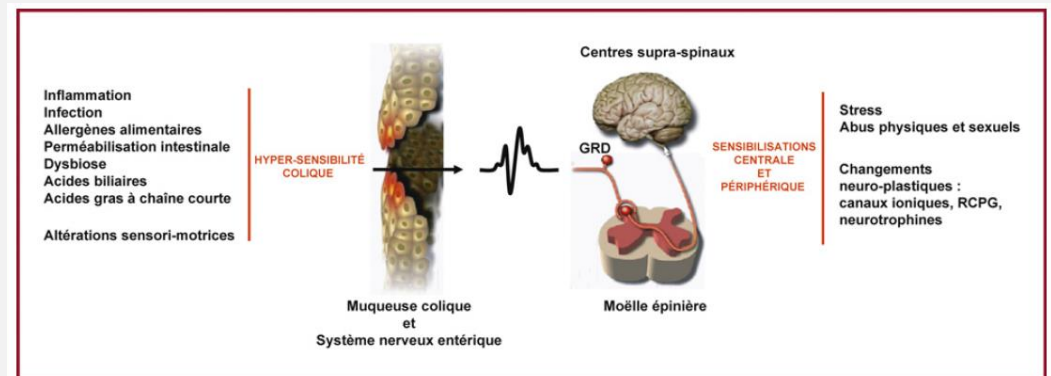


## FAITES LE POINT

### Mécanismes périphériques et centraux de l'hypersensibilité viscérale

Peripheral and central mechanisms of visceral hypersensitivity:  
Insights on colonic pain

Julien Matricon<sup>a,\*,b</sup>, Agathe Gelot<sup>a,b</sup>, Denis Ardid<sup>a,b</sup>



# FREE-ENERGY PRINCIPLE

## Karl Friston

Opinion



# The free-energy principle: a rough guide to the brain?

Karl Friston

The Wellcome Trust Centre for Neuroimaging, University College London, Queen Square, London WC1N 3BG, UK

**This article reviews a free-energy formulation that advances Helmholtz's agenda to find principles of brain function based on conservation laws and neuronal energy. It rests on advances in statistical physics, theoretical biology and machine learning to explain a remarkable range of facts about brain structure and function. We could have just scratched the surface of what this formulation offers; for example, it is becoming clear that the Bayesian brain is just one facet of the free-energy principle and that perception is an inevitable consequence of active exchange with the environment. Furthermore, one can see easily how constructs like memory, attention, value, reinforcement and salience might disclose their simple relationships within this framework.**

The motivation for the free-energy principle is again simple but fundamental. It rests upon the fact that self-organising biological agents resist a tendency to disorder and therefore minimize the entropy of their sensory states [4]. Under ergodic assumptions, this entropy is:

$$\begin{aligned} H(y) &= - \int p(y|m) \ln p(y|m) dy \\ &= \lim_{T \rightarrow \infty} \frac{1}{T} \int_0^T - \ln p(y|m) dt \end{aligned} \quad (\text{Equation 1})$$

See [Box 1](#) for an explanation of the variables and Ref. [5] for details. This equation (Equation 1) means that mini-

# STRESS, ALLOSTASIS



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Hormones and Behavior 43 (2003) 2–15

Hormones  
and Behavior

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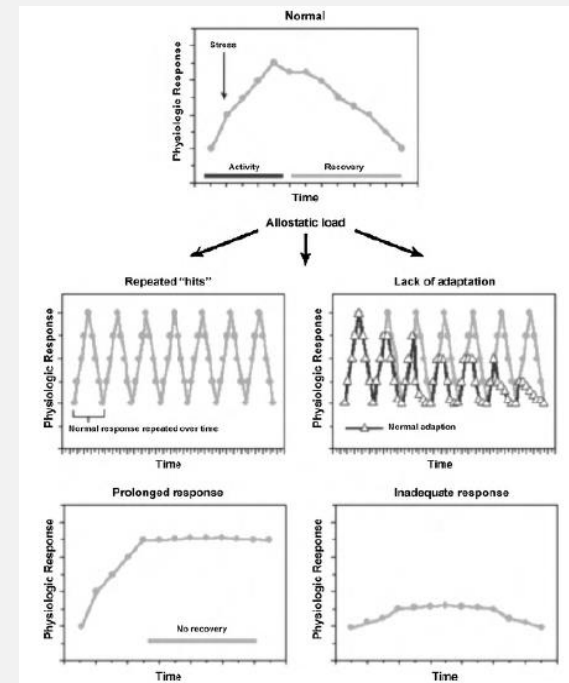
## The concept of allostasis in biology and biomedicine

Bruce S. McEwen<sup>a,\*</sup> and John C. Wingfield<sup>b</sup>

<sup>a</sup> *Laboratory of Neuroendocrinology, The Rockefeller University, Box 165, 1230 York Avenue, New York, NY 10021, USA*

<sup>b</sup> *Department of Zoology, Box 351800, University of Washington, Seattle, WA 98195, USA*

Received 28 February 2002; accepted 8 September 2002



McEwen, B.S. 2000. Allostasis and Allostatic load. *Neuropsychopharmacology*, 22: 108–124.



### Therapeutic relationship (non specific effects)

- Patient-centred
- Empowerment of patients (prevention of negative and/or passive effects of manual approaches)
- (En)active inference (Esteves)
- Narrative medicine (Charron)
- Placebo and nocebo effects
- Efficacy of CR processes:  
Coherent picture of a specific patient, managing of uncertainty, etc.

Osteopathic field

from

to

Prevention

Functional disorders

Structural and medical conditions

- ### Determinants of health
- Allostatic load management
  - Quantity and quality of sleep
    - Diet
    - Physical activity
  - Quality of social relations
  - Cultural and socio-economic environment

### Models supporting osteopathic interventions

(not mutually exclusive)

**Biomechanical model**  
Mechanoreceptors

**Tensegrity**  
Proprioception/coordination

**Body as a systemic organization**  
Interoception  
Sensitization  
Models of chronic pain and BPS  
Predictive brain model (Friston)  
Self-healing capacity (and placebo effect)  
Homeostasis and allostasis

underpin the choice of a model

### INFORMATION FROM PALPATION, AND INDUCED BY TOUCH

to link clinically

Less variable and less divergent effects

INTERVENTIONS SPECIFICITY

to

more variable and more divergent effects

**Local**

**Regional**

**Complex**  
"The sum is more than its parts"  
Ex: Deep/superficial fasciae system  
Dura-mater system

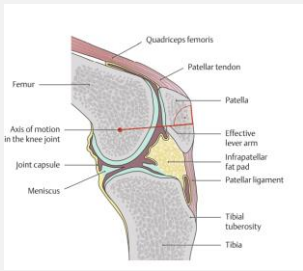
**Systemic**  
Psycho-neuro-endocrino-immune axis  
Beliefs  
Emotional state  
Spiritual life

**Reasons for osteopathic consultations' scale**  
(not mutually exclusive)

**Limitations due to structural condition** (some conditions are reversible) - **"Medically unexplained symptoms" (MUS)**

**Red flags (and other colors):** Contraindications to osteopathic practice





# REASON FOR CONSULTATION: **LOCAL**

## MODEL: **BIOMECHANICAL**



### REVIEW ARTICLE

## Knee Pain in Adults with an Osteopathic Component

Rohan Datta, OMS III,<sup>1</sup> Lyudmila Burina, OMS III,<sup>1</sup> Filippo Romanelli, OMS III,<sup>1</sup> & Theodore B. Flaum, DO, FACOFP<sup>2</sup>

<sup>1</sup>NYIT College of Osteopathic Medicine

<sup>2</sup>Assistant Professor, OMM Department, NYIT College of Osteopathic Medicine

### Keywords:

Knee Pain

Osteoarthritis

Osteopathic  
Manipulative  
Medicine (OMM)

Primary Care

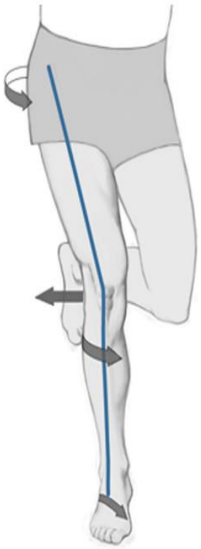
Ottawa Knee Rules

The incidence of knee pain is increasing due to the rising prevalence of obesity, sedentary lifestyles, and aging baby boomer population in the United States. Both acute and chronic knee conditions can result in the increased utilization of pain medications and a decreased quality of life. A multimodal approach to knee pain management can thus greatly benefit the patient population and decrease the burden of knee conditions on the healthcare system. This article presents the epidemiology, clinically relevant anatomy, physiology and major risk factors associated with common knee pain conditions. An overview of etiologies is presented in terms of major clinical presentation, diagnostic testing, and treatments. Practical guidelines for an osteopathic approach to the examination and diagnosis of knee pain are then discussed, with a focus on the osteopathic structural exam and the use of special tests to discern and localize soft tissue injury. A novel diagnostic algorithm summarizing a step-by-step approach to a patient with knee pain is also presented. This method integrates the physical exam, special tests, lab work, and imaging to formulate an evidence-based protocol for formulating a knee pain diagnosis. Finally, the article presents management strategies for common causes of knee pain including conservative, pharmacologic, manipulative, and alternative/complementary treatments. Evidence-based recommendations for manipulation efficacy are reviewed from meta-analysis data, randomized controlled trials, and a case report. The article also provides a description of commonly used manipulation techniques and their indications with respect to the anatomic location of knee pain and its underlying etiology.

- **Reasons for consultation:** Ex: Following a sprain? Over-use? Etc.
- **Biomechanical model** may be appropriate in the absence of orthopedic conditions, recovery to standard, and no general health conditions
- **Highlight of palpation:** Touch must be appropriate to the state of the tissue structure; ex: **testing and normalize flexibility** of fascia or connective tissue

# REASON FOR CONSULTATION: **REGIONAL**

## MODEL: **TENSEGRITY**



**FIGURE 1.** Dynamic knee valgus resulting from excessive hip adduction and internal rotation. Because the foot is fixed to the floor, excessive frontal and transverse plane motion at the hip can cause medial motion of the knee joint, tibia abduction, and foot pronation. Reproduced with permission from Powers CM. The influence of altered lower extremity kinematics on patellofemoral joint dysfunction: A theoretical perspective. J Orthop Sports Phys Ther. 2003;33:639-646.

### [ **CLINICAL COMMENTARY** ]

**Fig. 2** Cause for functional or dynamic valgus can be internal rotation of the femur, the tibia or both. Internal rotation of the femur might be the result of weakness of the hip abductors; internal rotation of the tibia might arise from rear-foot eversion or pes pronatus. Functional valgus may lead to lateral patella maltracking

CHRISTOPHER M. POWERS, PT, PhD<sup>1</sup>

## The Influence of Abnormal Hip Mechanics on Knee Injury: A Biomechanical Perspective

**O**f the lower extremity joints, the knee sustains the highest percentage of injuries, particularly among physically active individuals. For example, the knee has been reported to

terdependence of the hip and knee joints, the purpose of this clinical commentary is to discuss the biomechanical influences

- **Reasons for consultation:** Ex:  
Femoropatellar pain? Too long to recover after a sprain? Etc.
- **Tensegrity model** useful for estimating the relative involvement of all joints of the lower limb
- **Highlight of palpation :** **Harmonize** fascial expression and **promote coordination**; take an interest in broader palpatory information



# REASON FOR CONSULTATION: **COMPLEX**

## MODEL : **FASCIAL SYSTEM**

- **Reasons for consultation:** Ex: Long-standing knee pain, part of a generalized pain problem, experienced with distress and disarray; no sufficiently significant findings on assessment of the knee or lower limb, etc.
- A **fascial system seen as a complex model** is useful
- Consider also **BPS model** and a **person centered approach**
- **Highlight of palpation :** **Informing** the SNC through fascias
- **Reassurance and exercises**

- **Fascias** can be influenced by ANS overactivation and stress or by unconscious neurodevelopmental encodings and/or related to attachment **types** Calsius, J. & al. 2016. Touching the Lived Body in Patients with Medically Unexplained Symptoms. How an Integration of Hands-on Bodywork and Body Awareness in Psychotherapy may Help People with Alexithymia, *Frontiers in Psychology*
- Sometimes causes "**muscular armor**" which, in turn
- **Limits coordination & alters posture**

### Fascial plasticity – a new neurobiological explanation: Part 1

.....  
**Robert Schleip**



*Therapeutic Advances in Musculoskeletal Disease*

Let

#### Person-centered *versus* body-centered approaches in osteopathic care for chronic pain conditions

Gerard Alvarez , Rafael Zagarra-Parodi and Jorge E. Esteves

**Keywords:** osteopathy, fibromyalgia, chronic pain, patient-centered care

*Ther Adv Musculoskel Dis*  
2021, Vol. 13: 1-3  
DOI: 10.1177/  
1759720X211029417  
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Schleip, R. 2003. Fascial plasticity – a new neurobiological explanation: Part I. *Journal of Bodywork and Movement Therapies*, 7(1), 11-19.

# REASON(S) FOR CONSULTATION: LOCAL AND REGIONAL MODEL: BIOMECHANICAL

Journal of Bodywork & Movement Therapies (2010) 14, 255–261



available at [www.sciencedirect.com](http://www.sciencedirect.com)



journal homepage: [www.elsevier.com/jbmt](http://www.elsevier.com/jbmt)



FASCIA RESEARCH: VISCERAL ADHESIONS

## Notes on visceral adhesions as fascial pathology

Gil Hedley

Received 25 April 2009; received in revised form 13 October 2009; accepted 19 October 2009

- **LOCAL**
- **Reasons for consultation:** Ex: surgical site discomfort when movements are performed, etc.
- **Biomechanical model**
- **Highlight of palpation :** **Normalize flexibility** of fascia or peritoneum or skin

Human Reproduction Update, Vol.7, No.6 pp. 567–576, 2001

## Clinical implications of postsurgical adhesions

Michael P.Diamond<sup>1</sup> and Michael L.Freeman

Division of Reproductive Endocrinology and Infertility, Wayne State University School of Medicine, 4707 Saint Antoine Boulevard, Detroit, MI 48201 USA

<sup>1</sup>To whom correspondence should be addressed.

European Journal of Obstetrics & Gynecology and Reproductive Biology 188 (2015) 70–73



Contents lists available at [ScienceDirect](http://ScienceDirect)

## European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: [www.elsevier.com/locate/ejogrb](http://www.elsevier.com/locate/ejogrb)



## Impact of osteopathic manipulative therapy on quality of life of patients with deep infiltrating endometriosis with colorectal involvement: results of a pilot study



Camille Daraï<sup>a,b</sup>, Olivier Deboute<sup>b</sup>, Chrysoula Zacharopoulou<sup>a</sup>, Enora Laas<sup>a</sup>, Geoffroy Canlorbe<sup>a</sup>, Jérémie Belghiti<sup>a</sup>, Sonia Zilberman<sup>a</sup>, Marcos Ballester<sup>a,c</sup>, Emile Daraï<sup>a,c,\*</sup>

<sup>a</sup>Service de Gynécologie-Obstétrique et Reproduction Humaine, Hôpital Tenon, Assistance Publique des Hôpitaux de Paris, Université Pierre et Marie Curie Paris 6, GRC-6 UPMC, Centre Expert En Endométriose (C3E), Paris, France

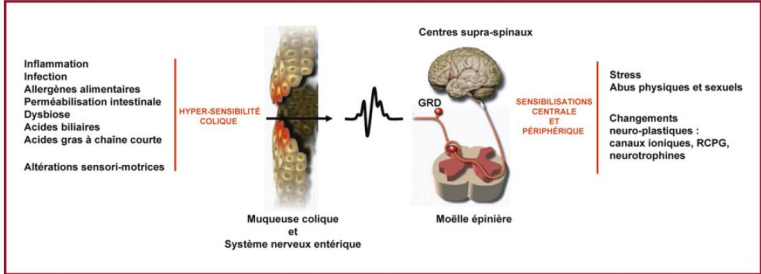
<sup>b</sup>Institut Privé d'Enseignement Ostéopathique (IPEO), 5/13 rue Auger, Pantin, France

<sup>c</sup>UMRS938, Université Pierre et Marie Curie, Paris 6, France

- **REGIONAL**
- **Reasons for consultation:** Ex: Pelvis or hip dysfunctions after abdominal surgery or endometriosis, etc.
- **Biomechanical model**
- **Highlight of palpation :** **Normalize flexibility** of fascia or peritoneum or skin and their MK consequences

nt's subsequent health. Adhesions are a significant source of obstruction, difficult re-operation, and possibly pain. Adhesiolysis for pain relief appears efficacious in certain cases. Adhesions have a great propensity to reform. Adhesions are at of the body. For treatment of infertility and recurrent improved fecundability and decreased pregnancy loss.





# REASON FOR CONSULTATION: **SYSTEMIC**

## MODEL(S) : **INTEROCEPTION/ VISCERAL PAIN**

Cureus

Open Access Review  
Article

DOI: 10.7759/cureus.15923

## Interoception and Emotion: A Potential Mechanism for Intervention With Manual Treatment

Hugo Pasin Neto <sup>1, 2</sup>, Eduardo Bicalho <sup>1</sup>, Gustavo Bortolazzo <sup>1</sup>

<sup>1</sup>. Osteopathy, Brazilian College of Osteopathy, Sorocaba, BRA <sup>2</sup>. Physiotherapy, University of Sorocaba, Sorocaba, BRA

**Corresponding author:** Hugo Pasin Neto, hugo.pasini@cbosteopatia.com.br

### Abstract

Interoception is considered a perception pathway as important as the exteroceptive pathways for determining responses to maintain homeostasis. There is evidence about the influence of the interoception on emotional responses as these expressions are considered to be a combination of physical, environmental and individual beliefs. A large percentage of afferent fibers in the body are related to free nerve endings which, when stimulated, reach the insular cortex that participates in the process of emotions. The viscera afferent fibers represent 5% to 15% of all these inputs. Evidence emerges that demonstrates the importance of visceral health as part of the treatment of patients with emotional imbalances. It can be postulated that manual treatment applied to visceral fasciae can assist in interoceptive balance and have a positive impact on emotions. Therefore, the objective of the present study is to discuss the concepts of interoception, central sensitization, emotional health and visceral manual treatment.

- **SYSTEMIC**
- **Reasons for consultation:** Ex: Restriction of the diaphragm with abdominal discomfort, pain in the back, neck and shoulders, accompanied by fatigue, headaches and digestive problems, difficult stress management, has had several abdominal operations etc.
- **Interoception model/visceral pain**
- **Highlight of palpation :** **Informing** the SNC through fascias and C-fibers and “secure touch”, convince the brain “that it is no longer in danger”

# MODELS

- Reason of consultation should be matched with different models and specific palpatory information
- We can't use, or teach, all the existing or possible models, but we must know enough of them, in sufficient number and diversity, to ensure representation of all reasons for consultation
- Occam's razor
  - **“The simplest explanation is usually the right one.”**
  - Prioritize the smallest intervention with the greatest potential effect

## WHAT SHOULD BE TAUGHT?

- Important and difficult choices to be made, but covering the continuum must be a priority
  - **Massive investment to make these choices, must be supported by consensus among faculty school and, if possible, by the entire osteopathic community**
- Students need specific training in choosing the most appropriate model for the type of patient and his or her needs, and the nature of the reason for consultation.
- Clinical reasoning processes must be adapted to each client and context and allow:
  - Accurate representation of the reason for consultation
  - Creation of repertoires, with non-random cases if necessary when clinical opportunities are insufficient
  - Management of uncertainty
  - Preparing for the development of expertise through the integration of evidence-based data



# ADAPTING VOCABULARY TO MODELS

Schleip, R. 2003. Fascial plasticity – a new neurobiological explanation - Part 2. Journal of Bodywork and Movement Therapies, 7(2), 104-116.

**Table 2**

Classical concept: The Body as a Mechanical Object	New neurobiological model: The Body as a Self-Regulatory Process
The body is seen as a perfect or imperfect <b>machine</b> , governed mainly by classical Newtonian physics	The body is seen as a self-regulating (SR) <b>biological organism</b> , involving nonlinear system dynamics, complexity and autopoiesis
Typical ' <b>industrial age</b> ' viewpoint	Typical ' <b>information age</b> ' viewpoint
Clear distinction between <b>structure and function</b>	No clear distinction between structure and function
Less focus on nervous system	Strong inclusion of <b>nervous system</b>
Subject/object separation ('principles of <b>intervention</b> ')	Subject–object connection (' <b>interaction</b> ' instead of intervention)
<b>Problem-solving</b> attitude	Focus on <b>enhancing</b> already existing SR
A machine has a limited number of variables. An inner sense of absolute <b>certainty</b> in the practitioner is therefore seen as achievable and as desirable	The system has high degree of complexity with almost unlimited variables. Practitioner personality needs to be comfortable operating with <b>uncertainty</b> principles
Local ' <b>precision</b> ' is important and admired	Good <b>timing and gradation</b> (dosage) are getting at least as important
' <b>Master technician</b> ' as idol	' <b>Facilitator</b> ' or ' <b>midwife</b> ' as idols
Typical work example: Direct mobilization of a precise ' <b>spinal fixation</b> ' or sacral torsion by the practitioner	Typical work example: Inclusion of facilitated active client <b>micromovements</b> during the hands-on work

# ADAPTING VOCABULARY TO MODELS

Abbey, H. 2022. Communication strategies in psychologically informed osteopathic practice: A case report. IJOM, 47, <https://doi.org/10.1016/j.ijosm.2022.10.009>.

Table 4: Pain discourse characteristics

Theme	Mechanistic	Facilitative
Treatment aims	Increase physical function Decrease pain and other symptoms	Increase psychological flexibility Increase personally valued activities
Body	Body as object, separate body parts	Body as lived experience, whole self
Pain	Structural damage, cause and effect, pain site and severity	Functional adaptation, relationships between factors, consequences in daily life
Patient role	Pace, reduce goals to live within limits, comply with expert advice	Act meaningfully with self-compassion, use values to adapt to challenges
Osteopath role	Expert, teacher, treater, carer Be helpful, effective and in control	Facilitator, co-learner, interpreter Be curious and compassionate
Language	Agency - Passive voice Inanimate - It, the neck Certainty - It is, I know Expectations - Ought, have to	Agency - Active voice Human - I, my, you Uncertainty - I wonder, maybe Possibilities - Could, might, choose


## WHAT LEGACY TO LEAVE?

- Osteopaths need to be reflective and humble, curious and open-minded, erudite
- In-depth understanding of the therapist's role is essential, also to protect therapists themselves
  - Philosophy of health: what is health, what is illness, what is healing?
  - Integration of humanities in cursus?

Theoretical Medicine and Bioethics (2021) 42:169–186  
<https://doi.org/10.1007/s11017-021-09550-3>



### Experimental philosophy of medicine and the concepts of health and disease

Walter Veit<sup>1</sup> 

Accepted: 30 October 2021 / Published online: 1 December 2021  
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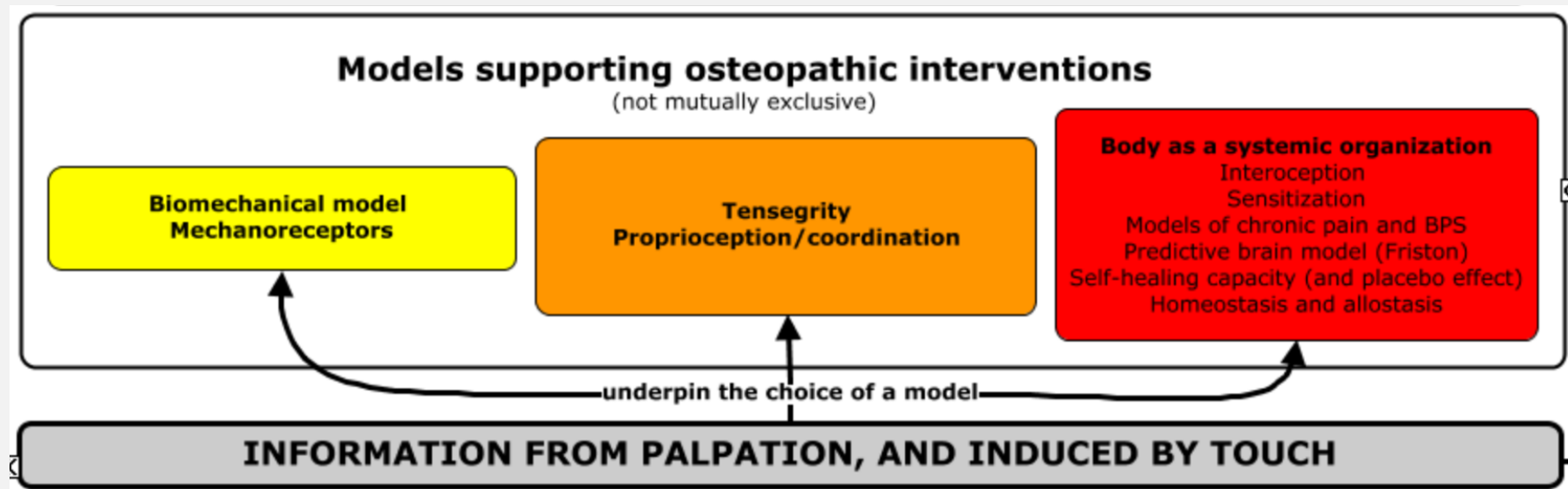
# WHAT LEGACY TO LEAVE?

- We need more than a single model to better understand:
  - **The therapeutic relationship,**
  - **The importance of touch/palpation,**
  - **To provide a rational basis for our clinical approaches.**
- We need a clear-sighted use of these models:
  - **Each model has its strengths and weaknesses**
  - **Research uses: clusters!**
  - **“There is no standard or average patient”<sup>1</sup>**
- We must not lock ourselves into a single model by forcing it to suit all reasons for osteopathic consultation if we want to keep osteopathy on the move: broad, pluralist, adapted and anchored in its environment and in its society.

<sup>1</sup>: Anjum, R.L., Copeland, S. & Rocca, E. 2020. Rethinking Causality, Complexity and Evidence for the Unique Patient. A Cause Health Resource for Healthcare Professionals and the Clinical Encounter. SpringerOpen, 252 pages, ISBN 978-3-030-41239-5

# CONCLUSION

**Use the right model(s) for each reason for osteopathic consultation in order to construct a coherent picture of each specific patient.**



! THANK YOU ; GRAZIE! MERCI ;

*The End*