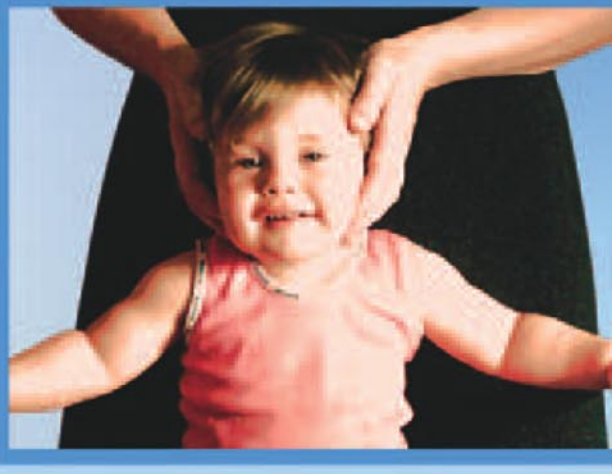


# *Visceral and Obstetric* OSTEOPATHY

CAROLINE A STONE



Forewords by
Jean-Pierre Barral
Michael L Kuchera



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# Visceral and Obstetric Osteopathy

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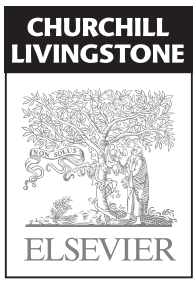
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# Visceral and Obstetric Osteopathy

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# Forewords

I have known Caroline for 20 years, initially as a postgraduate osteopath learning visceral manipulation, and later as someone who has enabled many other osteopaths to grow and develop. I have seen her evolve as a practitioner and as a teacher of visceral work and the osteopathic approach in general; in bringing this to the broader profession, she has made an indispensable contribution to osteopathy.

As soon as we met, I felt she had very good hands and that she would do something special in the visceral field; indeed, she has made many important contributions to the profession's understanding and appreciation of visceral manipulations within osteopathy, and how to help patients on many different levels, accordingly.

In her teaching, Caroline integrates many different components and brings alive the concepts of three-dimensional biomechanics in her inclusion of visceral tensions, torsions and dysfunctions. Just as importantly, she reveals the interaction between anatomy and physiology, thereby illustrating how soft tissue, organ, fascial and other tissue tensions can impact on homeostasis, function and recovery from pathology and injury. This helps osteopaths to approach the management, not only of patients with musculoskeletal symptoms, but also those with more complex visceral dysfunctions and disorders. This book is important for all those wishing to appreciate and incorporate work within the visceral field to their osteopathic practice. It will also help to guide those outside the profession towards an understanding of the osteopathic approach to patient care.

Visceral manipulation permits patients to feel better in their life and it is something that osteopaths must include in their evaluation of patients and their dysfunctions. In particular, osteopaths have a special contribution to make in the field of gynaecology and obstetrics. To help a woman to have a child and for her to achieve this in the best conditions is a chance that should be open to all. We have certain unique keys to improve factors around fertility, pregnancy and delivery, and it is our duty to do it, as health and function can be subtly but powerfully influenced by the osteopath's gentle, and knowing, 'listening' touch.

I commend this book to anyone wanting a deeper understanding of the osteopathic approach to healthcare, and applaud Caroline on her continuing dedication and contribution to osteopathy.

*Grenoble 2006* *Jean-Pierre Barral*

Churchill said, 'I always avoid prophesying beforehand, because it is a much better policy to prophesy after the event has already taken place.' I wish hindsight were my assigned task; however, I was asked to write a 'foreword' and not a 'backword'. In concluding this foreword, therefore, I decided to be somewhat bold in my assessment of this book. Please read on to understand why.

My global foreword is simply this: *Visceral and Obstetric Osteopathy* is a valuable, clinically applicable text written without pretence. In it, the author easily

communicates her clinical expertise by translating static anatomy into a palpable experience. Techniques are clearly and concisely written and follow directly from their anatomical descriptions. The elegance of the technique presentation in this book lies in the simplicity of the diagrams used to summarise them.

Chapter details in this foreword could be broadly painted because there is a clarity in the overall structure of the book. There are three parts to this book: (1) The Introduction and first three chapters are basically overview materials; (2) Chapters 4–8 are visceral-system specific and literally constitute the heart of this text; and (3) Chapters 9–10 contain the author's clinical application perspective.

- *Introduction and Chapters 1–3.* Don't judge the value of this text by its overview alone. Aware of the impossibility of writing overview materials to please everyone, the author wisely and simply states her perspective. The result is an interesting synopsis of concepts and clinical-approach models as understood and/or postulated in her training as an osteopathic professional. There is little attempt to convince any healthcare practitioner (osteopathic or otherwise) with outcome studies about the value of upcoming techniques … but then that was never her stated purpose. Note that the Introduction is clearly written from the perspective of a practitioner whose medical education and permitted scope-of-practice are more limited in her own country than in the USA. I therefore felt occasional reservations about the historical or clinical perspectives presented. There are significant differences in American and non-American applications of osteopathic care in part because 'osteopathic medicine' in the United States is practised by more than 60,000[1] complete physicians, including D.O. obstetricians and gynaecologists, internists, and family medicine specialists. Osteopathic medicine is therefore a much less 'contentious' word in the United States, where residencies exist in these and other fields, including NMM/OMM (neuromusculoskeletal medicine/osteopathic manipulative medicine) where many of the visceral and homeostatic concepts noted in her text are taught and valued. Interestingly, these reservations were not felt outside of the Introduction. My overall summary: this part of the book is of an easily read, simplified discussion of commonly and less-commonly used osteopathic approaches constituting a nice background for the rest of the text.
- *Overview of individual systems (Chapters 4–8).* This is the essence of the text and the reason to own it! Building on clear anatomic descriptions, the simple-yet-elegant diagrams facilitate acquisition of these often under-appreciated clinical techniques. These are not chapters written to validate the approach, rather they are careful, clear descriptions of how to manually contact and balance anatomy. For practitioners wishing to learn for themselves the value of integrating such techniques, this is the place to start. While the sections are not exhaustive in their overall scope to influence visceral function (e.g., sternal techniques were absent and viscerosomatic approaches were superficially addressed), the author's intent was fully met. The text excels in presenting the manual approach to the viscera themselves in an unambiguous and complete fashion. Finally, I would also be remiss if I did not praise the author for including arterial, venous and lymphatic vasculature as approachable visceral structures.
- *Patient management: visceral and obstetric.* The last two chapters of the textbook were clinically delightful and particularly appealing. Some patient management scenarios suggested much more care than I currently provide (or would have been willing to have considered prior to reading this text); some scenarios suggested much less osteopathic care than I thought could be done and her description didn't change my opinion about what I would do for my patients; and many scenarios I secretly applauded because I felt we would have managed that patient with that condition in exactly the same fashion. As a clinical educator, the key appeal to this section is that the scenarios that I interpreted as too much, too little or 'just right' are unlikely to be the same ones that the reader identifies. Such food for thought can only serve to help us to 'dig on' in our clinical understanding

and to evolve in our respective arts and practices.

That brings me back to my foreword's 'brave' prophecy that this text has the potential to positively reform the healthcare we provide our patients.

- *'Reform must come from within, not without.'* As an osteopathic practitioner, I thank Caroline Stone for this contribution to the osteopathic profession.
- *'Reform, that you may preserve.'* As someone who has had a successful practice for over 25 years, I thank this book for continuing to remind me to integrate new (and/or rediscovered) science, philosophy and art into my practice.
- *'If you try to make a big reform you are told you are doing too much, and if you make a modest contribution you are told you are only tinkering with the problem.'* I don't believe reform was on the author's mind at all. Nonetheless, intentionally or not, as an outside reviewer and educator I want to go on record as saying that this book strikes a happy balance to do so.

In conclusion and in my opinion, *Visceral and Obstetric Osteopathy* has the potential to be an instrument of reformation … if not of a profession, at least of one practice at a time.

Osteopathic founder, A. T. Still, M.D., D.O. said, 'Know you are right and do your work accordingly.' In sharing anatomic fact and her clinical perspective, Caroline Stone has constructed a text that empowers the reader to consider that possibility.

*Michael L. Kuchera,*
*Philadelphia 2006* *D.O., FAAO*[2]

[1]2006 figures. Osteopathic medicine is the fastest growing segment of healthcare providers in the USA so numbers will increase significantly after publication of this text.

[2]Dr Michael Kuchera and his father, William Kuchera, are also the authors of *Osteopathic Principles in Practice* and of *Osteopathic Considerations in Systemic Dysfunction* (Greyden Press).

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# Preface

Osteopathy is a great profession, and I have been very happy to help actively promote and develop it over the past 20 years. Establishing a firm basis and enthusiasm for the practice of visceral osteopathy has been a huge part of my professional life; of this I am very proud. Osteopathic care for pregnant women and patients suffering from a wide variety of 'visceral' problems need not be complex or confusing. This book aims to help all practitioners, regardless of their individual approaches to patient care, to appreciate a range of basic, advanced, subtle and integrated approaches in the visceral and obstetric fields of osteopathic healthcare.

Some of the techniques and approaches discussed in Chapter 10 'Osteopathy and obstetrics' may be subject to practice restrictions in the UK. Readers and practitioners are advised to check current legal boundaries for practice in their region/location. Their inclusion in this book does not in itself infer practice rights.

*Mount Lawley 2006* *Caroline Stone*

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In writing this book, I would like to thank the following people who have all helped in a number of ways: Ray and Catherine Power for help with illustrations; Julie Peipers for support; Amanda Heyes for lots of care, comments and treatment; and other colleagues who have attended recent courses and offered great feedback. I would also like to thank Anne Cooper and Jenni Paul for their insights and helpful comments. Thanks also to Claire Wilson and Gail Wright at Elsevier for their efficient and friendly work on this book.

I would most like to thank my husband, Brad, for his love and enthusiasm for this project, and our beautiful daughter Jasmine for her self-sufficiency and patience! Love also to our second child, who will arrive as this book nears publication.

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# Introduction

CHAPTER CONTENTS

**Basic concepts of visceral and obstetric osteopathy 1**
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The field of visceral and obstetric osteopathy is not new but is increasingly popular and relevant in current patient-oriented healthcare systems in which the body's inherent self-regulating and self-healing mechanisms are increasingly recognized and valued therapeutically.

Osteopaths themselves are also keen to maintain and develop their scope of practice and as general and professional awareness of the potential of osteopathic care is reawakened, practitioners are more enthusiastic than ever to explore the human dynamic in increasingly three-dimensional and integrative ways.

Osteopaths see a variety of patients complaining of many problems, including but not limited to:

- low back and neck pain
- repetitive work-related injuries or strain
- effects of trauma such as whiplash
- asthma and other breathing problems
- colic and irritable bowel syndrome
- postoperative pain and adhesion problems
- back, joint and soft tissue pain during pregnancy
- postpartum pelvic problems, including pelvic floor injuries
- headaches and TMJ pain
- ENT problems
- developmental, feeding, sleeping and other problems in babies and children.

Any or all of the above problems may benefit from the application of visceral osteopathy, even if the symptoms arise within the musculoskeletal system (and the patient has no accompanying visceral symptoms or disorders). In other words, although a visceral approach can be used when patients present with visceral symptoms, it is also helpful when there are only musculoskeletal symptoms of biomechanical origin.

## BASIC CONCEPTS OF VISCERAL AND OBSTETRIC OSTEOPATHY

Visceral osteopathy is a way of exploring those tensions of the body that reside within the organs and associated tissues, with the aim of improving

overall movement, lessening any barriers to better function and allowing the body's own self-healing and self-regulating mechanisms to function more optimally. Any problem within the body may have a visceral component.

These types of factors can be present in people with no symptoms of visceral disease, in much the same way that many of the biomechanical/musculoskeletal tensions and restrictions present in someone with, for example, low back pain are not in themselves always symptomatic.

Obstetric care by osteopaths centres around allowing the woman to accommodate her pregnancy as comfortably and physiologically as possible, with the aim of reducing or removing stress and strain not only for the mother and for labour, but for the developing baby as well.

Osteopathy in these contexts is an understanding of how three-dimensional anatomy relates to physiological function and how manual treatments can help restore optimum functioning and improve healing.

## VISCERAL OSTEOPATHY

Visceral osteopathy is a field concerned with:

- the three-dimensional dynamics of body biomechanics (including musculoskeletal, myofascial, connective tissue and organ structures)
- reflex activity in the central and peripheral nervous systems
- neuroemotional–immune links
- effective circulation and drainage of all the body fluid systems and tissues.

A patient does not need to present with a visceral problem (e.g. irritable bowel or hiatus hernia) for a visceral approach to be relevant. Many cases of musculoskeletal pain can be helped by releasing asymptomatic problems within various organs and body tissues. Also, just because someone has presented with some sort of visceral symptom does not mean that the primary treatment is applied to those organs. It could be equally if not more important to consider the surrounding or related musculoskeletal system components. Visceral approaches within osteopathy are merely another tool for the osteopath to utilize when managing a whole variety of patient presentations.

For most patients and presentations, a variety of tensions, torsions, stresses and strains are apparent throughout the whole of the body and the osteopath often applies a combination of treatment to 'old injuries' or sites of infection/inflammation and fresh or recent problems and traumas. Osteopaths are aiming to interact with the physiological functions within the body and to promote health and better function by removing irritating factors and barriers to the homeostatic self-regulating mechanisms of the body. *Better movement is considered the key to this process, and visceral osteopathy is at its simplest the study of movement within the visceral systems and related tissues and structures.*

## OBSTETRIC OSTEOPATHY

Many women and many health practitioners consider that much of the pain and discomfort associated with pregnancy and birth is 'part of one's lot' and not really amenable to treatment. Most women experience physical problems and often the majority wait for the end of pregnancy to bring relief to their suffering. This does not have to be the case, as many of the problems associated with pregnancy can be managed or alleviated using an osteopathic approach.

Osteopathic care for pregnant women, pre- and postnatally, focuses on helping the mother's structure (spine, joints and soft tissues) to cope with the increasing demands of the pregnancy. It helps to alleviate some of the pains and problems associated with changes in posture, weight bearing, and the stretching of various ligaments and tissues that support the uterus. It also helps to prepare the body and pelvis for labour and delivery, may have a role to play during labour and helps the woman recover from the traumas and strains imposed during the birth process (be that 'natural' delivery or 'caesarean'). Osteopaths can help in managing existing spinal and joint problems during pregnancy, aiming to reduce the impact that the pregnancy has on the disc disease or ligamentous and muscular strain problems, for example.

Obstetric osteopathy also aims to make the space available for the developing baby as 'comfortable' as possible, thus potentially reducing mechanical stress on the baby during pregnancy. This may have many effects, including giving space for the baby to freely rotate and move around

within the uterus, and get into an optimum position for labour and birth. Improving the mechanics of the joints and muscles of the pelvis in particular is also thought to help ensure that the birth canal is as accommodating as naturally possible. This is thought to reduce the risk of injury not only to the mother but also to the baby. There is also a large field of study called paediatric osteopathy which is concerned with the osteopathic management of problems from birth through infancy and childhood to early adulthood, which is not fully addressed in this book.

Intrapartum care is also an area of practice in osteopathy. Here, the osteopath is legally a 'birth partner' to the labouring woman and does not have medical control of the situation. Their role is to support the mother and offer whatever osteopathic services all parties (including the midwifery and obstetric carers) agree upon, with the aim of reducing strain in labour and potentially improving birth processes and outcomes for the mother and child. This is an area of special interest and not one that all osteopaths would routinely offer.

## OSTEOPATHIC MEDICINE

Using osteopathy as part of a management system for the very sick, the diseased or those with a weakened immune system is not contraindicated, nor is (as mentioned above) its use in natural conditions such as pregnancy or during labour.

Osteopathic medicine is a term used to describe how osteopaths view health and disease, and how they consider that effective and efficient movement in *all* body tissues, structures and fluid circulations contributes to health and balanced homeostatic function. Osteopaths consider that irritations in tissues and nerves and barriers to effective fluid circulations are all related (in part) to movement and biomechanical restrictions in the body tissues (including muscles, joints, connective tissues, organs, blood vessels and so on).

Osteopaths consider that there is a biomechanical component to pathological processes and disease, and that examination of the body's tissues for movement disorders should form part of any general medical screening procedure.

Consequently, osteopaths consider that a normal part of medical management of pathology and disease should be restoring or improving movement in all body tissues where possible, as they believe that this will aid physiological recovery.

If movement is restored, communication between parts is more efficient, fluid circulation and drainage improve, irritating signals are reduced and the body's homeostatic and immune mechanisms can operate more effectively, thus restoring health and better function.

The term 'osteopathic medicine' is a contentious one, as it has often been interpreted as meaning that osteopaths are working outside their scope of practice. Osteopaths have historically defended the use of their principles in the management of health and disease issues, as supplementary care, complementary care or alternative care, depending on the situation. Providing the pathological nature of conditions is understood and appropriate considerations made, for example in terms of techniques used, forces applied and ethics and legalities observed, then osteopathic management can provide sometimes quite marked relief of symptoms associated with those conditions. Not only that, but the impact on physiological processes may enable the body to utilize its own self-regulating and healing mechanisms more effectively, and thus may contribute in some way to the resolution of ill health. Osteopaths contend that treating the person, rather than the disease, leads to improved outcomes on more levels than simple application of disease-oriented therapy alone.

Whilst part of their work is aimed at symptom management, through the link between movement and physiology and the way that osteopaths consider that movement restrictions impact on physiology and hence reduce tissue health and functioning, there is some consideration of the potential aetiological impact of the movement restrictions on pathological development and progression. Hence osteopaths also theorize that some of their management addresses pathological change. This is an area where the evidence base for osteopathic concepts is currently small.

Ethics, risk/benefit equations, evidence-based medicine, diagnostic rights, consumer (patient) protection, regulatory issues, safety and medicolegal considerations, research options and patient-centred care are all important topics for any practitioner to be aware of. The osteopath and patient negotiate between them a contract of care that enables them both to contribute to the patient's health management, with the aim of reducing symptoms and suffering. Osteopaths respect pathological and tissue state changes, meaning that if appropriately applied, there are very few absolute contraindications to practice. Consequently, osteopaths become engaged in the management of people with cancer, immune insufficiency, genetic disorders, in postoperative care and many other situations. Osteopaths bring their principles to bear so that relative contraindications (for example, to mode of technique applied at a certain time) can be identified and management adjusted accordingly.

Pathology creates tissue change, including protective spasm, rebound, pain and tenderness, oedema and congestion, which reacts upon palpation. When these factors are placed in context with case history and other examination components such as special tests and imaging, the osteopath can tailor their application of therapeutic manipulations and mobilizations accordingly, in a safe manner with low risk. Awareness of tissues states and pathological processes forms part of the safety net for patient and practitioner.

## DEFINITIVE OSTEOPATHIC TENETS

Osteopathy is not a two-dimensional mechanistic approach; viewing the body as a complex Meccano set is not what osteopaths are about. Osteopaths see the body as something where mind, body and spirit interact and are reciprocally related, and where the building blocks of the body (its *tissues*) interact and both influence and are influenced by internal physiology and homeostasis. Note that the word 'tissues' has been used, as most observers erroneously consider that osteopaths are interested only in bones, ligaments, muscles and tendons. Osteopaths work with *all* body tissues and fluids, even though they may sometimes use the musculoskeletal tissues as a 'handle' into deeper, less accessible structures, tissues and circulatory pathways.

### *Structure and function are reciprocally related*

Things function in a certain way as a result of how they are made and structured. If the structure alters, then so will the function. This concept informs osteopathic practice in the following way.

- Anatomy governs physiology.
- Soft tissue dynamics relate to physiological efficiency and effective homeostatic balance.
- Altered soft tissue mobility both reflects and contributes to poor physiological function and pathological change.
- Improvement of mobility and restoration or normalization of movement patterns improve the self-regulatory and self-healing functions of the body, thus promoting better function, health and well-being.
- Osteopaths therefore examine the body to identify areas of altered or poor movement, and make attempts at restoring that movement, to improve function and therefore reduce symptoms.

### *The rule of the artery is supreme*

Circulation is immensely important to health and without adequate nutrition, tissues cannot perform efficiently. At a cellular level, the dynamics of the extracellular matrix (ECM) and the microcirculation are important to function and immunity where movement of cells and fluid through the ECM plays a key role. Drainage is also important, as without effective lymphatic and venous drainage, the appropriate 'chemical' homeostatic balance is not maintained and waste removal is inefficient.

In identifying the 'rule of the artery' as supreme, osteopathy's founder, Dr AT Still, focused on nutrition and felt a lot of manual treatment should be directed at 'irrigation of withering fields'. Although the language may be somewhat old-fashioned, the physiological implication is clear.

Osteopaths are also particularly interested in the role of the autonomic nervous system. Historically, the functioning of the sympathetic nervous system and its influence on circulation through vasoconstriction mechanisms was an area of considerable osteopathic interest and research. Increased sympatheticotonia was attributed to a variety of mechanical disturbances and other stressors in the body, with resultant ischaemia and other

physiological changes in the end organ or target tissue. Adapting sympathetic outflow in some way would presumably affect these aspects and influence nutrition in the end tissue or field (and therefore impact on tissue health and healing). Today, osteopaths continue to work with all parts of the autonomic and somatic nervous systems, in order to interact with the body's physiology in general, and circulation and fluid movement in particular.

### *The body has self-healing and self-regulatory mechanisms*

Communication is vital to health and good function. The body has built up some amazing methods of communication between its diverse parts and tissues, which are still being investigated and discovered. Osteopaths consider that movement restrictions negatively impact on communication (be it chemical, neural, mechanical or otherwise), thus affecting homeostatic balance. Remove or reduce these movement barriers and the body will naturally reorient itself towards health and better functioning.

### *The musculoskeletal system is the primary machinery of life*

The musculoskeletal system is more than a framework to carry our internal organs around. It is the means by which we express ourselves, how we perform tasks and care for others, and by which we can recognize in others their actions and feelings. Without an effectively functioning and coordinated musculoskeletal system, the way we live our life is indeed compromised.

Through its contact with and acknowledgement of these factors, and the subsequent manual therapy applied to the body, osteopathy is uniquely placed to interact with the patient's prime motives, emotions and functions, on all levels.

### *The whole is more than the sum of its parts*

Integration within and between parts is essential for effective body function. We are more than just a collection of cells; there is something about the way all those cells work together that summates and enables life as we know it to be expressed. Osteopaths accordingly never consider how any particular joint, muscle tissue or organ works in isolation, and do not look at body systems separately. The concept of 'specialisms' within practice, as exist within the orthodox medical model, is anathema to osteopaths. Vitalistic concepts apply.

### *Motion is life*

Whether it be an electrical current passing along a nerve, blood circulating through the body or muscles twitching and joints articulating, motion is an absolute characteristic of life. For an osteopath, assessing quality of motion is like assessing someone's quality of life: poor movement not only indicates that the person is not able to physically live their lives to the full or express themselves with ease, but also that their body systems are not functioning optimally and that their health and immunity are compromised as a result.

### *Find it, fix it and leave it alone*

The aim is to find the main focus of distress or dysfunction in the body, address that as far as possible and then leave the body to carry on sorting itself out from that input. Osteopaths work on the concept that the body knows what is good for it, and will always aim to bring itself into a healthy state wherever possible. If it can be given the right sort of helping hand, it will 'run with that impetus' and shift its function away from dis-ease and towards health and better function.

As Dr Still said: 'To find health is the mission of any doctor – anyone can find disease'.

It is the osteopathic ability to tune into the body's needs and integrated functioning that creates a different approach to other manual therapy practitioners. The ability of osteopaths to utilize a highly refined palpatory awareness to work on many levels of bodily and human function at once is a special skill, and one that enables a deeper understanding of health and disease to emerge.

## CONSIDERING THE WHOLE

Figure I.1 shows a typical patient, one who presents with a variety of biomechanical and soft tissue restrictions. The actual torsion pattern is not important – we all recognize that patients have restrictions throughout their bodies; it is the practitioner's job to interpret those tension patterns with respect to the presenting symptoms and underlying physiological processes.

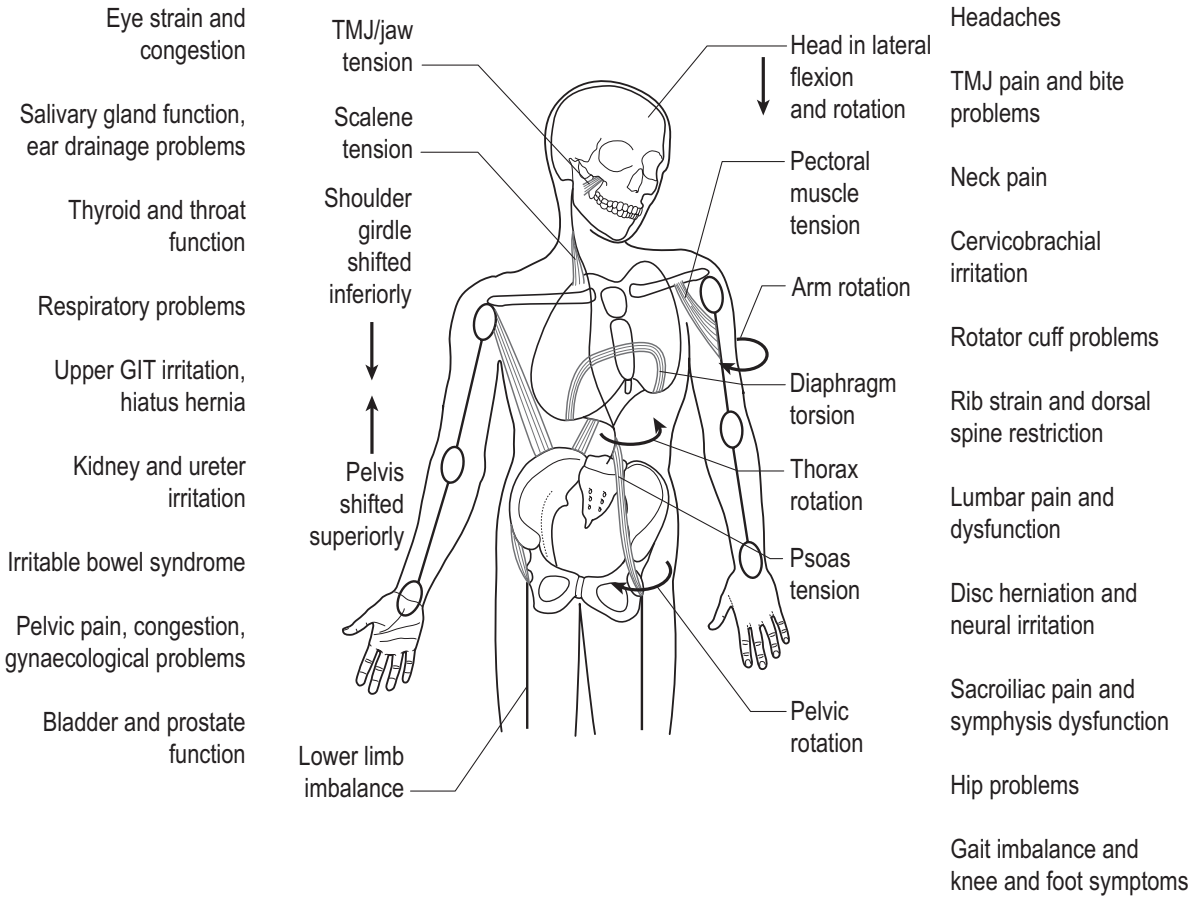



**Figure I.1** Three-dimensional torsion pattern.

This 'typical' patient could be presenting with a variety of symptoms, which may be manifesting within the musculoskeletal field or the visceral field (or both!).

- The torsion at the head, with some side-bending/lateral flexion and rotation, may present with pain and aches in the temporomandibular joint (TMJ) or with headaches or, because of the way the torsion affects the jaw, tongue and throat tissues, may be presenting with chronic ear infections and congestion.
- The torsion within the chest may be related to dorsal spine aches and rib strains or may be related to respiratory symptoms, lung and chest wall stiffness and decreased lung volume, for example.
- The torsion within the chest may have spread through to the mediastinum and be creating tension in the central tendon of the diaphragm. This may be contributing to mechanical aches and pains in the ribs, costal margin or crurae and upper lumbar spine or may be affecting the gastro-oesophageal junction and contributing to symptoms of gastric reflux or indigestion.
- The pelvic torsion may be consequent to lower limb problems but could also be related to the pelvic floor and hence prostate or bladder, for example.
- Coccygeal torsions could be related to the cranial base and cervical restriction pattern (through dural links) and could be involved in uterine or vaginal problems from pelvic fascial tension from the coccyx.

## WHERE IS THE PROBLEM?

This is the biggest question in any management scenario – where to apply the therapeutic input in the most beneficial, least stressful and most economic way, meeting the needs of both the patient and the ethics, principles and constraints of the healthcare system being utilized. It depends on your diagnostic and healthcare belief systems, and any individual practitioner's hypotheses all have a certain risk/benefit equation attached to them. In other words, your beliefs determine how you examine someone, how you interpret those findings, what other information you take into consideration and what you think will be a beneficial therapeutic intervention. The anticipated beneficial effects of any management applied have to be weighed against the risks imposed through its application.

As indicated by the figure and previous discussions, finding the primary cause of a problem or the underlying main restriction or tension pattern is not easy, as the body works in so many reciprocally integrated ways; it is a bit like asking the chicken and egg question. The patient does not have to have any particular symptoms in the visceral tissues for the organs to be participating in the overall biomechanical problem that is contributing to the patient's presentation. The organs and associated tissues may be tight, scarred, tense or irritated subclinically – they may just be moving awkwardly. This could be sufficient to physically constrain certain parts of the musculoskeletal system (through anatomical links) or may be reflexly irritating the musculoskeletal system (through shared/segmentally related parts of the nervous system).

This means that the visceral system must be examined generally as part of any overall assessment, to evaluate its relevance in that particular patient. The osteopath could then eventually treat asymptomatic areas of the patient's body in order to resolve symptoms elsewhere. Of course, if the patient does have visceral symptoms (either currently or in the past) then the osteopath already has indicators that various organs should be explored for signs that they are maintaining poor or restricted movement within the musculoskeletal system, or are in part maintaining the visceral dysfunction itself. To requote one of the basic tenets: 'You can't fix it till you've found it, and you can't find it until you look'.

Working in the visceral and obstetric osteopathic fields simply means the practitioner increases their ability to work three-dimensionally within the body.

## TISSUE AWARENESS AND INTERPRETATION

Diagnosing any visceral component means that the practitioner must explore those tissues carefully and whilst there are some basic screening techniques designed to give an overview. there is no substitute for a sensitive, thorough and thoughtful evaluation. (Note: 'diagnosing' in this context means identifying and describing in osteopathic terms a movement change in or around a particular organ or related structure). Adding visceral osteopathy to one's repertoire will mean that additional time has to be set aside when evaluating a problem but this should lead to more effective management of the patient's problem through a more refined overall working hypothesis and diagnosis.

Invariably, in all cases there are some tensions found within the musculoskeletal system and some within the visceral, vascular or nervous systems of the body. It is the practitioner's job to interpret the relevance and importance of the different components of a patient's presentation and how they all fit together, before formulating a management plan based on that working hypothesis.

Visceral osteopaths utilize a variety of techniques to explore the organs and related tissues, to interpret findings and to treat what they find. As one is exploring tissues that may be scarred, inflamed, irritated or have some sort of pathological process going on, tissue awareness and medical knowledge must be part of the practitioner's training prior to examining the visceral field. That said, there are several components that can easily form a general examination of the visceral system and associated musculoskeletal components, which are listed below (the list is not exclusive). With experience, some or all of these may be incorporated into an individual's practice.

### Overview of patient assessment

The following types of routines are widely used and may form part of global assessment of the patient when making an initial diagnosis or

hypothesis, as well as part of an ongoing review of progress. They can be individualized according to situation and need and represent an averaged style of approach.

*Case history taking*

Includes the use of analytical questioning, a range of communication and observation tools, differential diagnostic sieving, development and exploration of working hypotheses.

*Use of special tests*

According to case needs, general screening of several body systems may be required. Osteopaths can utilize various basic medical screening tests such as manual neurological testing, percussion and auscultation, and can be aware of the need for blood and urine tests, x-rays, ultrasound and other imaging techniques. Where medical diagnosis is required or may be advisable, the osteopath will refer on for further care, often whilst continuing to manage the patient in a way that does not compromise them receiving the necessary tests or treatment and is not detrimental to any possible potential condition awaiting diagnosis.

*Standing assessment*

- When assessing a person, do not look just at their spinal mechanics using a posterior view. View the person from all sides, *and in particular*, don't forget your patient has a front.
- The objective is to identify areas of the body which are affecting overall posture and standing balance.
- Passive observation can be used, as well as active movements by the patient, to identify general body parts or sections that are not partaking in normal posture and movement.
- General listening techniques can be utilized. Listening techniques make use of fascial and connective tissue tensions and torsion patterns that are created through restrictions in organs, muscles, joints or other body tissues, to identify significant problems. This concept is discussed later.

*Sitting assessment*

- Removing the influence of the lower limbs can often reveal more specific patterns of restriction within the torso, neck and head.
- Practitioner observation of the patient, active movement by the patient, and passive examination of the patient can all be used.
- Special tests such as orthopaedic, respiratory or cranial nerve testing can be used, as required.
- General listening techniques can be utilized.
- Evaluation of spinally located reflex fields can be performed.

*Supine (and sometimes sidelying or prone) assessment of the body*

- Passive exploration of the tissues, be they musculoskeletal, vascular, neural, visceral or fascial, is undertaken.
- Mobility and motility tests can be performed. *Mobility* tests include testing articulations of the organs, testing sliding surfaces, examining the elasticity, compliance or stretch within an organ or its attachments/supporting tissues. *Motility* in this context is not peristalsis of the hollow/tubular organs such as the gut, but an osteopathic term relating to inherent movement within the structure being evaluated. Both these concepts are discussed later.
- Local listening techniques can be utilized.
- Soft tissue and dermatome reflex zones can be explored.

Passive examinations require sensitivity, especially in the presence of any particular pathological process within the tissues being examined. Medical diagnostic indicators from the case history and physical appearance of the patient can all point to certain pathological processes, of which the practitioner must be aware. On palpation of the abdomen, for example, there are various conditions that require consideration. The presence of aortic aneurysm, oesophageal varices, ulcers, carcinoma and infection, to name but a few, all involve particular changes within the tissues which render them weak, easily damaged and irritated. Overforceful palpation can further damage and injure the tissues, sometimes with serious consequences, and there is a risk of further spread of the pathological condition. Hence the practitioner cannot physically examine the patient without an awareness of underlying conditions and associated risks.

Medical diagnosis is the remit of orthodox doctors, consultants and specialists but all allied

health professionals must have training in this area, for the above reasons. That said, visceral palpation is possible in many cases, by using gentle direct techniques or indirect techniques; there are few absolute contraindications. Note: 'direct' and 'indirect' are osteopathic technical terms for styles of physical examination and treatment and will be discussed later.

## BASIC COMPONENTS OF VISCERAL OSTEOPATHY

'Organs move'... and that movement (both gross and internal to the organ) contributes to physiological function.

'Visceral mobility' can be:

- between adjacent organs, such as the liver and right kidney, lobes of the lungs, bladder and uterus, etc.
- between organs and adjacent somatic structures, such as the lungs and the ribs/intercostals, the kidney and psoas, stomach and diaphragm, etc.
- organs can express movement such as peristalsis of the gut tube, fallopian tube or ureters, and be motile, such as the heart and its rhythmic pumping, and the expansion and deflation of the lungs.

'Visceral motility' can be:

- an expression of its embryological derivation or migration
- an expression of its vitality
- this is not the same as 'peristalsis'. Note: visceral motility is discussed in a later chapter.

Both mobility and motility can be explored and evaluated by osteopaths, and both can be improved through a variety of manual techniques (both direct and indirect).

Organ manipulation can consist of:

- articulation
- stretching
- inhibition
- general mobilization*
- recoil techniques*
- functional, listening and 'involuntary' manipulations*

in order to evaluate all components of visceral movement.

Manual treatments are applied to:

- change the way the musculoskeletal system is responding
- change the way the organs are responding
- affect circulation and fluid drainage
- affect neural reflexes and input (and other forms of communication within the body)

and are aimed at improving function and reducing symptoms.

Organ manipulation is:

- about improving movement, locally to the organ or at a distant point
- aimed at changing function and physiology/homeostasis. Knowing the effects of reduced/altered mobility helps you critically appraise your treatment protocol.

The protocol for osteopathic intervention is simple.

- Reflect on the nature of the condition.
- Explore for tissue barriers to circulation, immune function and effective neural and other communication.
- Analyse impact of physical touch on the pathologically adapted tissue.
- Understand implications of altered blood flow, immune function and neural communication on the pathological processes or condition.
- Rationalize the impact and aim of the intended therapeutic input and consider the risk/benefit equation.
- Be able to justify and communicate actions in osteopathic as well as medical/scientific terms where possible.
- Practise ethically and safely, with informed consent.

## POINTS TO REMEMBER IN VISCERAL OSTEOPATHY

- The patient does not need to be complaining of any visceral symptoms (objective or subjective) in order for their organs to require 'treatment'.

*These terms will be explored in later chapters.

- Osteopathy has a role to play in the management of various pathological states and disease processes.
- Not all treatment to help resolve visceral dysfunction is applied to the organs.
- There are very few contraindications to osteopathy – just to how it is applied.
- Differential diagnostic medical knowledge is required in order to rationalize patient care and to manage people appropriately, including referral to other medical specialties as indicated.
- It is not possible to identify everything by feel alone. Palpatory quality may give much interesting information but it is not a replacement for diagnostic imaging or other types of tests.
- A few manual techniques applied to the organs are not going to reverse severe tissue changes such as deep ulceration, scarring and fibrosis.
- Mobilizing the organs in the presence of conditions such as bacterial infection, haematoma and carcinoma is contentious.
- General osteopathic care of patients with the above types of condition is not contentious, when used as a supportive or complementary (as opposed to alternative) care regime.
- What an osteopath may mean by mobilization of an organ may not be immediately clear to patients, medical professionals and others with no osteopathic training. Confusion often arises when discussing the issue.
- The scope of osteopathic practice as perceived outside the profession is quite limited; for example, that it mostly deals with back pain, various sporting injuries and general biomechanical problems.
- The scope of practice as perceived within the profession is much broader, even though the current evidence base is insufficient to define best practice.
- Expanding one's scope of practice means that the onus for illustrating competence rests with the osteopath (or practitioner) concerned.

## ABOUT THIS BOOK

The following chapters introduce the range of anatomical (and therefore physiological and biomechanical) inter-relationships between the different body systems and how the body functions in an integrated manner. Various examination and treatment techniques are introduced, and discussions on patient management in various situations are included. Some case histories are given to illustrate how the approaches discussed throughout the book are applied in practice.

Chapter 1

# General principles

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## VISCERAL SUPPORT

The organs are supported and contained by the efficient biomechanical couplings of the musculoskeletal system, without which the organs would not function effectively. There are various muscular and fascial supports to the visceral systems and these help to hold the viscera in a vertically oriented stack or column. The thoracic and pelvic cavities are bounded by skeletal components, making their internal mechanics more constrained than those of the abdominal cavity, which is mostly bounded by various muscles. The thoracic and abdominal cavities also have differing pressures, which are balanced against each other, so that the overall relationship between the two cavities is in equilibrium.

## BODY CAVITY DYNAMICS

The body cavities house the viscera, with a few exceptions (notably the thyroid and parathyroid glands, oropharyngeal glands and the testes).

The body cavities include the cranium and spinal column (bounded by the dura); the thoracic cavity bounded by the pleura, pericardium and cervical fasciae superiorly and the thoracic diaphragm inferiorly; and the abdominopelvic cavity bounded by the thoracic diaphragm above and the pelvic floor muscles below.

As will be explored in detail later, the mechanics of the muscles and articulations of the somatic body cavities are reciprocally related to the viscera and their fascial and serous membrane attachments. In order to appreciate this relationship, its three-dimensional (3D) movement dynamics must be recognized. Clinical work is much more effective once a 3D picture of the person and their movement patterns has been built up. This makes their management much easier to rationalize and tailor individually.

All the body cavities are interconnected and movement in one area will be transmitted to another. For example, respiratory movements from the thoracic diaphragm cause tissue movement in the cervical as well as the pelvic regions, and any weakness or damage to the diaphragm will lead to herniation of abdominal contents into the thorax as a result of the differing pressures between the two cavities. Osteopaths believe that the biomechanical relationships between the cavities are more complex than these simple examples, and much of the transference of movement is via fascial and connective tissue structures, which link the viscera to each other and to various musculoskeletal system structures. The body cavities should not in fact be viewed as separate but are continuous with various 'transverse stabilizing' structures such as the diaphragm and peritoneal mesenteries to give support, anchorage and, sometimes, motion. Embryologically, the body cavities are initially continuous and only become artificially divided by the further development of other structures such as the diaphragm.

## CORE-LINKS OF FASCIA AND THEIR 'TRANSVERSE' ATTACHMENTS

One of the reasons why the mechanics of the body are so integrated is the way in which all the structures are linked. There is a connection from the brain along the spinal cord and out to the peripheral nerves, which is formed by the dura, which links the central nervous system as one continuous organ. The dura connects various cranial bones and vertebrae running along the length of the spine, through to the coccyx. This has been labelled as the 'core-link' of fascia, in osteopathic concepts.[1] There is also a connection between many organs and structures which runs from its attachments at the cranial base, through the cervical region, down into the mediastinum, onto the diaphragm and then from below that, down through the abdominal cavity and into the pelvic bowl. This can be thought of as a 'visceral core-link' as opposed to the above 'neural core-link'.

These fascial cores of the body run longitudinally and are traversed horizontally by various structures which help to separate the body cavities or divide them into subsections. The neural core-link is traversed by the tentorium and denticulate ligaments and the visceral core-link is traversed by the thoracic diaphragm, the vertebropericardial ligament, the broad ligament and the pelvic floor. These are shown in Figure 1.1.

Osteopaths do not limit their understanding of body cavities to the 'traditional' descriptions of 'thorax, abdomen and pelvis'. For them, a body cavity is any space which is bounded by fascia (connective tissue), including vascular space, muscle sheaths, individual cell membranes, the extracellular matrix surrounding the interstitial spaces containing interstitial fluid, muscle fasciculi, and so on. All these body cavities are interconnected through the microscopic cytoskeleton, extracellular matrix and generalized fascial sheaths to larger structures such as the mesenteries, ligaments, tendons and ultimately bones and muscles. The fascial structures not only support structures but allow movement and reduce friction and tissue stress.

Fascial structures run continuously through the body and osteopaths do not favour the artificial breakdown into separate structures given different names by various anatomists over the centuries (www.osteodoc.com/fascia.htm). This confuses any understanding of how these fascial structures are functionally linked. Osteopaths are very interested in the 'unity of function', which is a way of thinking that tries to understand how all parts of the body work together as a unit. As such, fascia is intimately involved in all body mechanics and is part of the structural dynamic of the person.[2]

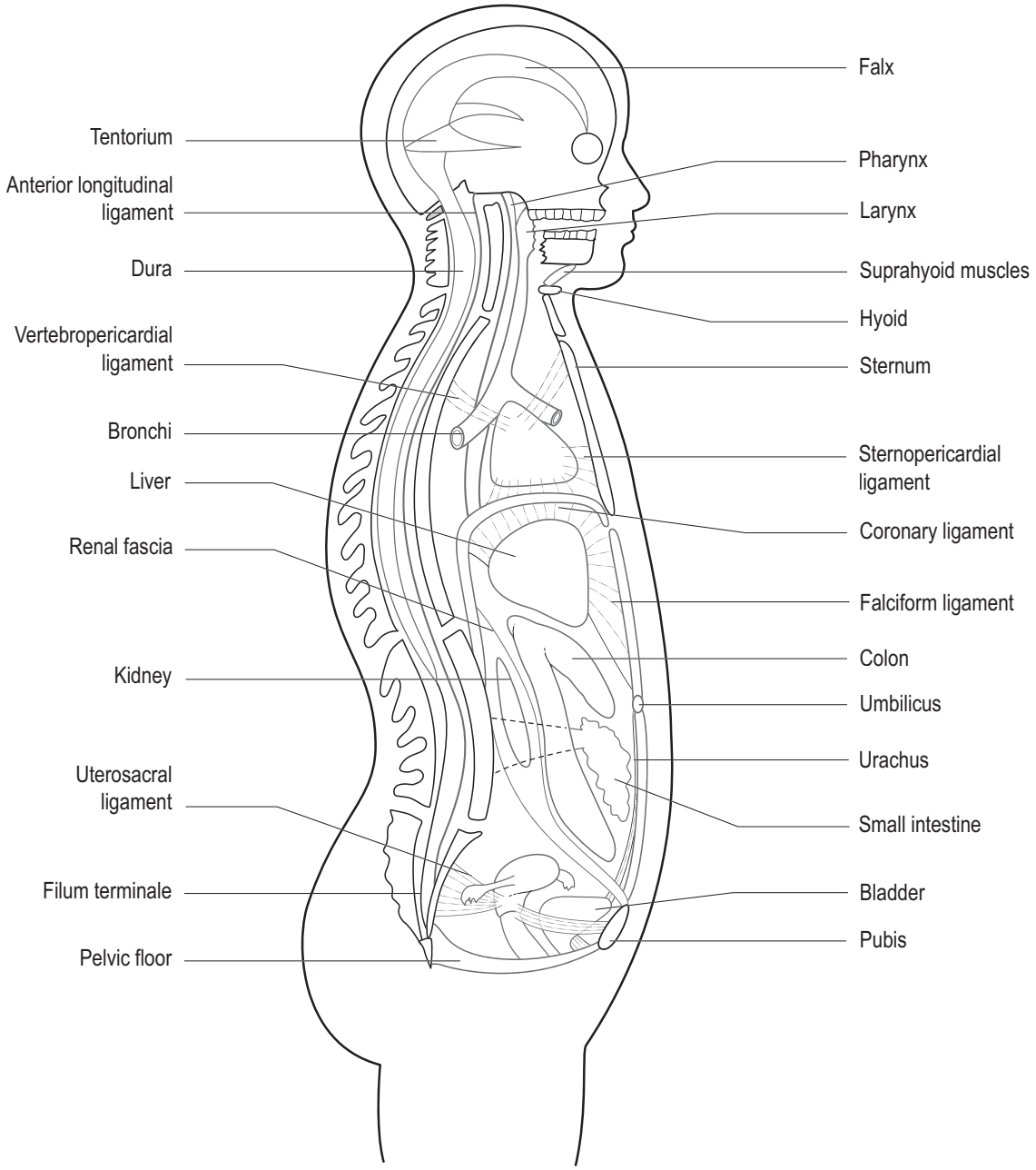



**Figure 1.1** Neural and visceral fascial core-links.

## Tensegrity and reciprocal tension membranes

Core-links of fascia connect all the body cavities, from the macro- to the microscopic. Movement can be transmitted almost simultaneously from one area to another, through the tensile properties of the fascial structures. Practically, osteopaths will feel through these fascial structures and can identify tension patterns that spread diversely throughout the body, by contacting and moving one or two distant parts and appreciating the way the movement passes through all the body's structures, on a gross level and even down to a cellular level.[2]

*Tensegrity* is a biomechanical term used to describe structures which are held together by tension rather than compression.[3] Forces within a tensegrity structure are dissipated evenly, with each part having to bear minimal strain, whilst the structure as a whole is very strong and resistant to stress. Tensegrity structures contain some elements which are under tension (being 'stretched') and some elements which are under compression (being 'squeezed'). In the human body, soft tissues such as muscles, ligaments and tendons represent the tensile components and bones represent the compression components.

A model of a tensegrity structure can be made using sticks and elastic, as shown in Figure 1.2. All the sticks are 'suspended' in space, by tension in the elastic. The sticks are very stable and very little energy is required to maintain the structure in place. For the human body, this is good news as, being a tensegrity structure, little muscle activity is required to hold the bones (skeletal framework) in place. With a little imagination, various 'spaces' or 'cavities' can be seen, bounded by either the sticks or the elastic, or both.

In the body, muscles span from one bone to another (within the model, from one stick to another). When these contract, they will shift the position of one stick relative to the others. All the relative positions of the sticks will change, as all the sticks are connected together by the elastic 'tension' components. Figure 1.3 shows the hands changing the position of the sticks, as though by a muscle contraction. This shift in the whole structure will open out some spaces within the model and close some down.

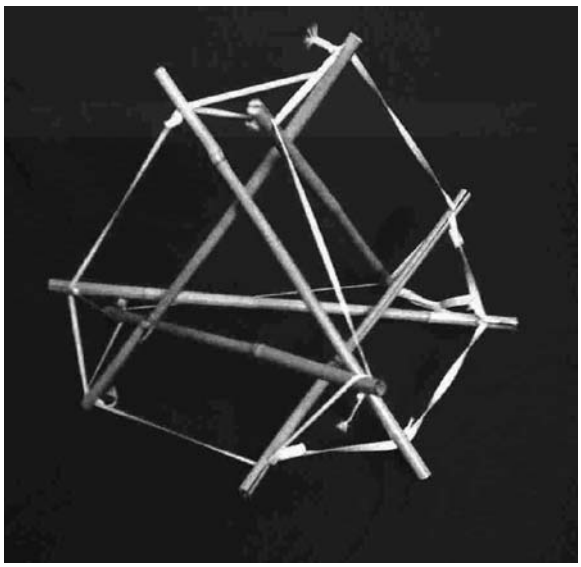


**Figure 1.2** Basic tensegrity structure.

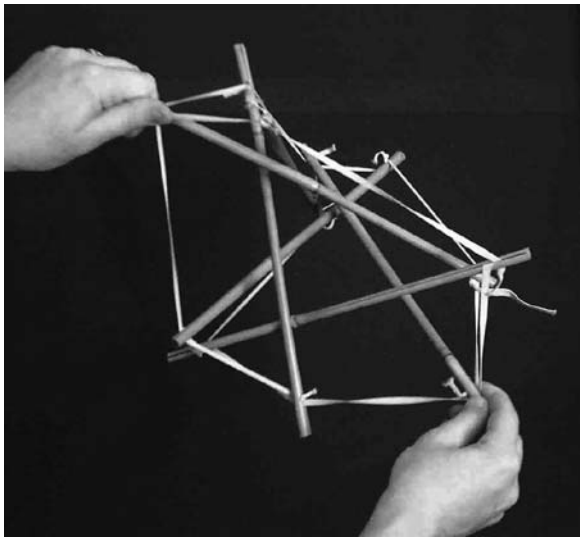


**Figure 1.3** Structure torsioned one way opens out some 'spaces'.

If the same sticks are pulled another way, then the whole structure shifts into a different 3D arrangement, so closing down the previously open spaces and opening up new ones. This is shown in Figure 1.4.

In the body, there is a continual shifting and relative 'repositioning' going on within the body tissues as they accommodate changes in posture and various movements. To appreciate the full dynamic picture, the effects of this shifting of stick and elastic positions must be considered with respect to the body cavities. Figure 1.5 shows a balloon in amongst the sticks and elastic to represent the organs of the body, which are relatively non-compressible. Hence every time the structure as a whole shifts and twists, the space taken up by the balloon is either compressed or torsioned. This change in its 'cavity dimensions' must be able to be absorbed by the balloon (i.e. the organs of the body).

Other spaces are not 'filled', as such, but are 'bridged' by various sheets of muscle or fascial layers, which are represented by the tissue

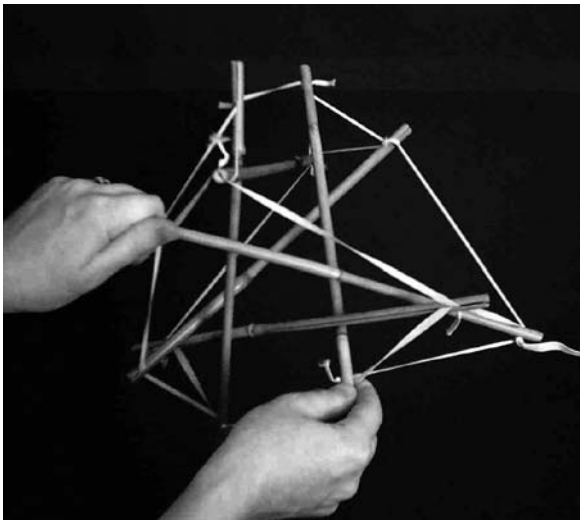


**Figure 1.4** Structure torsioned another way closes those 'spaces' and opens others.

between the sticks in Figure 1.6. Every time the structure as a whole distorts, the sheets must be able to flex and 'go with' that movement, in order not to restrict the flexibility of the overall structure.

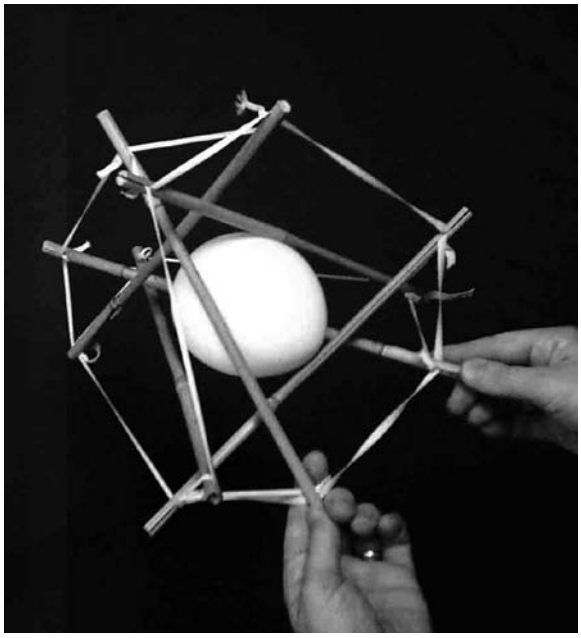


**Figure 1.5** Some spaces are filled with non-compressible 'organs'.

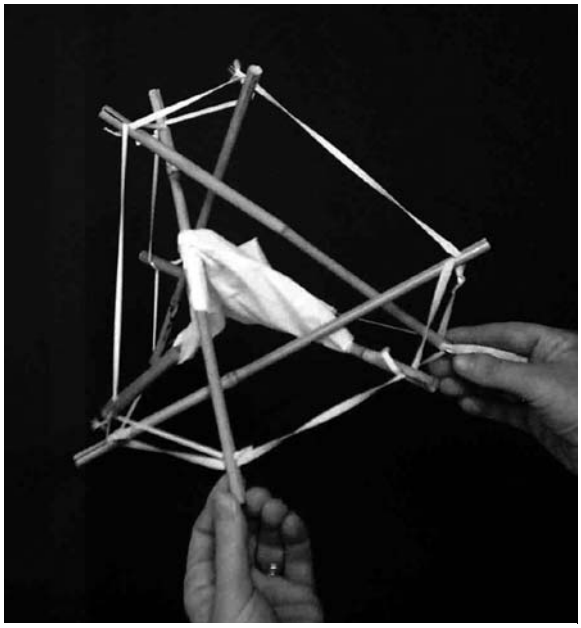


**Figure 1.6** Other spaces are bridged with layers or sheets of 'muscle or fascia'.

Whenever there is a movement disorder or an alteration in tension of one 'elastic' structure or another (i.e. some muscle, tendon or other soft tissue structure), this will 'preset' the tensegrity structure (i.e. the body) to adopt a subtly distorted resting posture. Not only that, but when the body comes to move, the way in which the structure will now spring and twist 'around' this tension will be different from before. Thus areas of strain and stress will develop at various points in the structure where before none existed as the 'non-distorted' tensegrity structure dissipated load evenly, to all parts simultaneously.

As stated above, the sticks represent the compression components, i.e. the bones; the elastic represents the tensile components, i.e. tendons, ligaments and some fascial 'bands' or structures; the balloon represents the body cavities filled with organs; and the white tissue represents such things as the diaphragm, peritoneal or other fascial layers, that divide or surround the body cavities. In this context, visceral osteopathy is merely ensuring that none of the organs, fascial layers or other structures interfere with the global elasticity, flexibility and absorbability of the body as a whole.

## FLUID DYNAMICS

Fascial sheaths, planes and cavities also form conduits for the passage of vessels and nerves. In this way, body cavity dynamics become involved in gross fluid movement throughout the body. The shifting layers illustrated by the tensegrity model demonstrate that there is the potential for much compressing and releasing of tissues and vessels in order to passively help the pumping and mobilizing of fluids.

Fluid, and in particular water, makes up a large part of each person. Body water content can change over time; for example, infants have low body fat and low bone mass and are 73% or more water whereas in old age, only about 45% of body weight is water. Healthy adult males are about 60% water while healthy adult females are around 50%. This difference reflects females' higher body fat and smaller amount of skeletal muscle.

Water occupies two main fluid compartments: intracellular and extracellular. Extracellular fluid consists of two major subdivisions: plasma, the fluid portion of the blood, and interstitial fluid in spaces between cells. A small proportion of extracellular fluid is also found in lymph, cerebrospinal fluid, eye humours, synovial fluid, serous fluid and gastrointestinal secretions.

Each fluid compartment of the body has a distinctive pattern of electrolytes. Extracellular fluids are similar (except for the high protein content of plasma) where sodium is the chief cation and chloride is the major anion. Intracellular fluids have low sodium and chloride where potassium is the chief cation and phosphate is the chief anion.

There is continual fluid movement amongst compartments, regulated by osmotic and hydrostatic pressures. Net leakage of fluid from the blood is picked up by lymphatic vessels and returned to the bloodstream. Exchanges between interstitial and intracellular fluids are complex due to the selective permeability of the cellular membranes. Two-way water flow is substantial.

### Mechanical influences on fluid movement

Although the vast majority of the above-mentioned fluid movement is chemically and osmotically controlled, there is some passive influence arising from the physical squeezing and compressing of vessels and fluid spaces by various parts of the musculoskeletal system, and through the change in pressures caused by respiration.

The best known of these are the actions of the thoracic diaphragm and the calf pump mechanism. Both increase venous and lymphatic return to the heart on a gross scale.[4] Both inspiration and expiration will increase venous flow, depending on which vessels are observed. Subdiaphragmatic venous flow increases with inspiration, whereas pelvic or lower limb venous flow slows with inspiration.[5] As mentioned above, mechanical effects are also thought to operate on a cellular or interstitial fluid level, sometimes with relatively powerful effects[6] mediated through the mechanics of the extracellular matrix. Any and all body movement would engage the fascia and connective tissues (right down to the extracellular matrix) and create tiny mechanical shifts, torsions and mobilizations within it, causing tiny compressions and relaxations that help to move fluid and aid circulation and drainage. Hence body cavity movement helps with fluid dynamics on many levels.

This is a passive mobilizing force but one that can be affected by the tension states within the soft tissues and fascia of the body. Any trauma, torsion or irritation of the tissue will affect its elasticity and biomechanical properties and will therefore have a knock-on effect on the tissues' ability to promote fluid movement. As fluid dynamics in the microcirculation are very important to tissue health, any impairment of fluid flow would impede efficient homeostatic balance and physiological function. Osteopaths consider that this would form part of disease aetiology and pathological change within any affected tissue.[7]

Osteopaths would consider that they are aiding fluid movement by improving respiratory mechanics; by improving diaphragm function through mobilizing related anatomical and articulatory structures; by improving fascial and general connective tissue elasticity and mobility; and by releasing tension deep within the body, hypothesizing that this helps the extracellular matrix of tissue to be more flexible and therefore more accommodating to fluid movement. Fluid dynamics and lymphatic flow are discussed in further detail

in a later chapter, where neural reflexes related to circulation are reviewed.

## VISCERAL MOVEMENT, POSTURE AND TENSION RECEPTORS

All of the above-mentioned fascia, of course, surrounds and embeds the viscera, and the organs are simply a part of the movement continuum within the body cavities. Mobility of the organs will help promote serous fluid movement between peritoneal, dural, pericardial and pleural membranes, as well as within the muscular and mucosal layers of the organs themselves. As the movement passes through the organs, the mesenteries will be slightly distorted and will stretch and accommodate this movement, as well as the shifting pressures and stretches caused by changing volumes in the hollow organs (through digestion, bladder filling and so on), as well as respiratory movements.

The mesenteries, peritoneal ligaments and muscle walls of the organs have various receptors that are sensitive to a range of stimuli, both physical and chemical.[8] It seems that the fascial attachments of the organs can act as tension monitors, detecting the amount and possibly direction of forces acting upon the organs.[9] Factors that stimulate these receptors are not completely understood but it is being recognized that they might play a role in whole-body balance mechanisms through potential links with the vestibular system.[10] This takes the concept of visceral movement to a level beyond mere nutrition and into general body functioning and balance.

Osteopaths incorporate these concepts into their general biomechanical assessment of the body and these theories partly underpin their approach to three-dimensional movement disorders, where asymptomatic visceral restrictions are related to musculoskeletal system restrictions, strains and symptoms.

## VISCERO-PTOSIS

Given the above discussion, osteopaths consider visceral function is related to efficient support, good circulation and drainage, and efficient movement patterns. In such circumstances visceral physiology should be optimum. Poor posture affects the integrity of the body cavity balance, leads to muscular imbalance, relaxation in some areas and tension in others. This affects visceral support and often leads to viscero-ptosis.

The weight of the abdominal cavity is normally supported through the pubis and is spread over the 'dome' of the pelvic organs. This helps to spread pressure away from the pelvic organs themselves. The viscera are held in a vertically oriented 'stack' or column, which is maintained by the abdominal muscles. The viscera literally support themselves and are effectively arranged in layers, supported by adjacent organs and by their mesenteric attachments. Any change in cavity dynamics or poor posture will lead to altered visceral position, and possibly viscero-ptosis. Viscero-ptosis can be clinically relevant in a variety of situations.

## MECHANICAL EFFECTS OF POOR ORGAN SUPPORT

Poor visceral support can lead to viscero-ptosis or organ prolapse. This commonly affects the pelvic organs, as a result of pelvic floor weakness, or the gastrointestinal organs through a weakened lower abdominal wall (herniation).

Generalized changes in body posture seem to be related to alteration in visceral support mechanisms. Body cavity alignment and organ position do seem to change as people age, usually with the result that organs shift inferiorly over time. A number of changes have been noted through research. Hyoid position lowers as people age, which leads to changes in position of the mandible and descent of oropharyngeal structures.[11] The diaphragm descends slightly, which is related to a decrease in thoracic cage diameters.[12] Spinal changes, especially loss of lumbar lordosis, are related to pelvic organ prolapse,[13] and the pelvic floor lowers with age.[14] Organ prolapse is known to be multifactorial, with debate about the role of collagen and the smooth muscle content of local tissues, for example.[15] Little research has investigated the role of general postural change but osteopaths historically attribute to it many cases of prolapse.

Osteopaths would manage someone complaining of the physical effects of ptosis by first

working on their posture and general body biomechanics in an attempt to reverse or alter to some degree the changes to the body cavities. They would consider that there is little point in only working locally (for example, by exercising the pelvic floor to strengthen it and so lift the pelvic organs) if the other areas of the body and body cavities were still in the adverse or ptosed posture. Osteopaths would start most cephalically, working to lift the sternum, raise the diaphragm and then lift the general visceral column by treating the abdominal region before finally coming to the pelvic region and addressing whatever local factors are present there.[16]

## PHYSIOLOGICAL EFFECTS OF POOR ORGAN SUPPORT

Apart from mechanical distortion and prolapse of organs giving rise to various physical symptoms, cases of viscero-ptosis are also thought to lead to actual visceral dysfunction and disease. For many years, the role of viscero-ptosis in organ disease has been prominent in osteopathic philosophy. As far back as the late 19th and early 20th centuries, medical authors discussed the 'new' disease concept of viscero-ptosis, which struck a chord with many osteopaths (www.meridianinstitute.com/eamt/files/contents.htm). One such author was Byron Robinson, whose work *The abdominal and pelvic brain* (1907) was widely read (www.meridianinstitute.com/eamt/files/robinson/Rob1ch39.htm). He had the following to say on viscero-ptosis:

> *Splanchnoptosia though a single unit is a general disease of the thoracic and abdominal viscera accompanied by relaxation of the thoracic and abdominal muscular walls. In short splanchnoptosia prevails wherever the nerves of respiration innervate. In splanchnoptosia not only several viscera are simultaneously affected but also the thoracic and abdominal walls are relaxed. From an erroneous and limited view of the founder of splanchnoptosia (Glenard) and the acceptation of the error by numerous followers the idea has prevailed that ptosis of single viscera occur and to them numerous pathological symptoms have been attributed. Hence a stately literature has arisen from nephroptosia, stomachoptosia, coloptosia (transverse), enteroptosia, etc., etc. On this error of single visceral ptosis has been founded the irrational surgery of so-called visceral pexies. One viscus may be afflicted with a greater degree of ptosis than another, however, splanchnoptosia is a general process affecting the thoracic and abdominal walls, the visceral mesenteries and visceral shelves.*

He went on to say:

> *The abdominal viscera are maintained in their normal physiologic position by: (a) nerves and vessels; (b) peritoneum; (c) ligaments; (d) visceral pressure; (e) ligaments; (f) visceral shelves; (g) abdominal walls (muscular and osseous). The first idea of importance is that no organ is absolutely or immovably fixed but that each viscus is endowed with a certain degree of movement, hence, the irrational surgical fixation (pexies) of organs is obvious. The mobility of organs is due to various factors as: (a), attitude (prone or erect); (b), respiration; (c), material within the tractus intestinalis (ingesta, gas); (d), material within the tractus urinarius (urine); (e), muscular movement of viscera (rhythm) and abdominal wall; (f), gestation (material within the tractus genitalis). Hence the abdomen should be viewed as occupied with viscera capable of more or less mobility – that fixation of abdominal viscera is abnormal, as e.g. peritoneal bands and visceral pexies.*
>
> *In general, in splanchnoptosia, canalization is compromised, nerve periphery traumatized, common visceral function (peristalsis, secretion, absorption, sensation) deranged; circulation (blood, and lymph) disordered; respiration disturbed – ending in malnutrition and neurosis. The symptoms of the splanchnoptotic are complex and numerous. Each cause in splanchnoptosia produces a vicious circle of – pathological physiology – pathological effects on the visceral tracts – digestive, genital, urinary, lymphatic, vascular, nervous, respiratory – impairing nourishment. Splanchnoptosia is often mistaken and wrongly diagnosed as neurasthenia, nervous exhaustion, hysteria, spinal anaemia, menopause, nervous dyspepsia, and neurosis.*

Other problems of visceral mobility and consequent function were also discussed at length in the same era. One of the most popular was autointoxication: namely, being slowly poisoned by

stagnation in the viscera and inappropriate absorption of matter into the body from luminal contents. This was considered to cause many irritating and debilitating disorders. Constipation was the most common disorder that was related to autointoxication, which has been associated with bodily ailments for millennia.[17] Autointoxication, like viscero-ptosis, was also a popular theme amongst early osteopathic practitioners.

In modern medical communities, both of these concepts have fallen out of favour and many now consider them thoroughly demoted to folklore. There are very few modern clinicians who would still consider them distinct disease entities, with set diagnostic criteria.[18] As medical fashions change over time, it is possible that many current concepts will be similarly derided when retrospectively reviewed. One such current 'catch-all' disorder which is commonly diagnosed and associated with a whole host of symptoms and systemic disorders (quite similar to those caused by viscero-ptosis, in fact) is fibromyalgia. In this disorder, postural misalignment or poor spinal or musculoskeletal movement is also related to the onset of the fibromyalgia syndrome,[19] which incorporates a whole host of generalized symptoms including pelvic pain, constipation, hypotension, thyroid problems, coccyx pain and tiredness.[20]

Osteopathic philosophy does on occasion still make reference to the idea of viscero-ptosis and autointoxication and still orients some aspects of management around these concepts. For the most part, though, visceral osteopathy makes more use of the mechanical components of viscero-ptosis, namely visceral prolapse, than it does of the disorder-as-disease component. That said, the influence of general body posture on organ orientation, mobility and function is still very important to osteopaths, and whenever the organs need to be addressed for whatever reason, that treatment must be 'contextualized' by considering what influences the general body is having on that organ dynamic. Some influences that general posture has on the viscera are illustrated in Figure 1.7.

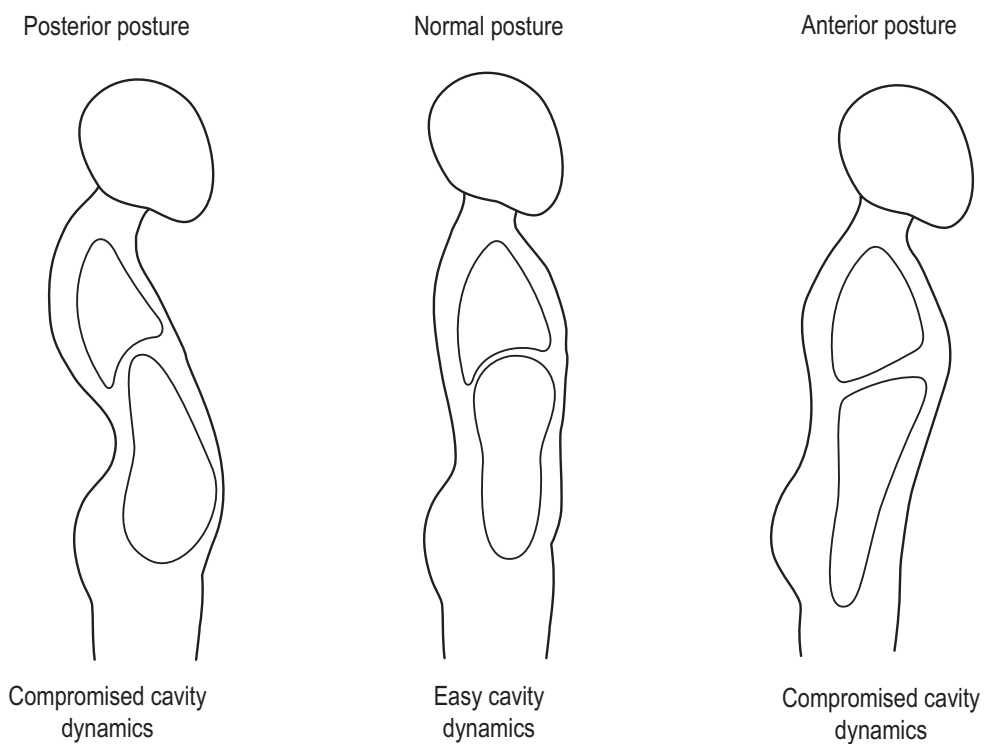



**Figure 1.7** Posture and visceral function.

When dealing with cases of prolapse, osteopaths would literally start from the top. It is not thought useful only to address organ prolapse, say, in the lower pelvic bowl, without first 'relieving pressure' on the whole visceral stack and fascial systems of the body by raising all the tissues from the head and throat, and then moving onto the thorax to lift the diaphragm, which will then engage the abdominal organs, supporting them superiorly, and finally taking pressure off the pelvic organs, allowing them to settle into a new position. This can then be maintained by re-strengthening the pelvic floor and lower abdominal muscles, and by ensuring that the postural adjustments do not revert, if possible.

## VISCERAL MOTION

The osteopathic management of visceral problems and the use of visceral techniques within the management of musculoskeletal problems involve more than just knowing a few techniques to mobilize the organs. AT Still, the founder of osteopathy, was reported never to teach technique at all; he only ever demonstrated treatments and students had to sort out for themselves what was being done on an individual basis. There is great merit in this approach, as describing a technique in isolation cannot represent what is meant by a treatment. It is virtually impossible to describe a sensation in print; in other words, it is difficult to teach someone without them receiving direct feedback regarding their palpatory experiences as they explore the visceral field. However, even the best hands-on instructors cannot impart everything at one sitting and so a reference text discussing how osteopaths approach the treatment of viscera is of value. In this chapter, the underlying concepts of visceral movement are introduced (acting as preparation on how to evaluate and potentially treat patients with visceral factors).

The study of visceral movement dynamics has long been part of the osteopathic approach to patient care.[21] Its study outside osteopathy is also now becoming more relevant to orthodox medicine, and there is increasing research into measuring the normal physiological patterns of visceral movement.[22] As discussed before, visceral osteopathy involves the use of various types of mobilization applied directly to the organs through the body wall, or indirectly through movements applied to body sections or segments that are attached physically or reflexly related to the organs within the body cavities.[16,23]

In addition to gross movements, all tissues, including the organs, will bend, be deformed and undergo stretch and compression during general body movements and respiration. The quality or quantity of such dynamics depends upon the physical properties of tissues such as viscoelasticity, creep and hysteresis, which describe the behaviour of the tissue under loading, stress and strain. Osteopaths consider that these physical characteristics give each organ a unique 'feel' which can help to identify it and its degree of health. Altered physical properties arising from inflammation and other pathological processes will affect palpable visceral characteristics such as stretch, deformation and compressibility. In this way, osteopaths can distinguish to some degree whether a tissue is normal or not normal (although, of course, one cannot diagnose any individual condition or state by feel alone).

Discussion on the osteopathic interest in visceral motion therefore includes not only gross movements of the organs but also their 'internal' physical properties such as compliance, stretch, deformity and so on, as well as any physiological movements such as peristalsis or other 'pacemaker' activities. Osteopaths are also interested in what they term 'motility'. Unfortunately for matters such as interprofessional communication and scientific comparisons and research, this does not mean what others would understand it to be: namely peristalsis, contractility and smooth muscle myogenic or neurogenic activity. Osteopaths use the term to refer to the natural rhythmic vitality of the tissues and organs, which is being expressed through a cyclic repetition of the embryological movement and migration patterns that the tissues and organs followed during development. Osteopaths also call this movement 'inherent motion' and believe it can be evaluated and compared to 'normal' and also 'treated', in the sense that the body or tissue can be encouraged through touch and certain types of mobilizations to return to expressing its natural and normal

rhythmic pattern of 'motility'. These movements are further discussed below.

## GROSS VISCERAL MOBILITY

Osteopathic visceral mobility testing involves trying to replicate 'normal' movement and see if the organs and tissues allow that or if the movement appears adapted/restricted or altered in some way. In order to appreciate the various aspects of visceral movement and how osteopaths may examine and ultimately treat organs for a variety of 'disorders', it is necessary to consider further those factors that would influence the gross movements of organs.

## SLIDING SURFACES

Peritoneal, pleural, pericardial, capsular, dural and other fascial/connective tissues coverings, wrappings and layers form surfaces along which the organs can slide or move. The above tissues are mostly serous membranes, which secrete fluids, such as peritoneal fluid, pleural fluid and so on, that buffer contact between membranes (sliding surfaces), creating easy movement of one organ on another or of an organ against part of the body wall or musculoskeletal structure.[24] The lubricating action of the fluids is normally independent of such things as changes in force and direction of movement.[25]

Gross movement of the organs (rather than simple peristalsis) is often described as 'visceral slide' by the orthodox medical profession. Its physiological importance is not currently recognized or explored, however. Note: the term 'visceral slide' is usually confined to the normal, longitudinal movement of the intraabdominal viscera caused by respiratory excursions of the diaphragm. Beyond recognizing that organs move as a result of external forces acting upon them, such as diaphragmatic excursion and torsion through the ribcage or muscular abdominal wall, little study seems to have been done regarding the physiological importance of that movement for most of the organs, except perhaps for the pelvic organs.[26]

The sliding and movement of various organs are being increasing well mapped through ultrasound imaging or cine mode magnetic resonance imaging. These imaging techniques can help in various surgical approaches or to avoid various complications. For example, ultrasound imaging is often used prior to laparoscopic surgery, to prevent trocar (cannular) penetration of the greater omentum or other adhered organs and hence further subsequent adhesion formation.[27] The presence of restrictions on ultrasound images has also been found to be a reliable indicator of the presence of actual adhesions, on subsequent surgical exploration.[28] These adhesions are often between the anterior abdominal wall and the greater omentum, which arises from the greater curvature of the stomach and has connections with the transverse colon and the posterior abdominal wall. Adhesions can alter the normal visceral mobility and sometimes even the position of the organs. Note: osteopathic management of adhesions and painful sequelae is discussed later.

The above types of imaging have given rise to the study of visceral kinematics within orthodox medicine. These studies are now so sophisticated that they can show such things as uterine peristalsis in real time and the presence of many types of intraabdominal adhesions.[24] These imaging processes would clearly be of great value in monitoring the effect of visceral manipulation on adhesion flexibility and visceral mobility, and would be very useful research tools.

The physiological and clinical relevance of all this movement of the organs, through respiratory diaphragm excursion, general body movement and changing volumes of the hollow organs, is not fully understood or acknowledged. Nor is the potential for any alteration, reduction or cessation of that movement to contribute to pathological change recognized as particularly important. To reiterate, osteopaths consider that reduction in motion (be it amplitude, direction or timing) is highly relevant to an organ's ability to function appropriately, and that manipulating or mobilizing the organ in some way would help to restore more appropriate physiological function, thus promoting health.

Examples of this passive mobility of organs would include the elongation of the heart with diaphragmatic descent; mobilization of the prostate with pelvic floor contraction; movement of the cervix and uterus during intercourse; stretching of the pharyngeal lymphoid tissue in speech and neck movements; deformation of the eustachian tube in