Benchmarks for Training in Osteopathy

Benchmarks for training in traditional/complementary and alternative medicine

World Health Organization

Benchmarks for training in traditional / complementary and alternative medicine

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Foreword

The oldest existing therapeutic systems used by humanity for health and well-being are called Traditional Medicine or Complementary and Alternative Medicine (TM/CAM).

Increasingly, TM/CAM is being formally used within existing health-care systems. When practised correctly, TM/CAM can help protect and improve citizens' health and well-being. The appropriate use of TM/CAM therapies and products, however, requires consideration of issues of safety, efficacy and quality. This is the basis of consumer protection and is no different, in principle, from what underpins modern medical practice. Upholding basic requirements for the modern practice of TM/CAM therapies can support national health authorities in the establishment of adequate laws, rules, and licensing practices.

These considerations have guided the work of the Regional Government of Lombardy in TM/CAM which was first included in the Regional Health Plan 2002-2004. Clinical and observational studies in the region of Lombardy have provided a crucial step in the evaluation of TM/CAM. With the help of data from these studies, a series of governmental provisions have been used to create a framework for the protection of consumers and providers. The cornerstone of this process was the first Memorandum of Understanding (MOU) for the Quadrennial Cooperation Plan which was signed between the Regional Government of Lombardy and the World Health Organization. The MOU highlighted the need for certain criteria to be met including: the rational use of TM/CAM by consumers; good practice; quality; safety; and the promotion of clinical and observational studies of TM/CAM. When they were published in 2004, the *WHO guidelines for developing consumer information on proper use of traditional, complementary, and alternative medicine* were incorporated into this first MOU.

In the region of Lombardy, citizens currently play an active role in their health-care choices. The awareness of the advantages as well as of the risks of every type of care is therefore critical, also when a citizen actively chooses to use TM/CAM. Consumers have begun to raise new questions related to the safe and effective treatment by all providers of TM/CAM. For this reason, the Regional Government of Lombardy closely follows WHO guidelines on qualified practice of TM/CAM in order to guarantee appropriate use through the creation of laws and regulations on skills, quality control, and safety and efficacy of products, and clear guidelines about practitioner qualifications. The Regional Government of Lombardy has also provided support and cooperated with WHO in developing this series of benchmark documents for selected popularly used TM/CAM therapies including Ayurveda, naturopathy, Nuad Thai, osteopathy, traditional Chinese medicine, Tuina, and Unani medicine.

Modern scientific practice requires a product or a therapeutic technique to be safe and effective, meaning that it has specific indications and evidence for care supported by appropriate research. Practitioners, policy-makers and planners,

both within and outside ministries of health, are responsible for adhering to this, in order to guarantee the safety and the efficacy of medicines and practices for their citizens. Furthermore, safety not only relates to products or practices per se, but also to how they are used by practitioners. Therefore it is important that policy-makers are increasingly able to standardize the training of practitioners for it is another fundamental aspect of protecting both the providers and the consumers.

Since 2002, the Social-Health Plan of the Lombardy Region has supported the principle of freedom of choice among different health-care options based on evidence and scientific data. By referring to the benchmarks in this present series of documents, it is possible to build a strong foundation of health-care options which will support citizens in exercising their right to make informed choices about different styles of care and selected practices and products.

The aim of this series of benchmark documents is to ensure that TM/CAM practices meet minimum levels of adequate knowledge, skills and awareness of indications and contraindications. These documents may also be used to facilitate establishing the regulation and registration of providers of TM/CAM.

Step by step we are establishing the building blocks that will ensure consumer safety in the use of TM/CAM. The Regional Government of Lombardy hopes that the current series will be a useful reference for health authorities worldwide, and that these documents will support countries to establish appropriate legal and regulatory frameworks for the practice of TM/CAM.

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Preface

There has been a dramatic surge in popularity of the various disciplines collectively known as traditional medicine (TM) over the past thirty years. For example, 75% of the population in Mali and 70% in Myanmar depend on TM and TM practitioners for primary care,[1] while use has also greatly increased in many developed countries where it is considered a part of complementary and alternative medicine (CAM). For instance, 70% of the population in Canada[2] and 80% in Germany[3] have used, in their lifetime, traditional medicine under the title complementary and alternative medicine.

Integration of traditional medicine into national health systems

Traditional medicine has strong historical and cultural roots. Particularly in developing countries, traditional healers or practitioners would often be well-known and respected in the local community. However, more recently, the increasing use of traditional medicines combined with increased international mobility means that the practice of traditional medicines therapies and treatments is, in many cases, no longer limited to the countries of origin. This can make it difficult to identify qualified practitioners of traditional medicine in some countries.

One of the four main objectives of the WHO traditional medicine strategy 2002-2005 was to support countries to integrate traditional medicine into their own health systems. In 2003, a WHO resolution (WHA56.31) on traditional medicine urged Member States, where appropriate, to formulate and implement national policies and regulations on traditional and complementary and alternative medicine to support their proper use. Further, Member States were urged to integrate TM/CAM into their national health-care systems, depending on their relevant national situations.

Later in 2003, the results of a global survey on policies for TM/CAM conducted by WHO showed that the implementation of the strategy is making headway. For example, the number of Member States reporting that they have a national policy on traditional medicine rose from five in 1990, to 39 in 2003, and to 48 in 2007. Member States with regulations on herbal medicines rose from 14 in 1986, to 80 in 2003, and to 110 in 2007. Member States with national research institutes of traditional medicine or herbal medicines rose from 12 in 1970, to 56 in 2003, and to 62 in 2007.[4]

[1] Presentation by the Governments of Mali and Myanmar at the Congress on Traditional Medicine, Beijing, People's Republic of China, 7-9 November 2008.
[2] Perspectives on Complementary and Alternative Health Care, a collection of papers prepared for Health Canada, Ottawa, Health Canada, 2001.
[3] Annette Tuffs Heidelberg. Three out of four Germans have used complementary or natural remedies, British Medical Journal 2002, 325:990 (2 November).
[4] WHO medicines strategy 2008-2013 and Report from a WHO global survey on national policy on traditional medicine and regulation of herbal medicines, 2005.

Ideally, countries would blend traditional and conventional ways of providing care in ways that make the most of the best features of each system and allow each to compensate for weaknesses in the other. Therefore, the 2009 WHO resolution (WHA62.13) on traditional medicine further urged Member States to consider, where appropriate, inclusion of traditional medicine in their national health systems. How this takes place would depend on national capacities, priorities, legislation and circumstances. It would have to consider evidence of safety, efficacy and quality.

Resolution WHA62.13 also urged Member States to consider, where appropriate, establishing systems for the qualification, accreditation or licensing of practitioners of traditional medicine. It urged Member States to assist practitioners in upgrading their knowledge and skills in collaboration with relevant providers of conventional care. The present series of benchmarks for basic training for selected types of TM/CAM care is part of the implementation of the WHO resolution. It concerns forms of TM/CAM that enjoy increasing popularity (Ayurveda, naturopathy, Nuad Thai, osteopathy, traditional Chinese medicine, Tuina and Unani medicine).

These benchmarks reflect what the community of practitioners in each of these disciplines considers to be reasonable practice in training professionals to practice the respective discipline, considering consumer protection and patient safety as core to professional practice. They provide a reference point to which actual practice can be compared and evaluated. The series of seven documents is intended to:

- support countries to establish systems for the qualification, accreditation or licensing of practitioners of traditional medicine;
- assist practitioners in upgrading their knowledge and skills in collaboration with providers of conventional care;
- allow better communication between providers of conventional and traditional care as well as other health professionals, medical students and relevant researchers through appropriate training programmes;
- support integration of traditional medicine into the national health system.

The documents describe models of training for trainees with different backgrounds. They list contraindications identified by the community of practitioners, so as to promote safe practice and minimize the risk of accidents.

Drafting and Consultation Process

The most elaborated material to establish benchmarks comes from the countries where the various forms of traditional medicine under consideration originated. These countries have established formal education or national requirements for licensure or qualified practice. Any relevant benchmarks must refer to these national standards and requirements.

The first stage of drafting of this series of documents was delegated to the national authorities in the countries of origin of each of the respective forms of traditional, complementary or alternative medicine discussed. These drafts were then, in a second stage, distributed to more than 300 reviewers in more than 140 countries. These reviewers included experts and national health authorities, WHO collaborating centres for traditional medicine, and relevant international

and regional professional nongovernmental organizations. The documents were then revised based on the comments and suggestions received. Finally, WHO organized consultations for further final review, prior to editing.

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Introduction

Osteopathy was developed by Andrew Taylor Still, a physician and surgeon in the United States of America in the mid-1800s, who established the first independent school of osteopathy in 1892 (*1,2*).

Osteopathy (also called osteopathic medicine) relies on manual contact for diagnosis and treatment (*3*). It respects the relationship of body, mind and spirit in health and disease; it lays emphasis on the structural and functional integrity of the body and the body's intrinsic tendency for self-healing. Osteopathic practitioners use a wide variety of therapeutic manual techniques to improve physiological function and/or support homeostasis that has been altered by somatic (body framework) dysfunction, i.e. impaired or altered function of related components of the somatic system; skeletal, arthrodial and myofascial structures; and related vascular, lymphatic, and neural elements (*4*).

Osteopathic practitioners use their understanding of the relationship between structure and function to optimize the body's self-regulating, self-healing capabilities. This holistic approach to patient care and healing is based on the concept that a human being is a dynamic functional unit, in which all parts are interrelated and which possesses its own self-regulatory and self-healing mechanisms. One essential component of osteopathic health care is osteopathic manual therapy, typically called osteopathic manipulative treatment (OMT), which refers to an array of manipulative techniques that may be combined with other treatments or advice, for example on diet, physical activity and posture, or counselling. The practice of osteopathy is distinct from other health-care professions that utilize manual techniques, such as physiotherapy or chiropractic, despite some overlap in the techniques and interventions employed. As a hands-on approach to patient care, osteopathy has contributed to the body of knowledge of manual therapies and complementary and alternative medicine.

Osteopathy is practised in many countries throughout the world. In some countries, manual therapists use osteopathic techniques and claim to provide osteopathic treatment, although they may not have received proper training.

This document presents what the community of practitioners, experts and regulators of osteopathy considers to be adequate levels and models for training osteopathic practitioners, as well as for dispensers and distributors. It provides training benchmarks for trainees with different backgrounds, as well as what the community of practitioners of osteopathy considers being contraindications for safe practice of osteopathy and for minimizing the risk of accidents. Together, these can serve as a reference for national authorities wishing to establish systems of training, examination and licensure that support the qualified practice of osteopathy.

1. The basic principles of osteopathy

1.1 Philosophy and characteristics of osteopathy

Osteopathy provides a broad range of approaches in the maintenance of health and the management of disease. Osteopathy is grounded in the following principles for treatment and patient management:

- the human being is a dynamic functional unit, whose state of health is influenced by the body, mind and spirit;
- the body possesses self-regulatory mechanisms and is naturally self-healing;
- structure and function are interrelated at all levels of the human body.

Within that framework, osteopathic practitioners incorporate current medical and scientific knowledge when applying osteopathic principles to patient care. Osteopathic practitioners recognize that each patient's clinical signs and symptoms are the consequences of the interaction of many physical and nonphysical factors. It emphasizes the dynamic interrelatedness of these factors and the importance of the patient-practitioner relationship in the therapeutic process. It is a patient–centred, rather than disease-centred, form of health care.

Structural diagnosis and osteopathic manipulative treatment are essential components of osteopathy. Osteopathic manipulative treatment was developed as a means of facilitating normal self-regulating/self-healing mechanisms in the body by addressing areas of tissue strain, stress or dysfunction that may impede normal neural, vascular and biochemical mechanisms.

The practical application of this approach is based on several structure-function relationship models described below. Osteopathic practitioners use these to gather and structure diagnostic information and to interpret the significance of neuromusculoskeletal findings for the overall health of the patient. Osteopathy is thus not limited to the diagnosis and treatment of musculoskeletal problems, nor does it emphasize joint alignment and radiographic evidence of structural relationships. Osteopathy is more concerned with the manner in which the biomechanics of the musculoskeletal system are integrated with and support the entire body physiology.

Although manual techniques are used by various manipulative therapy professions, the unique manner in which osteopathic manipulative techniques are integrated into patient management, as well as the duration, frequency and choice of technique, are distinctive aspects of osteopathy. Osteopathic manipulative treatment employs many types of manipulative techniques, including spinal thrust and impulse techniques, as well as gentle techniques (*1*).

1.2 Structure-function relationship models

Five main models of structure-function relationships guide the osteopathic practitioner's approach to diagnosis and treatment. These models are usually used in combination to provide a framework for interpreting the significance of somatic dysfunction within the context of objective and subjective clinical information. The combination chosen is adapted to the patient's differential diagnosis, co-morbidities, other therapeutic regimens and response to treatment.

1.2.1 The biomechanical structure-function model

The biomechanical model views the body as an integration of somatic components that relate as a mechanism for posture and balance. Stresses or imbalances within this mechanism may affect dynamic function, increase energy expenditure, alter proprioception (one's sense of the relative position and movement of neighbouring parts of the body), change joint structure, impede neurovascular function and alter metabolism (*5-7*). This model applies therapeutic approaches, including osteopathic manipulative techniques, which allow for the restoration of posture and balance and efficient use of musculoskeletal components.

1.2.2 The respiratory/circulatory structure-function model

The respiratory/circulatory model concerns itself with the maintenance of extracellular and intracellular environments through the unimpeded delivery of oxygen and nutrients, and the removal of cellular waste products. Tissue stress or other factors interfering with the flow or circulation of any body fluid can affect tissue health (*8*). This model applies therapeutic approaches, including osteopathic manipulative techniques, to address dysfunction in respiratory mechanics, circulation and the flow of body fluids.

1.2.3 The neurological structure-function model

The neurological model considers the influence of spinal facilitation, proprioceptive function, the autonomic nervous system and activity of nociceptors (pain fibres) on the function of the neuroendocrine immune network (*9-15*). Of particular importance is the relationship between the somatic and visceral (autonomic) systems. This model applies therapeutic approaches, including osteopathic manipulative techniques, to reduce mechanical stresses, balance neural inputs and reduce or eliminate nociceptive drive.

1.2.4 The biopsychosocial structure-function model

The biopsychosocial model recognizes the various reactions and psychological stresses which can affect patients' health and well-being. These include environmental, socioeconomic, cultural, physiological and psychological factors that influence disease. This model applies therapeutic approaches, including osteopathic manipulative techniques, to address the effects of, and reactions to, various biopsychosocial stresses.

1.2.5 The bioenergetic structure-function model

The bioenergetic model recognizes that the body seeks to maintain a balance between energy production, distribution and expenditure. Maintaining this balance aids the body in its ability to adapt to various stressors (immunological, nutritional, psychological, etc.). This model applies therapeutic approaches, including osteopathic manipulative techniques, to address factors which have the potential to deregulate the production, distribution or expenditure of energy (*6*,*7*,*16*).

2. Training of osteopathic practitioners

2.1 Categories of training programmes

Regulating the practice of osteopathy and preventing practice by unqualified practitioners requires a proper system of training, examination and licensing. Benchmarks for training have to take into consideration the following:

- content of the training;
- method of the training;
- to whom the training is to be provided and by whom;
- the roles and responsibilities of the future practitioner;
- the level of education required in order to undertake training.

Experts in osteopathy distinguish two types of training depending on prior training and clinical experience of trainees.

Type I training programmes are aimed at those with little or no prior health-care training, but who have completed high school education or equivalent. These programmes typically are four-year, full-time programmes. Supervised clinical training at an appropriate osteopathic clinical facility is an essential component, and students may be required to complete a thesis or project.

Type II training programmes are aimed at those with prior training as health-care professionals. Type II programmes have the same aims and content as the Type I programmes, but the course content and length may be modified depending on the prior experience and training of individual applicants. In some cases, the development of a Type II programme may be a temporary step pending the development of Type I programmes in osteopathy.

Experts in osteopathy consider that acquiring appropriate mastery of osteopathy to be able to practise as primary-contact health-care professionals, independently or as members of a health-care team in various settings, requires time. A typical Type I programme would take 4200 hours, including at least 1000 hours of supervised clinical practice and training. Osteopathic skills and physical examination training must be delivered via direct contact. Other academic curricular content may be delivered by various staff and in various training formats. Training may be full-time, part-time or a combination of the two.

While training of the osteopathy focuses on those subjects and skills that form the basis for the osteopathic approach, basic knowledge and understanding of the common allopathic medical treatments available to patients are necessary for competent practice as a primary-contact health-care practitioner. In addition, the osteopathic practitioner must also understand the rationale behind common standard treatment protocols; how the body responds to these treatments; and how the protocols may influence the selection and implementation of osteopathic treatment.

All elements of the curriculum are delivered in the context of focusing on the patient rather than the disease, viewing the patient as someone who seeks the facilitation of their optimum health, and on the importance of the patient and practitioner forming a therapeutic partnership.

2.2 Core competencies

Osteopathic practitioners share a set of core competencies that guide them in the diagnosis, management and treatment of their patients and form the foundation for the osteopathic approach to health care. The following are essential competencies for osteopathic practice in all training programmes:

- a strong foundation in osteopathic history, philosophy, and approach to health care;
- an understanding of the basic sciences within the context of the philosophy of osteopathy and the five models of structure-function. Specifically, this should include the role of vascular, neurological, lymphatic and biomechanical factors in the maintenance of normal and adaptive biochemical, cellular and gross anatomical functions in states of health and disease;
- ability to form an appropriate differential diagnosis and treatment plan;
- an understanding of the mechanisms of action of manual therapeutic interventions and the biochemical, cellular and gross anatomical response to therapy;
- ability to appraise medical and scientific literature critically and incorporate relevant information into clinical practice;
- competency in the palpatory and clinical skills necessary to diagnose dysfunction in the aforementioned systems and tissues of the body, with an emphasis on osteopathic diagnosis;
- competency in a broad range of skills of OMT;
- proficiency in physical examination and the interpretation of relevant tests and data, including diagnostic imaging and laboratory results;
- an understanding of the biomechanics of the human body including, but not limited to, the articular, fascial, muscular and fluid systems of the extremities, spine, head, pelvis, abdomen and torso;
- expertise in the diagnosis and OMT of neuromusculoskeletal disorders;
- thorough knowledge of the indications for, and contraindications to, osteopathic treatment;
- a basic knowledge of commonly used traditional medicine and complementary/ alternative medicine techniques.

2.3 Benchmark training curriculum for osteopathy

Basic science

- history and philosophy of science;
- gross and functional anatomy, including basic embryology, neuroanatomy and visceral anatomy;
- fundamental bacteriology, fundamental biochemistry, fundamental cellular physiology;

- physiology with special emphasis on the neuroendocrine immune network, the autonomic nervous system, the arterial, lymphatic and venous systems and the musculoskeletal system;
- biomechanics and kinetics.

Clinical science

- models of health and disease;
- safety and ethics;
- basic pathology and pathophysiology of the nervous, musculoskeletal, psychiatric, cardiovascular, pulmonary, gastrointestinal, reproductive, genitor-urinary, immunological, endocrine and otolaryngology systems;
- basic orthopaedic diagnosis;
- basic radiology;
- nutrition;
- basic emergency care.

Osteopathic science

- philosophy and history of osteopathy;
- osteopathic models for structure/function interrelationships;
- clinical biomechanics, joint physiology and kinetics;
- mechanisms of action for osteopathic techniques.

Practical skills

- obtaining and using an age-appropriate history;
- physical and clinical examination;
- osteopathic diagnosis and differential diagnosis of the nervous, musculoskeletal, psychiatric, cardiovascular, pulmonary, gastrointestinal, endocrine, genitor-urinary, immunological, reproductive and otolaryngology systems;
- general synthesis of basic laboratory and imaging data;
- clinical problem-solving and reasoning;
- understanding of relevant research and its integration into practice;
- communication and interviewing;
- clinical documentation;
- basic life-support and first-aid care.

Osteopathic skills

- osteopathic diagnosis;
- osteopathic techniques, including direct techniques such as thrust, articulatory, muscle energy and general osteopathic techniques;
- indirect techniques, including functional techniques and counterstrain;
- balancing techniques, such as balanced ligamentous tension and ligamentous articulatory strain;
- combined techniques, including myofascial/fascial release, Still technique, osteopathy in the cranial field, involuntary mechanism and visceral techniques;
- reflex-based techniques, such as Chapman's reflexes, trigger points and neuromuscular techniques;
- fluid-based techniques, such as lymphatic pump techniques (*1*).

Practical supervised clinical experience
Osteopathic manipulative treatment is a distinctive component of osteopathy. It requires both cognitive and sensory motor skills, and knowledge, and the development of these clinical and manual skills requires time and practice. Supervised clinical practice is an essential component of the training of osteopathic practitioners and should take place in an appropriate osteopathic clinical environment so that high-quality clinical support and teaching can be provided. This will include a minimum of 1000 hours of supervised clinical practice.

2.4 Adaptation of Type I to Type II programmes

The Type II programme is designed to enable other health-care professionals to become qualified osteopathic practitioners. The syllabus and curriculum for Type II programmes will vary depending upon the prior health-care training and clinical experience of each individual student. Graduates of Type II programmes must demonstrate the same competencies of osteopathy as graduates of Type I programmes. This programme typically has a duration of 1000 hours, to be adapted depending on the individual's prior training and knowledge.

Table 1 - Indicative Type I programme structure

Phase 1 **Scientific and professional underpinning studies**	No. of contact hours
Anatomy	150
Health-care studies and other health-care systems	5
ICT skills	2
Principles and philosophy of osteopathy	100
Neurology/neuroscience	32
Peripheral and spinal biomechanics	26
Physiology	140
Biochemistry	60
Nutrition	40
Palpatory skills and diagnosis	40
Phsychology/psychosomatics	5
Sociology	8
Research studies	
Research methodology (quantitative and qualitative) including critical analysis	5
Clinical/professional studies	
Applied clinical osteopathy	26
Radiological diagnosis and clinical imaging	6
Orthopaedics and trauma	8
Case-analysis studies	6
Professional practice management	2
Obstetrics and gynaecology	4
Paediatrics and osteopathic care of children	4
Osteopathic technique	150
Osteopathic clinical practice	
Closely supervised osteopathic clinical practice in suitable clinical environment(s)	20
Phase 2 **Scientific and professional underpinning studies**	
Anatomy	70
Sociology	16
Health-care studies and other health-care systems	12
Principles and philosophy of osteopathy	50
Neurology/neuroscience	12
Pathology	50
Peripheral and spinal biomechanics	100
Applied physiology	140
Exercise physiology	10
Emergency support skills/first-aid	10
Clinical methods and procedures	60
Palpatory skills and diagnosis	34
Psychology/psychosomatics	10
Research studies	
Research methodology (quantitative and qualitative)	18
Critical analysis	7
Research ethics	4

Clinical/professional studies	
Case-history taking and patient communication	9
Applied clinical osteopathy	20
Differential and clinical diagnosis and clinical problem solving	20
Radiological diagnosis and clinical imaging	20
Orthopaedics and trauma	14
Case-analysis studies	15
Osteopathic evaluation and patient management	38
Professional ethics	6
Osteopathic technique	150
Nutrition & clinical dietetics	6
Osteopathic clinical practice	
Closely supervised osteopathic clinical practice in suitable clinical environment(s)	140
Phase 3 **Scientific and professional underpinning studies**	
Anatomy	40
Health-care studies and other health-care systems	8
Pathology	18
Peripheral and spinal biomechanics	100
Pharmacology	20
Principles and philosophy of osteopathy	21
Physiology	6
Neurology/neuroscience	24
Clinical laboratory techniques	4
Palpatory skills and diagnosis	6
Sociology	4
Psychology/psychosomatics	100
Research studies	
Research methodology (quantitative and qualitative) including critical statistics	36
Critical analysis	10
Dissertation/research paper	100
Clinical/professional studies	
Case-history taking and patient communication	7
Differential and clinical diagnosis and clinical problem solving	100
Professional ethics	6
Radiological diagnosis and clinical imaging	50
Orthopaedics and trauma	60
Paediatrics and osteopathic care of children	100
Osteopathic sports care	20
Case-analysis studies	18
Applied clinical osteopathic technique	150
Ergonomics	10
Osteopathic evaluation and patient management including reflective practice	13
Gynaecology and obstetrics	40
Rheumatology	12
Osteopathic care of the elderly	12
Nutrition & clinical dietetics	6

Osteopathic clinical practice	
Closely supervised osteopathic clinical practice in suitable clinical environment(s)	370
Phase 4 **Scientific and professional underpinning studies**	
Anatomy	6
Principles and philosophy of osteopathy	11
Pathology	15
Peripheral and spinal biomechanics	9
Pharmacology	40
Research studies	
Research methodology (quantitative and qualitative)	29
Critical analysis	5
Dissertation/research paper	200
Clinical/professional studies	
Case-history taking and patient communication	6
Differential and clinical diagnosis and clinical problem solving	20
Professional ethics	8
Radiological diagnosis and clinical imaging	18
Gynaecology and obstetrics	12
Dermatology	20
Orthopaedics and trauma	6
Case-analysis studies	9
Paediatrics and osteopathic care of children	12
Applied clinical osteopathic technique	150
Professional practice management	50
Osteopathic evaluation and patient management	18
Osteopathic clinical practice	
Closely supervised osteopathic clinical practice in suitable clinical environment(s)	470

3. Safety issues

Osteopathic practitioners have a responsibility to diagnose and refer patients as appropriate when the patient's condition requires therapeutic intervention that falls outside the practitioner's competence. It is also necessary to recognize when specific approaches and techniques may be contraindicated in specific conditions.

Osteopathic practitioners consider that a contraindication to OMT in one area of the body does not preclude osteopathic treatment in a different area. Likewise, a contraindication for any specific technique does not negate the appropriateness of a different type of technique in the same patient. Absolute and relative contraindications for OMT are often based upon the technique employed in each particular clinical situation.

The contraindications identified by the community of osteopathic practitioners are regrouped in function of the osteopathic techniques considered: these can be direct, indirect, combined, fluid and/or reflex-based (*1*). Direct techniques, such as muscle energy, thrust and articulatory manoeuvres, pose different risks from indirect, fluid and reflex-based techniques. There is only little published evidence on which techniques should be avoided in specific conditions. Osteopathic practitioners use their understanding of the pathophysiology of the patient's condition and the mechanism of action of the technique to establish absolute and relative contraindications that are biologically plausible. On that basis the lists below have been established.

3.1 Contraindications to direct techniques

Direct techniques, may use thrust, impulse, muscle contraction, fascial loading or passive range of motion, to achieve tissue response. They can be applied specifically to a joint or nonspecifically to a larger area of the body. Often an area that should not be treated using a direct technique may safely and effectively be treated using an alternative technique, e.g. indirect, fluid or reflex-based. There are absolute and relative contraindications to direct techniques.

Systemic conditions that constitute absolute contraindications to direct techniques

- suspected bleeding disorder;
- prolonged bleeding times;
- anticoagulant pharmacotherapy without recent evaluation of therapeutic level;
- clotting abnormalities;
- congenital or acquired connective tissue diseases that result in compromised tissue integrity;
- compromised bone, tendon, ligament or joint integrity, such as might occur in metabolic disorders, metastatic disease and/or rheumatoid diseases.

Systemic conditions that constitute relative contraindications to direct techniques

- osteoporosis;
- osteopenia.

Absolute contraindications to direct techniques specifically applied at a local site

- aortic aneurysm;
- open wounds, skin derangement, recent surgery;
- acute hydrocephalus;
- hydrocephalus without diagnostic workup;
- acute intracerebral bleed;
- acute cerebral ischemia, including transient;
- suspected cerebral arterial-venous malformation;
- cerebral aneurysm;
- abdominal pain;
- acute cholecystitis with suspected leakage or rupture;
- acute appendicitis with suspected leakage or rupture;
- acute or subacute closed head injury;
- acute intervertebral disc herniation with progressive neurological signs;
- suspicion or evidence of vascular compromise;
- suspected vertebral artery compromise;
- known congenital malformation;
- acute cauda equine syndrome;
- ocular lens implant (early post-operative period);
- uncontrolled glaucoma;
- neoplasm;
- suspected bone compromise, such as osteomyelitis, bony tuberculosis, etc, or risk of same.

Absolute contraindications to direct techniques that specifically involve thrust or impulse applied at a local site

- specific technique at the site of surgical internal fixation of the joint;
- compromised bone or joint stability, such as might occur focally in neoplasm, metastatic disease, suppurative arthritis, septic arthritis, rheumatoid diseases, osteomyelitis, bony tuberculosis etc;
- acute fracture;
- bony or intramuscular haematoma or abscess.

Relative contraindications to direct techniques that specifically involve thrust or impulse applied at a local site

- intervertebral disc herniation;
- strained ligaments at the site;
- acute acceleration-deceleration injury of the neck.

3.2 Contraindications to indirect, fluid, balancing and reflex-based techniques

Indirect, fluid, balancing or reflex-based techniques may be applied specifically to a joint or non-specifically to a larger area of the body. These techniques do not

engage the restrictive barrier. They may include fascial and soft-tissue loading or unloading, hydraulic pressures, phases of respiration and cranial or postural adjustments, as part of the application of the technique. Relative contraindications to indirect techniques usually concern the clinical-temporal profile of the problem.

Absolute contraindications to indirect, fluid, balancing or reflex-based techniques applied at a local site

- acute hydrocephalus without diagnostic workup;
- acute cerebral bleed;
- acute intracerebral vascular accident;
- suspected cerebral arterial-venous malformation;
- cerebral aneurysm;
- suspected acute peritonitis;
- acute appendicitis or other visceral disease with suspected leakage or rupture;
- recent closed head injury.

Relative contraindications to any indirect, fluid, balancing or reflex-based technique applied at the local site

- metastatic disease;
- neoplasm;
- closed head injury.

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Annex: WHO Consultation on Osteopathy, Milan, Italy, 26–28 February 2007: list of participants

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