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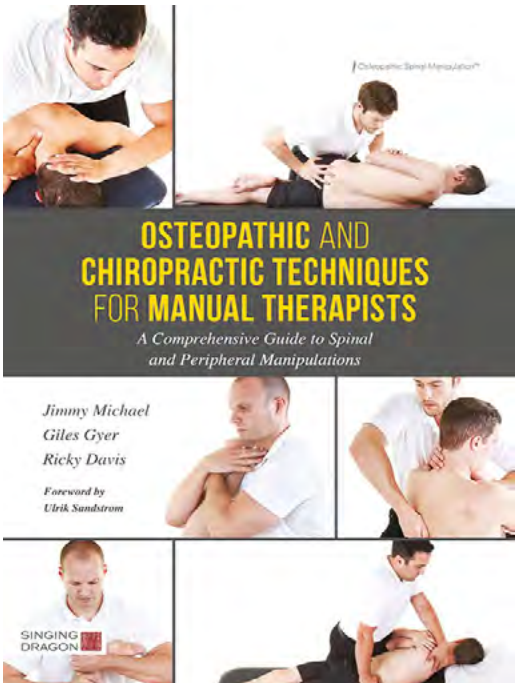

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OSTEOPATHIC AND CHIROPRACTIC TECHNIQUES FOR MANUAL THERAPISTS

A Comprehensive Guide to Spinal and Peripheral Manipulations

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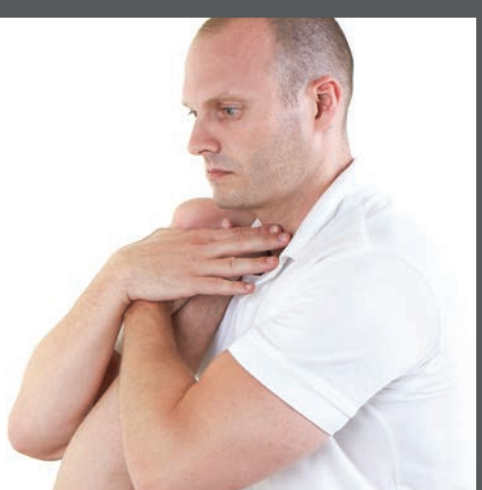
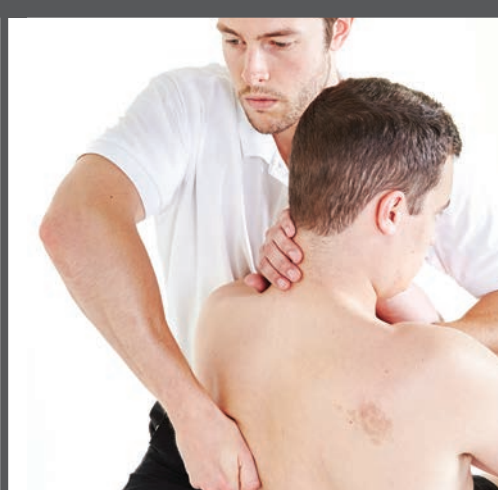
Foreword by
Ulrik Sandstrom





SINGING DRAGON

Contents

CHAPTER 1

Manipulation Therapy Theory

Introduction

Manipulation therapy is a type of physical therapy that is practised worldwide by health care professionals in various specialities, such as osteopathy, chiropractic and physiotherapy, to treat musculoskeletal pain and disability (Rubinstein *et al.*, 2011). The therapy uses drug-free, non-surgical techniques to reduce joint pressure, improve joint range of motion, restore muscle and tissue balance, promote body fluid mobilisation, decrease inflammation and enhance nerve function (Di Fabio, 1992; Cyriax, 1973). Scientific research on this modality continues; so far, a number of positive clinical findings have been reported. However, the theoretical base to support every aspect of its therapeutic use is still underdeveloped (Evans, 2010). Hence, the therapy has primarily been used for the management of a range of muscle and joint conditions.

Although the volume of research on joint manipulation has increased significantly in recent years (Bronfort *et al.*, 2008), little is understood about how this therapy works and what physiological effects it causes on various parts of the body (Evans, 2002). To date, many theories have been proposed to interpret these physiological mechanisms, but a unified theory based on scientific evidence is still lacking. However, this chapter is not written to offer a new theory based on the previous literature. Its purpose is to review features suggested to be essential components of manipulation and discuss various theories on physiological mechanisms that have been proposed up to now.

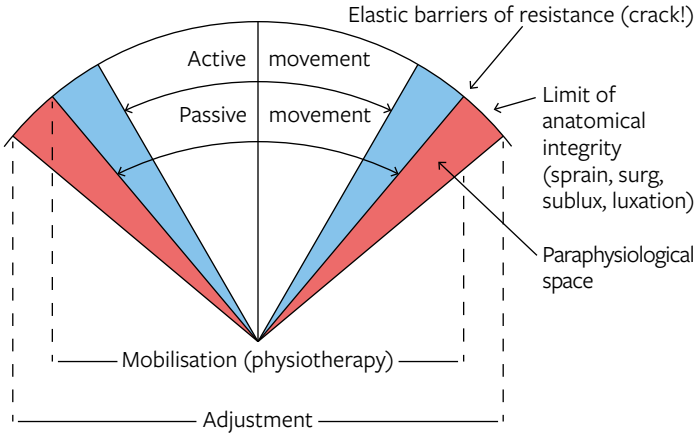


FIGURE 1.1 SANDOZ MODEL

Although some attempts have fallen short of providing a comprehensive revision to the Sandoz model (Gibbons and Tehan, 2001; McCarthy, 2001), Evans and Breen (2006) proposed a new general model of manipulation (see Figure 1.2), considering the requirement of a pre-thrust position and incorporating the 'neutral zone' into the original model. However, future research is required to test this model.

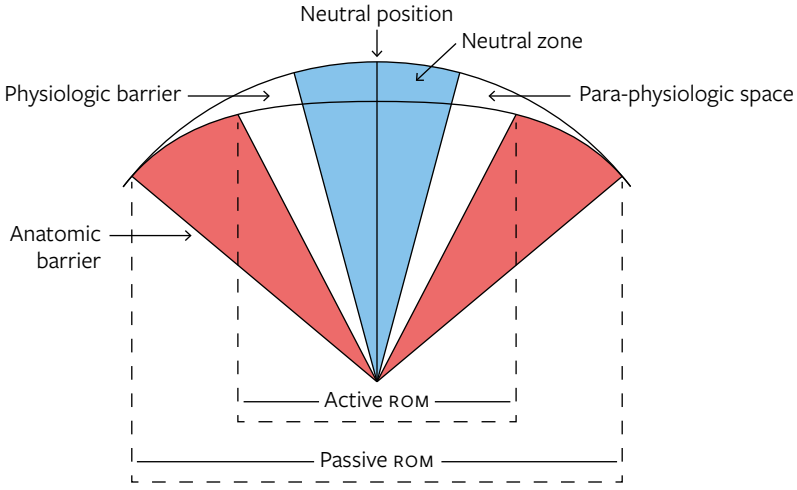


FIGURE 1.2 SCHEMATIC REPRESENTATION OF THE PROPOSED MODEL BY EVANS AND BREEN (2006)

Mechanism of Action of Joint Manipulation

Manipulation therapy has some strong clinical evidence for both acute and chronic low back pain (Bronfort *et al.*, 2004; Jüni *et al.*, 2009). However, the mechanism of action behind these clinical effects is only partly understood. Researchers have so far proposed many theories for the possible physiological mechanisms of manipulation, but scientific evidence to support these theories is still limited. This section discusses some of the noteworthy previous and current theories that have been proposed.

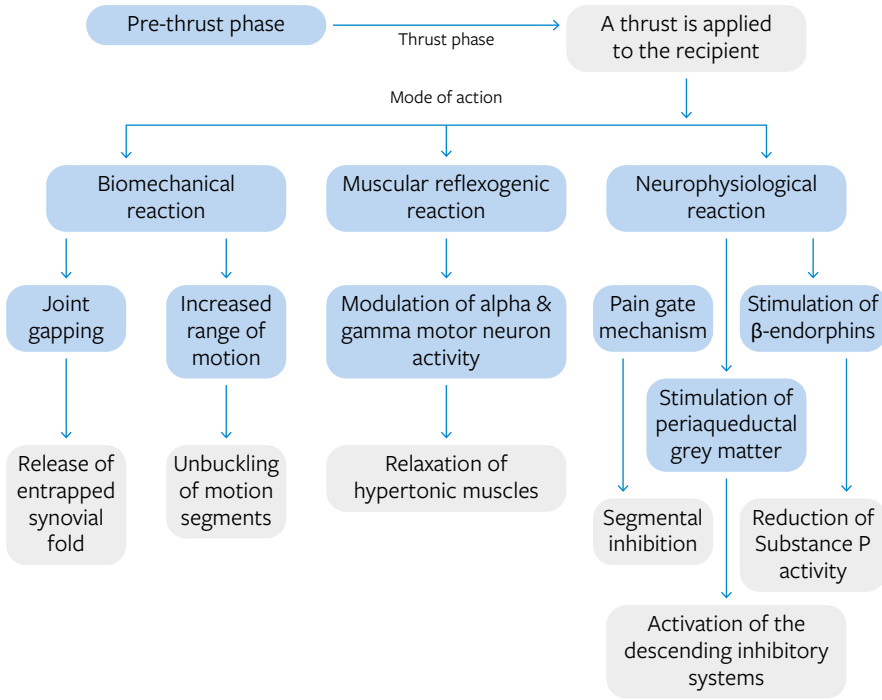


FIGURE 1.3 SCHEMATIC DIAGRAM OF THE PROPOSED PHYSIOLOGICAL MECHANISMS OF SPINAL AND PERIPHERAL MANIPULATION

Joint Gapping

The theory of joint gapping has a significant importance in understanding the mechanism of joint manipulation. It has been hypothesised that gapping of the facet joint in the spine encourages release of the entrapped meniscoid (Evans, 2002), a capsule process that fills in empty spaces and compensates the incongruence of articular surfaces (Kos, Hert

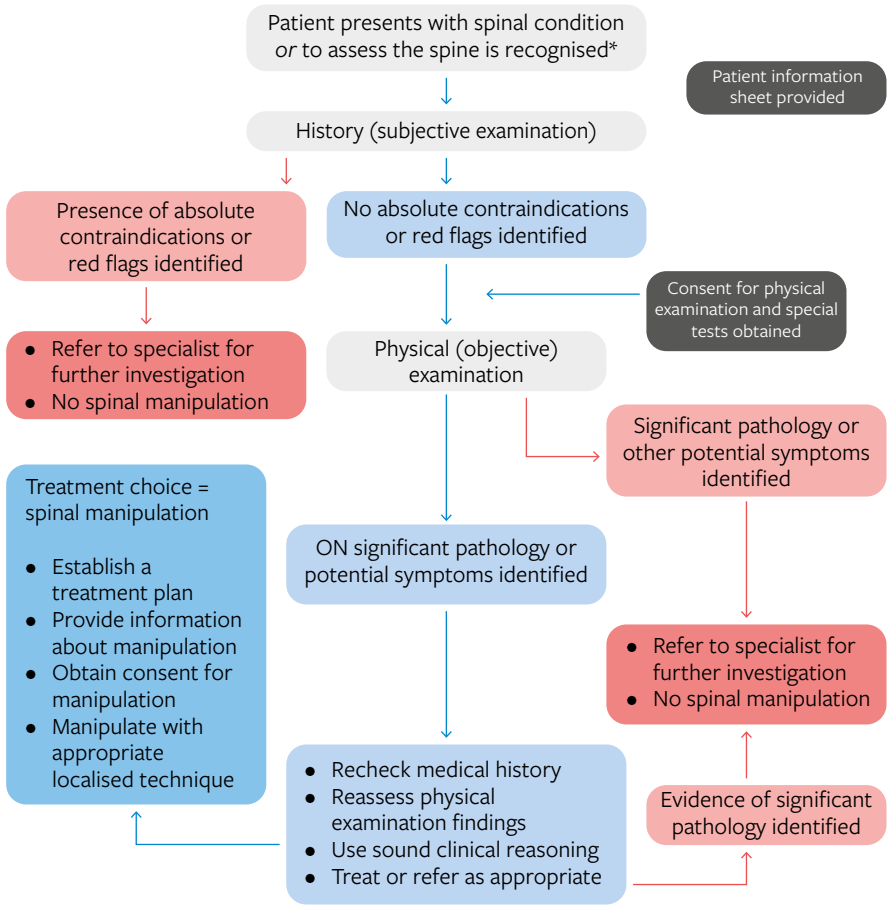


FIGURE 5.1 FLOW CHART FOR EXAMINATION OF PATIENTS PRESENTING WITH SPINAL PROBLEM

* A need to assess the spine will be recognised if the patient has a history of trauma, fever, incontinence, unexplained weight loss, a cancer history, long-term steroid use, parenteral drug abuse, and intense localized pain and an inability to get into a comfortable position (Bratton, 1999).

Vertebrobasilar Insufficiency Tests

Vertebrobasilar insufficiency (VBI) tests, also known as vertebral artery tests, are most commonly used for screening purposes before performing high-velocity thrust (HVT) and non-HVT manipulation (Magarey *et al.*, 2004; Childs *et al.*, 2005). These tests are provocative in nature. They are performed to test the collateral and vertebrobasilar blood supply to the brain in order to identify or recognise signs and symptoms of vertebral artery pathology, which may represent a pre-manipulation risk

approaches to identify whether SMT can actually cause a disc herniation. Furthermore, it is essential that more high-quality research is done on SMT, so that the benefit of spinal manipulation in the treatment of LDH can be compared with other conservative treatments, and it can be determined which patient group would benefit most from which type of treatment.

Summary

- The frequency of SMT-associated LDH, LDAT or CES is very low – 1 per 37 million manipulations.
- LDH, LDAT and CES have a strong genetic component, often occur spontaneously and may have a natural history of evolution independent of lumbar SMT. Appropriate diagnosis of pre-existing and presenting condition, thorough physical examination and accurate record keeping are therefore recommended to avoid potential temporal associations.
- Lumbar spine flexion should be avoided when performing rotational lumbar SMT techniques.
- Grade 5 rotary or high-velocity thrust (HVT) manipulations performed in acute DLBP or in cases of non-contained bulge or sequestered LDH may have medico-legal consequences. Therefore, they should be avoided.
- Use of gentle, long-axis stationary and manual traction techniques such as Cox, Leander and McManis, with usual precautions, may represent more conservative management options.
- Feedback from an alert and awake patient enhances safety. Because lumbar MUA increases the risk of serious SMT complications, it should therefore be avoided.

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