

The Bowen Technique – Mechanisms for Action

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ABSTRACT

The efficacy of the Bowen Technique can be explained by its action on a variety of structures in the body. Bowen moves stimulate several types of intrafascial mechanoreceptors that affect muscle tonus and increase vagal tone. The type of move used in Bowen also assists the hydration of fascia, which in turn encourages better vascular and nerve supply.

THE BOWEN TECHNIQUE

The technique developed by Thomas A. Bowen (1916-1982) is unusual in that it affects tissues in a variety of ways simultaneously. Its effect is not limited to relaxing tight muscles or increasing hydration in the fascia but it can also be used to increase tonus in the core muscles and contractile strength within the fascia and to initiate a lowering of sympathetic tone in the autonomic nervous system.

To understand how the Bowen Technique works it is useful to examine the varied role of connective tissue, and particularly fascia, in the body. For example, one of fascia's crucial functions in efficient locomotion is its property of recoil, which depends on good hydration (an important effect of Bowen work). This can be seen clearly in the thoraco-lumbar aponeurosis, which is the starting point for a lot of Bowen work. In walking and running, this area of fascia acts as a kind of 'bungee' and greatly reduces the amount of effort that is needed to exert via the muscular system. This is demonstrated in the movement of animals such as kangaroos, lemurs and gazelles as well as humans.¹ Where this recoil property is compromised through a lack of hydration and reciprocal tension in the fascia, certain movements like running and walking require more exertion through the muscular system. Change in the quality of the lumbar aponeurosis is also considered an important factor in lower back pain as this area is highly innervated with sensory receptors. In fact, fascia is the most richly innervated tissue in the body, being effectively its largest sense organ, with the highest density of proprioceptors² as well as being the key tissue addressed in Bowen treatments.³

The Bowen Technique has a very specific effect on fascia. Primarily, Bowen moves are made directly on muscles (although some moves are also performed on tendons, ligaments, joints and nerves), but because all these structures are surrounded by a network of fascia, it is inevitable that whatever structure is activated, the fascia that surrounds it (and is integral to it), is affected at the same time, albeit with slightly different physiological effects.

Apart from the sensory receptors in the skin such as Merkel's Discs, Meissner's corpuscles and Free Nerve Endings, there are key intra-fascial mechanoreceptors that are activated during a treatment. These are largely Golgi, Ruffini and Interstitial receptors. Occasionally, Bowen moves involve a fast release of pressure, which affects the Pacini receptors (involved in proprioception), but these types of move are rare. Mostly, Bowen moves involve taking skin slack, applying a challenge (or gentle push) for a few seconds, and a slow steady move over the structure being addressed. Bowen moves mostly consist of a type described by Schleip² as 'slow melting pressure'. These types of move strongly affect the numerous Ruffini receptors, which are found in the skin and in many deep tissues of the body including the lumbar fascia, dural membranes, ligaments and joint capsules etc. Slow moves over these structures have a lowering effect on the sympathetic nervous system (SNS)⁴ and induce a profound sense of relaxation in the client. Other receptors that induce a decrease in the SNS and corresponding increase in vagal tone, are the interstitial receptors, which are found nearly everywhere in the body. Some of these receptors (particularly the nociceptors) are high-threshold, and known to be involved in chronic conditions, but interestingly about 50% of these receptors are low-threshold fibres and are sensitive to the kind of very light touch (similar to skin brushing) that is used in some Bowen moves. This mechanism explains the deep relaxing effect of Bowen treatments and the crucial healing effect of increased vagal tone.⁵

On a more structural level Bowen moves affect the Golgi receptors (found in myo-tendinous junctions,

ligaments and the deep fascia) by using slightly more pressure and longer holding times, and by working close to origins and insertions. It has been suggested that manipulation of these receptors causes the firing of alpha motor neurons resulting in a softening of related tissues. This process also seems to happen via gentle stretching of the tissues such as in yoga.⁴

Muscles themselves are stimulated by the 'challenge' in a Bowen move, which activates the muscle spindles in response to the stretch on the muscle fibres. Much of this response is mediated at the level of the spinal cord but some impulses do make their way to various areas of the brain like the cerebellum, the basal ganglia, the reticular formation and the brain stem, before being co-ordinated in the thalamus and sent back down the various motor nerve tracts to the muscles or organs.³

It takes around 90 seconds for muscles to respond in this way, so it is interesting that it is normal practice for Bowen therapists to leave a two minute break (and sometimes longer) between the various activations or moves. It would appear that by inputting targeted, but minimal sensory stimulus during a Bowen session without extraneous interference, it allows the body to re-calibrate. For example Dietz et al⁶ have shown that the CNS can reset Golgi tendon receptors and related reflex arcs so that they function as delicate antigravity receptors.⁴ One thing students of the Bowen Technique are taught is always to get clients up at the end of a treatment so that both feet land on the ground at the same time, thereby stimulating a response in the many Golgi receptors in the plantar fascia of the feet.

Certain factors are important for a successful Bowen treatment, critically that there is not excessive stimulation of the CNS by an unnecessary number of moves or distracting the client. This is particularly important when there is a general sensitization of nerve pathways and tissues as is the case in chronic pain, which is why a favorite Bowen maxim is 'less is more'. Bowen also affects the fascia directly through encouraging hydration, as this process is assisted by gentle stretching, repetitive squeezing and release with pauses, (ie pressure applied and then waiting) – all elements of a Bowen treatment. The waiting time would appear to be essential as there is a significant increase in hydration after half an hour.⁷

CONTRACTILE PROPERTIES OF CONNECTIVE TISSUE

When looking at possible mechanisms for how the Bowen Technique works, it is important to differentiate how touch and manipulation affect muscle contraction (or lack of tonus) as opposed to connective tissue contracture (or in the case of some hyper-mobile clients, a potential lack of contractile properties in the tissues). Muscle contraction is a high-energy shortening of tissues, whereas contracture of connective tissue is a 'slow, (semi) permanent, low-energy, shortening process, which involves matrix-dispersed cells and is dominated by extracellular events such as matrix remodeling.'⁸

For efficient functioning of the human system connective tissues need to hold certain contractive patterns to maintain stability. In dissection you can see clearly that all connective tissues are under stress – for example dissected nerves and blood vessels have a length of around 25 – 30% less than their in situ length.⁸

Myofibroblasts play an essential role in maintaining reciprocal tension networks in the connective tissues, being a type of fibroblast, the 'building block' cell of fascia, which have the characteristics of smooth muscle. The constructive tension within the connective tissue is an essential element of the body's biotensegrity system⁹. Myofibroblasts are affected in many kinds of connective tissue disorders such as Dupuytren's and frozen shoulder. Bowen affects Myofibroblasts directly as they contract and expand slowly in response to factors such as pH and stress.² This occurs over a period of minutes or hours and so expansion or relaxation of myofibroblast activity will certainly occur during the length of a Bowen treatment (normally around 45 minutes) as the person relaxes. Soft-tissue techniques such as the Bowen Technique rely on effecting structural change by directly influencing the biotensegrity aspect of the connective tissue via their action on myofibroblasts, which is partly why Bowen has such a powerful and measurable effect on posture.

There is a number of different techniques available to the Bowen therapist that will be used depending on what outcomes are necessary for a given client in a given situation. For example, moves can be done faster or slower, with longer or shorter challenges, deeper or lighter pressure, medially or laterally, or anteriorly or posteriorly. All these factors will have different effects