

Joints and muscles

Normal pain-free function is a major part of the therapeutic objective of most bodyworkers. The range of systems, techniques and methods of therapeutic intervention that claim to achieve these ends are numerous, but are they equally useful and successful in achieving their objectives?

Take the seemingly endless debate between those who apply themselves to restoration of normal function to restricted joints as a primary focus, to whom the soft tissues are of secondary importance, and those practitioners/therapists who see the soft tissues as the primary culprits in producing most joint dysfunction.

While Janda (1988) acknowledges that it is not known whether dysfunction of muscles causes joint dysfunction or vice versa, he points to the undoubted fact that they massively influence each other, and that it is possible that a major element in the benefits that follow joint manipulation derives from the effects such methods (high velocity thrust, mobilization, etc.) have on associated soft tissues.

Steiner (1994) has discussed the influence of muscles in disc and facet syndromes and describes a possible sequence as follows:

- A strain involving body torsion, rapid stretch, loss of balance, etc. produces a myotatic stretch reflex response in, for example, a part of the erector spinae.
- The muscles contract to protect excessive joint movement, and spasm may result if (for any of a range of reasons) there is an exaggerated response and they fail to assume normal tone following the strain.
- This limits free movement of the attached vertebrae, approximates them and causes compression and bulging of the intervertebral discs and/or a forcing together of the articular facets.
- Bulging discs might encroach on a nerve root, producing disc syndrome symptoms.
- Articular facets when forced together

produce pressure on the intra-articular fluid, pushing it against the confining facet capsule, which becomes stretched and irritated.

- The sinuvertebral capsular nerves may therefore become irritated, provoking muscular guarding, initiating a self-perpetuating process of pain-spasm-pain.

Steiner continues, 'From a physiological standpoint, correction or cure of the disc or facet syndromes should be the reversal of the process that produced them, eliminating muscle spasm and restoring normal motion.'

He argues that before discectomy or facet rhizotomy is attempted, with the all-too-frequent 'failed disc syndrome surgery' outcome, attention to the soft tissues and articular separation to reduce the spasm should be attempted to allow the bulging disc to recede and/or the facets to resume normal motion. Clearly, osseous manipulation may be capable of achieving this objective, but there is evidence that soft-tissue approaches may also produce excellent results (Brodin 1982).

Lewit (1985) has addressed this controversy in an elegant study that demonstrated that some typical restriction patterns remain intact even when the patient is observed under narcosis with myorelaxants. He tries to direct attention to a balanced view when he states, 'The naive conception that movement restriction in passive mobility is necessarily due to articular lesion has to be abandoned. We know that taut muscles alone can limit passive movement and that articular lesions are regularly associated with increased muscular tension.' He then goes on to point to the other alternatives, including the fact that many joint restrictions are not the result of soft-tissue changes. He uses the examples of those joints not under the control of muscular influences: tibiofibular, sacro-iliac, acromioclavicular. He also points to the many instances when joint play is more restricted than normal joint movement. And since joint play is a feature of joint mobility that is not subject to muscular control the conclusion has to be made that there are often joint problems that have the soft

tissues as a secondary factor in any general dysfunctional pattern of pain and/or restricted range of motion (blockage). 'This is not to belittle the role of the musculature in movement restriction, but it is important to reestablish the role of articulation, and even more to distinguish clinically between movement restriction caused by taut muscles and that due to blocked joints, or very often, to both.'

Liebenson (1996) sums up the debate: 'Certain muscles typically react when specific joints are injured or dysfunctional. This relationship can work in either direction in that impairment in a muscle or joint will eventually lead to some compensatory change in its functional partner. Clearly, if a muscle is shortened or overactive, increased pressure and strain develop in the joint capsule and tendoperiosteal junction. Also a muscle that is inhibited and weak is associated with poorer stability for the related joints, with compensatory fixations or even hypermobility resulting.' Here is the voice of reason: muscles profoundly influence joint restriction; joint restrictions profoundly influence muscles. Appropriate treatment of one helps to normalize the other.

REFERENCES

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