

**Excerpt from Dental Practice Report May 2005 Article,
“Compromising Positions: Exercises that can Improve or Worsen Dental
Professional’s Health” by B. Valachi**

Unbalanced muscles

In order to perform the precision tasks of dentistry, the arms must have a stable base from which to operate. For example, dentistry requires excellent endurance of the shoulder girdle stabilizing muscles, (especially the middle and lower trapezius muscles) for safe shoulder movement and working posture (Fig 1B). These shoulder stabilizing muscles tend to fatigue quickly with forward head, rounded upper back and elevated arm postures—all commonly seen among dentists. When these muscles fatigue, other muscles (upper trapezius, levator scapula and upper rhomboids) must compensate and become overworked, tight and ischemic⁷ (Fig 1B).

This muscle imbalance may result in ‘tension neck syndrome’, a frequently diagnosed disorder among dentists. Symptoms include pain, tenderness and stiffness in the neck and shoulder musculature, commonly with pain that radiates between the shoulder blades or up into the occiput. Two contributing factors to tension neck syndrome in dentistry are forward head and elevated arm postures.

Another common imbalance among dentists is in the shoulder, caused by over-strengthening the deltoid and supraspinatus muscles. These muscles already tend to be strong in dentists due to frequent postures with the arms lifted away from the sides of the body. This imbalance can cause improper movement of the shoulder joint and scapula, with subsequent pain.

The muscle imbalance that tends to develop between the abdominal and low back muscles is especially problematic in seated dentistry. Leaning toward a patient repeatedly with rounded back posture can cause strain and overexertion in the superficial low back extensors, while the deep stabilizing abdominal muscles (transverse and oblique abdominals) tend to become weaker.

The core of the problem

In a society that bombards us with exercise options, from *Ab-blasters* to *Bun-busters*, it's hard to imagine that strengthening your muscles could be anything but beneficial. Yet, because of the muscle imbalances described above all exercise is not necessarily good exercise for dentists. Due to their vulnerability to muscle imbalances, most dentists should focus on specific strengthening of the core stabilizing muscles of the shoulder and trunk (Figs 1A&B, in blue) and avoid over- strengthening muscles already prone to imbalance, tightness, ischemia and pain (Figs 1A&B, in red).

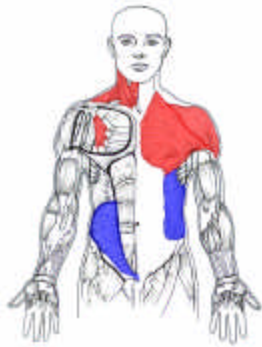


Fig 1A

Anterior Imbalances



Fig 1B

Posterior Imbalances

The core muscles of the trunk and shoulder girdle are designed to provide a firm and safe foundation from which the arms (and legs) can move. Core strengthening is the cornerstone of Pilates, a program which offers many benefits to dentist's musculoskeletal health. Working on a swiss exercise ball also targets the core muscles by creating an unstable base of support from which to move. Regardless of the avenue you take to get there, you should be aware of certain exercises that can worsen imbalances and make your muscles miserable.

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