

# **The 6 Keys to Wellness in Dentistry:**

## **Essential Steps to Improve Your Musculoskeletal Health**

**By Bethany Valachi, PT, MS, CEAS**

Developing and managing good musculoskeletal health in dentistry can be a challenge. Dental professionals are prone to unique muscle imbalances and require special exercise and ergonomic interventions to maintain optimal health during the course of their career. In a society where we are barraged with a plethora of health aids, ranging from Ab Blasters to Bun Busters, selecting the right intervention to optimize your health can be a confusing task. Combine this with the relatively free use of the word ‘ergonomic’ by dental manufacturers and the project can be a daunting one.

It is important to not only know what are effective interventions, but in what sequence to implement them. Here are my **6 Keys to Wellness** to help you work more comfortably, with less fatigue and extend your career.

**1. ‘Ergonomize’ your operatory.** It is all too common to observe dental professionals spending money on special therapy, expensive gadgets or exercise routines, only to return to the operatory environment that likely caused the pain problem in the first place. It is no surprise that the pain syndrome usually returns, and round and round it goes... So, first and foremost, you need to correct the ergonomic problems in your operatory. However, before you invest in ergonomic equipment, you need to know the specific ergonomic criteria for selecting stools, loupes and chairs that will benefit your health and not *worsen* it.

A helpful and inexpensive way to begin this process is with the dental ergonomic book, *“Practice Dentistry Pain-Free: Evidence-based Strategies to Prevent Pain and Extend Your Career”*.\*\* You will find not only equipment selection criteria, but helpful interventions for specific neck, back, shoulder and hand/wrist pain syndromes, patient positioning guidelines, equipment adjustment, front office and assistant chapters. Take advantage of the free

unbiased dental ergonomic *Product Reviews* on the Posturedontics website as well. A good resource for operator design and layout is Dr. David Ahearn's website at [www.desergo.com](http://www.desergo.com). Finally, a book by Finkbeiner, "*Four-handed Dentistry*" contains a helpful chart for patient positioning for specific tooth surfaces and quadrants. If you'd like to get your entire team on the 'same page' with regard to operator ergonomics, consider showing the lecture DVD, "*Neck, Back & Beyond: Prevent Pain for Peak Productivity*"\*\* at your next team meeting.

**2. Pick the right healthcare professional.** If you have had persistent chronic pain for longer than six to eight weeks, you should probably consult a healthcare professional.

So who is the 'right' healthcare professional? The first person most of us turn to when we are in pain is our primary care medical physicians. While physicians receive a tremendous (and very respectable!) amount of training in medical school, they cannot be specialists in every area. Their schooling in therapeutic rehabilitation is quite limited, yet many PCPs are making treatment decisions (surgery, medication, therapy, injections) that can profoundly impact your musculoskeletal health, quality of life and your career longevity.

It may be helpful to bring the book, "*Practice Dentistry Pain-Free*" to a healthcare professional who understands soft tissue, muscle imbalances and trigger points. This may help bridge the gap of knowledge between your occupational demands and your healthcare professional. Consider requesting a referral to one of the following healthcare professionals for chronic pain problems.

**Physical therapist (PT).** Physical therapists perform differential tests and evaluations to determine the origin of pain syndromes. They work to regain normal movement and function of the body through use of various modalities, hands-on techniques and exercises. A cornerstone of physical therapist treatment is patient education to prevent re-injury. Most physical therapists have a master's or doctorate degree.

**Certified hand therapist (CHT).** A certified hand therapist is an OT or PT who has a minimum of five years of clinical experience, including 4,000 hours or more in direct practice in hand therapy and has passed a comprehensive certification test. If you suspect your problem originates in the hand, wrist or arm you may want to request a referral to this specialist.

**Certified neuromuscular therapist (CNMT).** Neuromuscular therapy utilizes specific soft tissue manipulation techniques, flexibility stretching, joint mobilization, neuromuscular reeducation, client education and home care to eliminate the causes of most neuromusculoskeletal pain patterns. Certification for neuromuscular therapy involves an intensive 10-day seminar series and post-test. A CNMT is usually a physical, occupational or massage therapist.

There are numerous other alternative treatments that may be beneficial as well, such as intramuscular stimulation (IMS), occupational therapist, acupuncture, craniosacral, chiropractic and biofeedback.

**3. Resolve trigger points.** Major trigger points should be resolved before any strengthening exercise is attempted. Painful trigger points are common among dental operators due to several risk factors, including body asymmetry, poor postures, poor body mechanics, repetitive movement, lack of movement, sustained muscle contraction and mental stress. Unfortunately, trigger points are one of the most frequently misunderstood causes of pain and are often the cause of “mysterious” pain syndromes that may be overlooked in traditional Western medicine.



**Fig. 1: Common trigger points and pain referral patterns in dental operators. Left) An upper trapezius trigger point, and, Right) levator scapulae trigger points. (Travell, Simons. *Myofascial Pain and Dysfunction: The Trigger Point Manual*. Ed.—Johnson EP. Wilkins & Wilkins; 1999. Reproduced with permission.)**

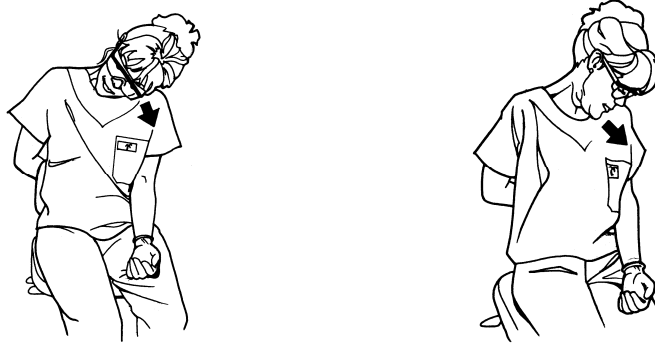
Among dentists and hygienists, trigger points occur in numerous muscles—far too many to discuss in this brief report. Examples of two common areas where trigger points frequently occur are in the upper trapezius and levator scapulae muscles. Trigger points in the upper trapezius muscles refer a tension neckache or a common ‘headache behind the eye’ that will not resolve with medication. Levator scapulae trigger points can cause pain and stiffness in the crook of the neck and shoulder.

In the operator, trigger points can develop from improper positioning, poorly adjusted scopes and a myriad of other ergonomic pitfalls. Specific operator modifications are, therefore, frequently necessary to avoid recurrences of specific trigger points. If allowed to persist untreated, some trigger points can cause compression on nerves and contribute to more severe syndromes such as thoracic outlet syndrome, pronator teres syndrome and numerous other dysfunctions. It is important to relieve trigger points as soon as possible to restore nutrient flow to the muscle, prevent muscle imbalances and prevent compression on nerves.

There are various methods to treat trigger points, and oftentimes a professional healthcare professional may be indicated for severe cases. However due to costs, time constraints or convenience, self-treatment is often the most practical and economical consideration. You can treat the pain immediately, don’t have to wait for an appointment, don’t pay for the treatment and don’t have to depend on someone else. Self treatment of trigger points is described in the “*Chairside Stretching and Trigger Point Therapy*” DVD kit,\*\* which includes the Backnobber, a trigger point self-treatment tool. Another very helpful resource is the “*Trigger Point Therapy Workbook*” by Davies,\*\* which helps target problematic trigger points. The trigger points and referral patterns for dozens of muscles are illustrated, with specific interventions.

**4. Develop Good Flexibility.** Chairside stretching and stretching at home will help you regain full range of motion and prepare you for strengthening. Overstretching muscles with active trigger points may cause micro-tearing of muscle, which is why stretching is recommended *after* trigger point treatment.

The most effective combination is to perform trigger point therapy on the painful trigger point, then immediately follow it with a sustained stretch of 60 seconds.



**Fig 2. Examples of 2 stretches from the “Chairside Stretching” DVD kit. Left) Upper trapezius stretch and, Right) Levator scapulae stretch.**

Since dental professionals are prone to muscle imbalances, it is important to ensure you are targeting the *correct muscles* with your stretching. Rather than stretching muscles that are already elongated, focus on the muscles that tend to become short, tight and ischemic. Twenty chairside stretches designed for dental professionals are demonstrated in the “*Chairside Stretching and Trigger Point Therapy*” DVD kit.\*\* (Fig. 2)

Safe stretching guidelines are important and include:

- Gentle stretch, with no pain
- Hold for two to three breath cycles. Repeat.
- Perform daily.

Chairside stretching is an important strategy to perform throughout the workday to prevent microtrauma and muscle imbalances. Stretching is especially important after prolonged static postures, and even more so if awkward positions were assumed. Certain types of yoga are also excellent ways to develop and maintain flexibility outside the operatory.

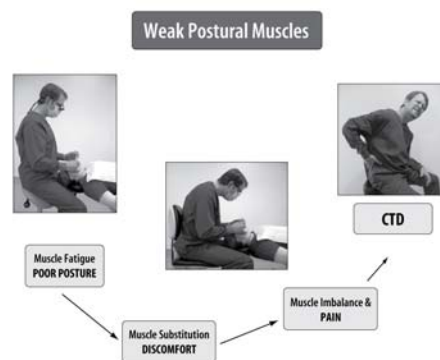
**5. Strengthen Specific Stabilizing Muscles.** Studies show that dentists with better endurance of the back and shoulder girdle muscles have less musculoskeletal pain. However, if you over-strengthen muscles with trigger

points, your pain may worsen, which if why this is the 5<sup>th</sup> step in our sequence. Consider waiting till the area is pain-free to begin strengthening.

Because of their vulnerability to muscle imbalances, *all strengthening exercise is not necessarily good exercise for dental professionals*. Some of the worst pain problems I have seen resulted from a dental professional who followed a ‘generic’ exercise program designed by a personal trainer at their gym. The exercise needs of dental professionals are very specific, and while certain key muscle groups should be targeted, others should be very cautiously approached or eliminated altogether in an exercise regimen.

Numerous studies support *endurance exercise* over strength training for dental professionals. In dentistry, it is imperative to have proximal stability--when these postural “stabilizer” muscles become fatigued, not only can the operator slump into less than optimal posture, but the “mover” muscles are called upon to perform a stabilizing task for which they are not designed, (a.k.a., muscle substitution). Muscle imbalances can develop that cause painful trigger points and muscle spasms to develop in the inappropriately used muscle. Also, joints may not move normally due to the abnormal muscular tension, causing pre-mature degeneration of joint surfaces and inflammation of the muscles or tendons. Over time, weak postural stabilizing muscles in dental professionals may ultimately lead to a CTD. (Fig. 3)

You will find twenty exercises that target the key muscle groups with endurance training in the “*Smart Moves for Dental Professionals On the Ball*” DVD kit.\*\*



**Fig. 3: Weak postural stabilizing muscles in dental operators may ultimately lead to a cumulative trauma disorder (CTD). (©2009 Reprinted from “Practice Dentistry Pain-Free”-Valachi, Posturedontics Press)**

**6. Be patient.** Allow several weeks to a month to see improvement: Your condition took a long time to get this way, so don't expect instant results. Be patient, but most of all commit yourself to a regular regimen of prevention strategies in and out of the operatory. The good news is that you *can* usually treat, manage and prevent chronic pain in dentistry!

*\*\*These products are available at [www.posturedontics.com](http://www.posturedontics.com).*



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