Dentistry Shouldn’t be a Pain in the Neck:
Ergonomic and Wellness Strategies to Prevent Pain and Extend Your Career

Written by Bethany Valachi, PT, MS, CEAS
Educational Objectives
The overall goal of this article is to provide the reader with information on the prevention of occupational musculoskeletal injury to the neck and shoulder.

Upon completion of this course, the dental professional will:
1. Know the risk factors that lead to tension neck syndrome, rotator cuff impingement and trapezius myalgia
2. Know the unique muscle imbalances to which dental professionals are predisposed
3. Know the importance of selecting the proper exercises, equipment, and positioning to optimize your musculoskeletal health
4. Understand how to implement these powerful strategies both in the operatory and at home.

Abstract
Three out of four dental professionals experience chronic neck and shoulder pain that can affect quality of life, productivity, or career longevity. Proper movement in the neck and shoulder is essential to the delivery of dental care and in performing everyday activities. Keys to success in preventing neck and shoulder injuries and pain include maintaining a neutral head posture, maintaining a neutral shoulder posture with the patient positioned at an appropriate height, using chairs with armrests, developing muscle endurance for specific neck and shoulder muscles, using indirect vision, using loupes or procedural microscopes, as well as taking frequent breaks and stretches.

Introduction
The reported incidence of neck pain among dentists and hygienists is up to 71 percent and 82 percent respectively, with female dental professionals experiencing slightly higher frequencies of pain than their male counterparts.1,2 Poor posture, movement or imbalances in the neck or shoulder can result in one of the three most prevalent pain syndromes seen in dentistry: tension neck syndrome, rotator cuff impingement or trapezius myalgia.

“Learning by experience often is painful—and the more it hurts, the more you learn.”
- Ralph Banks

The neck and shoulder are intimately connected and profoundly influenced by each other via the musculoskeletal and neuromuscular systems. Proper movement in the neck and shoulder is essential to the delivery of dental care and in performing everyday activities. For dental professionals, maintaining optimal neck and shoulder musculoskeletal health means understanding the unique muscle imbalances to which you are prone and how various working postures, positions, adjustment of ergonomic equipment and exercise can positively or negatively affect your musculoskeletal health.

Tension Neck Syndrome
Tension neck syndrome (TNS) results in pain, stiffness and tenderness in the neck and trapezius muscles, often with muscle spasms or tender trigger points.3 These symptoms may not always be localized in the neck; pain can occur between the shoulder blades, radiate down the arms or up into the base of the skull. Headaches also are a common symptom of TNS. Forward head posture is a primary contributing factor to TNS, a problem frequently seen among dentists and hygienists due to years of poor posture involving holding the neck and head in an unbalanced forward position to gain better visibility during treatment. Neck pain has in fact been shown to be associated with any job where forward head posture is 20 degrees or more for 70 percent of the working time.4 On average, dentists and hygienists work with forward head postures of at least 30 degrees for 85 percent of their time in the operatory.5 Poor endurance of the neck stabilizing muscles can worsen this pain in occupations where forward head postures are required.5

Neutral head posture is ear-over-shoulder when viewed from the side. Forward head posture occurs when the natural curve at the back of the neck is put out of balance by the sustained weight of the head (often as heavy as a bowling ball—about eight to 12 pounds) in the forward position. This can triple the strain on the neck and upper back structures.

Muscle imbalances
Occupations such as dentistry, where forward head and rounded shoulder postures are common, predispose workers to a unique muscle imbalance that is a primary contributor to TNS, thoracic outlet syndrome and numerous other myofascial pain syndromes.6 This imbalance develops between the neck and shoulder muscles that stabilize, and those that move.7 The delivery of dental care requires excellent endurance of the primary shoulder girdle stabilizing muscles to perform fine motor skills distally for prolonged periods of time. These muscles tend to fatigue quickly and weaken with prolonged forward head and rounded shoulder posture. (Fig. 1)

Figure 1. Musculature of the shoulder region

Shoulder girdle stabilizers (left) tend to weaken quickly with forward head and rounded shoulder postures. Other muscles (right) must compensate and become ischemic and painful.8
When the stabilizing muscles fatigue, other posterior muscles must compensate, performing postural jobs for which they were not designed. These muscles become overworked, tight and ischemic, resulting in improper movement of the shoulder blade, and neck or shoulder pain. Meanwhile, anterior “mover” muscles become short and tight, further pulling the head forward. (Fig. 1) Ligaments and muscles eventually adapt to this poor head posture, which can make proper, neutral head postures uncomfortable. The cycle of muscle imbalance perpetuates as tight muscles become tighter and weak muscles become weaker. Because major nerves and blood vessels to the arm run behind these tight muscles, entrapment syndromes may occur as a result of pressure on these neurovascular structures. Since dental professionals are predisposed to this imbalance, discretion is advised when selecting exercises that impact the neck and shoulder. Specific exercises are recommended that target this imbalance, while certain generic gym exercises may actually worsen this imbalance and pain.

Cervical Instability
Forward head posture can cause instability in the cervical spine, and lead to flattening of the neck curve, especially among women. As muscles, ligaments and tendons stretch, shorten and weaken to adapt to forward head posture, compression on the discs increases, raising the risk of disc injury or herniation. Cervical muscles may spasm and become inflamed as they work overtime to hold the head in an unbalanced posture. Once the cervical curve becomes flattened, you will likely need the help of a licensed healthcare practitioner to help restore the natural curve. Cervical instability can also be worsened by performing certain exercises that strengthen the anterior neck and chest muscles. Motor vehicle accidents and whiplash can be debilitating in any job, but especially so in dentistry. The added instability these injuries produce places dental professionals, who are already prone to cervical disorders, at an even higher risk for developing future neck and shoulder problems. Therefore, it is imperative that car accident victims place an especially high priority on all neck and shoulder prevention strategies.

Left untreated, years of forward head posture can lead to cervical spondylosis, a degenerative condition involving osteoarthritis of the cervical spine. In several studies conducted on dentists, the cervical vertebrae have actually slipped forward on each other due to this imbalance. One Finnish radiographic study sampled 119 dentists, and revealed that more than half had spondylosis of the cervical spine. The condition has numerous potentially disabling effects, the most notable being compression of the spinal cord, leading to pain, numbness and tingling in the arms and hands.

Rotator Cuff Impingement
Symptoms of rotator cuff impingement include shoulder pain with overhead reaching, lifting, getting dressed and/or when sleeping on the affected arm. Negligible pain combined with acute weakness may indicate a complete rotator cuff tear. Rotator cuff impingement causes gradual wearing of the tendon that passes between the humerus and acromion process, due to frequently lifting the arms away from the sides (shoulder abduction) or moving the arm improperly. Muscles that lift, or abduct the humerus must be balanced with the muscles that stabilize the humerus in the shoulder joint to allow proper movement and help to keep the tendon from becoming “pinched” between the humerus and acromion process. (Fig. 2)

When properly balanced, the rotator cuff muscles rotate the head of the humerus in the shoulder joint when lifting the arm, keeping it centered and avoiding impingement. (Fig. 3a) If the stabilizing muscles are weak, or if the mover muscles become stronger than the stabilizing muscles, this causes the humerus to roll upward into the acromion and pinches the tendon in-between, resulting in damage to the tendon. (Fig. 3b)
Figure 3. (a) Proper movement of the head of the humerus when lifting the arm (b) Impingement occurs when rotator cuff muscles become imbalanced.

Dental-care workers typically injure the rotator cuff via accumulated microtears from overuse due to frequently abducted shoulder postures. The microtears result in instability (muscle weakness) which leads to impingement, which can eventually lead to a complete tear of the rotator cuff tendon. Shoulder abduction beyond 30 degrees can impede blood flow to the supraspinatus tendon, causing ischemia.11 (Fig. 4) Dentists and hygienists tend to abduct the left shoulder more than the right,5 (more than 50 percent of the time) probably due to positioning challenges and using the mirror to retract soft tissue.

Figure 4. Lifting the shoulders out to the sides (shoulder abduction) is common in dentistry, and can lead to rotator cuff impingement.

Shoulder abduction is especially exaggerated in the 10 o’clock position while treating the buccal surface of the upper left quadrant, and in the 8 o’clock position when treating large-chested patients, patients who cannot tolerate reclined positions, or when working without a rubber dam. Excellent endurance and balance of the rotator cuff muscles is imperative to prevent microtears in this tendon. Improper strengthening of the shoulder and chest muscles can easily predispose dental professionals to this syndrome or worsen existing conditions. Ignoring this type of shoulder pain can lead to stiffness, tendonitis, partial rotator cuff tear, and, eventually, a complete tear. Once torn, surgery is almost always required.

Trapezius Myalgia

The large, flat triangular-shaped muscle between your shoulder and neck is called the upper trapezius. The delivery of dental care places high demands on this muscle, and can result in a painful condition called trapezius myalgia. Symptoms include pain, spasms, tenderness or trigger points in the upper trapezius muscle, often on the side of the mirror, or retracting arm. (Fig. 5) Trigger points in these muscles can cause referred pain that extends up one side of the neck, as well as referred headaches behind the eye.12

Figure 5. The left upper trapezius muscle (shaded)

The upper trapezius muscles are responsible for elevating the shoulders and rotating the neck. In rounded shoulder posture, the upper trapezius and neck muscles are largely supporting the arm’s weight, increasing muscular strain on the neck and shoulder. In dentistry, trapezius myalgia is associated with static, prolonged elevation of the shoulders and, to a lesser degree, abduction of the arms. (Fig. 6)

One EMG study of the neck, shoulders and arms showed that the highest activity during dental work occurred in the trapezius muscles.13 Sustained low-level contraction of these...
muscles with few breaks greatly increases susceptibility to pain in this muscle.\textsuperscript{14,15} With insufficient rest periods, tension can accumulate in these muscles and, by the end of the day, you may be wearing your shoulders as “earrings” without realizing it. In addition, high levels of emotional stress and working at complex, difficult tasks can cause contraction in this muscle,\textsuperscript{14} resulting in ischemic pain.\textsuperscript{16} Positioning the patient too high, working with the shoulders on a tilted axis or with the head turned to one side or a forward head posture\textsuperscript{17} can also lead to worsening of symptoms in these muscles. Since this syndrome is entirely myofascial in nature, it responds well to muscle therapy that involves frequent stretching, heat, massage or trigger-point work.

Figure 6. Elevating the shoulders can lead to pain, tightness or trigger points in the upper trapezius muscle

Keys to Success: Preventing Neck and Shoulder Pain

Neutral head posture. Optimal head posture is ear-over-shoulder when viewed from the side.\textsuperscript{10} Since it is nearly impossible for dental professionals to maintain this posture while operating without the use of a procedural microscope, it is important to maintain this postural awareness at all times when not chairside. Since forward head postures of greater than 20 degrees are correlated with neck pain, an optimal head posture of no more than 20 degrees is highly encouraged. (Fig. 7) Loupes have been shown to improve operator posture, however poorly designed loupes can actually worsen your posture, and cause neck pain.\textsuperscript{18} Dentists and hygienists must carefully select loupes based on working distance, declination angle and frame size to ensure the loupes are benefitting their health. Microscopes and procedure scopes allow near neutral head posture (zero degrees).

Figure 7. Optimal head posture with loupes is 20 degrees forward

Neutral head posture has been shown to deteriorate (the head moves forward) with age, probably due to gravity and daily work activities that facilitate this progression. Individuals with chronic neck pain tend to have a poor ability to maintain proper head posture.\textsuperscript{19} Since the occupation of dentistry can accelerate forward head posture, it is important to perform postural exercises such as the dental postural awareness exercise and chin nods frequently in the operatory. Chin nods improve endurance of the deep cervical flexors and help maintain neutral cervical postures during prolonged sitting.\textsuperscript{19} Individuals who have sustained injuries in a car accident or have suffered neck injuries should see a healthcare professional before performing any head or neck exercise.

Use armrests whenever possible. Supporting the arm weight is especially important for trapezius myalgia sufferers.\textsuperscript{12} Ensure the armrest height is adjusted properly: adjusting the armrests too high can cause neck stiffness and pain at the crook of the neck and shoulder.\textsuperscript{12} If you find it difficult to maneuver a chair with armrests around the patient, you may want to consider a unilateral armrest fixed to a counter. (Fig. 8) Dentists who operate with the left arm supported have been shown to have less pain than those who do not.\textsuperscript{20} These devices are available in a variety of heights and are especially useful since more dentists and hygienists experience pain in the left shoulder than the right.
Neutral shoulder posture and patient height. Neutral posture for the shoulder is often described as elbows at the sides, shoulders relaxed and forearms about parallel to the floor. Helpful advice, indeed—if you are reading a book. This is, of course, an extremely difficult position to maintain constantly during the delivery of dental care. It is far more helpful to know what is a safe shoulder working range. The upper arms should abduct out to the sides no more than 20 degrees, and reach forward a maximum of 25 degrees. However, when reaching forward further than 15 degrees is required, (due to pregnancy, large breasts or protruding abdomen) armrests are recommended. The occlusal surface should be at, or four centimeters above, elbow level. When the patient is higher than this, arm abduction or shoulder elevation typically occurs, especially when working between the 8 o’clock to 11 o’clock positions.

Operators with short torsos or long upper arms may find that when they position their knees under the patient’s head or backrest, the combined thickness of the patient chair and patient’s head causes them to elevate their shoulders or abduct their arms. This problem is best resolved with a saddle stool, which allows lower patient positioning and improves proximity by opening the operator’s hip angle.

Develop good endurance of specific neck and shoulder girdle muscles. Good endurance of the neck stabilizing muscles is directly related to better neck posture and less neck pain. Endurance strengthening of the shoulders may also improve neck and shoulder pain, especially among female dentists. All dental professionals can benefit from developing endurance in these muscles, but due to gender differences, it is especially important for women. Perform strengthening exercises only if you are pain-free and can raise your arm directly overhead and out to the side over your head with little or no pain.

Women in Dentistry

Whoever coined the phrase “my job is a pain in the neck” could have been a female dentist. Compared to the average female worker, female dental professionals experience two to four times more musculoskeletal pain. They also report higher frequencies of neck and shoulder pain than their male counterparts. The reasons for this are largely genetic. In general, women’s muscles are narrower and can exert only two-thirds the force of a man’s, which gives them less ability to counteract unbalanced postures. This is why it is imperative for female dental professionals to target specific muscles in a strengthening program. Bras are also a problem, especially for female dental professionals with large chests. Narrow bra straps can compress the upper trapezius muscle and worsen neck pain as well as cause headaches. Racer-back sports bras have wider straps, and are better suited for female dental professionals. A purse slung over one shoulder can also perpetuate muscle imbalances to which female dental professionals are prone, since the trapezius muscle must contract unilaterally to support the weight. Consider a backpack-style purse, because it distributes weight more evenly.

Women also face modesty issues and some prefer a comfortable distance between their chest and the patient’s head. However, positioning oneself further from the oral cavity shortens the endurance time of the shoulder muscles. This will cause the operator to crane the neck forward or reach excessively forward with the arms, both of which are contributing factors for neck and shoulder pain. Armrests can help remove unsafe workloads from the neck and shoulder muscles due to the weight of the extended arm. Use indirect vision. Use of the mirror can have a tremendously beneficial impact on neck and trunk posture. Dentists who regularly utilize a mirror tend to have fewer headaches and neck/shoulder discomfort.
and rotating the neck more than 15 degrees during a majority of one’s working hours has been shown to cause damage to the cervical spine. Consider the difference in posture when viewing the palatal upper right area directly vs. using a mirror. (Fig. 9) Lighted mirrors and double-sided mirrors can further improve visibility and ergonomic positioning.

Preserve the curve. It is essential that you preserve your natural cervical curve at night. Consider use of a neck pillow to maintain your cervical curve while sleeping. Use of a sleeping neck support pillow combined with physical therapy neck exercises has been shown to be an effective combination for chronic neck pain.

Periodic stretching. Both neck and shoulder pain among dentists have been shown to correlate with frequency and duration of breaks. Therefore, frequent breaks and chairside stretching are an important habit to prevent and manage neck and shoulder pain. The shoulder circles stretch is especially helpful for preventing trapezius myalgia, while chin nods can improve posture and neck muscular endurance.

Summary
The occupation of dentistry exposes the dental professional to the risk of associated musculoskeletal injuries to the neck and shoulder. By understanding how posture and activity affects the musculature of the neck and shoulder, dental professionals can learn to work ergonomically to help prevent these injuries and can perform certain exercises both to prevent and to help treat these conditions.

References


Resources
Practice Dentistry Pain-Free: Evidence-based Strategies to Prevent Pain & Extend Your Career. B. Valachi
• This CE course is Chapter 4 from the author’s book Treat Your Own Neck. R. McKenzie
Trigger Point Therapy Workbook. C. Davies
• Exercises for dental professionals
• Loupe selection guidelines
• Dental ergonomic product reviews

Author Profile
Bethany Valachi, PT, MS, CEAS
Ms. Valachi is a physical therapist, dental ergonomic consultant and author of the book, “Practice Dentistry Pain-Free”. She is CEO of Posturedontics®, a company that provides research-based dental ergonomic education and also lectures internationally—including at the 2009 International Dental Ergonomics Congress in Krakow, Poland. Clinical instructor of ergonomics at OHSU School of Dentistry in Portland, Oregon, Bethany has provided expertise on dental ergonomics to faculty and students at numerous dental universities. She has been widely published in various peer-reviewed dental journals and has developed chairside stretching and home exercise videos specifically for dental professionals. She offers free newsletters, articles and product reviews on her website at www.posturedontics.com.

Disclaimer
The author(s) of this course is the owner of Posturedontics.

Reader Feedback
We encourage your comments on this or any PennWell course. For your convenience, an online feedback form is available at www.ineedce.com.
Questions

1. The reported incidence of neck pain among dentists and hygienists is up to _______ percent and _______ percent respectively.
   a. 31; 62  
   b. 61; 72 
   c. 71; 82 
   d. 81; 92 

2. The three most prevalent pain syndromes seen in dentistry are tension neck syndrome, rotator cuff impingement and trapezius myalgia.
   a. True 
   b. False 

3. Forward head posture is a primary contributing factor to TNS.
   a. True 
   b. False 

4. Tension neck syndrome (TNS) can result in _______.
   a. pain, stiffness and tenderness in the neck 
   b. pain, stiffness and tenderness in the trapezius muscles 
   c. muscle spasms or tender trigger points 
   d. all of the above 

5. Neutral head posture is shoulder-over-ear when viewed from the side.
   a. True 
   b. False 

6. Neck pain has in fact been shown to be associated with any job where forward head posture is _______ percent of the working time.
   a. 20; 60 
   b. 20; 70 
   c. 30; 60 
   d. 30; 70 

7. The delivery of dental care requires excellent endurance of the primary shoulder girdle stabilizing muscles.
   a. True 
   b. False 

8. The cycle of muscle imbalance perpetuates as tight muscles become _______ and weak muscles become _______.
   a. stronger; weaker 
   b. weaker; stronger 
   c. tighter; stronger 
   d. tighter; weaker 

9. Forward head posture can cause instability in the cervical spine, and lead to _______ of the neck curve.
   a. curving 
   b. kinking 
   c. flattening 
   d. none of the above 

10. Cervical instability can also be worsened by performing certain exercises that strengthen the anterior neck and chest muscles.
    a. True 
    b. False 

11. _______ is a symptom of rotator cuff impingement.
    a. Shoulder pain with overhead reaching 
    b. Shoulder pain with lifting 
    c. Shoulder pain when sleeping on the affected arm 
    d. all of the above 

12. Left untreated, years of forward head posture can lead to _______.
    a. cervical condylosis 
    b. cervical spondylosis 
    c. cervical dilapidation 
    d. none of the above 

13. Muscles that lift, or abduct the humerus must be balanced with the muscles that stabilize the humerus in the shoulder joint to allow proper movement.
    a. True 
    b. False 

14. Dentists and hygienists tend to abduct the right shoulder more than the left.
    a. True 
    b. False 

15. Dental-care workers typically injure the rotator cuff via _______ due to frequently abducted shoulder postures.
    a. accumulated microtears from overuse 
    b. accumulated microtears from underuse 
    c. accumulated torsion from overuse 
    d. none of the above 

16. The large, flat triangular-shaped muscle between your shoulder and neck is called the _______.
    a. outer trapezius 
    b. upper trapezius 
    c. upper trapezoid 
    d. none of the above 

17. Forward head postures of greater than _______ are correlated with neck pain.
    a. 10 degrees 
    b. 20 degrees 
    c. 30 degrees 
    d. 40 degrees 

18. In dentistry, trapezius myalgia is associated with static, prolonged elevation of the shoulders and, to a lesser degree, abduction of the arms.
    a. True 
    b. False 

19. Poorly designed loupes can actually worsen your posture, and cause neck pain.
    a. True 
    b. False 

20. Dentists who operate with the left arm supported have been shown to have less pain than those who do not.
    a. True 
    b. False 

21. The occupation of dentistry can accelerate forward head posture.
    a. True 
    b. False 

22. A saddle stool allows lower patient positioning and improves proximity by opening the operator’s hip angle.
    a. True 
    b. False 

23. Compared to the average female worker, female dental professionals experience less musculoskeletal pain.
    a. True 
    b. False 

24. Female dental professionals report higher frequencies of neck and shoulder pain than their male counterparts.
    a. True 
    b. False 

25. Side-bending and rotating the neck more than _______ during a majority of one’s working hours has been shown to cause damage to the cervical spine.
    a. 10 degrees 
    b. 15 degrees 
    c. 20 degrees 
    d. none of the above 

26. Use of a sleeping neck support pillow combined with physical therapy neck exercises has been shown to be an effective combination for chronic neck pain.
    a. True 
    b. False 

27. Frequent breaks and chairside stretching are an important habit to prevent and manage neck and shoulder pain.
    a. True 
    b. False 

28. The shoulder circles stretch is especially helpful for preventing _______ myalgia.
    a. masseter 
    b. trapezius 
    c. pterygoid 
    d. intercostal 

29. Chin nods can improve _______.
    a. posture 
    b. neck muscular endurance 
    c. neck skin 
    d. a and b 

30. By understanding how posture and activity affects the musculature of the neck and shoulder, dental professionals can learn to work ergonomically to help prevent these injuries.
    a. True 
    b. False
Educational Objectives

1. Know the risk factors that lead to tension neck syndrome, rotator cuff impingement and trapezius myalgia
2. Know the unique muscle imbalances to which dental professionals are predisposed
3. Know the importance of selecting the proper exercises, equipment, and positioning to optimize your musculoskeletal health
4. Understand how to implement these powerful strategies both in the operatory and at home.

Course Evaluation

Please evaluate this course by responding to the following statements, using a scale of Excellent = 5 to Poor = 0.

1. Were the individual course objectives met?  
   Objective #1: Yes No  
   Objective #2: Yes No  
   Objective #3: Yes No  
   Objective #4: Yes No

2. To what extent were the course objectives accomplished overall?  
   5 4 3 2 1 0

3. Please rate your personal mastery of the course objectives.  
   5 4 3 2 1 0

4. How would you rate the objectives and educational methods?  
   5 4 3 2 1 0

5. How do you rate the author's grasp of the topic?  
   5 4 3 2 1 0

6. Please rate the instructor's effectiveness.  
   5 4 3 2 1 0

7. Was the overall administration of the course effective?  
   5 4 3 2 1 0

8. Do you feel that the references were adequate?  
   Yes No

9. Would you participate in a similar program on a different topic?  
   Yes No

10. If any of the continuing education questions were unclear or ambiguous, please list them.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

11. Was there any subject matter you found confusing? Please describe.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

12. What additional continuing dental education topics would you like to see?

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

PLEASE PHOTOCOPY ANSWER SHEET FOR ADDITIONAL PARTICIPANTS.
Practice Dentistry Pain-Free
EVIDENCE-BASED STRATEGIES TO PREVENT PAIN AND EXTEND YOUR CAREER

Studies reveal that 2 out of 3 dental professionals experience musculoskeletal pain

This research-based book bridges the gap between dental ergonomics and work-related pain so that you can work longer, more comfortably and with less fatigue. Discover how your job and equipment are affecting your health, and then implement powerful evidence-based strategies to prevent pain and injuries. After all, how successful is your dental career if your body retires before you do?

Designed for dentists, specialists, hygienists, staff, students and faculty

You will discover how to:
» Recognize pain syndromes unique to dentistry
» Implement appropriate interventions for chronic back, neck, shoulder, hand or wrist pain
» Select the proper equipment that fits you and your operatory
» Correct damaging posture and body mechanics before they cause pain
» Perform chairside stretches in your operatory to prevent microtrauma
» Identify which exercises benefit dental professionals

BETHANY VALACHI, PT, MS, CEAS, is a physical therapist, dental ergonomic consultant and president of Posturedontics LLC, which provides research-based ergonomic education for dental professionals. An international speaker, her engagements include the Hinman Dental Meeting, Chicago Midwinter Meeting and Toronto Winter Clinic. She has produced two videos and been widely published in the JADA and numerous other dental journals. For additional information, please visit www.posturedontics.com.

posturedontics
www.posturedontics.com

Posturedontics Press
Portland, Oregon