By midmorning, it started ... again. The all-too-familiar “tension headache” that soon evolved into a headache behind her right eye and pain in the right temple. Meanwhile, in an adjacent operatory, the dentist was experiencing burning pain on the left side of her neck. Why was this happening? Recently, both had embarked on diligent exercise programs with their personal trainers, in an effort to improve their musculoskeletal health and avoid such painful episodes.

Does this sound familiar? If so, you’re in good company — the incidence of neck pain among dentists and hygienists has been reported as high as 71% and 82%, respectively. The causes of headaches and neck pain are multifactorial; however, in dentistry, the upper trapezius muscle is the culprit that underlies a myriad of head and neck pain syndromes.

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, or tenderness in the upper trapezius muscle, often on the side of the mirror, or retracting arm (Fig. 1). Trigger points in this muscle result in referred headaches behind the eye, into the temple, and in back of the neck.

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 caused by static, prolonged elevation of the shoulders, mental stress, infrequent breaks, and poor head posture.

**Fig. 1:** The left upper trapezius muscle (shaded)

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Interventions

Don’t position the patient too high. This causes the hygienist to assume one of two postures, either working with the shoulders elevated (leading to trapezius myalgia) or shoulder abduction (leading to rotator cuff impingement). Additionally, working with the shoulders on a tilted axis or with the head turned to one side or a forward head posture can also lead to worsening of symptoms in these muscles. Position the patient so the oral cavity is at or 4 cm above your elbow level. When the patient is higher than this, arm abduction or shoulder elevation typically occurs, especially when working between the 8 o’clock and 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 chair and patient’s head causes them to elevate their shoulders. This problem is best resolved with a saddle stool, which allows lower patient positioning and improves proximity by opening the operator’s hip angle.

Use properly selected magnification. Poor head posture is commonly observed in the operator and strains the upper trapezius muscles. Properly selected telescopes can enable head postures of 20 degrees or less. Scopes with poor declination angles, improperly measured working distance, and/or small frame size can actually cause or worsen trapezius myalgia.

Use armrests. Supporting the arm weight is especially important for trapezius myalgia sufferers. 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. 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 2). Dentists who operate with the left arm supported have been shown to have less pain than those who do not. 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.

Frequent breaks/chairside stretching. One EMG study of the neck, shoulders, and arms showed that the highest muscular activity while delivering dental care occurred in the trapezius muscles. Sustained low-level contraction of these muscles with few breaks greatly increases susceptibility to pain in this muscle. Without sufficient rest periods or dynamic movement, tension can accumulate in these muscles and, by the end of the day, you may be wearing your shoulders as “earrings” without realizing it.

Stress management. Common clichés such as “pain in the neck” allude to stress as a cause of pain. This association is actually quite true. High levels of emotional stress and working at complex, difficult tasks can elicit muscular contraction in the upper trapezius muscle. This type of subconscious muscular contraction in response to stress is called neuromuscular hypertension. If the stress response is not followed by dynamic muscular activity, the blood pressure has no outlet and continues to rise. The statically contracted muscle becomes ischemic and painful while the blood pres-

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Heat is usually the best choice for chronic pain — stiffness and dull achiness that are characteristic of muscular-type pain. Be sure to consult a health-care professional for proper application and usage of heat.

Massage is a very beneficial therapy and effective in the management and prevention of trapezius myalgia. Ensure your massage therapist is trained in neuromuscular therapy to properly recognize and treat trigger points.

**Trigger point self-treatment.** Trigger points in the upper trapezius muscles can refer pain to the temple, cause a headache behind the eye, or pain in the back of the neck. First, you should always consult with a healthcare professional to rule out more serious etiologies. Once the diagnosis is determined to be myofascial, or muscular in nature, you may consider self-treating your own trigger points at home or at the office. A very effective combination is trigger point self-massage followed by a sustained stretch of the affected muscle. Many problematic trigger points can be reached using a self-massage tool (Fig. 3). Use a trigger point reference book that maps out trigger points and the corresponding referral areas to help you easily target your problem areas.

Sure remains high. Therefore, stress management strategies that specifically target muscular-type pain are helpful in prevention. One that is particularly effective is Progressive Relaxation, which allows you to identify and quickly relax tense muscles.

**Proper exercise.** Training the upper trapezius muscle with heavy weight resistance is one of the most common exercise mistakes hygienists make. This can worsen the unique muscle imbalance to which you are already prone, create trigger points, and worsen neck pain. Rather, you should target the upper trapezius muscles with aerobic exercise (i.e., walking while swinging the arms, rowing, cross country skiing, etc.).

**Women’s issues.** Narrow bra straps can compress the upper trapezius muscle, worsen neck pain, and create headaches, especially among female dental professionals with large chests. Racer-back sports bras have wider straps and are a better choice for female dental hygienists. A purse slung over one shoulder can also perpetuate muscle imbalances to which they are prone, since the trapezius muscle must contract unilaterally to support the weight.