

Reinforced Periodontal Instrumentation and Ergonomics

The Best Practice to Ensure Optimal Performance & Career Longevity

Learning Objectives

- Compare and contrast various instrumentation techniques and corresponding fulcrums.
- Apply reinforced instrumentation techniques to help implement power and safety.
- Identify newer strategies that can prevent cumulative trauma disorders.
- Describe harmful postural habits while scaling that can lead to musculoskeletal injuries.
- Discuss the benefits of standing while scaling heavy calculus on the mandibular arch.
- Demonstrate mini-break exercises to help prevent muscle tension and pain.

Introduction

No longer is scaling exclusively about calculus removal. It is about calculus removal and protecting oneself from injury. Reinforced periodontal instrumentation techniques can extend career longevity in a field that has documented evidence of ergonomic disorders. The definition of reinforce is to strengthen with some added piece or support.¹ The increase in strength while utilizing reinforced fulcrums and rests occurs from the utilization of both hands. The non-dominant hand that routinely holds a mirror for indirect vision assists the dominant hand while scaling. The use of both hands allows the clinician to use the larger, stronger muscle groups in the arms versus the smaller muscle groups in the hands. Reinforced scaling has been used to gain additional stability and control of the instrument when scaling with both the intraoral and extraoral fulcrum.² As the dominant hand adapts and angulates the blade of an instrument to tooth surfaces, the non-dominant hand provides additional pressure in the same direction to which the dominant hand's fingers are directing pressure. This assists in operator protection during strenuous and extensive instrumentation processes. If a clinician experiences pain due to a cumulative trauma injury, the utilization of reinforced instrumentation techniques help to decrease hand, wrist and arm pain.³ Unfortunately, work related pain has become so endemic to dental hygiene that many hygienists tend to passively accept the inevitable partnership between their work and musculoskeletal pain.⁴ As a result, a growing percentage of dental

hygienists are abandoning their vocation because of chronic physical disabilities. Studies have shown that some dental hygienists deviate from ideal working posture and scaling technique due to muscular fatigue or to expedite difficult procedures.⁵ This compromise would not have to occur, however, if advanced fulcruming techniques were incorporated along with proper ergonomic postures while scaling.

Fulcruming Techniques

A fulcrum is a finger rest used to stabilize the clinician's hand during periodontal debridement. An effective, well established finger rest is essential for stability, unit control, prevention of injury, comfort to the patient and control of length of stroke.⁶ There are three categories of fulcrums that can be implemented while scaling.

Intraoral Fulcrum

The standard intraoral fulcrum is established when the clinician's dominant hand is stabilized by placing and maintaining the pad of the ring finger on a tooth surface adjacent to or close to the tooth being instrumented. This technique for scaling continues to be the pioneer standard in the dental hygiene profession. All dental hygiene schools introduce intraoral scaling fulcrums in pre-clinical courses to set the foundation for more advanced instrumentation techniques. The intraoral fulcrum is utilized at times in conjunction with extraoral hand placement on the patient's cheek, jaw or chin. However, there are limitations with using intraoral fulcrums when trying to adapt to working angulations while treating deep periodontal pockets, especially in the maxillary posterior regions.

Extraoral Fulcrum

The extraoral fulcrum requires stabilization of the clinician's dominant hand outside the patient's mouth against the cheeks, jaws and chin. Extraoral fulcrums differ from intraoral fulcrums because the front or back of the fingers and hand provide the support rather than the tips or pads of the fingers as with intraoral finger rests. It is actually the bone and soft tissue of the patient's face that serve as the fulcrum to stabilize the working stroke. Extraoral hand rests are thus fully dependent on a secure hand rest that uses pressure equal to that exerted on the tooth by the blade. The degree of pressure used will vary according to the type of stroke activated.⁷

The palm-up rest and palm down rest require the fingers to remain somewhat straight and together in order to assist the dominant hand to work as a unit. Reasons to utilize an extraoral fulcrum include ease of proper instrumentation placement, accurate angulation, improved precision of scaling, protective ergonomic hand placement which allows the hand, wrist and arm to be in a neutral position, and increased power and strength that occurs from using a pull stroke with the larger muscle groups in the arm.³



Neutral hand, wrist, and arm position

Reinforced Fulcrum

The reinforced fulcrum scaling technique has been used to gain additional stability, and control of the instrument when scaling with both the intraoral and extraoral fulcrum. The non-dominant hand is used for extra support of the instrument instead of holding the mouth mirror.³ The index finger and thumb from the non-dominant hand can then help support the shank or instrument handle by placing pressure on it during a working stroke in order to acquire additional lateral pressure. Other reinforcements are implemented when the index finger supports the back of the shank or instrument handle to help guide the instrument. This is known as a finger assist fulcrum. Pinching the instrument with both the thumb and the index finger can also assist in insertion, placement and stroke pressure.³

The thumbs are also beneficial to incorporate while using reinforced instrumentation. When the non-dominant thumb bridges over to the dominant thumb holding the scaler, both hands have the



UR MB #4 using the 11/12 Gracey



UL DB #13 using the 13/14 Gracey



LR MB #29 using the 11/12 Gracey



LR DL #29 using the 7/8 Gracey

opportunity to work together as a unit (see instrumentation photos to the left). When both hands work in unison, the larger muscle groups of both arms can also work in unison. Scaling with both hands using thumb-to-thumb reinforcement, while utilizing extraoral reinforced techniques, will enhance scaling efficacy and reduce the incident for injury especially when treating patients with heavy calculus. This is one of the best protective periodontal instrumentation techniques that the dental care provider can incorporate into daily practice to help prevent musculoskeletal injury to the hands, wrists and arms.³



Thumb-to-thumb reinforcement

Advantages of Using Reinforced Instrumentation Techniques

- Enhances the balance of both hands
- Helps to prevent instrument slippage
- Increases control of the instrument blade
- Increases lateral pressure
- Increases power
- Improves scaling efficiency
- Helps to decrease hand, wrist and arm pain
- Helps to prevent musculoskeletal injury
- Encourages the use of larger muscle groups over smaller muscle groups to help prevent repetitive motion injury
- Improves patient comfort by using finger retraction instead of mirror retraction
- Assists individuals who have hyperlaxity or flexible joints where the thumb and fingers collapse while grasping and activating the instrument

There is a test that can be done to see if an individual has hyperlaxity or flexible joints. Joint hyperlaxity is a condition where some or all of the joints in the body have an unusually large range of motion, movement, or flexibility. If a hand can be extended back beyond a neutral position, then that individual can move their joints beyond a normal range. It is important for the dental care provider to recognize a joint hyperlaxity condition because it is difficult to grasp an instrument without having the thumb collapse or hyperextend on the instrument.³ Acquiring needed lateral pressure to scale is often difficult when the thumb collapses on the instrument.

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If collapsing occurs while scaling, extensive force and stress applied to the ligaments can cause musculoskeletal injuries.



Joint Hyperlaxity

Joint hyperlaxity can occur as a result from the shape of the bones in the hands, weak or stretched ligaments caused by problems with collagen and other proteins (the ligament bands that hold joints in place), muscle tone which affects whether joints are held

loosely or rigidly, and also as a result of sense of joint movement which is the sense that explains exactly where the joint is positioned and whether it is overstretched.⁸

A dental care provider with joint hyperlaxity needs to counter the hyperextension by holding the instrument with a bent thumb, not a collapsed thumb.³ Furthermore; reinforced instrumentation techniques should be implemented in order to minimize stress and strain on the joints.

Important Instrument Strategies for Injury Prevention

- Instrument design and selection are imperative when implementing protective scaling techniques. The use of rigid shank instruments to remove heavy tenacious calculus will help reduce repetitive motion due to the fact that the shank doesn't flex as much as non-rigid instruments.³ The rigidity can assist in the reduction of strokes needed to remove calculus. Fewer strokes equates to less repetition. Less repetition can reduce the incidence of cumulative trauma disorders.
- Handle choice is critical to lessen the effect of repetitive strain injuries. A primary consideration is clinician comfort. In selecting an instrument handle, three factors to take into consideration are weight, diameter and texture.³ Lightweight handles are less likely to place stress on the muscles of the hands and fingers, larger diameter handles reduce stress and strain on the hand and are easier to hold, and textured or serrated instruments facilitate instrument grip and control and reduce muscle fatigue.⁹
- Sharp, properly maintained instruments are important for effective periodontal debridement. A sharp cutting edge permits the clinician to make fewer and better-controlled strokes, improves stroke control and tactile sensitivity, minimizes stress and fatigue by not having to apply added lateral pressure, removes calculus more efficiently, and increases patient comfort and satisfaction. A sharp instrument allows the

clinician to use less force; this makes the instrumentation process more comfortable for the patient.⁹

- Maximize the use of the ultrasonic scaler for removal of heavy, tenacious calculus deposits and to help minimize repetitive stress on the fingers, hands and wrist. Operator advantages of using electronically powered instrumentation include a relaxed grasp with light lateral pressure for calculus removal and less time needed for calculus removal.⁹ Using an ultrasonic dental scaler may reduce the pinch force required to perform scaling and root planning.¹⁰ Powered scaling reduces the force needed to remove deposits, and it can reduce the risk of carpal tunnel syndrome and other musculoskeletal disorders.⁶

Suggestions to Prevent Musculoskeletal Hand Injuries

The use of neutral hand postures where the hand, wrist and forearm are straight allow the hand and arm to work together as a unit while scaling. Minimize extreme flexion, hyperextension and rotation of the wrist in order to avoid extra stress on muscles, nerves and tendons. The forearms should be parallel to the floor and either raised or lowered, if necessary, by pivoting at the elbow joint.⁹

The human body was not designed to remain in a static position for long periods of time. Therefore, it is imperative to stretch both hands throughout the appointment to help reduce stress and fatigue. Another suggestion to prevent injury is to alternate working in areas where there is heavy, tenacious calculus to other areas that require less power and strength. Consider alternating appointments requiring definitive quadrant scales with maintenance appointments when scheduling patients. Inform office personnel who schedule the hygiene appointments to avoid back to back quadrant scales if possible. Another suggestion is to shorten the patient's recall interval if lack of home care requires intense definitive scaling due to heavy tenacious calculus at every appointment.

Wear comfortable, fitted gloves that do not restrict or impinge movement. The proper fit will help avoid muscle strain while scaling. Surgical glove-induced injury is a type of musculoskeletal disorder that is caused by improperly fitting gloves. Symptoms include tingling or pain in the wrist and or fingers and numbness. The disorder occurs as a result of wearing ambidextrous gloves that are not fitted or from wearing gloves that are too tight. It is best to wear right- and left-fitted gloves that are loose fitting across the palm of the hand and wrist.⁹

Keep the fingernails short to be able to fulcrum correctly. The effect of short nails permit selection of a closer fit glove; longer glove

fingers may be required to protect nails. Shorter nails also allow greater dexterity during instrumentation.⁶ Long nails compromise an intraoral fulcrum and will inhibit well established intraoral built-up fulcrums and finger rests. This ergonomic compromise of the dominant hand and fingers can lead to musculoskeletal problems and accidental slippage of the instrument. By stabilizing the hand, a finger rest enhances control so that you will be less likely to inadvertently slip and lacerate the gingiva.¹¹

Postural Ergonomics for Optimum Musculoskeletal Health and Scaling Efficacy

Dental hygiene practice frequently requires maintaining the same working postures and using repetitive actions involving shoulder, forearm, wrist, restricted hand movements, forceful exertions and uncomfortable body postures held for extended periods of time. The human body was not designed to engage in repetitive motions for extended periods of time, especially while maintaining the same body position, and most particularly if not in an ideal postural stance.^{12,13} Dental hygienists have three times more injuries related to repetitive motion than dentists and dental assistants. Therefore, dental hygiene students should consider ergonomics early in their dental careers, before injuries have occurred and bad habits become hard to break.¹⁴ Studies have shown that dental care workers usually assume constrained postures to obtain optimal view of teeth within the patient's mouth, to provide a comfortable position for the patient and to be able to maneuver complex equipment which includes reaching for instruments.¹³

Poor postural positioning techniques hinder advanced reinforced scaling techniques. The body, hands and arms must work together and in unison to be able to have successful working strokes that require precision and power. Periodontal instrumentation requires excessive upper body immobility while the tendons and muscles of the forearms, and hands and fingers overwork. The dental health-care professional has a high risk of musculoskeletal injury when repetitive motions are combined with forceful movements, awkward postures and insufficient recovery time.⁹

Musculoskeletal Disorders Resulting from Prolonged Static Posture

Kyphosis – Defined as an abnormal increase in the curvature of the thoracic spine. This can be induced from prolonged poor posture. The round back musculoskeletal deformity can lead to symptoms that include pain, stiffness, and loss of range of motion.³

Increased Lordosis – Defined as an increased curvature in the lumbar spine. The buttocks appear prominent as a result to exces-

sive arching. This can lead to increased strain of the lower back that may cause low back pain, sciatica/leg pain, and lack of mobility.³

Scoliosis – Defined as an abnormal lateral curvature of the spine. It can be congenital or acquired from prolonged lateral or rotated positioning toward the patient. This can cause shortened muscles on one side or the spine which could trigger muscle spasms and induce chronic pain. Self-induced scoliosis is the body's attempt to adapt to an abnormal body position.³

If a dental hygienist is experiencing pain due to musculoskeletal problems, the specialists that can be of help include chiropractors, orthopedic surgeons, physical therapists, occupational therapists, acupuncturists, osteopathic physicians and pain management physicians. It is important to be proactive in seeing a specialist to avoid severe work-related problems which can lead to loss of time from work and permanent disability.

Dental hygienists can reduce the risk of developing musculoskeletal injuries by developing a healthy working posture. In order for this to occur, clinicians should begin by evaluating their individual postures.^{15,16} Maintaining a neutral posture while sitting may aid dental hygienists in the prevention of injury. The neutral working



Runner's stance or straddle

posture encourages the clinician to sit with the back and the spinal cord straight, weight evenly balanced, forearms and upper thighs parallel to the floor, and the hips at a 90 degree angle.¹⁷ Keep hips forward toward the operatory chair by using a runner's stance or straddle.³ The runner's stance is where the right handed operator tucks the right leg and foot slightly under the patient chair. The left-handed operator would tuck the left leg and foot under the chair.

The torso can be positioned in a more forward position when the clinician's legs fit under the patient chair.

Neutral position can be defined as the position of an appendage which is neither moved away from nor directed toward the body's midline, nor laterally turned or twisted. This will only allow rotation of the pelvis forward and backward from the hips.¹³ If a neutral posture is not implemented, muscle imbalance can occur. Muscle imbalance is the weakness of one muscle group while its antagonistic is strong. The weaker of the two muscle groups is usually elongated, while the

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stronger is shortened. The antagonistic muscle becomes elongated and begins to weaken thereby increasing susceptibility to injury.¹⁸ Regardless of which arch the area of instrumentation is in, optimum operator positioning should be maintained throughout the procedure. The neutral spine position should be determined and maintained throughout patient treatment.¹³

Steps to Achieve a Neutral Spine Position^{13, 20}

- Adjust the operator stool so that the knees are level or slightly lower than the hips
- Adjust the back rest to provide lumbar support
- Sit straight and tall in the chair with weight evenly distributed
- Relax the shoulders so they are relaxed and not elevated
- Tighten stomach muscles to flatten back against the chair
- Position elbows at 90 degrees or less and keep them close to the body
- Avoid rounding the mid back and low back
- Hinge forward at the hips when leaning forward
- Tilt seat slightly forward if possible to allow closer positioning of the patient
- Sit back on the seat to utilize the backrest whenever possible for lumbar support

The operator seat should provide sufficient body support for the thighs, legs, arms and back. Newly designed operator stools are more ergonomic and should help prevent back problems. Chairs designed to automatically correct an operator's seating position and help enhance proper balance are available. These chairs are designed to increase comfort and encourage better posture, blood circulation and improved respiration.²¹

Protective Postural Ergonomics for Patient Positioning

Scaling ergonomically requires a number of considerations. One consideration is to select a position that is comfortable for the clinician and the patient. By promoting patient comfort and relaxation, the clinician will gain patient compliance. The use of a contoured neck pillow can be used to enhance comfort when the patient has neck problems or limitations. The patient can then be placed in a supine position to allow control of the angle of patient's maxillary plane. Elevating the patient up or down in the chair is necessary for appropriate ergonomic postural and reinforced technique while scaling. It is also important to have the patient tilt her or his head up or down, left or right as needed to assist the clinician. Posture is partly controlled by the patient's head position.³ Overall, patient

compliance with ergonomic positioning is necessary to access difficult areas while keeping a neutral hand, wrist and arm position.

The adjustability and width of the patient care chair has been implicated in many cases of musculoskeletal injuries and disorders. Some of the older chairs don't allow the dental clinician to access the oral cavity in a comfortable way due to the height and width of the chair.²² Hygienists should inform their employer about equipment that prohibits a comfortable neutral posture for safe ergonomic positioning.

Seated Postures for Safe Practice

Learning how to attain a healthy seated working posture can be quite difficult for a hygienist. It is very common to slouch in the dental chair and round the shoulders or sit on the edge of the chair with minimal low back support. Passive sitting, which looks like slouching, is a common posture because it expends very little energy. Eventually, the spine, ligaments, muscles and soft tissue can adapt to a slouched working posture.²³ Active sitting occurs when sitting straight and maintaining a more neutral spinal posture. Learning how to sit up straight involves proper chair adjustment, correct biomechanics, seat selection, training of certain back muscles and proper working distance.²³

To obtain a neutral pelvic position that facilitates a natural low back curve while sitting, the clinician should have an ergonomic chair that has lumbar support, an adjustable back rest, seat tilt feature, adjustable cylinder height, and an ergonomic safe width and depth of seat. If a hygienist works in an office with an uncomfortable chair, the employer needs to be informed. If the employer refuses to purchase a chair, the hygienist should consider purchasing one that is ergonomically safe and comfortable. The purchase will be a career longevity investment and a tax write-off. In a traditional clinical chair, the hygienist may incur undue strain on the lower back. Newly designed clinician chairs help place the practitioner in the proper working positions.²⁴

Movement around the patient during an appointment will help prevent injury and allow for ergonomically safe instrumentation technique. The only way to ensure that the operator's hands, wrists and arms are straight and not hyper extended or flexed is by positioning around the patient chair from 8:00 to 2:00.³ Movement around the patient chair is also beneficial to prevent static posture. The operator's hips should be parallel to the floor and balanced over the feet. The legs should be in a runner's stance or straddle to keep the hips angled forward toward the patient's chair. These postures will assist the hygienist to sit in a forward position facing the patient. Keeping the spine as erect and straight as possible will minimize musculosk-

keletal injuries. Clinicians need to be self-aware of postures that are not neutral, which contribute to musculoskeletal disorders.²⁵

Standing when Scaling

Standing when scaling in the place of sitting is beneficial during the course of an appointment, especially when working on the mandibular arch and there is difficulty accessing the areas to be scaled. Standing enhances access intraorally and increases operator visibility. If an operator is not large enough to move to a seated 2:00 position, then standing can be beneficial to access those areas. Standing also decreases stress and strain on the back by decreasing the intervertebral disc pressure from approximately 220 pounds while sitting to 110 pounds while standing.³ Other advantages include stability and balance over both hips and feet around the entire patient chair when scaling. Standing forces the operator to transition from a static posture to one that requires movement. This transition promotes increased cardiovascular blood flow throughout the body.

Magnification in Dentistry

Magnification helps dental hygienists see better and can reduce the risks for musculoskeletal discomfort and pain that often accompanies dental hygiene clinical practice.²⁶ Seeking visual access to small and poorly illuminated areas of the oral cavity, dental practice often requires an extreme posture, with numerous spinal articulations placed at the limits of their ability to move.²⁷ Optical magnification loupes also help improve ergonomic posture, comfort and precision in dental procedures.³ When viewing through magnification loupes, probe readings and tissue characteristics improve due to increased visual acuity.²⁶

Magnification enhances neutral posture while scaling which is beneficial when using reinforced periodontal scaling techniques. Sitting up straight in an ergonomically safe posture allows the dental hygienist to

use the larger muscles groups in the arm for full arm strokes. Using magnification can also help prevent and eradicate poor postural habits.²⁸ Many dental hygiene schools are requiring new incoming students to be measured for magnification loupes for the significant benefits of practicing hygiene in a more precision oriented, ergonomically safe and comfortable environment.³

Stretching for Optimal Health and Career Longevity

Most dental hygienists sit for long periods of time during the day. Being in a seated position for long periods of time can cause muscle tension and stiffness. It also leads to weak musculature and restriction of movement in the joints. This can predispose an individual to a musculoskeletal injury. Performing exercises that stretch and lengthen the major muscle groups is an easy way for dental hygienists to reduce the likelihood of injury. Taking a few minutes to stretch during the day is important for the following reasons:³

- Helps prevent muscle strains and sprains
- Reduces tension by increasing blood flow and oxygen to the muscles
- Increases range of motion, which promotes increased flexibility
- Increases coordination, which enhances control of fine motor skills
- Promotes psychological well-being by reducing stress
- Promotes endurance during a stressful day



Shoulder, Arm Stretch

Taking mini-breaks to stretch can be done throughout the day. It only takes a few minutes to stretch if discomfort is experienced from muscle strain. It is extremely important to listen to your body and have body awareness when pain is being elicited from lack of mobility from sitting in a static position. Incorporating stretching and mini-breaks to relax for a couple of minutes during intense moments of discomfort will enhance well being and more endurance.

Exercise outside the workplace that includes functional strength training such as Pilates or flexibility training such

A graphic for a CDHA newsletter. On the left, there is a close-up of a dental mirror reflecting a patient's teeth. The background is a grid of green lines. On the right, there is a blue box with white text. The text reads: "Your Life is About to Get Easier!" followed by "Keep up with your profession & colleagues with our new eColleges online newsletter, featuring:" and a list of bullet points: "Professional development", "Best practices", "Patient care updates", "New products/instruments", "Business tips", and "And more!". At the bottom, it says "Get requested at www.CDHA.org" and "Visit us today and subscribe!". The CDHA logo is in the top right corner of the blue box.

as yoga can address weak core musculature and restriction of movement in the joints that can occur from sitting for long periods of time. The Pilates exercises combine a systemic approach to core stabilization of the abdominal muscles, internal and external obliques, erector spinae, and glutes. Core strengthening increases the length in the spine and improves musculoskeletal balance and health. Flexibility training such as yoga can assist in



Chest, Shoulder, Arm Stretch

balancing musculature. Yoga will stretch, strengthen and lengthen muscles. This type of flexibility training reduces tight muscles, improves posture, balance and function.³

There are many opinions about the best exercise for preventing or correcting musculoskeletal problems, but one thing is a constant: Prevention is the best approach.²⁹ Dental health care workers have tremendous physical demands on the neck, shoulders and back while performing daily work.

Dental practice often requires an extreme posture, with numerous spinal articulations limiting the ability to

move while seeking visual access to small and poorly illuminated areas of the oral cavity.²⁷ Therefore, a good exercise protocol should be incorporated to strengthen and balance postural muscles in order to encourage good seated posture for wellness, hygiene efficiency while scaling, and career longevity.

Behavioral Change to Adopt Future Change in Dental Hygiene Practice

Dental hygienists are faced with many decisions for appropriate patient care delivery, based on their relative clinical knowledge and skills. They must stay up-to-date with emerging research and technology, assess the needs of each patient, and implement the best treatment strategies within the appointment time and the scope and level of their own clinical skills. Hygienists must know when to adopt change, what the best practices are today and how to implement change while practicing in the work place.³⁰ Staying abreast of evidence-based clinical practice requires change; and change requires awareness, reeducation, implementation, open-mindedness and willingness. Educational programs emphasize evidence-based clinical decision-making more than ever. They are teaching students to base clinical patient treatment decisions on the best available research evidence.³¹

If a dental hygienist is willing to implement change in clinical practice, there are continuing education courses available to learn about evidence-based postural positioning and advanced periodontal instrumentation techniques. There are interactive hands-on workshops for participants to practice on typodonts as well as hands-on workshops in the operatory to learn instruction and application of advanced reinforced instrumentation techniques. Enrolling in an interactive/clinical continuing education program and clinical course on periodontal instrumentation has the potential to help dental hygienists improve their knowledge, skill level and integrate new information and instrumentation skills into their practices.³⁰

If the dental hygienist developed a personal ergonomic assessment plan to assess individual musculoskeletal risk and identify problems that exist, then the willingness to change behavior in dental practice might be more of an incentive. Learning new reinforced instrumentation techniques, strategies to prevent musculoskeletal injuries, protective postural ergonomics, and exercise implementation does require change; but the good news concerning change is that it's never too late to change!

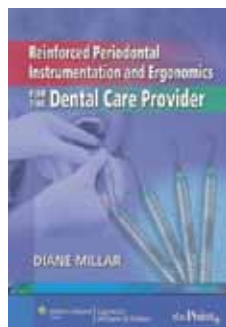
About The Author

Diane Millar, RDH, MA, has embraced the past 28 years working in private practice coupled with teaching at USC and currently at Cerritos Community College. Additionally, she is a published author of a dental hygiene instrumentation



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Home Study Correspondence Course

“Reinforced Periodontal Instrumentation and Ergonomics”

2 CE Units – Member \$25, Potential member \$35

Circle the correct answer for questions 1-10

1. If a clinician experiences pain due to cumulative trauma injury, the incorporation of reinforced instrumentation techniques help to decrease hand, wrist and arm pain.
 - a. True
 - b. False
2. Extraoral hand rests are dependent upon the following:
 - a. The pad of the ring finger needs to be adjacent to or close to the tooth being instrumented
 - b. A secure hand rest that uses pressure equal to that exerted on the tooth by the blade
 - c. The front or back of the fingers and hand provide the support outside the patient’s mouth
 - d. B and C
 - e. All of the above
3. Which of the following is not an advantage of using reinforced instrumentation techniques?
 - a. Increases control of the instrument blade
 - b. Increases power
 - c. Encourages the use of smaller muscle groups in both hands
 - d. Enhances the balance of both hand
 - e. A and B
4. The following information is true concerning hyperlaxity or flexible joints
 - a. It is difficult to grasp an instrument without the thumb collapsing
 - b. Can result from shape of the bones in the hands
 - c. Sometimes occurs due to weak or stretched ligaments
 - d. The hand can often be extended back beyond a neutral range of motion
 - e. All of the above
5. While using reinforced scaling techniques, the body, hands and arms must work together and in unison to be able to have successful working strokes that require more precision and power.
 - a. True
 - b. False
6. Neutral position is important while working because this position will only allow the following type of pelvis rotation:
 - a. Side to side from the hips
 - b. Forward and backward from the hips
 - c. Both of the above
 - d. None of the above
7. Movement around the patient during an appointment will help prevent injury and allow for ergonomically safe instrumentation technique.
 - a. True
 - b. False
8. Being in a seated position for long periods of time can cause the following:
 - a. Muscle tension and stiffness
 - b. Weak musculature
 - c. Restriction of movement of the joints
 - d. All of the above
 - e. None of the above
9. Which of the following is not true concerning stretching?
 - a. Promotes psychological well-being by reducing stress
 - b. Increases range of motion, which promotes increased flexibility
 - c. Decreases blood flow and oxygen to the muscles
 - d. Helps prevent muscle strains and sprains
10. Hygienists must know when to adopt change, what the best practices are today and how to Implement the best change while practicing in the work place
 - a. True
 - b. False

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