Maintaining Healthy, Pain-free Posture for the Dental Professional

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Introduction
Injury resulting from repetitive use in the dental professional and office staff can result in significant pain and loss of work, perhaps shortening an otherwise long fulfilling career. Through mindful awareness, the body can literally retrain its response to repetitive stress. Breathing, stretching and strengthening key muscle groups to better support and release tension will lead the dental professional and seated office staff to freedom in the body, the mind and the spirit.

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• The author reports no conflicts of interest associated with this course.

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Overview

Every day in thousands of dental offices, one of the staff members suffers from significant pain due to the repetitive body positioning required to treat patients. According to the Occupational Safety and Health Administration (OHSA) of the U.S. Department of Labor, work loss as a result of repetitive use injury (RUI) is the most common occupational health problem, costing more than $20 billion per year in workers’ compensation alone.1 The financial cost of treating low back pain as well as the personal income and production loss is tremendous.

Gathering specific data unique to the dental professional and the innumerable positions we place our bodies in poses a challenge. The anatomical characteristics of both the clinician and the patient need to be taken into consideration. The flexibility and static suspension (holding the jaw open or neck turning) can decrease proper vision and mechanical access. Imbalance can occur and lead to overexertion and injury. It is difficult to develop a “one size fits all” program that will prevent and treat imbalance in the dental clinician’s body. There are multiple facts to consider in regards to exactly what (or where) needs to be brought to balance. When imbalance occurs over time, it results in overexertion and injury. Prolonged static contractions leads to the accumulation of lactic acid, reduction of oxygen levels in the tissue, and fatigue and pain and likely injury.2 Developing health is best approached by stretching and strengthening several key muscle groups. Whether it is issues with the neck, shoulders, middle back, lower back, elbows, forearms, wrists, or fingers, the dental field is a high-risk profession, and taking charge now can change one’s day-to-day well-being.3 This particular course focuses on strengthening the legs, hips and low back.

As many dental professionals can attest, the position the body is kept in while treating patients contributes to pain and limitation in movement. The repetitive motion combined with the same static positioning can lead to imbalance that may result in injury. Injury requires treatment and often involves loss of work. Mindful practice of posture combined with breathing, stretching and strengthening key muscle groups regularly will balance the body. This is accomplished and maintained through the practice of yoga. Yoga is a philosophy and practice that connects the body, breath, and mind to energize and balance the whole person.4 Balanced bodies are necessary to support a healthy, pain-free spine. When balance is found within the body, in any position or range of motion, harmony can be created. This sense of equanimity can bring more peace into the workplace as well as throughout everyday life.

Learning Objectives

Upon completion of this course, the dental professional should be able to:
• Learn how and why overuse syndrome can result in pain.
• Understand early identification of imbalance in the body.
• Understand the antagonist/protagonist relationship of muscles at work.
• Use the breath to become aware of body sensation.
• Identify tight tissue or weakness and how to apply stretching or strengthening positions.
• Balance muscle groups while working with patients.
• Maintain balance in the body at work and all of life, creating comfort and stability.

Introduction
When treating patients the dental professional is seated, but may also be rotated at the hips and lower back. The natural curve of the lumbar vertebrae is the most compromised area in a seated position. This curve is developed as an infant prior to taking the first footsteps. It is unique to humans as it allows the spine to remain balanced in a fully upright position for extended periods and gives us the ability to walk. The cervical and thoracic curves of the spine are also involved.

In a seated position consider foot placement, leg position, pelvis, sacrum and low back as they are directly involved in how this is managed. In addition, the torso and weight of the arms may lean at yet another angle. Often, this position places the body both forward and twisted. It is easy to see how the potential for a stress related injury is likely to occur. Tasks involving awkward and static postures generate continuous muscle activity. The muscle fibers fatigue and develop micro tears in this cumulative trauma situation. Becoming aware of discomfort in the body when it is just a whisper is crucial. This calls for attention to the small sensations of the body, before they become big enough to create loud discomfort. Engaging in appropriate therapeutic yoga poses with the breath to stretch tension and strengthen weakness. Yoga does not require flexibility, but flexibility and strength can be gained by following one simple principle-observing the breath in movement and static position. Once this becomes fairly routine, it will be hard to imagine to have lived without this connection to the body.

Breath
Firstly, consider bringing awareness to the breath. When tension exists in the body or mind, breathing changes. When breathing changes the body is “fueled” differently. The physiological changes that occur with the decrease of oxygen levels causes an increase in cortisol and other harmful hormones to be released in the body. When breath does not flow properly, the organs of the body do not receive enough oxygen or blood flow to function as the body was designed to do. Circumstances may not be able to be changed, but one can learn to control and balance the breath with movement.

Sitting in a quiet environment, place both feet flat on the floor with knees over ankles and back straight in a relaxed manner. Gazing softly at one point or closing the eyes, begin to notice the natural inhale and exhale of the breath. Notice the length and depth of the inhale as the chest expands and the relaxation response that the exhale creates. Follow it in and follow it out several times before bringing the focus to anywhere in the body that is even slightly tight and tense. Begin in the thighs, exhale and soften them gently. Bring awareness to the sits bones and surrounding glutes, feel them relax down. Notice the low back, outer hips and knees as well. The most important part of this breath is the length and depth of it. The goal is an inhale to the count of 4 bottom lung, belly expanding and exhale fully with a long breath.
This is where the magic is found. The release into freedom or the power into strength.

The Bandhas (Energy Locks): The Pelvic Floor

The Bandha is defined as a “lock” of the energy flow inside the body. Strength and stability of the front and back of the body, referred to the core, is essential for pain and injury-free movement. When the body experiences long-term repetitive motion, it responds with increased tension in the connective tissue associated directly with the position of that body part. The first muscle group responsible for the action activates primarily, the next muscle group takes on some of the effort, and the next and so on. Each muscle does not act alone. Humans have the ability with awareness, to activate areas of the body that lighten the load, thereby saving any one muscle group from doing all the work and suffering the consequences. This is where awareness of the Bandhas is very beneficial in sustaining proper alignment over time. They are associated with areas of the body related to the larynx, upper belly and perineum. They connect proportionally core stability, pelvic floor health as well as the breath. All muscle groups enjoy the assistance of these “energy locks.”

Pelvic Floor/Mula Bandha

The pelvic floor is the deepest, lowest part of core activation. Located in the perineum, when engaged, it gently “zips” the core base in and slightly upward, the same muscles that control urine flow. Some may be familiar with the Kegal method of maintaining pelvic floor health. It is common however to create too much tightness in the area. Since everything is connected, it will result in an imbalance. It is important to note that there is an anterior and posterior engagement of the pelvic floor. The emphasis is placed more on the urine flow and just behind it. If the anal sphincter gets over activated too strongly and frequently, the sacrum will pull down and again, create painful imbalances.

A fairly easy and quick way to find these areas of Mula Bandha is to begin standing, with both feet equally flat, toes facing forward, shoulder blades gently drawn back and down in the position called “Mountain Pose.” Take a few long full breaths to connect with the body and become aware of the foundation of the core the pelvic floor, gently activated. Shift the weight slightly to the heels and become aware of the posterior activity of this muscle for a breath or two. Again, feel both feet fully engaged on the floor. As the weight shifts slightly forward (envision a ski jumper just leaving the chute) and notice the front activation of the pelvic floor for a breath or two. Be sure to return back to feet both fully engaged on the floor in mountain pose with equal pressure on the big toe ball mound, the pinky mound and the heel for a few breaths. Take time for another breath or two to become aware of now the “middle ground” of the perineum.

Why so much talk about this area? The activation of this area during movement can assist greatly in supporting and strengthening muscles in action, especially long-term repetitive use. Let’s take this concept to a seated position, where much of the dental practitioner’s time is spent. Begin again with feet equally grounded, placed directly under the knee in 90 degree angle, practice this a few times by gently “zipping” in and releasing of this area. Begin to extend the torso forward, over the legs and lift the arms in a reaching motion. Notice and activate this area while doing so. This little muscle will take much of the work load of the back, the shoulder and the spine when gently activated during movement.

Abdominal Activation/Uddiyana Bandha

This energy lock is also known in the yoga world as the “flying up” lock. This phrase refers to the action of engaging the abdominal muscles not only inward but also slightly upward. This is important because it keeps the low ribs from raising up too high which will create too much of an extension in the low back curve, tightening the mid back. When properly executed in a firm yet gentle manner, the extension of the spine automatically occurs.

To briefly visit this sensation, find a neutral standing position with shoulders drawn gently back, directly over hips. Connect with a long, slow breath or two. On an inhale, gently pull the belly in and slightly up, then release. Note the relaxation response that may cause the back to round again. Come back to the breath and after a few rounds activating gently in and upward, slightly lean the torso forward in a reaching out
Abdominal muscles, hips and the low back are very vulnerable to an extended seated position as well as forward or side leaning. This results in having stronger, foreshortened abs and longer weak back muscles. This is the perfect set-up for low back pain, one of the most common reasons for lost time at the workplace.

• Chest and upper back are equally vulnerable to imbalance resulting in pain. The forward position with arms extended can lead to shortened tight pectoralis muscle and overstretched trapezius. This will also greatly affect the most vulnerable of all joints that will be covered in the next session, the shoulder.

Muscles work in opposition and in synchronicity. One muscle does not move alone. The label “agonist” is given to the group that creates the motion, while the “antagonist” returns it back to anatomical position. When a muscle is activated, surrounding muscles reply with effort to share the workload, thereby avoiding excessive stress that could lead to injury. When awareness is brought to the surrounding tissues that can be actively engaged, further precaution is taken to protect and prevent injury. It is important to have the knowledge, or more importantly, the awareness and ability to engage opposing muscles groups that seated dental professionals rely on heavily while treating patients. Major, larger muscles that allow for walking, bending, lifting and carrying, are called upon differently in the dental professional body. Static positioning is added over time with the same repetitive movement and soon begin to feel the imbalance. This sets up a cascade of other issues of all surrounding (and even further away) activated body parts in the movement.

Throat Lock/Jalandhara Banhda
This area is of less importance and not activated much in a yoga/activity fitness environment. However, it would be good for the seated dental professional to be aware of it, locate it and be able to activate it particularly during long procedures without breaks. It is found in the throat area, by slightly tucking the chin and drawing the throat back.

Gentle engagement of these bandhas in to engage supportive skeletal muscles will keep the lower torso, mid back and neck muscles tone and balanced to support posture.

Identifying Antagonist Muscle Groups in the Dental Professional Working Position
Muscles that create normal range of motion are labeled agonists, while antagonists return it to anatomical position. Every human joint is articulated by multiple muscles. Each has antagonistic pairs to allow freedom in movement. This freedom is only as free as the balance is of workload versus rest, in both sides of the joint. This course and its suggested strengthening with equal stretching poses will cover the areas that dental professionals have overuse issues with in treating patients.

• Hamstrings and quadriceps work together. If they become imbalanced, injury of the knees and low back instability can occur.

Healthy vs. Unhealthy Alignment
Dentists, dental assistants, hygienists and front office staff all have a high incidence of positional imbalance and overuse syndrome. While treating patients, not only are they seated but likely rotated at the hips, leaning forward and likely looking down. This causes us to rely heavily on the front body in (tight) flexion and the back and side body in (long, weak) extension to achieve visual access. Foot placement, leg positioning, pelvis, sacrum and low back are directly involved in how this is
managed. Leaning the torso with arms lifted against gravity increases the probability of stress-induced chronic pain and injury.

At the beginning, ambitious young dental practitioners start out working more hours to gain experience and soon come to feel the effects in the body. Hours of work loss, hundreds, if not thousands, of dollars in doctor visits and physical therapy will certainly result in our feeling better. Returning to work, the cycle starts over again. This continues until education and awareness is discovered by the practitioner thus empowering them with the tools to achieve and maintain a balanced working posture.

Exploring the working muscles will help identify where to strengthen weakness and where to stretch congestion in tissues. Consider the legs with a common placement in a “10:00 and 2:00” position which can be much wider than hip distance apart. The feet are not often in full contact with the floor and placed with more outside edge. The sacrum itself is likely in posterior tilt, while the lumbar curve is compromised and the abdominal/chest area collapsed, as well as the neck likely in hyper flexion. This, in time will result in low back pain, piriformis issues, as well as the shoulder and neck pain (Figure 1).

It is useful to visualize “good” alignment while working. As the connective tissue (fascia) changes shape and strength, obtaining good posture will be an easier task. Eventually it will feel natural to be straight in posture. Ideally they would be just slightly more than hip distance apart. Likewise, it is important to ensure that there is no slumping or rounding of the low back. Attempt to keep the torso centered or at a line angle which agrees with tilt and core strength. Lifting the belly button to visualize it just equal or a little above the line of the horizon. Shoulder blades should be gently drawn back and down, as equal length in both sides of the torso is engaged (Figure 2).

Stretching and Strengthening Technique with Breath
There are different approaches to conditioning the seated dental professional’s musculature in striving for healthy balance. The following routine is simple, with easy exercises that do not take too much time thus increasing chances of regular practice. Personal identification in areas of strength as well as weakness is important. Long-term, an overall balanced practice will best serve the body and the mind. Applying regular therapeutic yoga principles consistently is the key to stability and freedom. The word YOGA signifies a union between the body and the breath. It is essential to remember to breathe during the process of practicing for it is in the measure of the breath where tightness may be found and released. The “four count” breath should be practiced throughout the body movement in yoga style practice of the “asana” or exercise. Always begin with taking the time for 3-5 rounds of breath while seated. Make them slow, full and purposeful to connect and quiet the mind. Count to 4 on the inhale, pause, and exhale to equal count. The breath is
where to tune in, connect and listen to the body, creating a “space” to release or build energy.

**Routine Practice of Poses to Maintain Balance and Stability**

**Abductors/Adductor**

**Simple Block Squeeze and Resistance for Strengthening Equal Sides**

**Seated Mountain Pose (Dandasana)**

Feel the feet directly under knees, full and straight on the floor. Press into the awareness of the big toe ball, pinky pad and heel equally. Draw the shoulders back, over hips, lengthen spine, pull the belly in and up slightly in a gentle toned hold. Place a yoga block or full box of gloves between the thighs and simply engage the thighs with slight tension and begin to press them towards each other, keeping the feet fully engaged. If there isn’t a prop to use, the palms can be used to create resistance here. Inhal, squeezing together gently for the four count, exhale release hold. Repeat 5-8 full breaths. Now, put a strap/belt/band around the thighs, or place firm palms on outside of the legs for resistance, press the legs apart for the count of four and release. Note if the feet are flat, if not, you may need to move them slightly to obtain this. If using the hands on outer thighs, be sure to maintain tall seated. Repeat 5-8 full breaths (Figures 3-4).

**Stretch/Release in Seated Wide Leg Pose (Konasana)**

While sitting tall in the chair, come to the edge of the seat (preferably without wheels), and take the legs as wide as comfortable until a full releasing stretch is felt. Place the hands on the inner thighs and breathe as the thighs start to press wide and away from each other. Keep feet flat under knees and tall. Hold 3-5 full breaths.

**Hip Rotators/Gluteals**

**Gentle Hip Opener “Figure 4” (Sukhasana Variation)**

While seated, take the right ankle (above the bony point), and place it on top of the left thigh. Hold onto the ankle gently with the left hand. Note what happened to the posture. Due to tight hips the back tends to round compensating for the tightness. Inhale, lengthen the spine and place the right palm on the right thigh (not the knee). Apply gently pressure outward and down, begin to lean forward slightly and then apply the breath to aid the stretch. Inhale to lengthen, exhale and gently press forward keeping hands firm. Bring awareness to the tightness upon the exhale allow it to soften and release. Stay there gently without moving back, right hand pressing, left hand holding. Continue mindfully with engagement on the inhale and release on the exhale (Figure 5) 8-12 breaths (hips are a large muscle group that holds much tension).
Low Back/Sacrum

Seated Forward Fold (Uttanasana)
Sit tall, open the legs a little more than hip distance apart and feet flat. Inhale, reach arms up, exhale and fold over the legs allowing the belly to drop between the thighs if possible. Move mindfully and carefully to not overstretch the low back. The hands may rest on a yoga block or fingertips to the floor or top of foot. If extreme tightness is discovered, the arms may not come near the floor at all. Allow the forearm to sit on the each thigh. Take a long slow inhale, engage the belly and pelvic floor to slightly raise the torso, exhalate release down being sure to keep aware of your edge; the limit when something feels less like a nice stretch and more like a pinch. Do this for 3-8 breaths. Upon coming up, engage the core, bring one elbow to thigh then the other elbow to the thigh and slowly rise coming back to Mountain.

Front Body Stretch

Front Body Stretch (Hastasana)
Simply inhale the arms up overhead while relaxing the shoulders away from the ears. Optional: interlace fingers, or palms together and start to lift up with a long spine, pressing the belly gently forward and up. Allow the arms to float back slightly, dropping the head gently. Imagine the back arching over a great big ball behind. Be sure to breathe, engage the core and pelvic floor in a gentle manner. Inhale to extend the reach, exhale to release back and over (Figure 6).

Side Bending/Seated Spinal Twist

Side Bending/Seated Spinal Twist (Matsyedrasana)
It is essential for spinal health to move the column of vertebrae in all of its possible directions of movement often, if not daily. First begin with lateral side bending to the right and left. With awareness, especially the breath, inhale the arms up and release the left arm to the chair edge or leg. Bend the elbow to a degree, reach the right arm up and over to the left. Keep the right sitting bone in contact with the seat. As the breath on the inhale guides the expansion, allow the exhale to lengthen from fingers down to the sit bones. Complete this for 3-5 breaths. Engage the pelvic floor and core and start to raise both arms over head. Looking to center and arms release down. Switch sides (Figure 7).

For a gentle spinal twist, inhale the arms up, exhale, turn left taking the left arm down gently behind you or down low by the leg of the chair. Bring the right hand on the outside of the left thigh. Turn gently in that direction to initiate the twist. Now, let the breath guide the movement, lengthen the spine upon inhale, and use the arms to hold, rotating the torso to the left. Be sure to stay tall and upright in the spine. Move from the deep belly, then the shoulders and finally gaze back behind for the whole long
4 count exhale. Remain there, gaze steady at some point behind, relax the belly and soften in the hips. Inhale again initiate spinal length and exhale from there deepening the turn. Engage the arms and soften. Move from the belly first, then the shoulders and finally the eyes to a point slightly further behind. Remember to keep the hips and belly and legs soft to further open and release the low back, feet in contact with the floor without grip. Do this for 3-5 breaths for each side (Figure 8).

**Seated Cat/Cow**

**Seated Cat/Cow (Marjaryasana/Bitilasana)**

Flexion and extension of the spinal column will help to keep the discs lubricated, nourished and in full range of motion. Begin in a seated position, with a tall spine and arms extended. Rest the hands on the knees. Upon the inhale, begin to bring the torso forward, lifting the heart center and drawing the shoulder blades together and down. The elbows will bend here to bring them close to the ribs allowing the back to arch in the attempt to increase air coming in. Be sure to bring a full, deep breath in that reaches the bottom of the lungs. A good “cue” is to imagine the sternum and belly reaching away from each other.

As the exhale naturally follows, begin to straighten the arms and draw the heart center back as the shoulder blades spread out across the upper back. The chin is slightly tucked as we gaze down and “hollow out” the belly. Round out the back as the sternum and belly draw towards each other. Complete the exhale to the count of four and, if possible, exhale further to a count of perhaps 6. Note that the longer the exhale, the more “stale"air can be expressed from the bottom of the lungs. Be sure to keep it within a range of effort that is not an over exertion. Keep in mind the lengthened exhale, with a fair amount of control, holds the potential to elicit a deeper relaxation response in the body.

Note: The Cat/Cow name derives from the “table top" position, which is on the hands and knees. The Cow pose is the belly dropped, back arched and heart center lifted forward on the inhale. The Cat pose refers to the rounding up like a Halloween cat and drawing the belly to the spine pressing the hands and tops of the feet into the floor to assist a long, fully complete exhale. This is also an excellent variation and way to explore spinal flexion and extension. Repeat 5-8 times (Figures 9-10).

**Standing Practice for Strength and Flexibility in the Hips and Low Back**

When time does not allow a full seated preventive practice, a shorter version can help release the body's tension in the workplace in just a few minutes of time, if that is available. These exercises reach far into the body as they stretch, strengthen and create stable support for the dental professionals' good posture. This will create the balance needed that will lead to a pain-free life. The best results come from a regular weekly practice of minimum 4 days per week. It may be discovered over time, that daily 15 minute attention to the body and connecting to the breath will be hard to live without. Just
as flossing and brushing are part of a regular routine, so will this practice be as well.

Begin in standing mountain pose. Keep the feet parallel, equally flat on the floor and hips distance apart. Press them (gently) into the floor. Engage the thighs, “zip” in the pelvic floor gently and become aware of the stability that action created as the spine lengthens towards the sky. Draw the shoulder blades together and gently down, while pulling the belly in and up slightly. Remain here, with arms enlivened somewhat, palms forward facing and breathe. One-5 breaths, big and slow and purposeful to a count of 4 on the inhale and a count of 4 on the exhale. Relax shoulders away from the ears. Notice the length in the spine, the feet intact and connect with the inhale/exhale count of 4.

**Right/Left Spinal Extension**

On the next inhale reach the arms up overhead stretching the front body open with shoulders relaxed down. Press lightly the belly button upward. Stay here, tall for 3-5 breath (Figure 11). On the last exhale place the left hand gently on the outer left thigh allowing it to slide down while the right hand reaches up and over. Notice the stretch from the hip to the fingertips as they expand again on the next inhale and perhaps the left hand slides (not supports) a little further down the left leg. Feel equal length on either side of the torso with core holding and pelvic floor stabilizing while staying for 3-5 breaths. Check if the feet are still in mountain pose connecting to the floor. Keeping the core and pelvic floor engaged in awareness draw the torso back to center and repeat on right side. Inhale brings arms up, exhale as the arm is released down. With length in the torso stretch over to opposite side. Take 3-5 breaths and bring the torso back to centered, supported along the way through core. Release arms to sides in mountain pose (Figure 12).

**Forward Fold Flexion/Lift Up Extension**

Inhale raising the arms up, exhale with KNEES BENT, fold forward placing the hands on shins, or a block or tops of your feet. Keep the belly close to the thighs and the full foot on the floor. The knees are bent to protect the spine. Inhale once again, exhale and slightly draw the crown of the head toward the ground further. Begin to gently straighten the legs and release. Complete the exhale releasing any tension held in the hamstrings and thighs. Rely on the hands and arms to stay engaged in order to further release. Remain here 3-5 or more breaths releasing the low back while keeping knees bent. Optional cue: energetically draw feet apart, freeing the sacrum.

Now, bend the knees even more and engage the core and pelvic floor to sweep the arms up and over head to standing. Place the palms together, interlaced fingers if desired and exhale the shoulders down. Inhale again, and extend the spine up as the head drops gently back to gaze up. Gently press the belly forward with the
weight in the heels and engaged legs. Feel as if the front body is opening, almost arching up and over to the back corner of the room. Breathe 3-5 breaths. Gently bend the knees to come out and back to mountain pose (Figure 13).

**Standing Spinal Twist Wall Assist**

Face the wall in mountain pose, close enough to touch the wall with elbows bent. Keep the legs gently active and place both hands on the wall. Keep the shoulder facing the wall. Inhale and gently use the arms to turn to the left. Engage the left hand pressing more than the right to maintain this gentle turn of the torso. Imagine softening in the low and mid back relaxing with the exhalation. After 3-5 breaths inhale and upon exhalation bring the twist to the right side of the body, using the right hand to press more into the wall to initiate the turn. End the twist with an inhale and coming back to mountain pose. Stay here for 3-5 breaths (Figure 14).

Repeat the practice of moving the spine in all 6 directions in which is meant to move, laterally with right/ left, forward and back, and lastly rotation to right/left. Be mindful, using the most important tool to connect with your body, the BREATH.

**Tips for the “In Between” Motions**

It is also valuable to be mindful of body position in the time between seeing patients. Oftentimes, workstation tops as well as the arm that holds all of the handpieces, instruments and suction devices are located at a level that causes stooping to wipe and clean. Taking the few minutes (a few minutes adds up by day’s end) to even sit and wipe down the equipment will make a big difference in the long run. If the bracket tray has the ability to be raised and lowered, then perhaps remain standing and lift the tray to access it for cleaning. Be mindful of the body, where the shoulders are in accordance to the breath. Consider standing as well when working on a few patients throughout the day (Figure 15).

It is also wise to notice the body in motion during often “hurried” movements on a busy day of seeing patients. When tension is felt in the body or mind, stop to take 1 or 2 slow deep full breaths while finding a gentle mountain pose. At the end of the day, one will feel more at ease, comfort and likely improved mood. Two breaths take less than 30 seconds. Another key movement that will help when done several times during the day is to draw the shoulder blades together and down gently. It is important to keep the low back from overarching while doing this motion, as the ribs may lift up if this move is overdone. Remember, always move gently. Begin at the level of focus on the breath. Listening with the ability to keep that slow deep breath steady, without hearing a change in it. If beyond that edge, the breath will be felt as a forceful hold on the inhale and overexertion upon an exaggerated exhale. Over time, the 4 count inhale and 4 count exhale will feel natural and a welcome practice at different
times of the work day as well as the non-work day. Focusing in on the breath brings awareness of the stillness, the peace and the balance we are looking for.

**Conclusion**

Dental professionals present unique body mechanics as they treat patients that can result in pain and overuse injury. Numerous studies have been performed due to this fact. It has been discovered and encouraged that dental professionals can have long, comfortable fulfilling careers that could be reduced through a combination of prevention, ergonomic guidance, and specialized therapeutic interventions. Over time, the repetitive positions and the nature of the movements will likely result in discomfort leading perhaps to loss of work and interruption of personal/family time. Recreational activity, chores and sports will become something that might be sacrificed or decreased.

There are many areas that can suffer strain in the body. The first and largest affected, as well as most potentially debilitating, are the hips (pelvis) and low back (lumbar/sacrum) when out of balance.

Since there is limited teaching on ergonomics in dental universities around the world, it suggests the implementation of an intervention program about work related musculoskeletal disorders that focuses on ergonomic considerations and regular exercises that can be effective in reducing such disorder among dental professionals.

There is something that can be done. Raising one’s own awareness, noticing breathing patterns, learning how to activate key areas of core stability and applying a few stretches/strengtheners will result in less discomfort in the body. When approaching this practice, remember the self as the caregiver of the body. Take the time to find simple effective methods to create postural health. It is important to note the suggested practice here will certainly benefit the dental body; however, it can be only the beginning of stopping the chain of pain and injury. Yoga has become more and more popular with all levels of age, health and fitness. It is a practice that is immediately available, diverse in style and offered at all levels which makes it open to everybody. Local studios as well as online sessions are good places to begin to deepen the ever growing body of knowledge. It may take some time to find the place/teacher that best suits individual goals. It is important as well, to remember to start in a level appropriate class and soon the proper level for each individual will present itself. The hardest part is taking the first step of beginning. Resistance itself is strong before, during or after a long busy day. No one ever says “Darn, I wish I didn’t do yoga.” Begin today to free the overworked tightness with breath and stretch, as well as strengthening the weaknesses. Creating peace and equanimity in the body, mind and spirit will allow for the freedom that will be felt in the office and into everyday life.

![Figure 15.](image-url)
Course Test Preview
To receive Continuing Education credit for this course, you must complete the online test. Please go to: www.dentalcare.com/en-us/professional-education/ce-courses/ce523/start-test

1. Which is most compromised in the seated dental professional?
   a. Pelvic bone  
   b. Leg muscle  
   c. Lumbar curve  
   d. Sacrum

2. Awareness in the body is important for the following reasons?
   a. Noticing discomfort before it reaches pain/injury  
   b. Aides us in movement  
   c. Assists spinal integrity in static position  
   d. All of the above.

3. Proper breathing pattern change the following ___________.
   a. oxygen reaching the organs  
   b. decreased cortisol release  
   c. decreased circulation  
   d. A and B

4. Breathing practice suggests all of the following EXCEPT ___________.
   a. relaxation response is noticed on the exhale  
   b. breathing exercises can be done seated or lying down  
   c. the inhale is done for a quick count of four  
   d. the exhale can be long to a count of four or more

5. Awareness of the Bandhas/Energy locks are important for ___________.
   a. core stability  
   b. the first muscle group responders only  
   c. urine flow  
   d. A and C

6. The Mula Bandha is found ___________.
   a. reaching the arms up overhead  
   b. drawing the belly in and up  
   c. pressing through the feet  
   d. gently engaging the pelvic floor in and up

7. Core stability is assisted greatly with ___________.
   a. Mula Bandha  
   b. Uddiyana Bandha  
   c. Jalandhara Bandha  
   d. All of the above.

8. Muscles work separately. The antagonist muscles benefit by balance.
   a. Both statements are true.  
   b. Both statements are false.  
   c. The first statement is false, the second statement is true.  
   d. The first statement is true, the second statement is false.
9. When the sacrum is in posterior tilt, the following is affected?
   a. Lumbar curve
   b. Hamstrings
   c. Abdominals/chest
   d. All of the above.

10. Which of these exercises will balance the Abductor/Adductor relationship?
   a. Seated squarely, feet rotated out, gently resist the inner action of the thighs
   b. Seated squarely, take legs wide, creating resistance with a band/strap
   c. Seated squarely, feet under knees, squeeze block, then legs extended
   d. Seated squarely, feet under knees, create in and outward resistance, with block/strap

11. The most important element in performing exercises is the breath. Why?
   a. To create a lock in the body when we retain the breath.
   b. The regulation of the breath signals our ability to perceive strengthening and release.
   c. The exhale creates a response that allows the body to release cortisol.
   d. With the inhale we gain strength, with the exhale we release it.

12. Which of the following is true in seated hip opener?
   a. We cross the ankle, above the bony part over opposite thigh, above the knee.
   b. Inhaling we lengthen the spine, exhaling we gently press gently torso forward.
   c. Move in and out of the position several times, guided by breath- maintain the pose.
   d. A and B

13. Opening the front body, seated or standing is done in the following manner?
   a. Inhale arms up overhead, as the belly is gently pressed forward and up.
   b. Allow the gaze to come upward, relaxing the neck back, shoulder blades down.
   c. Feet in full contact with the floor, thighs enlivened, lengthen spine up and back.
   d. All of the above.

14. Forward folds require bent knees protecting the spine, keeping feet level.
   a. Both statements are true.
   b. Both statements are false - knees bent, feet stay level.
   c. The first statement is false, the second statement is true.
   d. The first statement is true, the second statement is false.

15. The following tips are true for the movements we make between patients.
   a. Be mindful of where your shoulders are and draw them often together and down.
   b. Taking time to allow a slow full inhale and exhale during the day is very beneficial.
   c. Consider standing while treating patients, and be seated for wipe down cleaning.
   d. All of the above.

16. Dental professionals have body mechanics that can suffer injury. This is due to occasionally holding their posture in extreme, off balanced positions.
   a. Both statements are true.
   b. Both statements are false.
   c. The first statement is false, the second statement is true.
   d. The first statement is true, the second statement is false.
17. The best place to begin a regular yoga practice is ____________.
   a. a local gym with high intensity class offerings
   b. a local studio and even online gentle sessions
   c. a private teacher only is the best way to begin
   d. obtain a book on yoga and do the poses one at a time
References

About the Author

Dianne Saywell, RDH, RYT

Dianne Saywell has been practicing dental hygiene for over 25 years. After coming close to being incapable of continuing her career due to repetitive stress injury, she turned to yoga. Upon discovering the healing benefits in her body after just a few weeks of attending sessions at a local studio, she knew she had to share this with everyone.

Dianne now currently does both jobs, dental hygiene and yoga instruction. She holds workshops in the studio where she teaches all levels of classes in North Port, Florida. Feeling she has found a passion alongside a rewarding career, she never tires of sharing the yoga love with her patients and co-workers as well as any dental suggestions with her students.

Dianne works and lives in Southwest Florida with her husband, Bob, a retired firefighter and avid fisherman. They practice yoga together to maintain their active lifestyles.

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