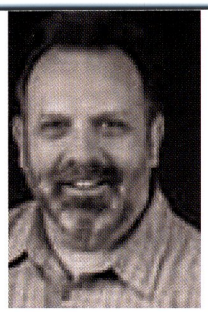
Optimal Performance



By Dr. Timothy J. Caruso

Graduate, Benedictine University, Lisle, Illinois, MBA, MS

Washington University, St. Louis, Missouri, PT

University of Illinois, Chicago, Illinois, BA

Currently, Chicagoland Performance Consultant, Chicago, Illinois

Optimize:

To make as effective or functional as possible.

Optimal:

Most desirable or satisfactory.

Performance:

The execution of an action; the manner in which a mechanism performs.

What does optimal performance mean to you? Running faster, jumping higher? Running a smooth practice? Does your office run efficiently or are you held back by inefficiencies, poor work flow, fatigue, or discomfort? Are you in the groove or in a rut? Working today requires much more from each and every staff member in order to meet the needs of our patients and our creditors. We are all working harder, but can we work smarter? How about pain; do you have pain when you work? How about fatigue? Pain and fatigue can negatively impact the practice of dentistry in the short run, but in the long run, pain can shorten your career, limit your aspirations, and lead to disability in some cases. These are just a few of the costs of modern day dentistry.

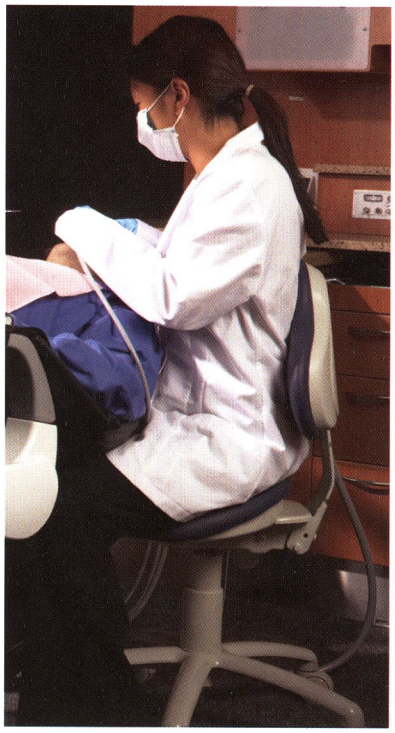
Have you ever considered the cost of poor positioning on your body? The kind you experience when you stay in one position for too long. Some people call these holding patterns. You know the ones, leaning forward from your head and shoulders, turning to the left and reaching with your arms to access the oral cavity. How often are you in these patterns? Is your body in balance or out of balance? Do you feel stiff or sore during your working day? Are you able to achieve and maintain an upright, sitting posture? Is it comfortable? So many dental professionals approach their work with "reckless abandon." By this I mean that dental professionals do whatever it takes to treat each and every patient to the best of their ability, often to their own detriment. All dental professionals assume a wide variety of awkward, if not extraordinary postures in order to deliver an effective treatment to their patients on a daily basis. The awkward postures, repetitive motion, and forceful exertions necessary to perform today's dental techniques can stress and strain the musculoskeletal system, which in turn inhibits the body's natural repair processes. This often results in pain, limited mobility, headaches, fatigue, numbness, tingling, and potential injury. Many of you reading this article may be experiencing one or more of these problems right now. Do you suppose that it positively or negatively affects your work? Reckless abandon often has its negative consequences.

This is why posture is a key factor in producing or reducing stress and strain. Posture changes over time. As we begin the day, we often assume a good upright working posture. As the day progresses, however, gravity begins to take hold. This, in combination with muscular fatigue, can lead to a less than optimal, slouched posture. Throw in a difficult patient, poor visualization of the oral cavity, or limited adjustability of the operator stool; it is easy to slip into an awkward, stressful static posture. The body needs to then work harder in order to function. The ultimate effect on the body is shortening and tightening of the anterior muscular and soft tissue structures of the chest, arms, shoulders and neck. Meanwhile, the posterior back and scapular muscles become over-stretched and weak. This shortening on the anterior aspect with over-stretching posteriorly contributes to a poor posture with a forward head and rounded shoulders. Where do you feel your stress and fatigue after a long day? Your back? Your neck? Your shoulders? As the body accommodates more and more to this position, it may become harder to assume a more balanced upright position. A static holding pattern may make sitting up straight difficult, if not impossible as the years pass. The slouched posture increases the amount of stress on the cervical spine and associated neuromuscular tissues musculature. It may decrease blood flow to the associated structures causing ischemia, pain and ultimately limited function. Do you have headaches, dizziness, blurry vision? Muscle spasms and unrelenting tension?

How does a dental practitioner achieve optimal performance in their practice without stress? You may be well on your way, just halfway there, or still at the starting blocks. Let's

consider how an optimal practice achieves its working status. Welcome to our "virtual office." Let's look at several key areas to consider in an optimally performing office.

Let's start with an example. If you golf, you know the importance of a good set of clubs, the value of professionally taught lessons. But what is most important beyond all of that? The golfer! For years we have watched pro golfers struggle with poor performance and chronic injuries, knowing all along that they have the best clubs and the finest instructors. Consider, if you will, the golf swing for a moment. For all of you golfers out there, think about your back swing. If you have any tightness in your shoulders or limited rotation in your hips or perhaps some stiffness in your back, it doesn't matter what type of clubs that you have, or how many lessons that you have taken, you won't be able to get into a good back swing! Ultimately it is not the clubs nor is it the lessons; it's the body that dictates the swing. In dentistry, there are similar forces at play. The operatory can be state of the art, run by a highly trained practitioner. But if that practitioner is stiff, sore, out of shape, or out of balance, the practice does not run optimally, it's impossible.



Neutral Posture

Dentistry requires extraordinary dexterity, coordination, and control in order to maneuver around the oral cavity consistently enough to successfully complete the task. If we consider the primary target in dentistry, it is the oral cavity. All of the "action" centers on the oral cavity, which is approximately 2 inches in diameter, and considerably smaller than the cup in golf. The position of the hand and the grip of the fingers dictate the ease and efficiency with which the procedure can be undertaken. If we were to place the wrist in an awkward position, wouldn't that impact the procedure? What is the effect on the rest of the body? If one extremity is contorted, the awkward position tends to impact the rest of the body. For example, try to bend your head forward as far as you can while turning it to the left. Sound familiar? Now keep that position while trying to sit up straight. How does the rest of your body feel? How often do you assume this position in your practice? How are you feeling at the end of the day?

Let's consider the position of the wrist and hand more closely along with the affect on one's grip. Ergonomic literature has shown that excessive flexion, extension or "bending" of the wrist can diminish grip strength while increasing the pressure within the carpal tunnel. We know that wet, smooth instruments require increased grip strength and force in order to maintain necessary control of the instrument. Now, try a little experiment. Wet your treatment gloves, then pick up an instrument and grip it normally. Then have one of your coworkers try to remove it from your hand. Is it easy or difficult? What do you have to do? Next, move your wrist into an excessively flexed (downward) or extended (upward) position as far as you can and do the same thing. Does this affect your grip? You bet! You most certainly have to grip it harder to maintain control. Over time the poor position along with fatigue comes into play. Now, consider gross debridement patients, three, four or five in a row! Yikes! Try the same experiment at the end of the day compared to the beginning of the day. Uncomfortable? Painful? Interesting isn't it?! Worrisome?

How about where you sit? There are numerous components to consider when looking for a new seating system to meet your personal needs. Let's consider what to look for in an operator stool. There are literally hundreds of options available for sitting. There is your standard dental operator stool, which is fairly conventional. There are "saddle" type stools with varying types of seating configurations. There are anterior support stools to allow you to lean forward toward the patient. There are exercise ball type seats which require more "dynamic sitting." When all is said and done, the most important component is comfort, followed by function and adjustability. Let's consider a few of the most important components of seating.

First, the seat pan should be wide enough and deep enough to fit your bottom. If you share your seat with someone whose bottom is very much different than yours, consider getting one type of seat for each of you. The next consideration is the shape of the seat pan. We all have differing contours to our bottoms but tend to be more comfortable with a contoured seat that has leg reliefs or "cut outs" for the thighs. The front of the seat should be contoured or "water-falled", gently sloping forward toward the floor. Both of these features will best accommodate the round shape of the leg and relieve pressure on the back of the thigh.

The ability of the chair to allow a gentle forward tilt of the seat pan allows the knees to be slightly lower than the hips, which facilitates a more balanced position of the spine. Having a stable base of seated support will allow the rest of the body to "sit" comfortably from the waist up. There should be a back support that is able to meet the back and gently support the natural lumbar curve of the lower back while being a reminder of one's posture.

The backrest should be adjustable up and down to accommodate differing torso heights while being adjustable, forward and backward, for varying degrees of lumbar lordosis or swayback. This will also allow the practitioner to assume a number of different postures during the course of a day and not be obligated to just one or two. Use of armrests tends to be a controversial topic, but more over, a personal preference.

Many dental professionals have learned to practice their trade without armrests, which has led to a variety of awkward working postures. When in use, armrests tend to keep the arms in a supported, balanced, neutral position during the working day at the practitioner's side. This tends to significantly unload the stresses of the upper body, neck and shoulders, thus decreasing the amount of fatigue one feels when the arms are not properly supported.

BAD POSTURE

GOOD POSTURE

Although the use of armrests may be an initially awkward position for those individuals unaccustomed to working with armrests, they soon find that their level of comfort during the day increases dramatically. And, although armrests are useful, there may be certain procedures that are hindered by them. The rule with armrests is that they should support and un-weight the upper extremities, but should not constrain one's natural arm movements. The armrests should have unlimited degrees of freedom of movement and should be able to move out of the way when not needed. Lastly, the dental stool should be a five-caster base to allow for freedom of mobility on a variety of flooring surfaces. Comfort and function in the operatory is a priceless commodity. Efficiency, effectiveness, and career longevity can be positively and negatively impacted by operator seating. When it comes time to consider a chair, don't sell yourself short and if the decision falls to someone else, the option of being willing to "split the cost" and get what is best for you should not be overlooked. Remember, the ultimate component is comfort, followed by function and adjustability to best meet your particular needs.

Next, let's consider this: if a dental practitioner would like to maintain a balanced, upright working posture while accessing the oral cavity on their operator stool, the patient chair also needs to have certain characteristics. It is understood that the patient needs to be properly supported and relatively comfortable. However, the ultimate level of comfort and function needs to belong to the dental practitioner. Once the general needs of the patient are met, the dental professional needs to be considered and take priority. Remember, the patient is in the operatory from 30 to 60 minutes per procedure on average, while the dental practitioner is in the operatory from 8 to 12 hours per day. In order to optimally access the oral cavity while maintaining a balanced sitting posture, the back of the patient chair must be thin, narrow or tapered.

This shape will best allow the dental professional to easily slide their legs comfortably under the back of the chair and get close to the patient. By doing so, the professional is able to keep their arms in a relatively neutral position closer to their sides while accessing the patient's oral cavity. The top of the chair needs to be able to support patient's head in a position under the practitioner's hands. This will eliminate the need to bend or twist the trunk to "reach" the oral cavity. The head support should be easily adjustable to allow the patient's head to be properly supported while allowing freedom of movement necessary during ongoing dental procedures. The patient armrest should support the patient's arms without restricting the practitioner or interfering with treatment.

In general, the patient's chair should not sacrifice practitioner access for patient comfort—and should be an asset to treatment not a hindrance. Patients should be asked to accommodate for the practitioner, rather than the other way around. Over time, patient accommodation, poor positioning, and stressful postures can take its toll on dental productivity, comfort, and efficiency.

We have taken a short walk down the path of optimal performance. Is this the right path for you? If you were to consider one or more of the areas discussed, you may find that there may be a few that fit easily into your practice. What you may find is that you cannot implement them all at once, but may have more success adding them incrementally. On a day-to-day basis, these recommendations, combined with the elimination of the anatomical and physiological stressors in your practice, can improve your level of performance and overall comfort. In the long run, may even prolong your dental career. That said, can you afford not to? ■