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A Move to Improve - Posturedontics

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Editorial

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The art of dental practice requires a high degree of concentration and precision. Most of the dental professionals reported neck, shoulder and lower back pain as dentists often assume awkward physical positions and repetitious hand movements while providing treatment. Ergonomics might positively impact dentists throughout their professional lifespan.

In Greek “Ergo” means work and “Nomos” means natural laws or systems. What is Ergonomics? An applied science concerned with designing and arranging things people use so that the people can do work most efficiently and comfortably.

According to the study done by Burke et al. in 1997 ^[1], reasons for early retirement among dentists are Musculoskeletal Disorder (MSD) (29.5%), Cardio-Vascular Diseases (21.2%), Neurotic Symptoms (16.5%), Tumors (7.6%), and Disease of Nervous System (6.1%).

In the ADA's Health Screening Program of 2012, 56.4 percent of participating dentists had musculoskeletal symptoms. Sixty-one percent of the currently practicing dental professionals reported regularly experiencing pain, tingling, or numbness. The most commonly reported symptoms were located in the back (51.0 percent reported) and neck (51.1 percent) ^[2].

Common types of musculoskeletal disorders are neck and shoulder disorders, cervical spondylosis and myofascial pain disorder. Back disorders are herniated spinal disc, lower back pain & sciatica. Hand & wrist disorders are carpal tunnel syndrome and finger tendonitis.

MSD Signs: decreased range of motion, deformity, decreased grip strength, loss of muscle function. Symptoms: pain, numbness, tingling, burning, cramping & stiffness ^[3]. A risk factor is not always a causation factor; the level of risk depends on amount, duration and level of exposure.

Applying Ergonomics Principle to Work: To start with a thin narrow patient chair to allow the practitioner to get close. A supportive operator stool to provide proper spinal alignment and support, reduce force exertion, maintain hand/wrist in neutral position (no wrist bend) and use a more relaxed grip when possible.

When selecting instruments look for hollow or resin handles, round, textured/grooves, or compressible handles and color-coding may make instrument identification easier.

1. When selecting hand pieces look for lightweight, sufficient power, built-in light sources, angled vs. straight-shank, pliable and lightweight hoses (extra length adds weight).
2. Provide sufficient space, permanently place equipment used in every clinical procedure within comfortable reach (within 20 inches in front of the body), use mobile carts for less commonly used equipment and allow convenient positioning when required.
3. Lighting: Produce even, shadow-free, color-corrected illumination, concentrated operating field, the overhead light switch

should be readily accessible, hand mirrors can be used to provide light intra orally, use of fibre-optics for hand pieces & add centered lighting to operating field.

4. Magnification: Eye loupes provide clearer vision and depth of field. Improve neck posture.
5. Operator Chair: Promote mobility and patient access; accommodate different body sizes. Look for stability, lumbar support, easy seat height adjustment & fully adjustable.
6. Patient Chair: Promote patient comfort, maximize patient access, look for stability, fully adjustable head rest and hands free operation.

Caution in Equipment Purchasing: Consider ergonomics when purchasing new equipment. Dentists must develop an understanding of ergonomic risk factors and the concept behind it.

And because even dentists have a life outside of dentistry, everyday habits can add to the stress on your body and well-being. When using a laptop, use the padded wrist rest. Position yourself in such a way that it doesn't affect your back and neck.

RECOMMENDATIONS

Exercise and fitness is an important element of overall health and prevention of musculoskeletal disorders. Strengthening the stabilizing muscles, such as those in the shoulders and back, as well as chair-side stretching, also can help prevent injury. Take time for stretching breaks in between patients or after certain procedures. Listen to those aches and pains from your body and respond to them before they become chronic.

CONCLUSION

Fortunately, good ergonomic practice can drastically reduce the likelihood of negative effect of musculoskeletal disorder. Two dentists may be exposed to the same risks, at the same degree of intensity, and one will develop MSD and the other will not. Reason is unknown but it's true. A poor ergonomic choice may impact today or even a few years down the road. Many dentists have experienced some type of musculoskeletal pain in their shoulders and neck, hands and wrists, low back, forearms and elbows. Studies need to be conducted on the impact of poor ergonomics on the development of nerve and muscle pathologies. MSD would prevent dentists from providing the quality service and could threaten the professional careers. Ergonomics have come into the profession in a big way.

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