

Taking Microsteps to Ensure Long-Term Health and Safety

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When we think about safety in the workplace, we almost immediately think of OSHA and the many administrative and engineering protocols they have set in place to help workers avoid acute injuries, like checklists and thick rubber gloves for instrument handling during sterilization. Ergonomics occasionally becomes a consideration, and an ergonomic specialist is hired for team training to evaluate equipment needs or make suggestions for operatory optimization.

One often-overlooked, but incredibly effective, implementation for improving workplace safety is personal wellness. Wellness may feel like an elephant-sized undertaking to improve, but there are a few relatively small steps that can pack a big punch for worker safety. Surprisingly, these are often also steps our patients can benefit from to improve their overall health and safety.

We wanted some practical alternatives to long-term injury prevention for the worker, the patient, and the practice, so we sat down with Katrina Klein, RDH, CEAS, CPT. Katrina has been a practicing registered dental hygienist since 2007, but she’s also an international speaker, author, certified ergonomic assessment specialist, and self-described biomechanics nerd. Here’s what she had to say about preventing, reducing, and eliminating pain.

Q: What can be done on site to improve safety for dental workers that doesn’t cost the practice money?

A: The most common occupational health risk for dental professionals is musculoskeletal disorders (MSDs), with at least 74% of dental professionals reporting MSD symptoms.¹ The reported body pain varies based on age, time spent working, gender, general activity level, number of years working, and ergonomic interventions.² Stretching, individually throughout the day or as a team in a huddle, can easily be implemented to reduce the chronically tight musculature that’s commonly associated with MSDs. Ergonomic strategies like standing part of the time, tipping the headrest back slightly on the patient chair, and optimizing existing workspaces are small ways to reduce overall risk. Creating an office culture in which professionals are encouraged to take care of basic human needs, such as staying adequately hydrated, can reduce injury risk. Dehydration can result in muscle cramps, headaches, brittle bones, fatigue, etc., which can lead to errors and injury. One study showed that “Being dehydrated by just 2% impairs performance in tasks that require attention, psychomotor, and immediate memory skills, as well as assessment of the subjective state.”³

Q: Can anything be done at home for workplace safety?

A: Absolutely. 70% of workplace errors happen due to fatigue.⁴ According to the Mayo Clinic, chronic fatigue can most often be tied to lifestyle habits, with additional consequences of poor overall long-term health.⁵ Improved lifestyle habit considerations include regular exercise to help reduce age-related muscle loss while also improving posture and sleep quality.⁶ Maintaining a consistent sleep schedule and better sleep hygiene habits show a dramatic reduction in chronic fatigue.⁷ See the table below for sleep hygiene recommendations.

Sleep hygiene habits that improve sleep quality:

- Achieving 7 to 9 hours of sleep
- Maintaining a consistent sleep/wake schedule
- Having a regular bedtime routine
- Engaging in regular exercise
- Avoiding many substances late in the day (e.g., caffeine, alcohol, heavy meals, light exposure)

Q: There is so little time in the day. Where do we find the time?

A: The short answer is that we make it. We plan for it just as we plan for staff meetings or annual OSHA training. Planning for wellness is planning for injury prevention. Consider exercising before work, as the day’s happenings can lead to obstacles in getting it done afterward. As a team, schedule ergonomic education/training during a projected annual downtime. Add a stretch into every morning huddle, when entering/exiting an operatory, or before a patient whose needs create a heavy physical demand on the provider. Take a microbreak while in “waiting” mode (waiting for an exam, waiting for another provider to finish their task, etc.). Take advantage of break periods by mentally exhaling with some fresh air outside the office, taking a walk, or doing deep breathing exercises to calm the nervous system. Ultimately, it’s our job to be mindful of health and safety.

Q: Isn’t there a gadget I can buy to fix all of this?

A: No, but there are several that can help. The most impactful piece of injury reduction ergonomic equipment for clinicians is now defunctive (“ergo”) loupes, followed closely by ergonomic training and then an ergonomic chair.⁸ Deflective loupes place the clinician’s head in neutral rather than in flexion at the neck as seen in traditional TTL (through the lens) loupes, thus reducing neck pain — which is the No. 1 reported body part with pain by dental clinicians across the board.⁹ The next body part with frequently reported pain is the back, which can be reduced with a properly used and fitted saddle stool as well as varying working posture by part-time standing.¹⁰ By placing the hips above the knees in a sit-stand position experienced by saddle stool users, the spine is held in a neutral position with the vertebrae and discs stacked evenly on each other, reducing the risk for bulging discs. A small finger massager, like Palmero’s CaRing Tension Relief Band (Ref# 3810) that promotes circulation to the fingers is also easily stored and used — simply roll the massager up and down the finger and feel the relief!



CaRing Tension Relief Band
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Practices can achieve long-term worker safety with small but significant steps to protect our overall health and mental acuity, maintain neutral posture, and promote ergonomic practices in the dental office. By using a prevention mindset — being mindful of and consistent with our small daily habits — we can work without pain!

We want to thank Katrina Klein, and we invite you to evaluate our wide range of products designed to protect clinicians, patients, and the practice during dental procedures. For more information, visit palmerohealth.com, call 800-344-6424 or email customerservice@palmerohealth.com.

References:

1. Moodley R, Naidoo S, Wyk JV. The prevalence of occupational health-related problems in dentistry: A review of the literature. *J Occup Health*. 2018 Mar 27;60(2):111-125. doi: 10.1539/joh.17-0188-RA. Epub 2017 Dec 6. PMID: 29213011; PMCID: PMC5886878.
2. Butera A, Maiorani C, Fantozzi G, Bergamante F, Castaldi M, Grassi R, Leuter C, Scribante A, Nardi GM. Musculoskeletal Disorders in the Clinical Practice of Dental Hygienists and Dentists, Prevention and Awareness among Italian Professionals: Focus on Enlarging Systems. *Clinics and Practice*. 2024; 14(5):1898-1910. <https://doi.org/10.3390/clinpract14050150>.
3. Adan A. Cognitive performance and dehydration. *J Am Coll Nutr*. 2012 Apr;31(2):71-8. doi: 10.1080/07315724.2012.10720011. PMID: 22855911.
4. National Academies of Sciences, Engineering, and Medicine. 2006. Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem. Washington, DC: The National Academies Press. <https://doi.org/10.17226/11617>.
5. Fatigue. Mayo Clinic website. Accessed Feb 3, 2025. <https://www.mayoclinic.org/symptoms/fatigue/basics/causes/sym-20050894>
6. Chen L, Li Q, Huang X, Li Z. Association between sleep duration and possible sarcopenia in middle-aged and elderly Chinese individuals: evidence from the China health and retirement longitudinal study. *BMC Geriatr*. 2024 Jul 11;24(1):594. doi: 10.1186/s12877-024-05168-x. PMID: 38992611; PMCID: PMC11241889.
7. Baranwal N, Yu PK, Siegel NS. Sleep physiology, pathophysiology, and sleep hygiene. *Prog Cardiovasc Dis*. 2023 Mar-Apr;77:59-69. doi: 10.1016/j.pcad.2023.02.005. Epub 2023 Feb 24. PMID: 36841492.
8. Lietz J, Ulusoy N, Nienhaus A, Prevention of Musculoskeletal Diseases and Pain among Dental Professionals through Ergonomic Interventions: A Systematic Literature Review. *Int J Environ Res Public Health*. 2020 May 16;17(10):3482. doi: 10.3390/ijerph17103482. PMID: 34229439; PMCID: PMC7277669.
9. Gupta S. Ergonomic applications to dental practice *Indian J Dent Res*. 2011;22:816–22.
10. Pejčić N, Jovčić MĐ, Miljković N, Popović DB, Petrović V. Posture in dentists: Sitting vs. standing positions during dentistry work--An EMG study. *Srp Arh Celok Lek*. 2016 Mar-Apr;144(3-4):181-7. PMID: 27483563.

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