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We are Training Dentists to Hurt Themselves, and We Know It

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Opinion
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Opinion

I have spent the better part of a decade watching clinicians bend over patients in postures that would make a physiotherapist wince, and I have come to a blunt conclusion: dentistry has normalized an occupational injury pattern that would be considered unacceptable in almost any other profession. We call it "the nature of the job." I no longer accept that framing.

The numbers are not new, and that is precisely the problem. Surveys of practicing dentists and dental hygienists have repeatedly put the prevalence of musculoskeletal complaints neck, shoulder, and lower back pain chief among them somewhere between 60 and 90 percent depending on the study and the country. These figures have been stable for decades. We have not moved the needle, and I think that is because the profession has treated ergonomics as a matter of individual discipline rather than systemic design [1].

Consider how dental education handles posture. Most curricula devote a lecture or two, early in training, to the "neutral position" the textbook illustration of a clinician sitting upright, instruments held loosely, magnification loupes angled just so. Then the student spends the next several years learning procedures under time pressure, in clinics with fixed-height chairs and instrument trays designed for an average that fits nobody, and the neutral position quietly becomes an aspiration rather than a habit. By the time a dentist has been in practice for ten years, the posture that gets reinforced is whatever posture lets them see the site, not whatever posture protects their spine. I do not think this is a failure of individual willpower, and I am tired of continuing education modules that frame it that way. Telling a dentist to "sit up straighter" while the operatory itself is engineered around outdated assumptions is like telling someone to breathe deeply in a smoke-filled room. The environment must change before the behaviour can.

What would that change look like? First, procurement decisions for dental equipment need to treat ergonomic evaluation as a hard requirement, not a marketing footnote. Chair height ranges, magnification systems, and instrument weight and grip diameter should be assessed against anthropometric data the way seating in aviation or automotive design is assessed, not left to whichever vendor sponsors the regional conference. Second, dental schools should build posture assessment into competency exams with the same seriousness as clinical skill assessment. If a student cannot complete a procedure without static loading on the trapezius for more than a few minutes at a stretch, that is a deficiency worth flagging before graduation, not after the first rotator cuff surgery [2].

Third, and this is the argument I expect the most pushback on, four-handed dentistry and expanded use of dental assistants should be treated as an ergonomic intervention, not merely a productivity one. The evidence for reduced awkward postures when clinicians work with a well-trained assistant handling retraction, suction, and instrument transfer is consistent, yet the conversation around staffing models rarely mentions musculoskeletal risk at all. We talk about throughput. We should be talking about spines.

I want to be fair to the counterargument, because it deserves airtime. Many practitioners, particularly in solo or rural practice, do not have the capital to redesign an operatory or add staff, and telling them to do so is not useful advice. There is also a legitimate concern that over-medicalizing posture turns a craft into a checklist, and that some of the finest clinical work happens when a dentist is fully absorbed in a difficult site, not monitoring their own spine angle. I take that seriously. But I do not think it excuses a profession-wide

shrug at injury rates that have not budged in a generation [3].

The honest fix is neither purely individual nor purely institutional. It requires equipment manufacturers, dental school curricula, and practice-management economics to treat musculoskeletal risk as a design constraint from day one, the same way infection control became one after we stopped treating it as optional. Until that shift happens, we will keep training excellent clinicians to injure themselves slowly and calling it the cost of doing business.

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