

**Informal Comments
Texas State Board of Dental Examiners (TSBDE)
Stakeholder Meeting
September 27, 2024**

Potential Amendments to Board Rules that Require Lead Apron Use for Dental X-Rays

The Texas Dental Association (TDA) urges the Texas State Board of Dental Examiners (TSBDE) to amend board rules, including 22 Texas Administrative Code §108.42 and §113.2, to reflect current evidence-based guidelines on patient contact shielding during dental imaging to reflect the guidelines by removing the requirement that dental patients must wear lead aprons while exposed to X-rays.

Recent clinical research, supported by the American Dental Association (ADA) and the American Academy of Oral and Maxillofacial Radiology (AAOMR), no longer endorses the routine use of lead aprons or thyroid collars during dental X-rays.¹ This recommendation applies to all patients, including vulnerable populations such as pregnant women. The recommendations apply to all forms of dental imaging, whether traditional or digital.

The TSBDE's rules are outdated and do not align with the clinical guidelines, necessitating action from the TSBDE.

The TSBDE's regulations must reflect this evolution in dental imaging practices to ensure patient safety and align with updated national standards. By amending its regulations to eliminate the mandatory use of lead aprons and thyroid collars during dental imaging, the TSBDE will not only promote better radiation safety practices but also ensure that Texas dentists are following the most up-to-date clinical guidelines.

22 Texas Administrative Code §108.42(6)(D)

~~(D) when radiographs are to be made by the mobile dental facility or portable dental unit, a lead apron which includes a thyroid collar;~~

22 Texas Administrative Code §113.2(c)

~~(c) All dental patients must be protected by a lead apron with the thyroid collar while directly exposed to x-rays with the exception of those radiographs where it is necessary to image areas concealed or obstructed by a thyroid collar. A non-lead apron may be used instead of a lead apron if the non-lead apron provides protection from x-rays that is equivalent to that of a lead apron.~~

This rule modification is essential for enhancing patient care and ensuring compliance with national standards.

Background

The ADA's updated 2024 guidelines state that modern digital X-ray technology renders additional shielding unnecessary with its improved precision and lower radiation output. This shift reflects advances in beam control, which sufficiently limits radiation exposure without needing protective aprons. Continuing to use lead aprons can compromise image quality, leading to potential retakes and ultimately increasing radiation exposure. Therefore, the use of such shielding contradicts the ALARA principle (As Low as Reasonably Achievable), a standard that emphasizes minimizing radiation exposure without sacrificing diagnostic quality.

These informal comments by Texas Dental Association (TDA) are not all-inclusive and are subject to reconsideration and revision by TDA based upon analysis of any future data and other information and rule drafts publicly released by the Texas State Board of Dental Examiners. Both the availability and analysis of such data and information is critical in identifying actions for further improvement in patient safety and outcomes.

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Current TSBDE regulations, including 22 Texas Administrative Code §108.42(6)(D) and §113.2(c), require lead aprons with thyroid collars during X-rays. This requirement is outdated and contradicts the latest ADA and AAOMR guidelines.² These organizations have made it clear that thyroid and gonadal shielding, even for vulnerable populations, is no longer necessary due to the minimal radiation risks involved in modern dentomaxillofacial imaging.

Additionally, the American Academy of Pediatric Dentistry (AAPD) updated its guidelines in 2024, endorsing the discontinuation of patient shielding during dental X-rays for infants, children, adolescents, and individuals with special health care needs. The AAPD's stance is consistent with the positions of the American College of Radiology and the American Academy of Pediatrics.³ As digital X-ray technologies continue to evolve, Texas dental regulations must follow suit to ensure that dentists practice in line with the most current evidence-based safety recommendations.

Patient Dose Reduction

Although not the purpose of the TSBDE's Stakeholder Meeting, the TDA takes this opportunity to support transitioning from traditional to digital X-rays, a move backed by both the ADA and AAOMR. Digital imaging technologies not only reduce radiation exposure but also improve image clarity and diagnostic precision. Outdated protective measures, such as lead shielding, become unnecessary in this context, as these technologies offer sufficient radiation safety measures.

To minimize the patient's radiation exposure, it is advantageous to switch from round collimation to rectangular collimation for intraoral dental X-rays. Rectangular collimation restricts the X-ray beam to match the size of the image receptor, cutting the patient's dose by 60% during intraoral radiography.²

Resources

1. Benavides E, Krecioch JR, Connolly RT, et al. Optimizing radiation safety in dentistry: Clinical recommendations and regulatory considerations. *J Am Dent Assoc* 2024: S0002-8177(23)00734-1.
2. Benavides, E., Bhula, A., Gohel, A., Lurie, A. G., Mallya, S. M., Ramesh, A., & Tyndall, D. A. (n.d.). *Patient shielding during dentomaxillofacial radiography: Recommendations from the American Academy of Oral and Maxillofacial Radiology*.
3. American Academy of Pediatric Dentistry. (2024). *Prescribing dental radiographs for infants, children, adolescents, and individuals with special health care needs*. In *The reference manual of pediatric dentistry* (2024-2025). P. TBD.

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