


Smoke Screen to Distract From Flawed Science: A Response to Côté et al. Over Criticisms to Their Deficient ‘Rapid Review’ on Chiropractic X-Ray Utility

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Côté et al. attempted to review the clinical utility of X-ray within chiropractic (1910–Nov. 25, 2019).¹ After reviewing only 9 articles, the most recent dated by 15 years, they concluded “Given the inherent risks of ionizing radiation, we recommend that chiropractors do not use radiographs for the routine and repeat evaluation of the structure and function of the spine.”¹ We recently showed dozens of chiropractic studies that were missed according to their own very strict inclusion/exclusion criteria, as well as over 100 others that definitively show the clinical utility of X-ray use in the screening, assessment, diagnosis, and follow-up of patients seen in routine chiropractic practice.² We also showed that current evidence substantiates that X-rays are a harmless diagnostic tool.² Herein, we are pleased to respond to the Cote et al. letter-to-the-editor³ regarding our extensive and exhaustive critical commentary of their recent rapid review.

Côté et al.³ cling to a single aspect of our lengthy and meticulous critique of their flawed review by claiming “ad hominem” criticism. The verification of author bias by Corso and Côté, we argue, is not ad hominem if true, which is indisputable.² More importantly, however, is the fact that they failed to address the majority of our numerous and valid criticisms of their flawed review including:²

- Rationale for Review
- Selection of “Rapid Review” Design
- Inappropriate Referencing of WHO Guidelines
- Eliminating Valid Studies If Not “Performed by Chiropractor”
- Missed and Excluded Reliability Studies

- Missed and Excluded Clinical Outcome Studies
- Failure to Include Upper Cervical, Full-Spine, Pelvis, and Leg Length Inequality
- Failure to Include Studies on Anomalies/Pathologies that Alter Manipulative Treatment
- Failure to Define “Red Flags”
- Eliminating Validity Studies Based on “Bias”
- Conclusions Defy Impairment Rating Guidelines
- Co-Authors Hold Anti-Imaging Bias
- Strong Conclusions Based on Little/Conflicting Evidence

Among these criticisms, perhaps the most condemning is the fact that they failed to include even one of the many randomized controlled clinical trials (RCTs) demonstrating the effectiveness and superiority of X-ray-based spine rehabilitation procedures. As we previously stated,² the inclusion of even one of these RCTs would have reversed their conclusions. Some of these excluded RCTs are summarized in recent systematic reviews,^{4,5} and three more RCTs further showing the superiority of X-ray-guided

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treatment over traditional treatment approaches have also been published this year.⁶⁻⁸ These RCTs can no longer be ignored and must be considered in any future discussion of X-ray utility in chiropractic and spine rehabilitation practice.

The neglect to respond to these critical criticisms indicates egocentrism of Côté et al. The failure to address our critical concerns also shows that they cannot counter our valid concerns. The bottom line is that they conducted a study design that was inappropriate, and their rapid review of the literature ultimately proved to be fatally flawed and poorly executed. The claims they made in their conclusions¹ are serious overgeneralizations, extrapolations beyond their included data and most importantly, at odds with current scientific evidence.

Not surprisingly, some of the same authors including Côté were recently shown to have ‘extrapolated beyond the data’⁹ in a review of non-musculoskeletal conditions where, after very strict inclusion/exclusion criteria Côté et al.¹⁰ reviewed a handful of studies on only 5 health conditions and concluded that there is no evidence for chiropractic treatment benefit for any non-musculoskeletal conditions and encouraged “Governments, payers, regulators, educators, and clinicians” to “consider this evidence [their limited review] when developing policies about the use and reimbursement of SMT for non-musculoskeletal disorders [ie *any and all* non-musculoskeletal disorders].” Importantly, 12% of those that participated in the review process did not approve the final report and some of these participants published a re-assessment of the data and cautioned that “a lack of evidence cannot be interpreted as counterevidence, nor used as evidence of falsification or verification.”⁹ This type of pseudo-science manipulation as seen in 2 recent papers by Côté et al. has become a staple from a small academic faction within the chiropractic research community with an apparent agenda against X-ray based chiropractic care, as well as chiropractic care for a broader array of conditions beyond musculoskeletal complaints.

The most concerning aspect of the discredited Corso et al. chiropractic X-ray clinical utility review¹ is that it was in concert with the College of Chiropractors of British Columbia that paid for its completion and then used its overgeneralized and erroneous conclusions to rush through radical restrictive policy changes for chiropractors that had had full access to utilization of X-rays for clinical purposes in British Columbia, Canada for 87 years without being considered a ‘public health threat.’ An inquiry to the registrar confirmed that at least for the last 2 years there has not been a single complaint related to the use of X-rays.¹¹

As elaborated in our lengthy Corso critique article,² there is a preponderance of evidence supporting routine and repeat use of X-rays in chiropractic clinical practice; the failure of Côté to rebut any of the numerous valid criticisms puts an end to this debate. The elephant in the room remains the supposed risks from X-rays. Surprisingly, this whole issue revolves around radiation believed to cause cancers in patients who receive

X-rays. As we discussed at length,² and to which Côté had no critical discourse,¹ X-rays most definitively are not harmful to chiropractic patients who receive them. Thus, there was no need for a ‘rapid review’ on X-ray utility and no need for the CCBC to push through restrictive X-ray policy as there was no public health threat.

Interestingly, on May 21, 2021, during their 94th annual congress, the Federation of Chiropractic Licensing Boards (FCLB) passed an update pertaining to the use of X-ray throughout the profession, Resolution 2-21.¹¹ In it, the FCLB recommends “the use of radiographic imaging in patient care is at the professional judgement of the treating Doctor of Chiropractic....”⁶ The FCLB also recommends that “Chiropractic care policies and guidelines that impose practice standards based on parameters of time before a Doctor of Chiropractic may obtain radiographic imaging potentiates an unnecessary delay which can adversely affect the efficacy of patient care and their health as consumers of chiropractic services.”¹²

The bottom line is as we stated in our article,² the speedy adoption of an over-restrictive X-ray policy by the CCBC has placed patients at risk. The smoke screen tactic of pleading ad hominem by Côté et al. to distract readers from the obvious failure to address the long list of important critical comments shows that the debate over X-ray utility in chiropractic practice is over; it is an important part of daily practice. The CCBC is now facing legal challenges.

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