## Ad Hominem Criticisms: An Old Trick to Discredit Inconvenient Research. A Response to Oakley et al. And the International Chiropractors Association Rapid Response Research Review Subcommittee

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On July 9, 2020, we published a rapid systematic review which found no evidence that routine or repeat radiographs to assess the function or structure of the spine, in the absence of red flags, benefits patients.<sup>1</sup> Our research challenged the beliefs and practice of some chiropractors who found our findings inconvenient.

An old trick to discredit inconvenient research findings is to publicly attack the credibility of researchers. A recent example of this strategy is the commentary by Oakley et al and the "International Chiropractors Association Rapid Response Research Review Subcommittee."<sup>2</sup> Such a strategy is not surprising because the International Chiropractors Association previously published an opinion-based guideline that promotes radiographs for the biomechanical assessment of spinal subluxation by chiropractors.<sup>3</sup> This guideline was not published in a peer-reviewed journal.

Oakley et al. state that we held "anti-imaging bias" and that our research was flawed.<sup>2</sup> These are serious accusations and nothing in their opinion-based commentary provides evidence of bias or methodological flaws. Using ad hominem criticisms are easy and ethically questionable, especially when the authors provide no valid demonstration of bias nor methodological flaws. We emphasize that the paper by Oakley et al is not a research paper. Despite its lengthy reference list, it is a narrative opinion that does not meet accepted methodological standards for a systematic review.<sup>2</sup>

We stand by our methodology and our results. Our research was conducted in accordance with accepted methodological guidelines and practices.<sup>4-6</sup> We wish to correct false accusations made by Oakley et al.<sup>1</sup> First, the authors claim that Professor Pierre Côté was contracted by the College of Chiropractors of British Columbia (CCBC). This statement is incorrect. The contract was between the CCBC and Ontario Tech University. Professor Côté was the lead epidemiologist

and the research was conducted at arm's length from the CCBC. As stated in our paper: "The CCBC was not involved in the design, conduct or interpretation of the research that informed the research."1 Furthermore, we reject the unsupported accusations made from pages 7 to 16 in their paper because their approach to appraise our research is flawed. The validity of scientific findings should be challenged by demonstrating how methodological biases led to erroneous results. Oakley et al failed to present such critical analysis. Moreover, comments in their commentary are false. For example, they incorrectly claim that we failed to define red flags. We defined red flags in the first sentence of the abstract.<sup>1</sup> Similarly, Oakley et al. suggest that our review is not systematic. This is incorrect; the Cochrane Rapid Reviews Methods Group defines a systematic review as studies that "clearly report inclusion/ exclusion criteria; search at least 2 databases; conduct risk of bias assessment; and provide a list and synthesis of included studies."<sup>6</sup>; our review complied with all these criteria.

Journal editors should be concerned when ad hominem criticisms are used to discredit inconvenient research findings because consumers of research often lack the time or methodological skills to critically evaluate science information.<sup>7</sup>

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