*General comments on SAMPLE-BIOMECH-LN’s approach*

The purpose of Dr. ExpertLast's opinion is to provide a backdoor medical causation opinion that Ms. and Mr. Pl1LastName and Mx. Ugly Last Name were not injured in the subject collision because they (Dr. ExpertLast) deemed any injury to be impossible in the crash. Dr. ExpertLast made no attempt to assess the actual probability of injury from any real-world crash like the subject collision, information which can only come from observational (epidemiologic) study of injuries associated with real world crashes, not from intellectually dishonest comparisons between one of the most common causes of injury in the US to innocuous activities of daily living. Dr. ExpertLast cites to multiple (12) publications in his 15-page report, yet none of them provide valid or reliable evidence that the injuries diagnosed in Ms. and Mr. Pl1LastName and Mx. Ugly Last Name cannot, or did not, result from the collision that they were exposed to.

***Injury Causation Analysis***

A crash-related injury causation analysis for a specific individual is performed by assessing the risk of injury from the collision and comparing it to the probability that the injuries or conditions would have been present at the same point in time if the collision had not occurred. The process is referred to as a "3-step" injury causation method in which improbable alternative causes are ruled out and the single most likely cause is identified. The analysis is accomplished via the application of crash reconstruction, biomechanical, medical, and epidemiologic (risk assessment) principles.[[1]](#footnote-1)[[2]](#footnote-2)[[3]](#footnote-3) This 3-step methodology has been extensively described in the peer-reviewed literature, been deemed generally accepted by Courts in the United States, and has been adopted as part of case law in the U.S. - See the Appendix at the end of this report for more information.

The three fundamental elements or steps of an injury causation analysis are as follows:
Whether the injury mechanism had the potential to cause the injury in question (aka general causation);

The degree of temporal proximity between the injury mechanism and the onset of the symptoms reasonably indicating the presence of the injury; and

Whether there is a more likely alternative explanation for the occurrence of the symptoms at the same point in time (aka differential etiology).

As applied to the facts in the subject case, these 3 steps are as follows:

*Reconstruction of the crash*

***CRASH RECONSTRUCTION***

Injury biomechanics

1. Melia P et al. Development of the INFERENCE (INtegration of Forensic Epidemiology and the Rigorous EvaluatioN of Causation Elements) approach to causal inference in forensic medicine. Int J Environ Res Public Health 2020;17:8353; doi:10.3390/ijerph17228353. [↑](#footnote-ref-1)
2. Freeman MD. A practicable and systematic approach to medicolegal causation. Orthopedics 2018;41(2):70-2. [↑](#footnote-ref-2)
3. Freeman MD, Centeno CJ, Kohles SS. A systematic approach to clinical determinations of causation in symptomatic spinal disc injury following motor vehicle crash trauma. PM R 2009;1(10):951-6. [↑](#footnote-ref-3)