

# THE VERTEBRAL SUBLUXATION: CONCEPTUAL DEFINITION FOR RESEARCH AND PRACTICE

## Background

The concept of vertebral subluxation has been central to the chiropractic profession for well over 100 years.<sup>1-3</sup> Despite significant debate, vertebral subluxation remains relevant to the practice of chiropractic<sup>4-7</sup> and chiropractic education,<sup>8-11</sup> is documented in policy and legislation,<sup>1,3</sup> and thought there is strong supporting scientific evidence it is a high priority for future research.<sup>12-14</sup>

The theory of the vertebral subluxation, and the potential impact it may have on human function and health, has been widely described and accepted within the greater healthcare community.<sup>3,15,16</sup> However, within the chiropractic profession there has been a clear need to properly define vertebral subluxation in a manner that is philosophically congruent, usable in practice and is a testable model in research.<sup>12,13,17,18</sup>

The chiropractic profession is uniquely positioned to address the possible impact that interference to the nervous system has on the expression of life.<sup>1</sup>

The Australian Spinal Research Foundation (the Foundation) recognise the following principles that are central to chiropractic:

- That a person's state-of-being, or how well they are expressing life, is dependent on their ability to be self-aware, to self-regulate, organise and heal
- That the person's nervous system is central to the perception of, processing of, regulation of and adaption to environmental demand
- That vertebral subluxations may interfere with the expression of life, which impacts the person's ability to be at their optimal state-of-being
- That to improve a person's state-of-being, it is vital to address the vertebral subluxation as a cause of their reduced state-of-being, rather than exclusively investigating the effect(s)/symptoms.

In February 2017, the Board of the Foundation announced its strategic plan for the next 5 years to step closer to its vision of "A clear understanding of Subluxation." The Board committed to facilitate one million dollars of research toward reaching that goal. This assertive move demanded that the Foundation engage the profession in the development of the research agenda that will be the directive for research over the next 5 years. The five-part research agenda focuses on better understanding the impact of chiropractic care on the quality of life of an individual and on the community. The first part of the Foundation's research agenda was to develop a conceptual definition of a vertebral subluxation that is usable in research and translatable to practice.

## Consultation Process and Results

In late 2016, the Foundation embarked on a 9-month global consultation process that engaged 59 leaders, researchers and academics within the chiropractic profession from 9 countries (Australia, Canada, England, Germany, Hong Kong, New Zealand, Scotland, Spain and the United States of America). A total of 15 full-time researchers were represented in the consultation group. The consultation group represented 11 colleges, 5 national associations, 3 research foundations, 4 peer-reviewed research journals and 5 allied organisations.

The consultation process involved one-on-one communication, a group wide survey and two 'round table' style meetings held in Melbourne (Australia) and San Francisco (USA) in April 2017. Based on the information gathered through this process there are several findings that have supported the development of a conceptual definition of vertebral subluxation.

In consulting the profession's thought-leaders, the Foundation was advised that past definitions of vertebral subluxation are not suitable because they either: a) do not allow for a testable model of the vertebral subluxation; and / or b) the science that they reflect is no-longer current; and / or c) they are not translatable to practice.

To best develop a conceptual definition of vertebral subluxation, the Foundation was advised that the following should be considered as requirements that the definition:

- Is congruent with the philosophical tenets of chiropractic and utilises appropriate language
- Can be reduced to a scientifically testable model that uses current evidence, language and concepts
- Is relevant to, translatable to and impactful on practice
- Incorporates the impact of the vertebral subluxation on the body's altered level of function and the whole person's state of being.

As a result of the consultation process, it was strongly advised that the definition of vertebral subluxation:

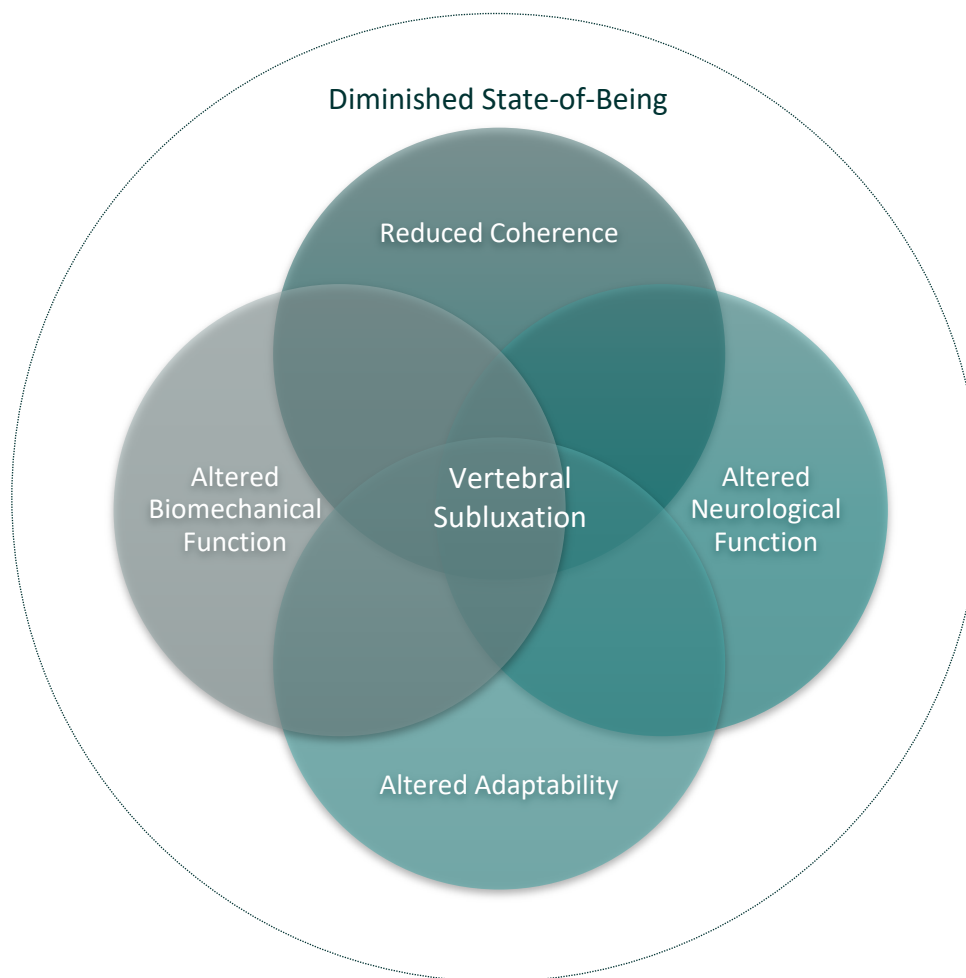
- Is not an operational definition
- Includes the more holistic impacts on:
  1. The whole person's state of being
  2. The expression and efficiency of the energetic system - or coherence<sup>1</sup>.
- Should not itself specify the implications on the vitalistic nature of the person (self-aware, self-organising, and self-healing nature).

## Definition of the Vertebral Subluxation

As a result of the consultation process the Foundation's Board have formulated and adopted a conceptual definition of vertebral subluxation (Appendix 1), and adopted a testable model that is applicable to research and chiropractic practice (Appendix 2), both of which reflect current available evidence and understanding.

For the purpose of the research agenda The Australian Spinal Research Foundation, currently defines that:

*"A vertebral subluxation is a diminished state of being, comprising of a state of reduced coherence, altered biomechanical function, altered neurological function and altered adaptability."*



<sup>1</sup> Coherence may be described as the property of unity; logically connected; consistent. Having a natural or due agreement of parts; harmonious;

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## Appendix 1

### A Conceptual Definition

The resultant definition needs to encompass various philosophically-derived concepts, from which scientific models and practice models could be derived. As such, it is simplest to start with a conceptual definition that represents these philosophically-derived concepts - a conceptual definition of the subluxation - and to then:

1. reduce these concepts to scientifically-defined models (that are scientifically-testable, reflective of current evidence, language and scientific concepts)
2. to also reduce these concepts to models that are relevant to and translatable to practice.

These would be accomplished in further, more refined definitions, which could then be specifically operationalised, tested and translated to practice. Further research could discuss valid operational definitions derived from this definition of the vertebral subluxation.

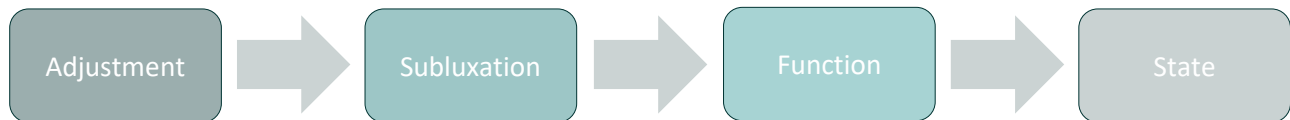
In incorporating all four attributes of the vertebral subluxation (reduced coherence, altered biomechanical function, altered neurological function and altered adaptability), the definition is reflective of various types of vertebral subluxations: a) segmental / biomechanical; b) neurological, incorporating efferent and afferent peripheral, spinal, subcortical and cortical effects; c) tonal, incorporating whole-person effects.

It is important to note that it is the fourth attribute - altered adaptability - that differentiates the putative biomechanical-neurological lesion from the chiropractic vertebral subluxation. In order to be identified as a vertebral subluxation, it is necessary to identify the presence of all four attributes of the vertebral subluxation (assessment of the evidence of a person's state of reduced coherence, altered biomechanical function, altered neurological function and altered adaptability) as the criteria for establishing the presence of a vertebral subluxation and it is vital that the state of altered adaptability must be established.

## Appendix 2

### The Testable Model

The definition of the vertebral subluxation should reflect the concept derived from chiropractic philosophy, as well as reflecting experience in practice and current scientific understanding, that is that the vertebral subluxation is interrelated in a complex way with the body's altered level of function and the person's altered state-of-being. The definition should allow for the testing of this concept. In simplistic terms, it should encompass the following simplified linear causative chain:



It is hypothesised that the vertebral subluxation would impact a person's vitalistic abilities, which include their self-aware, self-organising, and self-healing abilities.

### Examples of application to research and practice

Various models could be derived for research and practice. For example, one testable model that may be derived may be that the altered biomechanical and neurological function may manifest as a central sensorimotor control dysfunction that is associated with ongoing maladaptive neural plastic changes; a phenomena that may be self-perpetuating.

Assessment of the vertebral subluxation in research and in practice involves assessment of the evidence that there is reduced coherence and alteration to biomechanical function, neurological function and adaptability. It may also include assessment of the evidence of a person's diminished state of being and state of reduced coherence.