

Hypothesis: Long COVID Olfactory Dysfunction can be exacerbated by Dysautonomia generated by Vertebral Subluxation

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Manus prompt:

Provide a 2 paragraph summary of this paper by Masarsky 'Hypothesis: Long COVID Olfactory Dysfunction can be exacerbated by Dysautonomia generated by Vertebral Subluxation' using professional clinical language and provide 5 multi-choice quiz questions and 5 true/false question with answers.

Manus summary:

Masarsky proposes that persistent olfactory disturbances associated with long COVID, including anosmia, hyposmia, and parosmia, may be exacerbated by autonomic nervous system dysfunction arising from vertebral subluxation. The paper describes a putative pathophysiological sequence in which excessive sympathetic activity contributes to a hyperinflammatory state within the nasal and olfactory mucosa, potentially interfering with regeneration of the olfactory epithelium and its globose basal stem cells. The author further argues that altered cervical or upper thoracic vertebral mechanics could disturb sympathetic pathways through mechanisms such as spinal nerve-root irritation, dorsal-root-ganglion compression, osteophytic encroachment on neural structures, or tension transmitted through cervical myodural connections. Because sympathetic innervation of the nasal mucosa is associated primarily with the upper thoracic spinal cord and cervical sympathetic chain, the cervical and upper thoracic regions are identified as the most anatomically relevant levels.¹

Preliminary support is drawn from three clinical vignettes in which patients with post-COVID olfactory dysfunction reported improvement following chiropractic care that included cervical adjustments and, in some cases, upper thoracic intervention. Reported outcomes included improved subjective olfactory sensitivity, recognition of previously undetectable odours, reduced frequency or severity of parosmia, and—in one patient—resolution of a Weber test abnormality suggestive of conductive auditory dysfunction or ear-nose-throat congestion. The author appropriately acknowledges that these uncontrolled observations do not establish causality and calls for more rigorous investigation using objective olfactory testing, measures of autonomic function such as heart-rate variability, pupillometry, facial thermography, and sudomotor activity, and assessment of whether changes in dysautonomic findings covary with olfactory recovery. The paper ultimately frames the proposed relationship as a testable hypothesis and advocates inter-professional evaluation and co-management rather than presenting

Chiropractic intervention as an established treatment for long-COVID olfactory dysfunction.

Multiple-Choice Questions

1. What is the central hypothesis proposed in the paper?

- A. Long-COVID olfactory dysfunction is caused exclusively by psychological stress.
- B. Vertebral subluxation-generated dysautonomia may exacerbate long-COVID olfactory dysfunction.
- C. Olfactory dysfunction after COVID-19 is always permanent.
- D. Chiropractic care directly eliminates the SARS-CoV-2 virus.

Answer: B. Vertebral subluxation-generated dysautonomia may exacerbate long-COVID olfactory dysfunction.

2. Which mechanism is proposed as a contributor to persistent olfactory dysfunction?

- A. Excessive sympathetic activity producing a hyperinflammatory nasal mucosal state.
- B. Reduced renal filtration causing olfactory-nerve compression.
- C. Increased parasympathetic activity causing destruction of the auditory nerve.
- D. Decreased skeletal-muscle perfusion causing permanent loss of taste buds.

Answer: A. Excessive sympathetic activity producing a hyperinflammatory nasal mucosal state.

3. Which spinal regions does the author identify as most relevant to autonomic innervation of the nasal mucosa?

- A. Lower lumbar and sacral regions.
- B. Sacral and coccygeal regions.
- C. Cervical and upper thoracic regions.
- D. Lower thoracic and lumbar regions only.

Answer: C. Cervical and upper thoracic regions.

4. How should the clinical vignettes presented in the paper be interpreted?

- A. As definitive evidence that chiropractic care cures long COVID.
- B. As randomized controlled evidence establishing a causal mechanism.
- C. As preliminary, uncontrolled observations that generate hypotheses but do not establish causality.
- D. As evidence that olfactory testing is clinically unnecessary.

Answer: C. As preliminary, uncontrolled observations that generate hypotheses but do not establish causality.

5. Which measure does the paper propose for evaluating associated autonomic dysfunction in future research?

- A. Serum creatinine alone.
- B. Heart-rate variability.
- C. Bone-density scanning alone.
- D. Visual-acuity testing alone.

Answer: B. Heart-rate variability.

True/False Questions

1. The paper discusses anosmia, hyposmia, and parosmia as possible persistent olfactory manifestations of long COVID.

Answer: True.

2. The author presents the proposed relationship between vertebral subluxation and olfactory dysfunction as conclusively proven.

Answer: False. The paper characterises the relationship as a hypothesis requiring more robust evidence.

3. Stellate ganglion blockade is discussed as a procedure that may reduce excessive sympathetic activity and associated inflammation.

Answer: True.

4. The three clinical cases included randomised controls and blinded outcome assessment.

Answer: False. They were uncontrolled clinical observations or case reports.

5. The paper recommends further research using objective olfactory and autonomic measures and encourages inter-professional co-management.

Answer: True.