Traster D. Carbon Dioxide regulation, respiratory mechanics, and Autonomic function: A potential role for Chiropractic care. Asia-Pac Chiropr J. 2026;7.3. https://www.apcj.site/TrasterRespiratory.pdf

MANUS Summary

This clinical exposition examines the physiological importance of carbon dioxide in cerebral perfusion, acid–base balance, respiratory drive, and autonomic regulation, highlighting how excessive ventilation and resulting hypocapnia may contribute to dizziness, cognitive difficulties, fatigue, air hunger, and exercise intolerance. For chiropractors, the paper emphasises the potential relationship between restricted thoracic spine and rib cage mobility, compensatory breathing patterns, and reduced ventilatory efficiency. It proposes that thoracic and rib cage mobilisation, combined with breathing retraining that encourages diaphragmatic activation, nasal breathing, and appropriate respiratory pacing, may help match ventilation to metabolic demand and limit excessive carbon dioxide loss. The author advocates multidisciplinary co-management that considers mechanical, neurological, respiratory, cardiovascular, and metabolic contributors to symptoms. As a clinical exposition rather than an original intervention study, the paper presents a proposed adjunctive role for chiropractic care, not definitive evidence that these interventions normalise carbon dioxide levels or improve autonomic disorders.

MANUS QUIZ

True-or-false

1.Carbon dioxide contributes to cerebral blood flow regulation and acid–base balance, rather than functioning solely as a metabolic waste product.

> Answer: True. The paper describes carbon dioxide as an important regulator of vascular responses, blood pH, and respiratory drive.

2.Hypocapnia refers to an arterial carbon dioxide pressure above 45 mmHg.

> Answer: False. Hypocapnia refers to an arterial carbon dioxide pressure below approximately 35 mmHg; values above 45 mmHg indicate hypercapnia.

3.Hyperventilation can occur only when a patient breathes rapidly.

> Answer: False. The paper explains that excessively deep breathing and frequent sighing can also increase ventilation beyond metabolic requirements and lower carbon dioxide levels.

4.The paper proposes combining thoracic and rib cage mobilisation with targeted breathing exercises as an adjunct to multidisciplinary care.

> Answer: True. This combination is presented as a potential means of supporting respiratory mechanics and ventilatory efficiency.

5.The paper reports original clinical trial results demonstrating that chiropractic mobilisation normalises carbon dioxide levels in patients with autonomic disorders.

Answer: False. It is a clinical exposition outlining physiological mechanisms and a potential therapeutic role, rather than a report of an original clinical trial.