Last Word on Point: Counterpoint: Hypobaric hypoxia induces different responses from normobaric hypoxia

Grégoire P. Millet, Raphaël Faiss and Vincent Pialoux

1ISSUL Institute of Sport Sciences-Department of Physiology, Faculty of Biology and Medicine, University of Lausanne, Lausanne, Switzerland; and 2Centre de Recherche et d’Innovation sur le Sport, Université Claude Bernard, Lyon, France

TO THE EDITOR: We thank the authors of the comments (see Ref. 1) who contributed their thoughts to this debate (3, 5). Many additional interesting arguments were provided, and most of the comments are in line with our view that hypobaric hypoxia induces different physiological responses from normobaric hypoxia but also that the underlying mechanisms and clinical/practical relevance have not yet been investigated enough.

Regarding the mechanisms, we concur with Verges et al. (see Ref. 1) that motor cortex excitability might be affected differently between HH and NH (4). We also agree with Laymon et al. (see Ref. 1) and Verges et al. (see Ref. 1) that the cost of breathing is likely different between HH and NH. Several authors (Conkin; Guenette and Koehle; Loepky; Taylor et al.; Vagula and Nelatury; see Ref. 1) supported the view that pressure change associated with hypobaria plays a role in pulmonary fluid flux differences between HH and NH (2). However, because “there is no direct comparison…in HH vs NH…on AMS severity” as noted in our Point (3), the question of the clinical relevance for AMS remains unanswered (Loepky vs. Schommer and Bartsch; see Ref. 1).

Finally, the comments of Conkin and Wessel (see Ref. 1) or Koehle et al. (see Ref. 1) on the inaccuracies of defining correct hypoxic levels, those of Chapman and Levine (see Ref. 1) on the differences in intermittent exposure between NH and HH or those of Girard (see Ref. 1) on the impact on air resistance during repeated sprints support that, from a practical point of view, training in NH is different by nature from training in HH. To conclude, we would like to borrow the statement of Pun (see Ref. 1): Hypobaric hypoxia has complex and multitude of stimuli compared with normobaric hypoxia.

DISCLOSURES
No conflicts of interest, financial or otherwise, are declared by the authors.

AUTHOR CONTRIBUTIONS
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Address for reprint requests and other correspondence: G. P. Millet, ISSUL Institute of Sport Sciences-Dept. of Physiology, Faculty of Biology and Medicine, Univ. of Lausanne, Batiment Vidy, CH-1015, Lausanne, Switzerland (e-mail: gregoire.millet@unil.ch).