



Universiteit
Leiden
The Netherlands

Potential applications for human hypoxia models

Post, T.E.

Citation

Post, T. E. (2025, May 8). *Potential applications for human hypoxia models*. Retrieved from <https://hdl.handle.net/1887/4245517>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4245517>

Note: To cite this publication please use the final published version (if applicable).

POTENTIAL APPLICATIONS FOR HUMAN HYPOXIA MODELS

POTENTIAL APPLICATIONS FOR HUMAN HYPOXIA MODELS

© Titiaan Post, 2025

DESIGN

Caroline de Lint, Den Haag
(caro@delint.nl)

Research presented in this thesis was financially supported
by the Institute of Aerospace Medicine, German Aerospace Center (DLR)
in Cologne, Germany

Publication of this thesis was financially supported
by the Centre for Human Drug Research (CHDR) foundation
in Leiden, the Netherlands

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof.dr.ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op donderdag 8 mei 2025
klokke 16:00 uur
door
Titiaan Ernest Post
geboren te Hilversum
in 1990

PROMOTORES

Prof. dr. A.F. Cohen

Prof. dr. J.M.A. van Gerven

CO-PROMOTOR

Prof. dr. D. Aeschbach (DLR, Cologne, DE)

PROMOTIECOMMISSIE

Prof. dr. J. Jordan (DLR, Cologne, DE)

Prof. dr. O.C. Meijer

Prof. dr. G.J. Lammers

Dr. G. Jacobs

Dr. U. Limper (DLR, Cologne, DE)

TABLE OF CONTENTS

CHAPTER 1 Introduction – 7

CHAPTER 2 Human hypoxia models in aerospace medicine:
Potential applications for human pharmacological
research – 13

CHAPTER 3 Judicious elevation of ambient carbon dioxide during
hypobaric hypoxia to improve oxygenation in airline
passengers – a randomized feasibility study – 43

CHAPTER 4 Sensitivity of cognitive function tests to acute hypoxia
in healthy subjects: a systematic literature review – 63

CHAPTER 5 Oral fructose intake does not improve exercise, visual,
or cognitive performance during acute normobaric
hypoxia in healthy humans – 89

CHAPTER 6 Resetting of the human circadian melatonin rhythm
by ambient hypoxia – 107

CHAPTER 7 General discussion – 129

APPENDICES

Nederlandse samenvatting – 135

List of publications – 142

Curriculum Vitae – 144