

Author: [ADVANCED](#)Volume Page Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1880-313X

PRINT ISSN : 0388-6107

Biomedical Research

Vol. 30 (2009) , No. 4 August pp.245-249

[\[PDF \(435K\)\]](#) [\[References\]](#)**Effects of hyperoxic inhalation on psychological stress-induced salivary biomarkers**[Shigeo Kawada](#)¹⁾, [Chiho Fukusaki](#)¹⁾, [Masaru Ohtani](#)¹⁾ and [Kando Kobayashi](#)¹⁾

1) Department of Human and Engineered Environmental Studies, Graduate School of Frontier Sciences, The University of Tokyo

(Received June 10, 2009)

(Accepted June 18, 2009)

ABSTRACT

This study examined the effects of hyperoxic inhalation on psychological stress-induced salivary biomarkers. To induce psychological stress, eight males (22–24 year old) were performed a simple mathematical calculation. After the task, the subjects inspired either normal air or 100% O₂ for 30 min. The control subjects (control trial) did not perform the calculation task and inspired normal air. These three trials were randomly performed at an interval of at least one week, and the two calculation trials with and without 100% O₂ inhalation were performed using a single-blinded design. A tendency for increase in salivary cortisol (s-cortisol) and chromogranin A (s-CgA) concentrations, and a significant increase in salivary α -amylase (s-amylase) activity were observed following the task. Hyperoxic inhalation did not affect s-cortisol and s-CgA secretion, but decreased the s-amylase activity. Changes in the increased rate of s-amylase activity and s-CgA concentration showed a significant negative correlation with each other, after the task. These results imply that hyperoxic inhalation attenuates a part of autonomic excitability resulting from psychological stress. Although both s-amylase and s-CgA are employed as biomarkers of autonomic excitability, the s-amylase and s-CgA do not appear to be regulated by the same autonomic nervous system.

[\[PDF \(435K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)

To cite this article:

Shigeo Kawada, Chiho Fukusaki, Masaru Ohtani and Kando Kobayashi; "Effects of hyperoxic inhalation on psychological stress-induced salivary biomarkers", *Biomedical Research*, Vol. **30**, pp.245-249 (2009) .

doi:10.2220/biomedres.30.245

JOI JST.JSTAGE/biomedres/30.245

Copyright (c) 2009 Biomedical Research Press



[Japan Science and Technology Information Aggregator, Electronic](#)

