



Role of NO in Disease: Good, Bad or Ugly

Guest Editors:

Dr. Mats B. Eriksson

Department of Surgical Sciences,
Anaesthesiology and Intensive Care
Medicine, Uppsala University, 751
85 Uppsala, Sweden

Prof. Dr. Anders O. Larsson

Department of Medical Sciences,
Clinical Chemistry, Uppsala
University, 751 85 Uppsala,
Sweden

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Message from the Guest Editors

L-Arginine is a precursor for NO synthesis. NO is a reactive molecule with unpaired electrons, being a ubiquitous signaling molecule, able to interact with molecular oxygen and superoxide radicals. Endothelial cells are the largest source of NO production.

The antiviral effects of NO have caused considerable interest during the COVID-19 pandemic. NO impedes the binding of SARS-CoV-2 to the ACE2 receptor and counteracts viral replication. Compromised production or bioavailability of NO is associated with both arterial and venous thrombi, a frequent consequence of COVID-19.

Given the multitude of powerful biological effects of NO, several attempts have been made to utilize this radical as a therapeutic agent, mainly in pulmonary hypertension. Administration of NO has focused on inhalation, which may cause the relaxation of smooth muscle cells in the pulmonary vasculature. Vasodilation results in improved perfusion to ventilated areas of lung, thereby improving oxygenation and reducing intrapulmonary shunting.

However, NO is potentially harmful, since its oxidation products are toxic and may contribute to tissue damage in certain disorders.





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Editor-in-Chief

Prof. Dr. Felipe Fregni

1. Neuromodulation Center and
Center for Clinical Research

Learning, Spaulding
Rehabilitation Hospital and
Massachusetts General Hospital,
Harvard Medical School, Boston,
MA 02114, USA

2. Department of Epidemiology,
Harvard T.H. Chan School of
Public Health, Boston, MA 02115,
USA

Message from the Editor-in-Chief

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