

Please select Print from the file menu to print your Abstract.
Then sign and fax it to:
ATS Abstracts c/o Marathon Multimedia, FAX: US 507.334.0126.

Please note that due to the high volume of faxes received during the submission deadline, we are unable to confirm fax receipts.

ATS 2006 - San Diego International Conference

Filename: 951272

Contact/Presenting Author: J. B. Hoag

Department/Institution: Department of Medicine, Johns Hopkins University

Address: Division of Pulmonary and Critical Care, 1830 E. Monument Street, 5th Floor

City/State/Zip/Country: Baltimore, MD, 21205, United States

Phone: 410-955-3467 **Fax:** 410-955-0036 **E-mail:** jhoag1@jhmi.edu

ATS member: Yes **Student or in training:** Yes

Abstract Category: 8.13 - Imaging: Physiologic Correlates

Presentation format: Poster Only

Travel Award: Yes

Publication of email address: Yes, jhoag1@jhmi.edu

I confirm that all authors listed on this abstract have knowledge of the abstract submission: Yes

Title: Recirculation of Inhaled Xenon does not Alter Lung CT DensityJ.B. Hoag, MD, MS¹, R.H. Brown, MD, MPH¹, M. Fuld, BS¹ and B.A. Simon, MD, PhD¹.¹Johns Hopkins University, Baltimore, MD, United States.

Introduction: Xenon-enhanced computed tomography (Xe-CT) measures regional ventilation from changes in lung parenchymal CT density during the multi-breath washin/washout of inhaled Xe gas. Since Xe is moderately soluble, vascular uptake and redistribution has been proposed as a confounding phenomenon necessitating mathematical correction of density data. We propose that the redistribution of Xe via the circulation is negligible and that correction is unwarranted. **Methods:** Three anesthetized, paralyzed, intubated mongrel dogs had an Arndt bronchial blocker occluding one lung. The contralateral lung was ventilated with 65% Xe. Whole lung CT images during unilateral ventilation were obtained at baseline and at 1 and 5 minutes of Xe ventilation. Comparisons between blocked and Xe ventilated whole lung densities were made. Density of paraspinous muscle and blood (aorta, IVC) were also compared. **Results:** The density of lung tissue in the ventilated lungs increased significantly compared to control after 1 and 5 minutes of Xe ventilation.

Mean Density of Xe Ventilated vs Blocked Lungs (\pm SD)

	Blocked	Xe Ventilated
Control	-680.6 (65.6)	-662.3 (28.8)
Xe - 1 min	-688.5 (54.3)	-535.4 (55.6)*
Xe - 5 min	-689.1 (52.2)	-492.9 (89.1)*

Values in Hounsfield Units, *p<0.05 vs Control and Blocked

The density in the blocked lungs did not significantly change at either 1 minute or 5 minutes of ventilation with Xe. Although density tended to increase with time in the blood and muscle, the change only reached significance in muscle at 5 min. **Conclusions:** Five minutes of ventilation with a high concentration Xe does not cause measurable density changes in the contralateral lung. Xe accumulation in muscle tissue limits redistribution. Correction of Xe-CT time series density data may be unnecessary.

Funded By: NIH HL64368 and DOD DAMD17-02-1-0732**Off-Label Use Disclosure:** No**Financial Disclosure:** No

Signature of Presenting Author:

 J B Hoag

In order to complete your submission please print out a copy of your final abstract submission, sign it
and fax to:

ATS 2006 · SAN DIEGO INTERNATIONAL CONFERENCE Abstracts
c/o Marathon Multimedia, FAX: US 507.334.0126.

[Close Window](#)