

# Does Hypoxia cause hypertrophy that affects the elasticity in the aortic wall of the broiler chicken?

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## Objectives

The aim of the study is to investigate the effect of hypoxia on the aortic wall in 19 days old broiler chicken embryos.

I hypothesis that:

- Broiler chicken embryos treated with hypoxia will show aortic hypertrophy.
- Seen as a decrease in lumen diameter and an increase in wall/lumen ratio
- Wall elasticity will also be effected.

## Conclusion

- No evidence of aortic hypertrophy was found.
- But differences in responses to hypoxia could be seen in the different strains used.
- The elastic properties of the aorta were not altered by hypoxia.

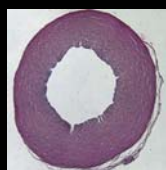
## Methods

### Histology

- Embryos were incubated under control (21 % O<sub>2</sub>) and hypoxic (14 % O<sub>2</sub>) conditions.
- Sampled at day 19 of 21 (hatching)
- Processed by use of regular histological techniques to estimate the dimensions of the aorta.



Normoxic



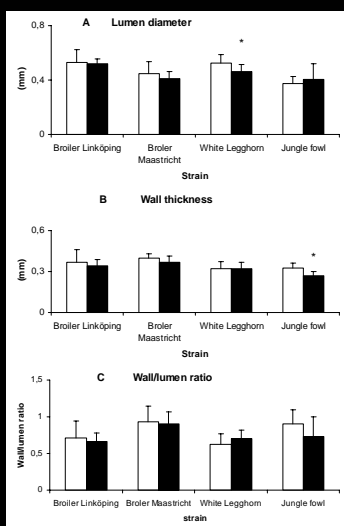
Hypoxic

### Wall elasticity

- Pressure-diameter loops were performed
- Changes in diameter were recorded



## Results

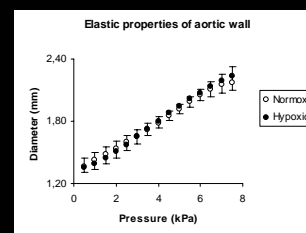


- Embryos treated with hypoxia had a significantly smaller body mass

- Hypoxic White Leghorn embryos have a significantly smaller lumen diameter

- Hypoxic Jungle fowl have a significantly smaller Wall thickness

- No difference found in Wall/lumen ratio



- No difference in elasticity could be found