

# Left atrial vascular and metabolic remodeling in pig models of atrial fibrillation

Citation for published version (APA):

Nasrallah, H. M. (2015). *Left atrial vascular and metabolic remodeling in pig models of atrial fibrillation*. [Doctoral Thesis, Maastricht University]. Uitgeverij BOXPress. <https://doi.org/10.26481/dis.20151216hn>

## Document status and date:

Published: 01/01/2015

## DOI:

[10.26481/dis.20151216hn](https://doi.org/10.26481/dis.20151216hn)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

## Take down policy

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

## **Ph.D. Thesis Propositions**

### **Left atrial vascular and metabolic Remodeling in pig models of atrial fibrillation**

1. Atrial fibrillation leads to atrial metabolic and vascular remodeling.  
— **This thesis**
2. Key aspects of the early atrial remodeling resemble the adaptive response to exercise training.  
— **This thesis**
3. Although atrial metabolism shows several adaptive changes early in the pathogenesis of AF, these changes fall short of restoring the balance between energy consumption and production.  
— **This thesis**
4. Loss of atrial contractility in the failing heart will accelerate the development of decompensating heart failure.  
— **This thesis**
5. The phenomenon of capillary rarefaction during AF will restrict the ability of the atria to respond to fluctuations in demand.  
— **This thesis**
6. After one week of AF, the function of isolated atrial mitochondria is intact, but the cellular capacity for energy production has decreased.  
— **This thesis**
7. To prevent AF progression, early (days to weeks), aggressive treatment is vital.  
— **This thesis**
8. Disease was a natural process and its symptoms were the reactions of the body to the disease.  
— **Hippocrates**
9. Faith is knowledge within the heart, beyond the reach of proof.  
— **Khalil Gibran**
10. There is no capital more useful than intellect and wisdom, and there is no indigence more injurious than ignorance and unawareness.  
— **Imam Ali bin abi taleb**

**Hussein M. Nasrallah**  
**Maastricht, December 2015**