

# Nonny Edda's Heart

by

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## Part I – A Scary Night

It was Karla's senior year of college, and she was excited to have a car on campus for the first time. She loaded her vehicle and headed to campus for the fall semester a few days early so that she could spend a weekend with her grandmother, Edna. Growing up, Karla loved spending weekends at "Nonny Edda's" (it's what she could say when she was three and the nickname stuck), and she was looking forward to this visit. Karla arrived and helped Nonny prepare dinner, bake cookies, and look over old photo albums. They spent a lot of time talking and Nonny was very interested in Karla's major (sociology) and what she wanted to do after graduation. She noticed Nonny would start coughing uncontrollably, but Nonny said she felt fine, just tired. Karla made sure Nonny wasn't on her feet so much, as her ankles also looked swollen. They were both tired and decided to turn in early. At 1 a.m., Karla was surprised to be awakened by Nonny. She had woken up feeling short of breath, and her heart seemed to be racing. Karla decided to take Nonny to the emergency department (ED) just to be safe.

At the hospital the doctors ordered a chest x-ray and an electrocardiogram (ECG), and a nurse took several vials of blood. The good news was that Nonny's blood tests showed normal levels of electrolytes and no signs of kidney or liver failure. Her heart valves also appeared normal, and there was no sign that she had had a heart attack (phew!). The bad news was that her blood pressure was high (160/110 mm Hg), her blood cholesterol levels were somewhat elevated (205 mg/dL), the left ventricle of Nonny's heart appeared to be enlarged, and she was accumulating fluid in her lungs. The doctor left to consult her colleagues but promised to return to discuss a potential diagnosis.

## Questions

1. Nonny was confused: she didn't understand what the left ventricle was, why it might be enlarged, and what function it served. Karla realized that it would likely be best to start with explaining the structure of the heart to her. How could she best describe this organ? Be sure to include a description of all of the chambers and their relative locations (on top of, below, etc.).







## Part IV – The Diagnosis

The doctor returned with the diagnosis: left-sided heart failure. She wanted to keep Nonny for a day or so for observation and recommended that she make an appointment with a cardiologist once discharged. She placed Nonny on two medications: lisinopril (an ACE inhibitor) and coumadin (an anticoagulant). It soon became obvious to Karla that she was at a loss to understand the condition, the drugs Nonny was prescribed, and what the diagnosis meant for Nonny's future. She realized it was time for her to go home and do some research. Karla had seen ads for the American Heart Association and decided to check out their website ([www.heart.org](http://www.heart.org)). She found information on heart failure under the "Health Topics" tab, and this helped Karla to feel better about her ability to support Nonny with her new diagnosis.



Using the American Heart Association website as a starting point, answer the following questions. You might need to branch out and consult additional sources to complete this part of the case study. Be sure to cite all of your sources. Your answers should be written in your own words.

### Questions

1. What is left-sided heart failure? How would this condition lead to the symptoms (cough, shortness of breath, swollen ankles, racing heart) that Nonny experienced?
2. What is an anticoagulant? Why does Nonny likely need it? How does this help the function of the heart?
3. What is an ACE inhibitor? (A complete answer would include the target of this medicine and what occurs in the presence and absence of the inhibitor.) Why does Nonny need it? How does this help the function of the heart?
4. Other treatment options are available if these medications do not work for Nonny. What are two such treatments?
5. What are the risks for heart failure? Is there anything Karla can actively do to avoid getting it herself?