



## Heavy Chain Deposition Disease

- What is Heavy Chain Deposition Disease?
- What does it look like (under the microscope)?
- How did I get it?
- What are the symptoms?
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- What are my chances for getting better?

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### What is Heavy Chain Deposition Disease?

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Heavy chain deposition disease is when kidneys, liver and/or heart dysfunction and failure occur due to deposits of pieces of heavy chains. Heavy chains are produced by plasma cells. These are a type of white blood cell. White blood cells defend the body by fighting infection. When plasma cells copy themselves over and over, these cells can produce too much of this material. This material can be a protein piece, a heavy chain. When too many pieces are made, they can deposit in organs including the kidneys, liver and heart. This can cause organ failure. This is known as heavy chain deposition disease.

Patients with this disease might also have multiple myeloma, a cancer of the plasma cells. It can be present at the time of diagnosis of heavy chain deposition disease. It can also be diagnosed after the diagnosis of heavy chain deposition disease. For this reason, people who have been diagnosed with heavy chain deposition disease may be required to undergo bone marrow biopsy to check for multiple myeloma.

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### What does it look like (under the microscope)?

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Samples of the kidneys, liver or heart can be taken and evaluated under the microscope. The pathologist can see the deposits of heavy chains in the organ. These deposits can be seen by a special stain done on the biopsy tissue called immunofluorescence staining. A glowing antibody attaches to the heavy chains and lights up where the heavy chains are deposited. This makes them visible to the pathologist.

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### How did I get it?

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Scientists do not understand yet why a person gets this disease.

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### What are the symptoms?

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If heavy chains deposit in the kidneys, people might notice swelling in the legs and the rest of the body. There could also be frothy or foamy urine, tiredness, a bad taste in the mouth, loss of appetite, itching, trouble concentrating or difficulty with memory, nausea, and vomiting. People could also be urinating more at night or have decreased total urination.

If the heavy chains deposit in the liver people may notice bruising, rash, swelling of the abdomen or feet, nose bleeds, bleeding from the gums, yellowing of the eyes or skin. They may also experience tiredness, or loss of muscle strength in the arms and legs.

If the heavy chains deposit in the heart people may feel short of breath. They may have decreased ability to exercise, have swelling in the legs, get chest pains, feel their heart race or skip, and feel tired.

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### **What is the treatment?**

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Treatment can include chemotherapy with medications including Melphalan, prednisone, thalidomide, Bortezomib, vincristine, carmustine, cyclophosphamide, adriamycin or others. Some people may be candidates for a type of stem cell transplantation.

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### **What are my chances of getting better?**

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The outlook is unfortunately poor. If the heart or liver is involved, survival may be as short as four to six months. Infection is usually the major cause of death. Patients are very likely to progress to end stage kidney disease if the kidneys are involved.