



## Bisphosphonates Inhibit Aneurysm Formation and Growth

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**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing methods of using bisphosphonate compounds, which are approved for the treatment of osteoporosis, to prevent or treat aortic aneurysms.**

### Overview

Aortic aneurysms are weakened or bulging areas in the aorta, the largest blood vessel in the body. As many as 30,000 deaths may result from ruptured abdominal aortic aneurysms each year, but no drug therapy has been shown to be useful to decrease the growth or rupture rate of such aneurysms.

Studies have found that mortality can be reduced for patients with large aneurysms through surgical interventions. Surgical interventions do not improve survival rates for small aneurysms, so such patients are monitored but not treated. However, the size of an aneurysm does not correlate with the likelihood of rupturing, so small aneurysms are not necessarily less dangerous. Improved clinical therapies to prevent or treat aneurysms are needed.

### The Invention

UW–Madison researchers have developed methods for using bisphosphonate compounds to treat aneurysms. After the researchers discovered robust calcification and osteoclast-like cells in the central layer of the aneurismal aorta wall in humans, as well as in an experimental abdominal aortic aneurysm model in mice, they hypothesized that overactivity of the osteoclast-like cells may induce the arterial damage that produces the aneurysm. By administering bisphosphonate, which inhibits osteoclasts, they showed complete inhibition of aneurysm formation in mice.

### Applications

- Prevention or treatment of aortic aneurysms

### Key Benefits

- Bisphosphonate is a widely accepted and approved treatment for osteoporosis.
- Bisphosphonate is relatively inexpensive.
- A wide variety of bisphosphonates can be used.
- Provides a method of treating abdominal aortic aneurysms, including those for which surgical intervention is ineffective and no therapeutic drug is known

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**For More Information About the Invention:**

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#### Tech Fields

- [Therapeutics & Vaccines : Cardiovascular](#)

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