



# Cardio-Embolic Stroke Protection (20120149)

Technology No. 20120149

**IP Status:** Issued US Patent; **Application #:** 14/391,639

## Stroke Prevention

A stroke prevention device has been developed that may prevent the complication of cardio-embolic stroke and has the added advantage of possible long-term use. The device comprises one or more stent-based rings with flow-altering surfaces that have been optimized based on the computer modeling of blood and particle flow from the heart to the brain. The open channel design generates a “filterless filter” effect that redirects particles downstream away from the brain vessels while maintaining “filtered” blood flow to the brain. Maintaining this open channel design allows procedure instruments relatively unobstructed access and transit beyond the implanted device in its functional position.

### MN-IP Try and Buy

#### Try

- Trial period up to 18 months. \$5000/6 months.
- Fee waived if MN operating company or if sponsoring \$50,000+ in research.

#### Buy

- Exclusive license for a \$25,000 conversion payment.
- No patent expenses.
- 1.5% royalty after \$1 million in product sales. 1.0% for MN companies.

# Heart Procedure Risk

Cardio-embolic stroke occurs when abnormal particles of various sizes pump from the heart and ultimately block arteries that supply blood to the brain. This can be a catastrophic complication related to a number of heart procedures, including new minimally invasive valve replacements.

#### **BENEFITS OF CARDIO-EMBOLIC STROKE PROTECTION:**

- “Filterless filter” design: Contoured surface(s) divert(s) threatening particles downstream, away from the brain circulation while allowing free circulation of blood to the brain.
- Open central channel allows instruments (ie guidewires and catheters) unobstructed access and transit while device is seated in functional position.
- Fully implantable system capable of long-term use.

**Phase of Development** Concept designs: flow modeling is being conducted

#### **Researchers**

Farzad Azimpour

*Medical Fellow, Cardiology Division, University of Minnesota Medical School*

<https://license.umn.edu/product/cardio-embolic-stroke-protection>