

NuVascular Technologies

The "Nu" Approach to Improving Patients' Lives



NuVascular Technologies Launches Suite of Hemodialysis Devices

New product pipeline uses patented nanotechnology to help those suffering from end-stage renal disease

Ashland, Mass., June 1, 2015 – A new line of medical devices has the potential to save the lives of millions of hemodialysis patients and billions of dollars worth of secondary medical treatments, [NuVascular Technologies, Inc.](#) (NuVascular) announced today. The suite of products uses NuVascular's patented nanotechnology to develop devices such as access grafts and sutures that can be loaded with specific drugs to treat patients afflicted with kidney disease by delivering the drug directly to a precise site for a defined period of time while significantly reducing the risks associated with these types of devices.

Worldwide, more than 2.8 million people undergo hemodialysis, including about 450,000 Americans. The average cost to treat a single hemodialysis patient is \$89,000 per year, and there are often complications associated with malfunctioning access devices that produce an annual cost of \$2.9 billion in the United States.

NuVascular is seeking to provide a solution to this public health crisis through its patented process producing nanofibers that mimic the natural biological scaffold into which native human tissue grows. Drugs can also be incorporated into these fibers with a customized release rate and duration, reducing complications. The Ashland, Mass.-based company is currently in discussions with the U.S. Food and Drug Administration to bring this technology to clinical trials.

"The problems associated with current hemodialysis treatments are destroying millions of lives, and the tragedy is getting worse each day," said Eugene Anton, CEO and co-founder of NuVascular. "Our patented solutions would prevent so much anguish and the burden of unnecessary costs by preventing infection, rejection, clotting and cell overgrowth."

Far more versatile and effective than the current hemodialysis treatments, NuVascular's nanofiber-based products can be licensed by other medical device manufacturers. This platform technology, which was originally developed using more than \$6.6 million in non-dilutive funding from the National Institutes of Health and the National Science Foundation, provides custom-tailored mechanical properties that allow the devices to self-seal and the body to heal faster with a significantly reduced risk of complications.

"It's all about compatibility," said NuVascular co-founder and Chief Technical Officer, Matthew Phaneuf. "The fiber size in a medical device really does matter when it comes to healing. The structural integrity of our nanofiber devices combined with the ability to release drugs in a

controlled manner sets these products apart.”

NuVascular is developing the following medical devices through its nanotechnology for hemodialysis:

- **Access Graft:** Synthetic artery-to-vein bridge that allows immediate access and self-seals
- **Drug-Eluting Access Graft:** Paclitaxel loaded synthetic artery-to-vein bridge
- **Arteriovenous Fistula (AVF) Suture:** Compliant suture that can be used to deliver drugs locally to any fistula/graft
- **Central Venous Catheter (CVC) Cuff:** Nanofibrous, thin cuff that kills bacteria while allowing controlled tissue ingrowth
- **Vessel Wrap:** Thin, flexible material that can be wrapped around a vessel to provide local drug delivery
- **Stent Sheath:** Nanofibrous drug-eluting sheath coated onto metallic stents to repair a fistula or graft
- **Angioplasty Balloon:** Nanofibrous elastomeric, drug-delivering balloon used to open blocked fistulas or grafts

NuVascular’s initial focus will be to apply this technology to hemodialysis access devices. This platform technology will then be expanded to other devices used to treat patients with kidney disease.

It can be used for a variety of other applications as well, ranging from biopacemakers and artificial blood vessels to anti-HIV blood filters and wound dressings. For more information, visit <http://www.nuvasculartech.com/>.

About NuVascular Technologies:

NuVascular Technologies, Inc. was established in Ashland, Mass., in 2014. The company was formed to commercialize patented technology developed over the past decade by BioSurfaces, Inc. and to further develop next-generation nanotechnology. Under the direction of an experienced management team, the company is developing medical solutions that mimic natural tissue growth and incorporate targeted drug delivery. Medical devices specifically designed for hemodialysis treatments, as well as other medical applications, will be licensed through NuVascular’s holding company, NuSpun Technologies, LLC.

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