

# Innovation, design, and a look to the future of stroke technology

An interview with John Daniel, Vice President, Neurovascular R&D

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## What inspires you about working at Stryker?

It is the foremost opportunity to solve unmet needs and clinical challenges that **help our customers treat stroke.**

## What are the core tenets that underline the innovation culture at Neurovascular?

Our work is inspired by our mission: Together with our customers, we are driven to make healthcare better. We prioritize customer feedback, taking the time to listen to our customers' needs and shaping our decisions by translating those inputs into product design.

**Our R&D team practices design thinking**, a process from Stanford University that we've institutionalized here at Neurovascular. Typically the biggest challenge in this process is defining and understanding the problem we are solving in such a way that we can accurately design a solution for it. We approach this challenge with a comprehensive perspective through providing our engineering team with intense clinical training which includes clinical field immersion.

## Design thinking at Neurovascular



### **How do you synergize between physicians' feedback and your team's decisions in designing stroke care technology?**

Our team relies on strong partnerships with physicians that provide us with detailed feedback on product performance. **Unlike design for consumer products, we can't test our products ourselves in the clinical environment.** Successful synergy between feedback and design requires a deep understanding of the treatment techniques employed by our customers during stroke procedures. To ensure depth and variety of the feedback we receive, we seek input from customers across multiple regions, specialties, and expertise.

Design changes, iterations, and final validation are based on these inputs from customers.

### **What drives the decision to explore new technology solutions? Are there any processes you have established to vet opportunities?**

Certainly. Proof-of-concept phases drive decisions on whether we make or buy new technologies. We think about competencies, the solution, the therapy, and technology, as a whole. We are always open to considering ideas from the outside, and I think **the future will be hybrid innovation. The most important thing to us is choosing the right solution on behalf of our customers and their patients.**

### **Would you say your team is innovative?**

Yes. We have been a pioneer in the neurovascular space with intra-cranial aneurysm coils, intra-cranial stents, micro-catheters, guidewires, and stroke technologies such as balloon guides, and distal access catheters to the market. **At Stryker we believe that, in partnership with our customers, we can bring best-in-class technology to market that benefits stroke patients and builds lasting value for our customers.**

I love the proverb – “If you want to go fast, go alone. If you want to go far, go together.”

### **You've seen many changes in stroke care– what would you say is the next big thing in our market?**

In the overall stroke care market new developments in telemedicine, automated pre- and in-hospital diagnostics, and AI-assisted image analysis for stroke detection and decision support are really exciting new frontiers. Robotics could also create big change for assisted stroke treatments in rural areas.

**Worldwide I believe the focus should be on increasing access to affordable stroke care and simplifying solutions.** Globally stroke has been a leading cause of death for the last 15 years<sup>1</sup> and disproportionately affects those living in low to middle-income countries<sup>2</sup>. Some customers in those

regions have expressed the needs for regionalized products and systems of care. Another trend is expanding clinical studies to other geographies outside of North America and Europe. This ensures we're reflecting the global stroke patient profile. Other areas of focus will be in stroke prevention, particularly in managing chronic hypertension.

1. The top 10 causes of death, World Health Organization. <http://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death>
2. Facts and figures about stroke, World Stroke Organization. <https://www.world-stroke.org/component/content/article/16-forpatients/84-facts-and-figures-about-stroke>