

Serial entrepreneur links biomedical innovation, unmet medical needs

“He’s So Vein,” reports Popular Science magazine. But Dr. Amir Belson is also a serial entrepreneur, pediatric surgeon, and prolific inventor.



Amir Belson, M.D.

Founder, Chairman

“The Emboliner™ embolic protection catheter is ‘must-have’ technology for TAVR companies to remain competitive as they expand the market to lower-risk patients,” says Dr. Belson.

Emboliner™: Total Embolic Protection — game-changing technology intended to provide more reliable and more complete protection of the arterial bed from procedure-related emboli from interventional and surgical procedures.

When Amir Belson arrived from Israel for a pediatric fellowship at Stanford University in 1998, he had developed a list of 64 ideas for biomedical inventions. Many of these innovations were inspired by the years he served as a flight surgeon in the Israeli air force, while others evolved from serving in a neonatal intensive-care unit.

Emboline was founded as a result of Dr. Belson’s belief that life-threatening emboli can be “trapped” during a TAVR procedure. Cerebral embolism is a known complication of cardiac surgery, cardiopulmonary bypass and catheter-based interventional cardiology and electrophysiology procedures. Embolic particles, which may include thrombus, valve tissue, and calcification, may become dislodged by surgical or catheter manipulations and enter the bloodstream.

“Cerebral embolism can lead to neuropsychological deficits, stroke and even death,” says Dr. Belson. “Other organs downstream can also be damaged by embolism, resulting in diminished function or organ failure.”

Entrapment and removal of these embolic debris would benefit patients and improve the outcome of these procedures. These risks are especially critical in transcatheter aortic valve replacement (TAVR), where up to 27% of patients experience a serious stroke within 30 days of the procedure. First-generation embolic protection technologies have been shown to reduce peri-procedural strokes by about 70–75%, with overall improvement in neurological and neurocognitive outcomes. The Emboliner™ is designed to improve upon first-generation technologies in terms of reliability of cerebral coverage, comprehensiveness of embolic capture, and ease of use.

*Dr. Belson was the founder of **Neoguide Systems**, acquired by Intuitive Surgical in 2009. Dr. Belson is also the founder of: **Vascular Pathways**, which developed a “can’t miss” IV catheter that was chosen as one of the 10 best inventions of 2009 by Popular Science magazine, and was acquired by C.R. Bard in 2015; **Zipline Medical**, a wound closure company; **Qool Therapeutics**, a minimally invasive therapeutic hypothermia technology company; **Radiation Medical**, a radiation protection medical device company; and **Vasostitch**, which develops large-vessel access and closure technology. Dr. Belson graduated cum laude from the school of medicine at **Technion**, Israel Institute of Technology. He served several years as a flight surgeon in Israel’s air force rescue unit before moving to the U.S. for a three-year Pediatric Nephrology fellowship at **Stanford University Medical Center**. Belson also spent one year as a research fellow with the **Biodesign Innovation Program at Stanford**.*