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Doctors cite flexible catheters as innovative

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By Debra Sherman

CLEVELAND, Oct. 3 (Reuters) - The Cleveland Clinic said on Wednesday a new generation of flexible catheters that allows surgeons to manipulate tiny instruments within the body will be the biggest medical innovation of 2008.

The new catheter systems allow precise remote manipulations within blood vessels and have broad potential applications in urology, cardiology, cardiac surgery and other medical specialties.

The current generation of catheters has many limitations and they can't be steered precisely, Dr. Tomislav Mihaljevic, who chaired the Cleveland Clinic's Top 10 Medical Innovations list, said in an interview.

The new catheters, or hollow tubes, can carry instruments to do stitches or cut tumors, he said. "There are a huge variety of procedures that can be done using them."

Mihaljevic, a heart surgeon, said the panel chose the catheters, manufactured by Hansen Medical Inc. (HNSN.O: [Quote](#), [Profile](#), [Research](#)), because the devices can be so widely used across many specialties, affecting the largest number of patients.

The Cleveland Clinic, which is holding its annual three-day Medical Innovations Summit focusing on the latest heart treatments, said the second innovation on its list is a technique to deliver a replacement aortic heart valve via a catheter. The technique was pioneered by Edwards Lifesciences (EW.N: [Quote](#), [Profile](#), [Research](#)), which makes replacement heart valve systems.

"We have not had many choices for high-risk patients. Many of them are elderly. The only choice was surgery and thousands of patients were not referred for surgery because they were just too sick," said Mihaljevic, noting that 60 percent to 70 percent of the 200,000 heart valve surgeries in the United States are aortic valve replacements.

The third top innovation named by the clinic was so-called RNA-based therapeutics, an area hotly pursued by top pharmaceutical companies including Merck & Co. (MRK.N: [Quote](#), [Profile](#), [Research](#)), Pfizer Inc. (PFE.N: [Quote](#), [Profile](#), [Research](#)) and AstraZeneca Plc. (AZN.L: [Quote](#), [Profile](#), [Research](#)).

RNA stands for ribonucleic acid -- a chemical messenger that is emerging as a key player in the disease process. It's a new type of genetic therapy that can switch off certain genes that trigger disease.

This particular innovation uses RNA technology to treat patients who are unable to reach their targeted cholesterol levels using statins alone, or who cannot tolerate anti-cholesterol drugs. It primarily targets so-called "bad" cholesterol.

Other top innovations included:

- Genome scanning to produce a personalized health risk assessment.
- New drugs to prevent blood clots.
- Nasal drops that deliver flu vaccines to infants.
- New medical imaging technology to better diagnose and to assist in minimally invasive procedures such as stent placement and tumor removal.
- Neural control devices that could restore movement of arms and legs to patients with central nervous system injuries.
- Engineered cartilage products to replace joint cartilage tissue damaged by injury or arthritis.
- Dual energy source computed tomography imaging that allows for imaging more quickly while exposing patients to less radiation. The new systems can also capture images of rapid heartbeats, unlike their predecessors.

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