Hemorrhagic Stroke

Hemorrhagic stroke, though less common than ischemic stroke, is a serious medical emergency that occurs when a blood vessel in the brain ruptures, leading to bleeding within or around the brain. This bleeding increases pressure on brain cells, potentially causing significant damage.¹

Types of Hemorrhagic Stroke²

Intracerebral Hemorrhage Bleeding occurs within the brain tissue.

Pre-IRRA*flow*

Subarachnoid Hemorrhage

Bleeding occurs between the brain and thin tissues covering it.

Causes of Hemorrhagic Stroke²

High Blood Pressure Aneurysms Arteriovenous Malformations (AVMs)

Risk factors include smoking, heavy alcohol consumption, use of illegal drugs, family history of stroke and advanced age.²

Common Warning Signs of a Stroke³

Sudden severe headache Nausea or vomiting Weakness or numbness, especially on one side of the body Difficulty speaking or understanding speech Vision problems Loss of balance Seizures

Traditional Treatment Options²

Emergency medical care is crucial, with traditional treatment involving controlling bleeding, managing pressure in the brain and sometimes surgery.

Why IRRAflow?^{4,5,6}

Unlike regular catheters that rely on gravity to drain blood, IRRAflow uses gentle pressure to push fluid into the brain while draining it. This makes the treatment more effective, helping patients recover better and with fewer complications.





Post-IRRAflow

36-Hour Treatment Time

Understanding Options After a Hemorrhagic Stroke

Hemorrhagic Stroke

When speaking with your provider about treatment options for your loved one following a hemorrhagic stroke, it's important to be educated in all available solutions.

Start by asking your provider what type of stroke your loved one had. You might say something like,

"I know there are multiple types of strokes. Can you tell me which kind my loved one experienced?"

This opens the conversation and allows your provider to elaborate on the effects of the stroke.

It's also helpful to ask what treatment options are available to your loved one following their stroke. A good question could be,

"What options are available to my loved one for treatment, and which will provide them the best outcome?"

This gives your provider an opportunity to include you and your loved one in the decision process. By weighing the positive and negative aspects of each treatment option, you can rest assured that the chosen path is the best one for your loved one.

Another key point to bring up is what the expectation is for the outcome of your loved one following the chosen treatment option. You might ask,

"What might the outcome of this treatment look like, and how might this impact recovery?"

Incorporating IRRAflow

If you're considering the IRRA*flow* Active Fluid Exchange System, it can help to approach the conversation with a few specific questions that highlight the benefits of this technology for your loved one's care. The goal is to ensure the provider understands your interest and can discuss how the system may fit into the current treatment plan.

Start by asking your provider if IRRA*flow* might be a suitable option for managing excess fluid and pressure after hemorrhagic stroke. For example, you might ask,

"I've read about IRRAflow and how it helps with managing blood in the brain after a hemorrhagic stroke. Could this approach help my loved one?"

This opens the conversation and allows your provider to consider whether it's appropriate for your loved one's specific needs.

It's also helpful to ask how IRRA*flow* might be different from other treatments they may be considering. For instance,

"How does the IRRA*flow* system compare with other methods in terms of outcome and recovery after hemorrhagic stroke?"

By approaching the conversation with these thoughtful, focused questions, you can help guide your provider toward understanding your desire to explore the IRRA*flow* system as a treatment option.

With these insights, you can ensure your loved one gets the most effective care possible.





References

1	American Heart Association. (n.d.). Hemorrhagic Stroke. www.stroke.org.
2	Unnithan, A. K. A., Das, J. M., & Mehta, P. (2023, May 8). Hemorrhagic Stroke. U.S. National Library of Medicine.
3	American Heart Association. (n.d.). Stroke Symptoms and Warning Signs. www.stroke.org.
4	Rajjoub K, Hess R M, O'Connor T E, et al. (May 22, 2021) Drainage, Irrigation, and Fibrinolytic Therapy (DRIFT) for Adult Intraventricular Hemorrhage Using IRRA <i>flow®</i> Self-Irrigating Catheter. Cureus 13(5): e15167. DOI 10.7759/cureus.15167
5	Brandmeir, Nicholas, et.al. Early Experience with Patient Treatment & Drug Delivery with IRRA <i>flow</i> ; An Automatically Irrigating and Draining Ventricular Catheter. As presented at The Neurosurgical Society of the Virginias Annual Meeting in January 2022.
6	Carrera DA, Marsh LM, Roach JJ, et al. HummingFlow: novel single twist-drill access for ventricular drainage, irrigation, monitoring, and automated local drug delivery in subarachnoid hemorrhage. J Neurosurg. 2023;139(4):1036-1041.

Important Information

The information presented is for educational purposes only. IRRAS is not dispensing medical advice. Please speak to your healthcare provider to decide if IRRA*flow* treatment is right for you. Only your healthcare provider can make a medical judgement regarding which products and therapies are right for your own individual condition. As with any surgery, intracranial surgery carries certain risks. Your surgeon will explain all of the possible benefits and complications of the procedure as well as side effects. Each patient will experience a different post-operative outcome. Your healthcare provider will help counsel you to the optimum care. A surgeon must always refer to the package insert, product label, and/or directions for use before using the IRRA*flow* System. Products may not be available in all markets because product availability is subject to regulatory approvals and medical practices in individual markets. Please contact IRRAS if you have questions about the availability of products in your area.

Description

IRRA*flow* Active Fluid Exchange System (AFES) is an intracranial drainage system intended for use by professional medical hospital personnel, trained and experienced in neurosurgical medical care.

Indications for Use

The use of the IRRA*flow* Active Fluid Exchange System is indicated when ICP monitoring is required, and for externally draining intracranial fluid as a means of reducing ICP in patients where an external drainage and monitoring system is needed.

Contraindications

The IRRA*flow* Active Fluid Exchange System is not suitable for lumbar drainage. The use of the Control Unit is contraindicated when trained personnel to supervise monitoring and drainage are not available. The Control Unit is contraindicated for use in a Magnetic Resonance (MR) environment. Refer to the IRRA*flow* Catheter IFU for MR environment use. Please refer to the Instructions for Use for the IRRA*flow* System for complete product labeling, indications, contraindications, and warnings. https://irras.com/product/eifu/

