Salim Khan health update: Salman Khan's father set for discharge after digital subtraction angiography; what is it?

Digital subtraction angiography explained: the procedure veteran screenwriter and actor Salman Khan's father Salim Khan underwent at Lilavati Hospital, Mumbai.

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Salim Khan – legendary screenwriter, patriarch of the Khan family and father to Bollywood actor Salman Khan – is expected to be discharged from Mumbai's Lilavati Hospital shortly. Admitted on February 17, the veteran screenwriter spent a month addressing age-related complications. **Also read | Salim Khan to be discharged after spending a month in hospital, underwent angiography after brain haemorrhage**

Following his successful DSA procedure and a month of observation, Salman Khan's father, Salim Khan, is set to return home. (File Photo)

A key highlight of Salim Khan's recovery journey was a specialised procedure called digital subtraction angiography (DSA), performed by neurosurgeon Dr Nitin Dange. To demystify this procedure, medical experts from across India explain to HT Lifestyle why DSA remains the 'gold standard' in modern vascular intervention.

What is digital subtraction angiography (DSA)?

At its core, DSA is a sophisticated imaging technique that allows doctors to see blood vessels without the 'noise' of bones or organs. Dr Nischal Kundaragi, senior consultant of interventional radiology at Aster CMI Hospital, Bengaluru, explains the 'subtraction' element.

He says: "The 'digital subtraction' part of the test means that the machine removes the background images of bones and tissues, so only the blood vessels are highlighted. This gives a much clearer and sharper picture compared to regular angiography, making it easier for doctors to identify even small problems."

Dr Rahul Gupta, director-cardiologist at Gleneagles Hospital, Mumbai, notes that while many are unfamiliar with the term, the process is highly technical. He says, “A contrast dye is injected into the patient's bloodstream to capture X-ray images. Then the computer tends to subtract the background structures like bones and tissues, and a clear view of blood vessels is obtained by the expert. Once the exact diagnosis is confirmed via DSA, prompt treatment is initiated immediately for improved outcomes.”

Why is DSA crucial for brain health?

For a patient of Salim Khan’s age (he is reportedly 90), precision is paramount. Neurologists rely on DSA because of the high stakes involved in cerebral blood flow. Dr PN Renjen, senior consultant of neurology at Indraprastha Apollo Hospitals, Delhi, highlights its role as the definitive diagnostic tool.

blood flow can have serious consequences. Removing background structures allows doctors to see only the blood vessels, clearly highlighting even subtle abnormalities that may be missed on other scans like CT or MRI," he says.

“DSA provides medical professionals with a cutting-edge imaging method that enables them to obtain extremely clear pictures of human blood vessels. Clinicians use DSA as their primary method for vascular imaging because they require better results than non-invasive testing methods which use CT angiography and MRI technology,” Dr Prakhar, intensivist, and medical director Pachouli Aesthetics and Wellness, Delhi, says.

Dr Renjen further highlights DSA's life-saving role in stroke management: “In cases of ischemic stroke, DSA not only helps identify the exact location of the blockage but also guides treatment. Procedures such as mechanical thrombectomy, in which a clot is physically removed, are performed under DSA guidance. This real-time imaging can be life-saving, as faster restoration of blood flow significantly reduces the risk of permanent brain damage.”

Neurologists rely on DSA because of the high stakes involved in cerebral blood flow. (Pexel)

A two-in-One tool: diagnosis and treatment

According to Dr Renjen, one of the primary reasons surgeons opt for DSA is that it allows them to fix a problem the moment they find it.

◉ Method: a thin catheter is inserted via the groin or wrist and navigated to the target area.

Real-time map: provides high-definition visuals of blood flow as it happens.