

Age: There is no clear evidence for upper age limits for treatment.

Advanced age leads to worse outcome, but the treatment effect is stable throughout the age range.

Underlying diseases: It is important to keep in mind the current quality of life and the ability to maintain it. This may be difficult to assess in the emergency department, but if in doubt, it is better to aim for treatment.

Stroke severity: Patients with an NIHSS ≥ 6 have a clear benefit from treatment.

No upper limits of severity has been demonstrated on the NIHSS scale.

About 10% of patients with mild symptoms may have large artery occlusion and therefore a CT angiogram should be obtained. These patients are at increased risk of worsening later.³⁰

If symptoms are unusual, consider whether the occlusion is old.

Dual vascular problems: There is good evidence for benefit in this group.

It is debatable whether a stent should be placed before or after thrombectomy.

In general, it is logical to remove the thrombus first, thus ensuring collateral blood flow through the circle of Willis, and later treat the stenosis in the internal carotid artery unless it cannot be passed

Benefit of treating distal M2 occlusion is uncertain.

Time: There is a clear benefit for thrombectomy within 0 - 6 hours from symptoms.

Benefit after 6 hours is uncertain.

A randomized study in this group is recommended, but results from ESCAPE²² and DEFUSE-2⁸⁹ suggest benefits if imaging results are favorable.

Infarct core

- Patients with an ASPECTS 6–10 score benefit.
- If patients have an ASPECTS score of 0–5, benefits are unclear. Consider location of ischemic changes and inaccuracy in evaluating unclear changes seen on an CT without contrast (collateral flow on CT angiogram and CT perfusion could be helpful in these circumstances).
- Patients with an ischemic core of < 70 ml on CT perfusion have a clear benefit. If core ischemia is > 70 ml benefit is unclear. Consider the location of ischemic core and patients general conditions (concomitant diseases, patients tolerance for a prolonged rehabilitation) as well as patients wishes (disability tolerance, but keep in mind their views may change after the stroke). Also keep in mind that symptomatic haemorrhage is more common with a larger infarct core.
- MRI perfusion is more accurate than CT perfusion but is time consuming, which needs to be weighed against benefits. Large core ischemia predicts worse outcome but has less impact on treatment benefit than previously thought.

Other imaging parameters

- **Evaluation of collateral blood flow.**

Patients with good collateral blood flow benefit from thrombectomy.

It is unclear whether patients with poor or no collateral blood flow benefit.

Assessment of collateral blood flow on single phase CT angiography can lead to undervaluation of collateral blood flow which, due to its nature, is delayed and therefore not present in the arterial phase of the study.

Multiphase CT angiography⁴¹ or dynamic time-resolved computed tomography angiography⁹⁰ avoids this.

- **Thrombus length**

No clear evidence exists that a short thrombus is more likely to open up on its own to a justify wait and see approach.