STROKE PHYSICIAN

CT IMAGING CHECKLIST



CT IMAGING CHECKLIST

PATIENT NAME:

Image interpretation basics

1) Set the correct windowing → Brain window for Bleeding and Ischemic/High Contrast Window for Ischemic damage

2) Scrolling → 1. look for bleeding and mimics (e.g tumours and abscesses)
2. look for hyperdense MCA
3. scroll to basal ganglia and evaluate ASPECTS regions

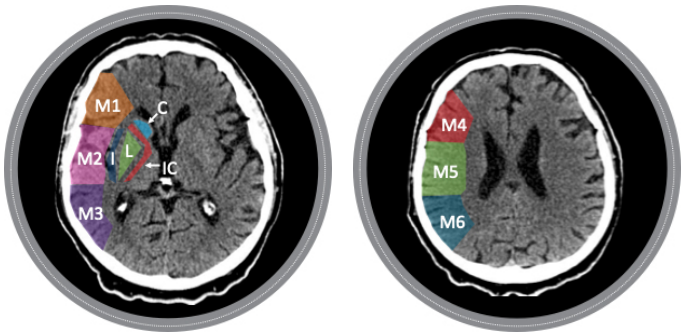
3) Hounsfield units → 45-60 = clot, 60-100 = bleed, 100+ = calcification

Hounsfield Units

TISSUE	TYPICAL HU VALUE
CSF	8
WHITE MATTER	30
GREY MATTER	45
FRESH BLOOD	60
CALCIFICATIONS	100+
BONE	1000+

CLOT

BLOOD



LEGEND
C - HEAD OF CAUDATE NUCLEUS
I - INSULA
IC - INTERNAL CAPSULE
L - LENTIFORM NUCLEUS (PUTAMEN + GLOBUS PALLIDUS)
CORTICAL REGIONS **M1**, **M2** AND **M3**
CORTICAL REGIONS **M4**, **M5** AND **M6**

Imaging Decision Aid

0 - 4.5 hours

☐ NIHSS < 6

Action: Plain CT
→ Exclude bleeding

Consider thrombolysis if no contraindications

☐ NIHSS ≥ 6

Action: Plain CT
→ Exclude bleeding

Action: CTA
→ Occlusion in ICA/MCA1/2

Pre-mRS (0-1) ☐

Location of clot (ICA/MCA1/2) ☐

Age (≥ 18) ☐

ASPECTS (≥ 6) ☐

Consider thrombolysis if no contraindications and/or thrombectomy

☐ 4.5 - 6 hours

Action: Plain CT
→ Exclude bleeding

Action: CTA
→ Occlusion in ICA/MCA1/2

Pre-mRS (0-1) ☐

Location of clot (ICA/MCA1/2) ☐

Age (≥ 18) ☐

NIHSS (≥ 6) ☐

ASPECTS (≥ 6) ☐

Consider thrombectomy if no contraindications

☐ 6 to 16 - 24 hours

Action: Plain CT
→ Exclude bleeding

Action: CTA
→ Occlusion in ICA/MCA1

Action: CT Perfusion
→ Check Ischemic core and Mismatch

Consider Thrombectomy if eligible according to DAWN or DEFUSE-3 trials

(see DAWN and DEFUSE-3 criteria on next page)

If no indication for thrombectomy or not planned

Onset time 4.5h-9h ☐ **OR** Awakening from sleep, last seen normal > 4.5h ☐

Action: CT or MRI core/perfusion

☐ ☐ Infarct core** volume < 70 ml
(**Infarct core = rCBF < 30% (CT perfusion) or ADC < 620 μm2/s (Diffusion MRI))

☐ ☐ Ratio of critically hypoperfused† volume/infarct core** volume > 1.2
(†critically hypoperfused = Tmax > 6 s (perfusion CT or perfusion MRI))

☐ ☐ Mismatch volume > 10 ml

Consider thrombolysis if no contraindications

Quality of evidence: Low
Strength of recommendation: Strong

→

CT IMAGING CHECKLIST

DEFUSE-3 (6-16 h)

	Yes	No
NIHSS ≥ 6	☐	☐
6-16 h post-onset	☐	☐
Pre-morbid mRS < 2	☐	☐
Occlusion Cervical/Internal Carotid or proximal MCA	☐	☐
Infarct volume < 70ml	☐	☐
Ratio dead vs. dying tissue ≥ 1.8	☐	☐
Penumbra ≥ 15ml	☐	☐
ASPECTS > 6	☐	☐

Consider thrombectomy if all criteria are fulfilled

DAWN (6–24 h)

		Group A		Group B		Group C	
Age		≥ 80	☐	< 80	☐	< 80	☐
NIHSS		≥ 10	☐	≥ 10	☐	≥ 20	☐
Core volume		< 21ml	☐	< 31ml	☐	31-51ml	☐
Time since onset		6-24h	☐	6-24h	☐	6-24h	☐
Pre-stroke mRS		0-1	☐	0-1	☐	0-1	☐
%MCA		< 1/3	☐	< 1/3	☐	< 1/3	☐
CTA: Occlusion		ICA/M1	☐	ICA/M1	☐	ICA/M1	☐

Consider thrombectomy if all boxes of one column are ticked

References:
- 2018 Guidelines for the Early Management of Patients With Acute Ischemic Stroke - A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association
- Nogueira R.G. et al. (2018); Thrombectomy 6 to 24 Hours after Stroke with a Mismatch between Deficit and Infarct; The New England Journal of Medicine
- Alberts G.W. et al. (2018); Thrombectomy for Stroke at 6 to 16 Hours with Selection by Perfusion Imaging; The New England Journal of Medicine
- European Stroke Organisation (ESO) guidelines on intravenous thrombolysis for acute ischaemic stroke, European Stroke Journal 0(0) 1–62, 2021

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