

STROKE PHYSICIAN

CT IMAGING CHECKLIST



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PATIENT NAME:

Image interpretation basics

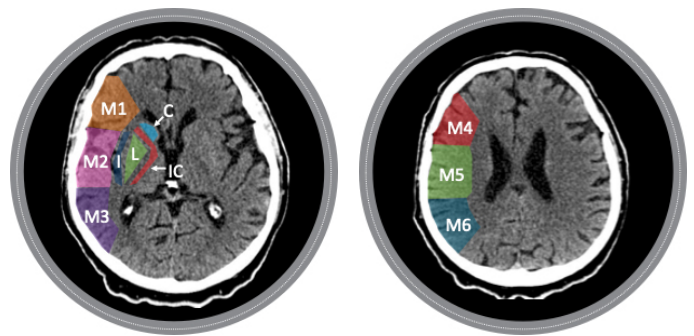
- 1) Set the correct windowing → Brain window for Bleeding and Ischemic/High Contrast Window for Ischemic damage
- 2) Scrolling →
 1. look for bleeding and mimics (e.g tumours and abscesses)
 2. look for hyperdense MCA
 3. scroll to basal ganglia and evaluate ASPECTS regions
- 3) Hounsfield units → 45-60 = 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	4.5 - 6 hours	6 to 16 - 24 hours
☐ NIHSS < 6 Action: Plain CT → Exclude bleeding Consider thrombolysis if no contraindications	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	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)
☐ 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	If no indication for thrombectomy or not planned Onset time 4.5h-9h ☐ OR Awakening from sleep, last seen normal > ☐ Action: CT or MRI core/perfusion ☐ ☐ Infarct core** volume < 70 ml (**Infarct core = rCBF < 30% (CT perfusion) or ADC < 620 μm ² /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 $< 70\text{ml}$	☐	☐	☐
Ratio dead vs. dying tissue ≥ 1.8	☐	☐	☐
Penumbra $\geq 15\text{ml}$	☐	☐	☐
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	$< 21\text{ml}$ ☐	$< 31\text{ml}$ ☐	$31-51\text{ml}$ ☐
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

