⚖️ ANAT1012 / ANAT1019 — NEURO EXAM FRAMEWORK (INSERA)

(Provisional 2024 Reference → to be updated 2025)

Version Lineage: M1 Anchors (ECP LO4–LO9) → M3 Framework (Exam Logic)

Purpose:

Provide operational reference for Tracey's Inspera exam psychology, qualifier order,

and SAQ structure. Used to predict question phrasing and audit answer logic.

Tracey_Nuances.docx

🧠 Core Psychology (Neuro flavour) Examples only

- 🧠 **Riddle-first:** what's *shown* ≠ what's *asked*.
  → She tests *role / site / side / decussation / territory*, not the label itself.

- 🕵️ **Qualifier logic:** primary / most / level / side / "at X nucleus" / "after decussation" /
  "vascular territory" → these single words **flip the correct answer.**

- 🧭 **Orient-before-answer:**
  Level → Side → Modality → Decussation → Territory → Structure.
  (Always identify the level first, then build the phrase.)

- 🟧 **Tutorials = phrasing rehearsal:** she listens for *concise* + *exact* wording; vague
  explanations lose marks.

- 🟧 **Inspera = structured traps:** expect *single-best-answer*, EMQ, matching, cross-section
  hotspots, short typed lines — no padding allowed.

🟧 Item Types (Expected on Inspera)

Type	What Tracey Targets	Common Trap
🟧 **Single-best-answer / EMQ**	Subtle distractors differing by *level / side / decussation / territory*	Choosing the "almost right" level
🟧 **Matching**	nucleus ↔ level ; tract ↔ decussation ; artery ↔ syndrome	Confusing crossed vs uncrossed
🟧 **Hotspot / Label**	Identify peduncle / lemniscus / nucleus on axial slice (level cues embedded)	Ignoring decussation or vascular zone
🟧 **Short-answer (typed)**	1–4 lines, exact Traceynese term (no synonyms)	Over-explaining / wrong phrasing

Type	What Tracey Targets	Common Trap
🔄 **Module MCQs**	Style training only — not predictive	Treat as phrasing drills, not mock exam

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✅ **Forensic Notes**

- Orientation + qualifiers = exam survival keys.

- Every SAQ/hotspot stems from these psych rules: *What is she really asking → Answer the noun phrase exactly.*

- Keep this page untouched in your Master Anchor; it becomes the foundation for how all Neuro SAQs are worded and marked.

The Decoder

(Run this on every Neuro question — it is Tracey's marking logic condensed.)

1. **Level** ⭐ *(high yield)* → Identify the anatomical level first.
   Midbrain (Superior / Inferior colliculus ?), Pons (facial colliculus ?), Medulla (olive / pyramids ?), Spinal (cord segment ?).

2. **Side** → Determine which side is affected. *Crossed face–body findings → brainstem localisation.*

3. **Modality** → Motor (UMN / LMN), Fine touch / Proprioception, Pain / Temperature, Autonomic, Special sense.

4. **Decussation point** → Corticospinal (caudal medulla); DCML (internal arcuate fibres in medulla); Spinothalamic (1–2 levels above via Anterior White Commissure).

5. **Vascular territory (if asked)** → PCA (midbrain); Basilar paramedian (pons); PICA (lateral medulla); AICA (lateral inferior pons); SCA (superior cerebellum).

6. **Answer the noun phrase** → Give only what is asked: *tract / nucleus / syndrome / artery / space / layer — nothing extra.*

Wording Patterns → What She Actually Wants

- **"Primary deficit expected at the level shown?"** → State the **modality and side** that match the decussation status at that level.

- **"Where do these fibres cross?"** → Name the exact decussation (e.g. *pyramidal decussation – caudal medulla*; *sensory decussation / internal arcuate fibres*).

- **"Best localising artery?"** → Give one specific vessel only (e.g. **PICA**, not "vertebral / PICA").

- **"Which nucleus is affected?"** → Exact nucleus name for that slice level (no tract names).

- **"Which limb of internal capsule?"** → Genu (corticobulbar) vs Posterior limb (corticospinal + somatosensory) vs Anterior limb (frontopontine / thalamocortical).

- **"UMN vs LMN signs?"** → State the pattern and side clearly (see Side Rules below).

Side Rules & Decussation (Answer-Fast Anchors)

• ⭐ **Corticospinal** → Decussates at **caudal medulla** → Supramedullary lesion = **contralateral** body weakness; Spinal cord hemilesion = **ipsilateral** weakness.
• ⭐ **DCML** → Crosses as **internal arcuate fibres in medulla** → Above medulla = **contralateral** loss of fine touch / proprioception; Cord lesion = **ipsilateral** loss below level.
• ⭐ **Spinothalamic (ALS)** → Crosses within 1–2 segments via **anterior white commissure** → Cord hemilesion = **contralateral** pain / temperature loss starting a few segments below.
• ⭐ **"Crossed findings" rule** → Ipsilateral cranial-nerve signs + contralateral body signs = **brainstem localisation.**

✅ **Forensic Notes**

- This is the **core algorithm Tracey uses to mark localisation logic**.

- Every Inspera SAQ, hotspot, or matching item draws from this sequence.

- Apply in order: **Level → Side → Modality → Decussation → Territory → Answer noun phrase.**

- Keep verbatim — this section is your command sheet for fast, error-free neuro reasoning.

Cranial Nerve / Nuclear Patterning (Fast IDs)

• **Level cues:**
o **Midbrain** → CN III & IV nuclei; superior/inferior colliculi landmarks; red nucleus vicinity.
o **Pons** → CN V (principal), VI (facial colliculus), VII nuclei; massive middle cerebellar peduncle (MCP).
o **Medulla** → olive, pyramids, dorsal column nuclei; CN IX–XII nuclei; inferior cerebellar peduncle (ICP).

• **Corticobulbar quirks (UMN):** Most pathways are **bilateral**; lower face receives **contralateral** input; **genioglossus** bias = contralateral.
Typed answers must state **UMN vs LMN** and **side.**

Vascular Syndromes (Only What She Loves to Twist)

- 🕵️ **Lateral medulla (PICA – "Wallenberg")** → ipsilateral face pain/temp loss (spinal V), contralateral body pain/temp loss (ALS), **nucleus ambiguus → dysphagia/hoarseness**, ipsilateral Horner's, ataxia (ICP), vestibular signs.

- 🕵️ **Lateral inferior pons (AICA)** → facial paralysis (VII nucleus/fibres), ipsilateral face pain/temp loss, contralateral body pain/temp loss, hearing issues (labyrinthine), ataxia (MCP/ICP).

- 🕵️ **Paramedian pons (Basilar)** → contralateral hemiparesis (corticospinal), ipsilateral VI palsy (medial gaze), possible medial lemniscus involvement (contralateral vibration/proprioception loss).

*(State the **single artery** asked; don't list features unless prompted.)*

Internal Capsule & Cortex Terrains (One-Liners)

- ⭐ **Posterior limb** → corticospinal + somatosensory (thalamocortical).
- ⭐ **Genu** → corticobulbar.
- ⭐ **Somatotopy (cortex)** → ACA = leg (medial); MCA = face/arm (lateral).
(If asked "most affected limb in MCA stroke?" → face / arm.)

✅ Forensic Notes

- All neuro-vascular SAs hinge on localisation + side + artery.

- Tracey's **"don't list features unless asked"** = exam trap rule.

- This section is a **fast-ID atlas**: keep verbatim for spotter-style SAQs and Inspera hotspot diagnosis.

Cerebellum & Peduncles (what she tests)

- **Peduncles: SCP = output (decussates); MCP = pontocerebellar input; ICP = spinal/vestibular input.**

- **Signs: ipsilateral ataxia** with cerebellar hemisphere lesions (double-cross logic).

- **Arteries: SCA (superior), AICA (ant-inf), PICA (post-inf)** — expect pairing to syndrome.

CSF & Dural Spaces (short, exact)

- **Flow:** *lat vents → Monro → 3rd → aqueduct → 4th → Luschka/Magendie → subarachnoid → arachnoid granulations → dural sinuses.*

- **Cavernous sinus contents: III, IV, V1, V2 (lateral wall); VI + ICA (central).**
  *(If asked "most at risk within sinus thrombosis?" → **VI**.)*

Answering Templates (type exactly; fill the blanks)

- **Lesion logic (1–2 lines):**

    o "Level **[midbrain/pons/medulla/spinal]**, **[left/right]** side → hits **[structure]**; **[modality]** is **[ipsi/contra]** because decussates at **[site]**."

- **Vessel pick:**

    o "**[PICA/AICA/Basilar/PCA]**." *(Only the vessel unless asked for features.)*

- **Nucleus/tract ID:** = "**[Exact nucleus/tract name]** at **[level cue]**."

Traps You Will See (Neuro Edition)

- 🧠 **Noun-phrase mismatch** → question asks for *primary tract* but options list *nuclei* (or vice versa).
- 🧠 **Near-synonyms** → *medial lemniscus ≠ MLF*; *pyramids ≠ corticospinal tract in pons*.
- 🧠 **Side drift** → diagram left–right swapped; **match the patient's side**, not image orientation.
- 🧠 **Level bait** → IC vs pons vs medulla slices differ by **colliculi / olive / pyramids / MCP** — mis-level = wrong everything.
- 🧠 **Territory overlap** → AICA vs PICA (lateral brainstem) — look for **facial nucleus (AICA)** vs **nucleus ambiguus (PICA)**.

What to Practise (Tutorial → Inspera)

- 🟧 **Level-first drills** → flash slices; name level in < 3 s using 1–2 landmarks.
- 🟧 **Decussation one-lines** → DCML / CST / ALS — write each crossing in one exact line.
- 🟧 **Artery match-ups** → 10-card shuffle: artery ↔ hallmark feature (one keyword).
- 🟧 **Corticobulbar exceptions** → lower face = contralateral UMN; tongue pattern = contralateral bias; state UMN vs LMN cleanly.
- 🟧 **Noun-phrase sprints** → read stem → underline asked entity → answer only that.

✅ **Forensic Notes**

- Every trap here has appeared in prior Tracey modules.
- The **"noun-phrase sprints"** line is her exact tutorial wording — treat it as a rule, not advice.
- These are not content drills; they are *exam-behaviour drills* — practise them as timed micro-tasks.

Do / Don't (Inspera)

• ✅ **Do:** Read qualifiers carefully → pick **level first**, then **side / decussation**, and answer the **exact noun phrase** asked.
• ✅ **Do:** Use **surface-style short lines** in typed items — no prose sentences.
• ✅ **Do:** Treat module MCQs as **wording trainers**, not "question leaks."
• ❌ **Don't:** List multiple vessels / structures when only **one** is requested.
• ❌ **Don't:** Confuse **ML (medial lemniscus)** with **MLF (medial longitudinal fasciculus)**, or **genu** with **posterior limb.**
• ❌ **Don't:** Ignore side — **Inspera loves left / right flips.**

Quick-Reference (Drop into Your Neuro Thread)

• ⭐ **Crossed face–body = brainstem.**
• ⭐ **CST cross = caudal medulla; DCML cross = internal arcuate (medulla); ALS cross = 1–2 segments above.**
• ⭐ **Genu = corticobulbar; posterior limb = corticospinal + somatosensory.**
• ⭐ **ACA = leg; MCA = face / arm.**
• ⭐ **Cavernous sinus:** CN VI most vulnerable.
• ⭐ **Answer the noun phrase.** Keep it to **one exact term.**

✅ **Forensic Notes**

- This page is the **final behavioural anchor** — the checklist you run before starting each Inspera item.
- "Answer the noun phrase" is Tracey's marking mantra — *one wrong extra word = half-mark penalty.*
- Combine with **The Decoder** → gives you a full start-to-submit algorithm for every neuro question.