

Hip — Vancouver PPFx (decision rule)

AG / AL	Troch / calcar — usually nonop
B1	Stem stable → ORIF (plate ± strut, cables)
B2	Stem loose , good bone → revise (MFT stem)
B3	Loose + poor bone → revise + APC / PFR
C	Below stem → ORIF, bypass tip ≥2 cortical Ø

Crux: B2-as-B1 is the classic error. Subsidence on serial films = most reliable loosening sign; **intra-op stem toggle test** is gold standard. When in doubt → B2. UCS adds D (interprosthetic), E (two-bone).

Hip — bone loss & misc

Paprosky acet	I intact · II supportive · IIIA up-out · IIIB up-in/discontinuity
Paprosky fem	I · II · IIIA (≥4 cm fit) · IIIB (<4 cm) · IV non-supportive
Crowe (DDH)	I <50 · II 50–75 · III 75–100 · IV >100% migration
Dorr	A flute (cementless) · B · C stovepipe (favor cement)
Brooker	HO grade I (islands) → IV (ankylosis)

Cup orientation targets

Lewinnek	inc 40±10° · AV 15±10° (necessary, not sufficient)
Callanan	inc 30–45° · AV 5–25°

Functional > static: ~25–30% have abnormal spinopelvic mobility. Stiff spine → ↑anteversion ± dual mobility. Add standing/sitting lateral films.

Knee — distal femur PPFx

Su/Lewis (location)	Rorabeck (displ.+implant)
I above component	I undisplaced, stable
II at edge → proximal	II displaced, stable
III below ant. flange	III displaced + loose

Stable+displaced → **locked plate or retrograde nail** (nail needs open/box-compatible femur). Rorabeck III / comminuted → **distal femoral replacement**. Notching ≥3 mm ↑ fracture risk†.

Knee — tibia / patella PPFx

Felix (tibia)	I plateau · II at stem · III shaft · IV tubercle; mod. A fixed / B loose / C intra-op
Goldberg (patella)	I extensor intact (nonop) · II disrupted/loose → op · III inf-pole · IV fx-disloc

Felix B (loose) → stemmed revision bypassing fx. Most patellar fx Type I → nonop; operate if extensor disrupted.

Knee — deformity & bone loss

Krackow valgus	I correctable (MCL intact) · II MCL stretched · III MCL incompetent → CCK/hinge
AORI	1 intact metaphysis · 2 damaged (A uni / B bi) · 3 deficient ± collateral → cones/hinge/DFR
CPAK	9 phenotypes from arithmetic HKA + joint-line obliquity
Insall-Salvati	<0.8 baja · >1.2 alta

PJI thresholds (ICM 2018)

Marker	Acute	Chronic
Serum CRP†	—	>10 mg/L
Serum ESR†	—	>30 mm/hr
Synovial WBC†	~10,000/µL	>3,000/µL
Synovial PMN%†	~90%	>70%

Major (either = infected): sinus tract to prosthesis; 2 positive cultures, same organism. **DAIR** only acute <3–4 wk, well-fixed, susceptible. Biofilm matures ~3–4 wk.

Alignment & cut numbers

- Femoral valgus cut angle** 5–7° (varies 3–10° — measure off long film)
- Femoral component ER** ~3° off posterior condylar axis; use epicondylar/Whiteside in hypoplastic valgus
- Mech axis** = head→ankle; HKA ±3° neutral. **Anatomic** 5–7° valgus off femoral mech axis
- Restricted KA** bounds: ±5° per bone, ±3° HKA†
- Posterior slope** ~3° PS, ~5–7° CR
- THA templating** magnification ~1.15; within one size ~78–90%†

ROM, rehab & high-yield

- TKA ROM:** extension to 0° priority; ~90° by 2 wk; ~120° by 3 mo†
- MUA** threshold ~<90° at 6–12 wkt; ↓5-yr survivorship — meaningful event
- CPM** no durable benefit; **adductor canal > femoral block** (saves quad)
- Hip precautions** not routinely needed (≥32 mm heads, post. repair)†
- WBAT** standard THA/TKA; restrict for ETO/cones/graft (~6 wk)†
- XLPE** ↓wear 50–80%; enables 32–36 mm heads
- Cement** default in fragility-fx hip >75 (HEALTH)
- Robotics** ↓alignment outliers; no proven PROM/survivorship gain†
- Bypass** stem tip/osteotomy ≥2 cortical diameters
- ~15–20% TKA dissatisfied despite good mean PROMs