

Block	Indications	LM	Technique	Stim/end point	LA	SE/ Complications	Clinical points
Superficial cervical plexus	CEA, thyroid, neck line, shoulder surgery	Midpoint of SCM	Needle along posterior border of SCM cephalad & caudal	Form 'sausage' along posterior border of SCM	10ml 0.25% Levobupivacaine	Haematoma	
Deep cervical plexus block	CEA, cysts, LN Bx, superficial neck surgery	Thyroid cartilage (C4), posterior border SCM, interscalene groove	Identify posterior SCM at level C4, move finer laterally to feel interscalene groove	10-20 mm in direction of contralateral elbow until paraesthesia or C4 transverse process felt	10ml 0.25% Levobupivacaine	Phrenic nerve palsy, RLN palsy, stellate ganglion block, haematoma	Single injection as effective
Interscalene block	Shoulder and humeral surgery	Cricoid (C6), posterior border of SCM, interscalene groove	<u>Winnie's</u> : Posterior border of SCM at level of C6, place finger beneath on to ant belly of scalenus anterior & move laterally to feel interscale groove	10-20mm in direction of contralateral elbow Deltoid stimulation (shoulder surgery), elbow flexion (humeral surgery)	10-40ml 0.25-0.5% Levobupivacaine	Phrenic nerve palsy, RLN palsy, stellate ganglion block, haematoma, epidural/spinal, vertebral artery puncture, SCI, pneumothorax	Phrenic nerve - too anterior, dorsal scapular - too posterior
Subclavian perivascular block	Elbow, wrist & hand surgery	Interscalene groove, subclavian artery	Identify interscalene groove & move down until subclavian artery felt or skin flattens out over supraclavicular fossa,	1.5-4cm caudally directed posterior to the artery	10-40ml 0.25-0.5% Levobupivacaine	Horner's, RLN block, Vascular puncture, haematoma, pneumothorax	NO MEDIAL ANGULATION Ulnar border missed in 5%
Subcoracoid infraclavicular block	Elbow, wrist & hand surgery	Coracoid, 2cm inferior and 1-2 cm lateral	3-8cm deep perpindicular in all planes	Wrist/finger extension - accept posterior cord Pectoral/elbow twitch - don't accept as too superficial/ medial/cephalad.	10ml 0.25% Levobupivacaine	Vascular puncture, pneumothorax, intravascular injection	NO MEDIAL ANGULATION
Suprascapular nerve block	shoulder surgery	Mid point of scapular spine, draw a line from the angle of the scapula to this point, move 1cm superiorly	Insert needle perpindicular to skin downwards on to bone	Abduction/elevation or parasesthesia	10-20mls 0.5% levobupivacaine	pneumothorax	

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Axillary block	Elbow, wrist & hand surgery	Axillary artery, insertion of pectoralis major	Draw a line from anterior axillary fold (pec major insertion) crossing the artery; fix artery between index & middle finger. 45° to skin proximally	<u>Above artery:</u> Median - index/middle finger flexion Musculocutaneous - elbow flexion <u>Below artery:</u> Ulnar - thumb adduction, little finger flexion <u>Below/behind artery:</u> Radial - thumb extension	7-10ml for each nerve of 0.25-0.5% levobupivacaine	Nerve damage, arterial puncture, vascular injection	Single shot commonly misses radial/musculocutaneous
Midhumeral block	Elbow, wrist & hand surgery	Brachial artery in the bicipital groove at the level of deltoid insertion	Median: above artery Musculocutaneous: 45° above artery & lateral to humerus Ulnar: Below & medial to artery Radial: Below artery & humerus in spiral groove	As above	7-10ml for each nerve of 0.25-0.5% levobupivacaine	Bruising/bleeding	
Elbow blocks	Forearm/hand surgery, top up brachial plexus block	Elbow crease, brachial artery, biceps tendon	<u>Median:</u> medial to artery, 45 degrees to skin/proximal, 10-15mm. <u>Medial cutaneous nerve of forearm:</u> SubQ medial border of biceps tendon <u>Radial:</u> Groove between biceps and brachioradialis, 1.5-2cm proximal to crease <u>Lateral cutaneous nerve of forearm:</u> SubQ lateral border of biceps tendon <u>Posterior cutaneous nerve of forearm:</u> SubQ infiltration between lateral epicondyle and olecranon <u>Ulnar:</u> medial epicondyle (sulcus), 2cm proximal, 1-3 cm deep 45 to skin cranially	Median: finger flexion Wrist extension alone inadequate, extension of thumb needed. Flexion ring finger, thumb adduction	5ml 0.5% Levobupivacaine 5-10ml 0.5% Levobupivacaine 5mls 0.5% Levobupivacaine 5ml 0.5% Levobupivacaine 5ml 0.5% Levobupivacaine 5ml 0.5% Levobupivacaine		Cutaneous branches of the ulnar nerve supplying the forearm come off higher. THE MAJOR NERVES ONLY HAVE CUTANEOUS INNERVATION TO THE HAND AT THIS LEVEL

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Wrist Block	Hand surgery	<u>Median:</u> FCR & PL/ FCR <u>Palmar cutaneous branch (median n):</u> <u>Ulnar:</u> FCU <u>Dorsal cutaneous branch (ulnar):</u> <u>Superficial radial nerve:</u>	3-5cm proximal to crease, 45 degrees towards wrist between FCR & PL (or 1cm medial to FCR if PL absent) SubQ proximal to flexor retinaculum 2cm proximal to crease 1cm under FCU SubQ over ulnar aspect of wrist SubQ from radial styloid to posterior aspect of the wrist	Parasthesia index finger Parasthesia little finger	3-5ml 0.5% Levobupivacaine 3-5ml 0.5% Levobupivacaine 3-5ml 0.5% Levobupivacaine 5-8ml 0.5% Levobupivacaine	Nerve damage, arterial puncture, vascular injection	
Bier's block	Minor superficial surgery forearm, K wires, reduction of fractures		Apply double cuff, cannulate both arms, elevate and exsanguinate the arm, inflate lower cuff followed by upper cuff to 100mmHg above SBP, deflate lower cuff and inject LA. Rotate cuffs every 10 mins	Keep cuff inflated >20 mins	0.5% prilocaine (300mg max) 0.5% lignocaine (250mg max)		CI in children, obesity, hypertension, long operations
Paravertebral block	Rib fractures, thoracic surgery, breast surgery, open cholecystectomy, renal surgery	Spinous processes & transverse processes (TP of corresponding vertebrae)	Palpate spinous processes and mark 2.5cm lateral its most cephalad aspect. Go perpendicular to contact transverse process (2-5cm), re-angle to go above & advance 1-1.5cm	LOR or intercostal muscle twitch	5-15ml 0.25-0.5% Levobupivacaine	Intravascular, intrathecal injection, pneumothorax	Thoracic surgery T5/6, chole/renal T8-12 Avoid lateral angulation
Intercostal nerve block	Open chole/ fractured ribs	Rib angle (immediately lateral to the erector spinae muscles)	Insert needle perpendicular to skin downwards on inferior rib border, walk off & insert 2-5mm	LOR	5ml 0.5% Levobupivacaine	Pneumothorax, absorption toxicity, intravascular injection	

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Penile block	Circumcision	Symphysis pubis, mark 2 points 0.5-1cm either side of the midline just below the SP	Posterior, medial and slightly caudal until LOR (elastic recoil with Buck's fascia). Infiltrate subQ around penile root onto lateral side of the scrotum	8-30mm	5ml 0.5% Levobupivacaine	Puncture corpus cavernosum/ dorsal vessels	By infiltrating laterally you can get branches of the ilioinguinal and iliohypogastric nerves
Ilioinguinal/ Iliohypogastric nerve blocks	Inguinal surgery including orchidopexy	ASIS, Deep inguinal ring (1-1.5cm above midinguinal point)	2cm medial to ASIS (1cm in children)	Ilioinguinal:- initial click Iliohypogastric:- 2nd click Intercostal nerves:- fan out SubQ infiltration	10ml 0.5% Levobupivacaine 10ml 0.5% Levobupivacaine 5-10ml 0.5% Levobupivacaine	Intravascular, intraperitoneal injection, femoral nerve block	Tell patient about femoral nerve block
Caudal (children)	Circumcision, orchidopexy, herniotomy, anaesthesia for LLS	PSIS, Sacral cornu, Sacral hiatus	Palpate PSIS, the hiatus is at the apex of an equilateral triangle whose base is formed by a line linking the two PSIS. Or, palpate the cornu, the depression between them & immediately inferior is the hiatus	22g needle, cephalad 45 degrees in children, (15 degrees in babies - sacrum flatter). Pop felt as sacrococcygeal membrane is perforated	Depends on level of operation - LS 0.5ml/kg TL 1.0ml/kg Mid thoracic 1.25ml/kg of 0.25% Levobupivacaine		
Lumbar plexus block	NOF, femoral shaft, TKR, all leg/foot surgery (with sciatic)	Line parallel to spinous processes passing through PSIS. Mark where this crosses Tuffier's line	Perpendicular to skin, slightly caudal, contact transverse process, then re-direct above/ below TP - depth 10-12cm	Quadriceps contraction	20ml 0.5% Levobupivacaine	Epidural spread, intravascular, bleeding	Hamstrings - too medial/caudal Avoid too medial -> epidural spread.
Sacral plexus block	hip surgery, post amputation (also, see indications for sciatic n. block)	PSIS, ischial tuberosity	Draw a line from PSIS to IT, at a point 6cm distal to the PSIS. Perpendicular to skin, contact bone and redirect caudally and advance 2cm (depth 60-80mm)	Plantar flexion of foot/toes (tibial n.)	10-20mls 0.5% levobupivacaine	Perforation pelvic viscera, intravascular injection. Blockade of other components of sacral plexus.	Eversion of foot (move medially). Sacral parasympathetics can be blocked --> urinary retention.

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Sciatic nerve block	Solely - ankle/foot surgery. With femoral n. - amputation, knee surgery.	PSIS, greater trochanter, IT.	Flex knee to 90 degrees, draw a line connecting GT & IT, mark a point half way in the groove between the hamstrings & adductors	Plantarflexion of foot/toes (tibial n.)	10-20mls 0.5% levobupivacaine	Vascular puncture, intravascular injection	Eversion of foot (move medially).
Femoral nerve block	Solely - knee surgery, femoral shaft fracture.	Inguinal ligament, femoral artery.	1cm below & 1cm lateral to the femoral artery, 30-50mm	Patellar twitch	10-20mls 0.5% levobupivacaine	vascular puncture, intravascular injection	Sartorius too superficial
Lateral cutaneous nerve of thigh	Hip/femoral surgery	ASIS, inguinal ligament	2cm medial/2cm inferior to ASIS, infiltrate above & below fascia lata (click felt)		10ml 0.5% Levobupivacaine	Femoral n. block	
Knee/popliteal block	Ankle/foot surgery	Apex and borders of the popliteal fossa	Mark a point 1cm lateral to the midline & 6-8cm proximal to the crease	Tibial: plantar flexion Common peroneal: dorsiflexion/eversion	10-15ml 0.5% Levobupivacaine	Vascular puncture	Work laterally to find common peroneal nerve
Saphenous nerve block	Ankle/foot surgery in addition to popliteal block	Tibial tubercle to medial condyle of tibia	Infiltrate subcutaneously		10-20mls 0.25% levobupivacaine	Bleeding (long saphenous vein)	
Ankle block	Forefoot & toe surgery	DP, posterior tibial artery, medial malleolus, sustentaculum tali	<u>Deep fibular n:</u> 2-3cm distal to inter-malleolar line, either side of the DP <u>Superficial fibular n:</u> from above point, infiltrate subQ across the dorsum of the foot. <u>Tibial n:</u> posterior to tibial posterior artery (midway between MM & calcaneum) <u>Sural n:</u> infiltrate from LM to lateral border of achilles tendon		2ml 0.5% Levobupivacaine each side 5-10ml 0.5% Levobupivacaine 5-8ml 0.5% Levobupivacaine 5 ml 0.5% Levobupivacaine		
Midtarsal block	Minor surgery of toes/forefoot	MTPJ	2cm proximal to the MTPJ, insert needle to plantar aspect of foot		6-8ml 0.5% levobupivacaine	Haematoma	No appreciable motor block

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Topical ophthalmic anaesthesia	Corneal surgery				Amethocaine 1% Proxymetacaine 0.5%		
Peribulbar block	Globe, cataract and retinal surgery	Sclerocorneal junction (limbus), medial canthus, caruncle, inferior orbital rim	Inferolateral injection: Palpate IO rim in line with limbus. 1mm above rim & just lateral, either transcutaneous or transconjunctival. Initially back & slightly inferior then redirect posteriorly under globe Medial injection: medial to caruncle, backwards & slightly medial to touch medial wall, then redirect posteriorly	Depth 20-25mm Depth 20-25mm	Lignocaine 2ml 2% with Hyalase 10-30u/ml plus 3ml 0.5% Levobupivacaine Lignocaine 2ml 2% with Hyalase 10-30u/ml plus 3ml 0.5% Levobupivacaine	Conjunctival oedema, proptosis, Retrobulbar haemorrhage, globe perforation, subarachnoid injection, extraocular muscle damage	Bevel facing globe. 25g 25mm needle. If AL > 27mm consider only medial injection or Sub-Tenon's
Sub-Tenon's block	Globe, cataract and retinal surgery	Sclerocorneal junction (limbus)	Install LA drops, in infranasal quadrant, raise the conjunctiva with Moorfield's forceps. 5mm from the limbus an incision is made using Westcott spring scissors. Dissection of this space infranasally between the sclera (vascular) & Tenon's capsule (white, avascular)	Insert a curved sub-Tenon's needle backwards beyond the equator	Lignocaine 2ml 2% with Hyalase 10-30u/ml plus 3ml 0.5% Levobupivacaine	Bleeding, chemosis, subconjunctival haemorrhage, proptosis	Less risk of bleeding but less akinesia c/w peribulbar