Local Anaesthesia
Study Guide

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Contents
Glossary ................................................................................................................................. 3
Learning Objectives ............................................................................................................... 4
  Year 5 .................................................................................................................................. 4
Introduction .............................................................................................................................. 5
Relevant Physiology / Surface Anatomy ................................................................................... 8
  Physiology ............................................................................................................................. 8
  Anatomy ............................................................................................................................... 9
Preparation .............................................................................................................................. 12
  ANTT ................................................................................................................................ 12
  Sharps Injury ....................................................................................................................... 12
  Patient safety ....................................................................................................................... 14
Documents .............................................................................................................................. 15
Equipment .............................................................................................................................. 15
Procedure ................................................................................................................................ 17
  Topical Application ........................................................................................................... 17
  Infiltration of Local Anaesthetic ....................................................................................... 17
  Peripheral Digital Ring Block ............................................................................................ 22
Post Procedure ...................................................................................................................... 26
Documentation ....................................................................................................................... 26
Appendix 1 ............................................................................................................................. 27
  Clinical Skills sharps management for the School of Medicine, Liverpool ......................... 27
Bibliography & Further Reading ............................................................................................ 28
Picture Credits .................................................................................................................... 30
# Glossary

**ABG**  
Arterial blood gas

**Aminoamide**  
One type of local anaesthetic

**Aminoester**  
One type of local anaesthetic

**ID**  
Intradermal

**Incised wound**  
A wound cut with a sharp object, eg scalpel, knife or glass

**Intra-articular**  
Into the joint

**IM**  
Intra- muscular

**LA**  
Local anaesthetic

**Laceration**  
Is a tearing of the skin of a cut from blunt force

**MP joint**  
Metacarpal-phalangeal joint

**SC**  
Subcutaneous
Learning Objectives

Year 5

To have an understanding of some of the different methods of administration of local anaesthetics
To understand the basic principles of safe administration of local anaesthetics
To understand the complications associated with administration of basic local anaesthetics
To understand how to safely administer local anaesthetic for some basic procedures adhering to ANTT.
Introduction

Local anaesthetics (LA) are drugs that deliver local and reversible depression to the local nervous system. A local anaesthetic will block pain sensation and depending on how it is administered can cause local paralysis.

This study guide is focusing on the administration of local anaesthetic to aid clinical skills procedures, such as wound care, cleaning and closure, or even cannulation and venepuncture.

LAs can be used in a variety of ways:

1. Topical application
2. Infiltration, and infiltration of lidocaine with adrenaline
3. Nerve block
4. Local anaesthetic joint injection
5. Epidural (extradural) block
6. Spinal anaesthesia (subarachnoid block)

Following the clinical skills session you can practice the first 3 bullet point under direct supervision in clinical practice where appropriate.

1. Topical Application
   Topical anaesthetics often come in the form of a cream, lotion or a spray and are used to numb a surface area, a patch of skin and frequently in ophthalmology to numb the cornea or conjunctiva.
   In clinical practice you may see this used in:
   - Ophthalmology for example prior to removal of foreign body
   - In paediatrics or needle phobic patients, prior to venepuncture or cannulation
   - Prior to infiltration of lignocaine, eg: in dentistry or children
   - Prior to catheterisation

   Some common topical anaesthetics:
   - Tetracaine- (AMETOP)
   - Lidocaine
   - Oxybuprocaine
   - Chlorhexidine with lidocaine
   - Prilocaine mixed with Lidocaine – (EMLA)

2. Infiltration
   Infiltration of LA is where an LA is injected over several points to numb an area.
   In clinical practice you may see this used:
   - Prior to suturing
• Prior to taking ABG’s.
• Prior to tooth extraction
• Prior to chest drain insertion
• Prior to bone marrow aspiration

Some common LAs used in infiltration are:

- Lidocaine
- Lidocaine with adrenaline, adrenaline also acts as a vasoconstrictor and use with lidocaine can reduce bleeding from wounds.
- Prilocaine
- Mepivacaine

3. Nerve Block
The LA is injected near to a specific nerve or bundle of nerves in order to block pain sensation to a specific area, they are most commonly used for fingers, hands and feet. An ultrasound may be used to pinpoint the exact nerve.

In clinical practice you may see this used in:

- Ring block or a digital nerve block for fingers or toes, eg: suturing a finger laceration
- Femoral nerve block, is done by a senior experienced clinician and can be used as pain relief for a fractured neck of femur etc.
- Brachial plexus nerve block, is done by a senior experienced clinician and can be done during or prior to surgery of the arm
- Intercostal nerve block is done by a senior experienced clinician, to treat chest wall or upper abdominal pain.

Some common anaesthetics used for nerve block are:

- Lidocaine
- Bupivacaine
- Ropivacaine

4. Local Anaesthetic Joint Injection (intra-articular)
This is normally done for patients with long term joint problems and local anaesthetic normally with steroids are injected into the joint by a senior experienced clinician.

In clinical practice you may see this used in:

- Shoulder joints
- Knee joints
- Elbow
- Wrist
- Hip
Some common anaesthetics used for intra-articular injections are:

- Lidocaine (with methylprednisolone)
- Bupivacaine

5. **Epidural (Extradural) Block**
   A senior experienced clinician injects a small amount of anaesthetic into the epidural space around the spine to stop pain sensation travelling from the spine to the brain.

   In clinical practice you may see this used in:
   - Epidural anaesthesia
   - Pain relief in childbirth
   - Trauma, especially severe chest trauma

   Some common anaesthetics used in epidural:
   - Bupivacaine
   - Ropivacaine
   - Levobupivacaine

6. **Spinal Anaesthesia (Subarachnoid Block)**
   This is also called spinal, intradural, or intrathecal block. This is an injection performed by a senior experienced clinician using a fine bore needle into the subarachnoid space.

   In clinical practice you may see this used in:
   - General surgery on its own or in conjunction with a general anaesthetic for surgery below the umbilicus
   - Caesarean section
   - Pain relief for lower limb trauma

   Some anaesthetics used in spinal anaesthesia:
   - Levobupivacaine
   - Prilocaine

Before choosing a local anaesthetic to use, you need to know why it is being used, what effect you wish it to have and if you are able to use the drug.

Many LAs have a safety warning with them in the BNF, stating that they “should only be administered by, or under the direct supervision of, personnel experienced in their use, with adequate training in anaesthesia and airway management” NICE (2020). As with any administration of drug, please ensure that you have read all the information prior to administering the drug.
Relevant Physiology / Surface Anatomy

Physiology
Local anaesthetic drugs act by blocking conduction along nerve fibres, this is a reversible block and duration of which depends on the local anaesthetic, and application. They mainly do this by reversibly blocking the gated sodium channels, thus interrupting the influx of sodium ions across the cell membrane, which in turn disrupts the action potential across the membrane, stopping nerve conduction.

Topical anaesthetics block nerve conduction near their administration site by targeting free nerve endings in the dermis or mucosa, they also penetrate the skin through mucosal surfaces, sweat glands and hair follicles (Kumar et al 2015).

There are two types of LA’s that fall into either an aminoester or an aminoamide class, and many are structurally related to cocaine. Both of these are metabolised more slowly in children and caution must be used if administering to infants (Monitto 2011). Aminoester and aminoamide differ in stability, amides are stable in solutions whilst esters are unstable. Each LA differs in potency, duration of action, speed of onset dependant on their chemical structure, and therefore you need to be aware of how the LA works before you use it.

Aminoester:
These are metabolised by plasma cholinesterase, and have been found to be more potent at closed channel block than the aminoamide (Courtney 1980):

Below are a list of some aminoester LA:
- Procaine/ Cocaine- Slow and short acting, and now rarely used
- Tetracaine- Slow and short acting, can be used topically with children
- Chloroprocaine – spinal anaesthesia

Aminoamide:
These are metabolised in the liver, bound by plasma proteins and are excreted in the urine, they are less likely to cause allergic reactions.

Below are a list of some aminoamides:
- Lidocaine-Fast and moderate time of action, it is absorbed quickly and can be used topically, for infiltration or nerve block.
- Bupivacaine – Fast and long acting. Is used for major nerve block/ intra-articular/ epidural.
- Ropivacaine – can be used for peripheral nerve block/ epidural etc.
- Levobupivacaine – can be used for nerve block/ intrathecal/ epidural etc.

The most common drug that you will be using for wound care will be Lidocaine.
**Lidocaine**
This can be given intravenously but only in emergency situations by an appropriately trained clinician.
Lidocaine can be given topically or used as an infiltration.
For infiltration or peripheral nerve block, it should be dosed according to the patient’s weight and the size of the wound.
Lignocaine toxicity can occur, so ensure that you are aware of the safe dosages:
- A maximum of 200mg should be given
- Unless it is mixed with adrenaline and then up to 500mg can be given.
Without adrenaline, Lidocaine will come in a 1% or a 2% solution i.e.: 10mg per ml or 20mg per ml, therefore the maximum dose is 20 ml of 1% and 10ml of 2% lidocaine. (BNF2020)
Contraindications:
Avoid injection into inflamed or infected tissue, and do not apply topically to damaged skin. This is because the efficacy of Lidocaine is affected by pH and increased acidity caused by inflammatory processes reduces Lidocaine’s effect (Ueno 2008).

Lidocaine and other amides when in a solution are weak organic bases consisting of charged and uncharged fractions. The ratio of charged to uncharged fractions is dependent on the pH, and if the pH decreases (more acidic) there is less uncharged local anaesthetic. Only the uncharged fraction can diffuse through interstitial tissue to the nerve membrane. Lidocaine has a pH of 5-7 in its marketed form, this is important when considering the uptake of anaesthetic through the interstitial tissue and the inflammation in the wound and also regarding pain of administration (discussed page 12) Ritchie and Greengard (1966) and Richard et al (1988).

As mentioned Lidocaine can be mixed with adrenaline and this can allow you to use more lidocaine but the adrenaline also acts as a vasoconstrictor and can reduce bleeding from wounds, but should not be used in areas with an end-arterial supply, eg. digits or nose as this can cause ischaemia or gangrene.

Side effects of Lidocaine are less severe when given topically or via infiltration, however it can affect the central nervous or cardiovascular system, and if given intravenously or more than the safe dose is given (lignocaine toxicity) can cause arrhythmias or cardiac arrest.

**Anatomy**
The LA will be generally be applied topically or intradermally (ID) subcutaneously (SC) for wounds, so be aware of the skin layers.
Knowledge of anatomy is essential as thicker nerve bundles require greater concentrations of LA than thinner nerve bundles. The same holds for unmyelinated and myelinated nerve fibres.
For example, in figure 3 the local would be infiltrated at the green crosses in order to numb a whole finger or either side of the metacarpal joint (turquoise dot) in order to numb that joint and distal to that joint.

Figure 3
Preparation

ANTT
Administering LA should utilise an aseptic non touch technique (ANTT) approach

ANTT is practiced when carrying out invasive clinical procedures, such as infiltrating LA. The key parts that should not be contaminated are the syringe tip, needle, neck of the glass/ plastic ampoule, patient’s skin and needle insertion site (ANTT, 2018).

Sharps Injury
If you sustain a needle stick, see Appendix 1.

There will be a policy in the Trust that you are working in and the School of Medicine has a Health and Safety code of practice available on the School’s Intranet.

You will need to complete an incident report form and inform the School of Medicine by emailing the Departmental Safety Coordinator: Dr Emma Beddoes, email: ebeddoes@liv.ac.uk

In order to reduce sharps injury, be aware of HSE regulations (2013).

Incorrect disposal of sharps may cause injury or death

Before you administer an LA, you have to decide what type of anaesthetic and the route of administration.

Allowing the anaesthetic to work
The topical administration of LA, should not be applied to broken skin and often requires time to work, for example:

- Instillagel® in catheterisation needs 3-5 minutes in order for the LA to work.
- AMETOP/ EMLA, prior to venepuncture in children often needs at least 30 minutes to work.

Infiltration also needs time to work, they can take up to 30 minutes to become fully effective and can last 4- 6 hours. You will need to check that the area is numb before you start the procedure.

Reducing pain on administration:
Injecting an LA for infiltration is often painful and Quaba et al (2003) discuss methods for reducing pain for the patient:

- Patient reassurance is found to be almost as effective as some of the other methods
- Consider prior application of topical anaesthetic before infiltration, but consider the time required for it to work
- Slow administration
- Using a fine needle and the smallest volume necessary
• Warming the LA, some studies have suggested that warming to room or body temperature can reduce pain. If the lidocaine is stored in the fridge then this will cause less pain if it is warmed.
• Buffering the LA solution with for example adding 1ml 8.4% sodium bicarbonate to 9ml Lidocaine solution has been found to reduce pain, and raise the pH of the solution.
• Injecting into sub dermal tissue initially before injecting intradermal tissue.
• Using a nerve block rather than infiltration.

Complications of topical LA:
• Skin irritation, this can be mild but can lead to blisters, observe the skin once applied and do not leave on for longer than the manufacturer recommends.
• For topical cream for venepuncture a dressing has to be applied to the skin, and this can cause reactions.
  • Hives
  • Itching
  • Pallor
  • bruising
  • Vascular oedema
  • bronchospasms
  • Some can cause allergic reactions
• It should not be applied to broken skin, unless specifically designed to do so (TAC/ LAT-these are specific gels used for open wounds, normally for paediatric patients and are less commonly used).
• Eye drops have been associated with patient overuse, can cause corneal de-epithelisation ocular damage and reduced healing etc.
• Rarely, some benzocaines can be associated with methemoglobinemia (haemoglobin is oxidised to the ferric state) and is associated with severe outcomes or death.

Topical LA- AMETOP (tetrocaine) should not be used with patients who are breast feeding or pregnant, not on the lips, mouth, tongue or anal or genital areas, it should be used with caution in patients who have epilepsy, and the amount is age dependent.

Complications of infiltrated LA:
• Pain or discomfort
• Urticaria
• Allergic reaction
• Reduced healing of wounds may be evident
• Infection
• Sensory complications
• Haematoma
• Inadvertent intravenous administration or repeated injection can lead to overdose
• Toxicity
  ▪ Dizziness, anxiety, confusion, tinnitus, diplopia, tremors, slurred speech can be signs that the central nervous system has been affected.
  ▪ Increased heart rate and blood pressure, with subsequent bradycardia can be a sign that the cardiovascular system has been affected

Complications of peripheral nerve block:
• Nerve injury
• Transient paraesthesia (Jeng et al 2010)
• Allergic reaction
• Infection
• Haematoma
• Ischaemia if injected distal to web of finger, (Thompson and Malchow 2002)
• Inadvertent intravenous/ intravascular administration or repeated injection can lead to overdose
• Toxicity
  ▪ Dizziness, anxiety, confusion, tinnitus, diplopia, tremors, slurred speech can be signs that the central nervous system has been affected.
  ▪ Increased heart rate and blood pressure, with subsequent bradycardia can be a sign that the cardiovascular system has been affected
  ▪ In L.A toxicity there is evidence to suggest that 20% lipid emulsification agents may reverse any toxic events. Standard Advanced Life Support protocols must be adhered to and help must be sought if any symptoms are noted.

Before undertaking a procedure, roughly calculate the safe dose for that particular patient taking into account age, weight, vascularity of the area and clinical condition of the patient.

Patient safety
• Introduce yourself
• Check the patient’s identity and allergies
• Explain what you want to do
• Gain informed consent
• Consider an appropriate chaperone
• Adequate exposure maintaining dignity
• Position the patient appropriately – consider moving and handling
• Wear Personal Protective Equipment as required.
• Wash your hands before and after you touch the patient (as per WHO guidelines)

On first meeting a patient introduce yourself, confirm that you have the correct patient with the name and date of birth, if available please check this with the name band and written documentation such as the prescription chart and the NHS/ hospital number/ first line of address.
Some Trusts may have electronic prescriptions, please check the local policy.

Check the patient’s allergy status, and know the side effects and interactions of the drug, ensure that the LA is prescribed and that the dose is in the “safe” amount.

Ensure the procedure is explained to the patient in terms that they understand, gain informed consent and ensure that you are directly supervised, with a chaperone available as appropriate. Allow the patient to ask any questions that they may have and discuss any past problems (e.g. fainting/ bleeding/ medication history).

Assist patient into a comfortable position, where you can easily access the point where you will be administering the LA, this may mean raising the bed/ trolley or getting a chair for you to be at the best height.

If the patient has a history of needle phobia or fainting, they may be positioned better on a trolley, ask the relatives if they have any problems with needles. Consider topical anaesthetic or ways of reducing pain as appropriate.

Don personal protective equipment, apron and gloves should be a minimum when you are coming into contact with bodily fluids (Loveday 2014), sterile gloves may be used, please follow local policy and use sharps in accordance with HSE (2013). Wear gloves when applying topical anaesthetic, repeated exposure to yourself can increase the risk of allergic reaction.

Be aware of hand hygiene and preventing the spread of disease, WHO (2009), continue to use the modified Ayeliffe technique.

Documents
The local anaesthetic should be prescribed, as with giving any drug please check as a minimum the WHO’s 5 rights (2009) with your supervisor:

- Right patient
- Right route
- Right drug
- Right dose
- Right time

Please see Injection study guide for further information.

Equipment
Try to minimise the spread of infection and follow ANTT principles; clean the tray, do not contaminate key parts by placing unsheathed needle in the tray.

If you are doing topical local anaesthetic consider:

- Tray and wipe for cleaning tray
• Topical local anaesthetic: eye drops, LA for catheterisation or cream/ gel prior to venepuncture
• Gloves and/or an apron, dependent on type.
• Occlusive transparent dressing for gel or cream for venepuncture. (Insert pic- one requested/ department)
• Gauze for removing excess

If you are doing an **infiltrated LA**, consider:

• Sharps bin and tray
• Wipes for tray
• Hand gel
• Sterile towel/ field, a wound care pack may be used as a sterile area
• Syringe
• Safety needle, fine bore
• Drawing up needle for use with glass ampoule
• Sterile gauze
• Drug vial
• Wipe for cleaning the neck of the ampoule
• Gloves (you may consider sterile depending on the procedure)
• Apron
• Consider sterile saline for cleaning away any blood seepage from wound

If you are doing a **peripheral ring block** consider above, but you may require skin preparation prior to infiltration.
Procedure

Topical Application
Sequence of procedure for topical application prior to venepuncture is dependent on Trust policy, and is done after gaining informed consent and patient safety checks:

1. Clean tray
2. Wash hands
3. Prepare equipment, especially checking dose & expiry dates
4. Don Personal Protective Equipment
5. Ensure skin is clean and unbroken
6. Apply dose of cream to above a the venepuncture sampling vein, ensure that the gel is not rubbed into the skin
7. Apply transparent dressing by pressing the edges to the skin, ensuring no leakage. Do not put pressure on the cream or gel as it will spread
8. Record the time applied (eg: on the prescription chart) leave in situ for 30-45 minutes (depending on type)
9. Observe for any irritation
10. After the appropriate amount of time, the dressing should be removed and the gel or cream wiped off with a clean tissue, or gauze.
11. Dispose of all waste into a clinical waste bin.
12. Document procedure

Dependent of product, for adults and older children more than one area can have cream or gel applied at the same time, but be aware of the maximum amount that can be used.

Infiltration of Local Anaesthetic
Sequence of procedure for infiltration of local anaesthetic to wound edges is dependent on Trust policy, and is done after gaining informed consent and patient safety checks, an ANTT approach should be employed:

1. Clean tray
2. Wash hands
3. Prepare equipment, especially checking dose & expiry dates with supervisor
4. Clean the neck of the ampoule and leave to dry for 30 seconds
5. Don Personal Protective Equipment
6. Draw up LA, the amount required for the size of the wound
7. Inform the patient that it may be uncomfortable, offer reassurance
8. Inject the local anaesthetic slowly into the skin
9. Once you have injected the amount you need, dispose of needle and syringe
immediately into a sharps bin
10. Remove and dispose of PPE and waste as required.
11. Record the time on the prescription chart.
12. Allow the anaesthetic time to work, but observe patient for any reaction
13. Check the local anaesthetic has worked
14. Close wound as appropriate, please see the wound care study guide.

Below is some further information on the above list:

1. Clean tray
2. Wash hands
3. Prepare equipment, especially checking dose & expiry dates with supervisor
4. Clean the neck of the ampoule and leave to dry for 30 seconds
5. Don Personal Protective Equipment
6. Draw up LA, the amount required for the size of the wound with a blunt fill needle and then swap to a fine bore needle.

7. Inform the patient that it may be uncomfortable, offer reassurance
8. Inject the local anaesthetic slowly into the skin
   There are 2 ways that this can be done
   • Through the wound edges
   • To the side of the wound

**Through the wound edges:**

This is allegedly less painful for the patient, but should only be done with a clean incised wound, so that dirty particles are not passed into the surrounding tissue, increasing the risk of infection.

The bevel of the needle should be facing up, depending on the size of the wound, start in the middle and insert the needle into the dermis. The needle has to be able to reach all of the wound edges, so starting in the middle means that you are less likely to have to remove the needle from the skin.
Inject a small amount at the insertion site

Angle the needle down either side of the incised wound, staying close to the wound edge, insert the needle up until the tip of the wound.

Aspirate a small amount to ensure that there are no vessels present.

Slowly infuse a small amount at a time, the skin may blanch or bubble (this is expected) gradually withdraw the needle, infiltrating as you move the needle ensuring that the tip remains in the wound.

Once LA has been infiltrated for the needle length, keeping the tip in the wound edge, turn the angle of the needle 180 degrees to do the other side.
Repeat the above process until the whole side of the wound is infiltrated.

Then do the other side of the wound as above.

To the side of the wound

This could be more painful for the patient, but should be done with any dirty incised wound or laceration, the skin either side of the wound may require cleaning prior to infiltration. There will be variation in clinical practice, but this process should mean that the patient will have a needle inserted fewer times, reducing infection risk and pain.

The bevel of the needle should be facing up, depending on the size of the wound, start in the middle and insert the needle into the dermis parallel to the wound approximately .5cm from the edge of the wound. The needle has to be able to reach the extent of the wound so starting in the middle means that you are less likely to have to remove the needle from the skin.

Inject a small amount at the insertion site and then insert the needle fully ensuring that the tip of the wound is covered with LA.

Aspirate a small amount to ensure that there are no vessels present and that no LA will be injected intravascularly.

Slowly infuse a small amount at a time, the skin may blanch or bubble (this is expected) gradually withdraw the needle, infiltrating as you move the needle. Ensure that the tip remains in the skin.
Turn the needle 180 degrees, you may do this in stages and infiltrate small amounts as you turn the needle about see Figure 15.

Repeat the above process until the whole side of the wound is infiltrated.

Then do the other side of the wound as above.

9. Once you have injected the amount you need, dispose of needle and syringe immediately into a sharps bin

10. Remove and dispose of PPE and waste as required, most LA’s require 10-30 minutes to work, so you may do something else whilst you are waiting for it to work and then come back to close the wound.

11. Record the time on the prescription chart.

12. Allow the anaesthetic time to work, but observe patient for any allergic reaction, please see injection or IV study guide for recognising anaphylaxis.
13. Check the local anaesthetic has worked, you can use forceps to check that the area is numb, the patient will still feel pressure

14. Close wound as appropriate, please see the wound care study guide.

Peripheral Digital Ring Block
Sequence of procedure for digital nerve block is dependent on Trust policy, and is done after gaining informed consent and patient safety checks, an ANTT approach should be employed:

1. Clean tray
2. Wash hands
3. Prepare equipment, especially checking dose & expiry dates with supervisor
4. Clean the neck of the ampoule and leave to dry for 30 seconds
5. Don Personal Protective Equipment
6. Draw up LA, (potentially 2% Lidocaine)
7. Inform the patient that it may be uncomfortable, offer reassurance
8. Inject the local anaesthetic slowly into the skin
9. Once you have injected the amount you need, dispose of needle and syringe immediately into a sharps bin
10. Remove and dispose of PPE and waste as required.
11. Record the time on the prescription chart.
12. Allow the anaesthetic time to work, but observe patient for any reaction
13. Check the local anaesthetic has worked
14. Close wound as appropriate, please see the wound care study guide.

Below is some further information on the above list, for a web-space block:

1. Clean tray
2. Wash hands
3. Prepare equipment, especially checking dose & expiry dates with supervisor
4. Clean the neck of the ampoule and leave to dry for 30 seconds
5. Don Personal Protective Equipment
6. Draw up LA, the amount required for the size of the wound with a blunt fill needle and then swap to a fine bore needle. (see figure 7)

7. Clean the skin and allow to dry, and inform the patient that it may be uncomfortable, offer reassurance.

8. Inject the local anaesthetic slowly into the skin

Use a 25 gauge needle as per image, hold it perpendicular to the digit and insert the needle into the web space distal to the metacarpal-phalangeal joint, slowly advance the needle to the volar (palmar) aspect of the web space, ensuring that you do not pierce the skin on the volar side. Infiltrate LA slowly around all surrounding tissue and infiltrate as you withdraw.

(If you touch a nerve with the needle, the patient will experience a very sharp pain, withdraw the needle, inform your supervisor and document)

Repeat on the opposite web space

9. The maximum that should be infiltrated is usually 3 ml on each side of the digit. Once you have injected the amount you need, dispose of needle and syringe immediately into a sharps bin
10. Remove and dispose of PPE and waste as required.

11. Record the time on the prescription chart.

12. Allow the anaesthetic time to work, but observe patient for any allergic reaction, please see injection or IV study guide for recognising anaphylaxis.

13. Check the local anaesthetic has worked, you can use forceps to check that the area is numb, the patient will still feel pressure.

14. Close the wound or clean the wound as appropriate, please see the wound care study guide.

Above the web space block is described as it is possibly the most common and least painful method of ring block.

There are various other techniques, including the transthecal block, the 3 sided digital block and the 4 sided ring block.

- The transthecal, also known as the flexor tendon sheath digital block, it is known to be painful, the needle is inserted into the palm just distal to the distal palmer crease (or at the metacarpal crease) into the tendon sheath.
- 3 sided, this is often done for the great toe: the foot is placed plantar down, the toe has an infiltration of LA, done in 3 places:
• 4 sided, this is similar to the 3 sided – however has an increased risk of ischaemia, so is rarely done.

Above are some examples of Local Anaesthetic administration, please follow local guidelines and practice under supervision in clinical practice.
Post Procedure

After the LA has been administered, please observe the patient for any reaction, and when the area is numb, wound closure can be performed.

If the local hasn’t worked, follow the drug guidelines in the BNF, you may be able to administer further as long as the safe dose is not exceeded.

Documentation

Please ensure that you document the whole procedure, including any problems with administration and ensure that the prescription chart is fully completed.
Appendix 1
Clinical Skills sharps management for the School of Medicine, Liverpool

If you sustain a sharps injury in clinical practice, please also adhere to Trust policy, if you sustain an injury in CSTLC, such as in The Learning Zone please also adhere to the CSTLC policy.

Remove
- Remove sharp
- Sharps with unknown contaminants may need to be retained for analysis

Squeeze it
- Squeeze the site to make it bleed

Wash it
- Wash the site thoroughly with soap under running water
- Do not scrub

Dry it
- Dry the site thoroughly

Dress it
- Apply a dressing to the site

Report it
- Report the injury to your supervisor and manager of the clinical area
- Dr Beddoes (ebeddoes@liv.ac.uk) must be emailed with all injuries sustained in clinical practice.

Document it
- Complete an incident form
- Attend Occupational Health or Accident and Emergency Department
Bibliography & Further Reading


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Picture Credits

1. **Figure 1: Skin, nails and hair** Cerio, Rino, Hutchison's Clinical Methods, 19, 403-417 Copyright © 2018 © 2018 Elsevier Ltd. All rights reserved.

2. **Figure 3: By Henry Vandyke Carter - Henry Gray (1918) Anatomy of the Human Body** (See "Book" section below)Bartleby.com: Gray's Anatomy, Plate 816, Public Domain, Nerves of left upper extremity. This work is in the public domain in its country of origin and other countries and areas where the copyright term is the author's life plus 100 years or fewer.