Local Anaesthetic Update 2025

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Declaration of Interest

I have no conflicts of interest

Topics for this session

- Brief overview of drugs used in podiatric practice under POM-A
- Maximum safe dose calculations
- Actual dose calculations
- Record Keeping
- Local anaesthesia in children
- Adrenaline containing anaesthetics and podiatric use
- Absolute contraindications

Drugs used in Podiatric Practice

Drug	Brand Name	Maximum Safe Dose	Onset	Duration	pKa
Lidocaine	Xylocaine	3mg/kg	2 – 5 mins	1 – 1.5 hrs	7.7
Mepivacaine*	Scandonest	4.4mg/kg	2 – 5 mins	1.5 – 2 hrs	7.6
Prilocaine	Citanest	6mg/kg	2 – 5 mins	1.5 – 2 hrs	7.7
Bupivocaine	Marcain	2mg/kg	15 – 30 mins	4 – 6 hrs	8.1
Levobupivocaine	Chirocaine	2mg/kg	10 – 15 mins	4 – 6 hrs +	8.1
Ropivacaine	Naropin	4.3mg/kg	10 – 15 mins	4 – 6 hrs +	8.1

Mepivacaine – MSD 300mg
Mepivacaine – 3mg/kg in children

Drugs used in Podiatric Practice

- Lidocaine with Adrenaline (1:200,000)
  - MSD 7mg/kg
- Bupivicaine with Adrenaline (1:200,000)
  - MSD 2mg/kg

Drugs used in Podiatric Practice

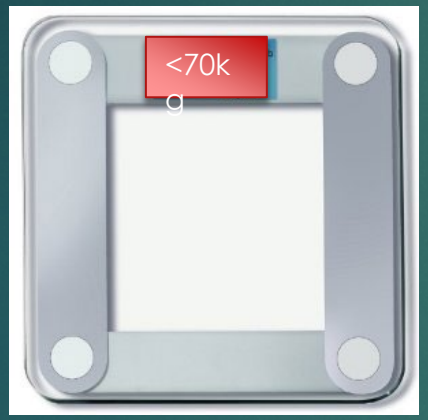
- Adrenaline
  - Increase MSD (not Bupivicaine)
  - Reduce rate of absorption
  - Prolong duration

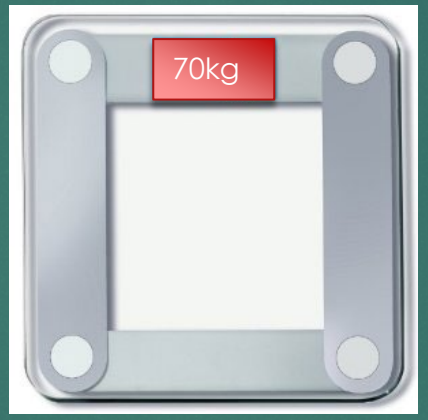
Maximum Safe Dose

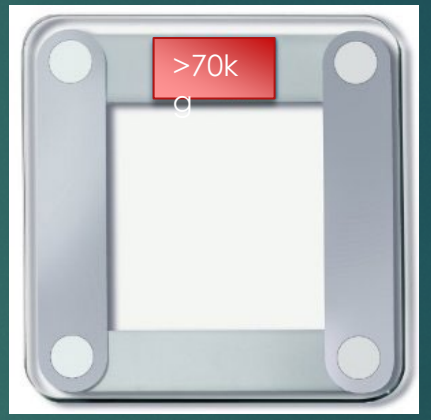
Maximum Safe Dose (MSD) refers to the amount of drug which can be administered for therapeutic effect with minimum risk of adverse effects. This normally relates **to a 24 hour period**.

Understanding Maximum Safe Dose

Patient Body Weight







Up to 70kg use actual body weight

Over 70kg – use 70kg as body weight

MSD - Examples

- A patient weighs 70 kg.
- How much Lidocaine can be given?
- MSD for Lidocaine = 3mg/kg
- Weight is 70 kg
- MSD is 3 x 70 = 210 mg

Lidocaine	**Xylocaine**	**3mg/kg**	**2 – 5 mins**	**1 – 1.5 hrs**	**7.7**

MSD - Examples

- A patient weighs 50 kg
- How much mepivacaine can be given?
- MSD for mepivacaine = 4.4mg/kg
- Weight is 50kg
- MSD is 4.4 x 50 = 220 mg

Mepivacaine	**Scandonest**	**4.4mg/kg**	**2 – 5 mins**	**1.5 – 2 hrs**	**7.6**

MSD - Examples

- A patient weighs 90 kg
- How much levobupivocaine can be given?
- MSD for levobupivocaine = 2 mg/kg
- Weight is 90kg – this gets capped at 70kg
- MSD is 2 x 70 = 140 mg

Levobupivocaine	**Chirocaine**	**2mg/kg**	**10 – 15 mins**	**4 – 6 hrs +**	**8.1**

Dose Calculations

- The dose of local anaesthetic is measured in mg
- The formula for calculation of dose is;
  - Dose (mg) = volume (ml) x drug concentration (%) x 10
  - Mg = ml x % x 10

Dose Calculations - Example

- I use 4mls of 1% lidocaine to anaesthetise a digit. What dose have I given?
- Formula is;
  - Dose = volume x concentration x 10
- Mg = ml x % x 10
- Mg = 4 x 1 x 10
- Dose = 40mg

Volume calculations

- Volume (ml) = dose (mg) / Concentration (%) / 10

Volume Calculation

- You have a 48 kg patient and you wish to carry out a local anaesthetic procedure using 2% lidocaine. Before you start injecting, you want to work out how many mls can be injected.
- Work out MSD – Mg/kg x kg
- Lidocaine: 3mg/k x 48kg
- 3 x 48 = 144: we can use 144mg
- To calculate the volume:
- Volume (ml) = dose (mg) / Concentration (%) / 10
- Volume (ml) = 144/2/10
- 7.2 ml

Important

- **Do not mix Local Anaesthetic Drugs in same syringe**

Record Keeping

- • Site of injection
- • Time of injection
- • Local anaesthetic drug – name and concentration
- • Dose delivered – milligrams (mg), NOT millilitres (ml)
- • Batch number
- • Expiry date
  - (College of Podiatry, 2019)
  - Section 6.7

Use of Mepivacaine (Scandonest) in children

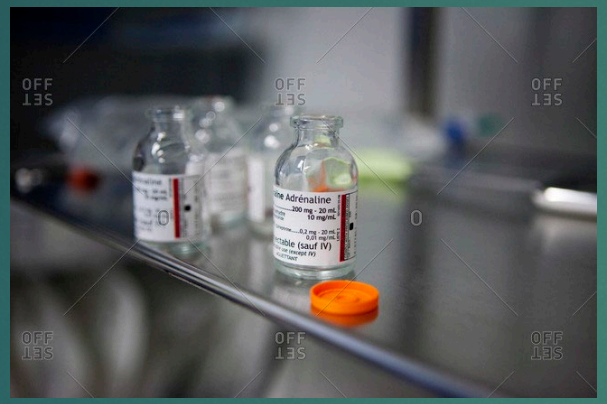
- The most commonly used local anaesthetic to achieve digital anaesthesia with nail surgery in UK podiatry is 3% plain Mepivacaine Hydrochloride (Scandonest). This product is not licensed for podiatric use in children. This is because the manufacturers have not applied for a product license for this application. However, The College of Podiatry and the Healthcare Product Regulatory Agency consider the use to be acceptable professional practice and recognises its widespread use amongst suitably qualified and HCPC-POM-A registered podiatrists
  - (College of Podiatry, 2021)
  - Section 6.2

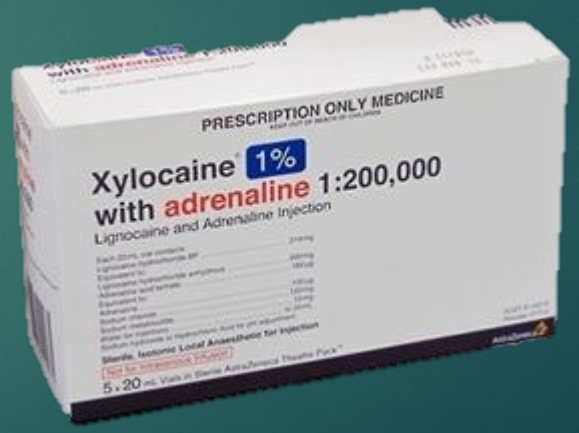
Use of Mepivacaine (Scandonest) in children

- Calculate MSD based on 3mg/kg

Childhood Obesity

The use of adrenaline in local anaesthetics in podiatric practice





Podiatric Uses of Local Analgesia

- Surface LA – painful HNV
- Regional Infiltration – painful HNV

Absolute Contraindications

- Lack of informed consent
- Unwilling patient
- Absence of resuscitation equipment
- Lone practitioner
- Local sepsis
- Known drug allergy

Informed Consent/Unwilling Patient

- NHS Consent to Treatment
- BMJ (2017) Montgomery and informed consent: where are we now?
- The Lancet (2018) How Montgomery is reconfiguring consent in the UK

Absence of resuscitation equipment

- **Resuscitation equipment**
- Before the patient enters the clinic **and if oxygen is available**, ensure that the oxygen mask is connected to the cylinder, that the cylinder is functional, and that the oxygen level is correct. Ensure that the oxygen cylinder is accessible and the pulse oximeter available.
- (College of Podiatry, 2021)
- 6.4 Emergency equipment

Absence of resuscitation equipment

- It is recommended that adrenaline, either in the form of an easy administer pen or in a 1:1000 solution vial with syringe and suitable needles for drawing solution and injecting, is available in case of anaphylaxis

- All members of the clinical team must undergo recent (within the past year) and appropriate training to recognise and treat patient collapse and anaphylaxis. www.resus.org.uk
- (College of Podiatry, 2021)
- Section 6.2 Local anaesthetic

Lone Practitioner

- Nail avulsion is a relatively safe and effective method of treating a number of nail pathologies. Whilst having assistance with such procedures is highly recommended, it is recognised that **single-handed practice (but not lone working)** may be necessary at times. Single-handed practice can be undertaken safely if the clinician identifies and minimises the risks associated with these procedures and undertakes proper planning and preparation by carrying out a fully documented risk assessment and emergency plan.

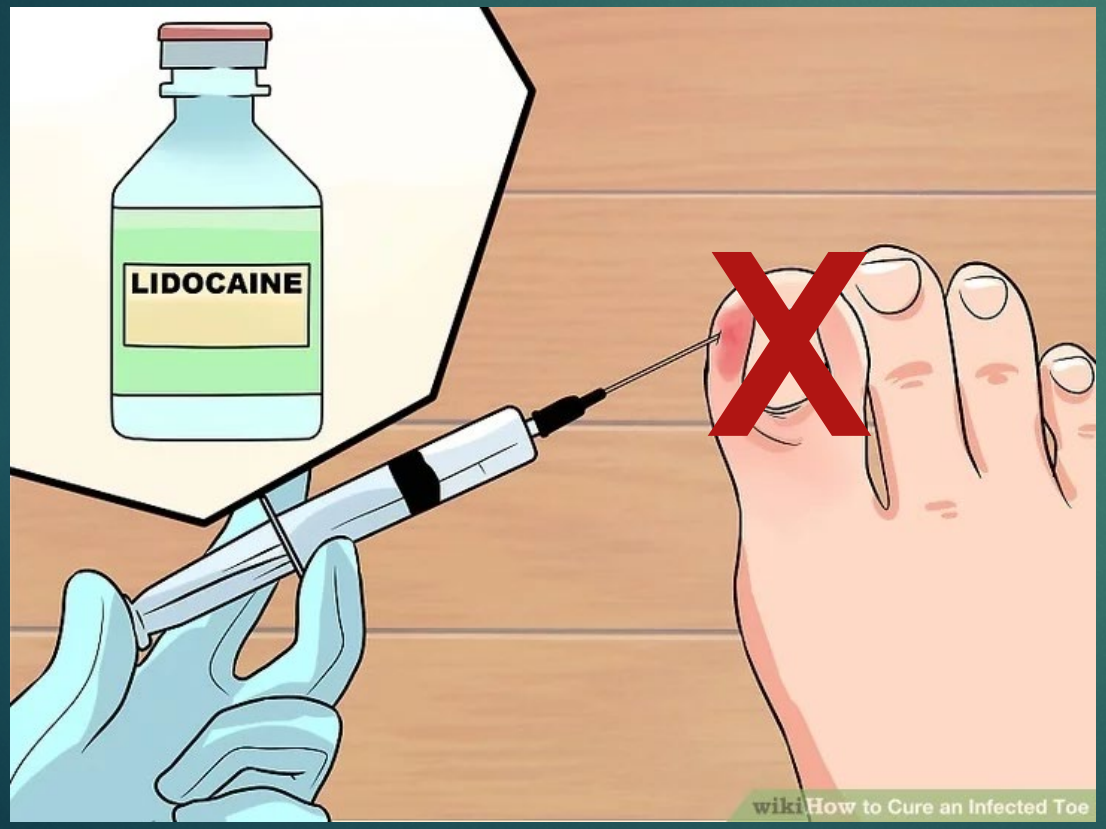
Lone Practitioner

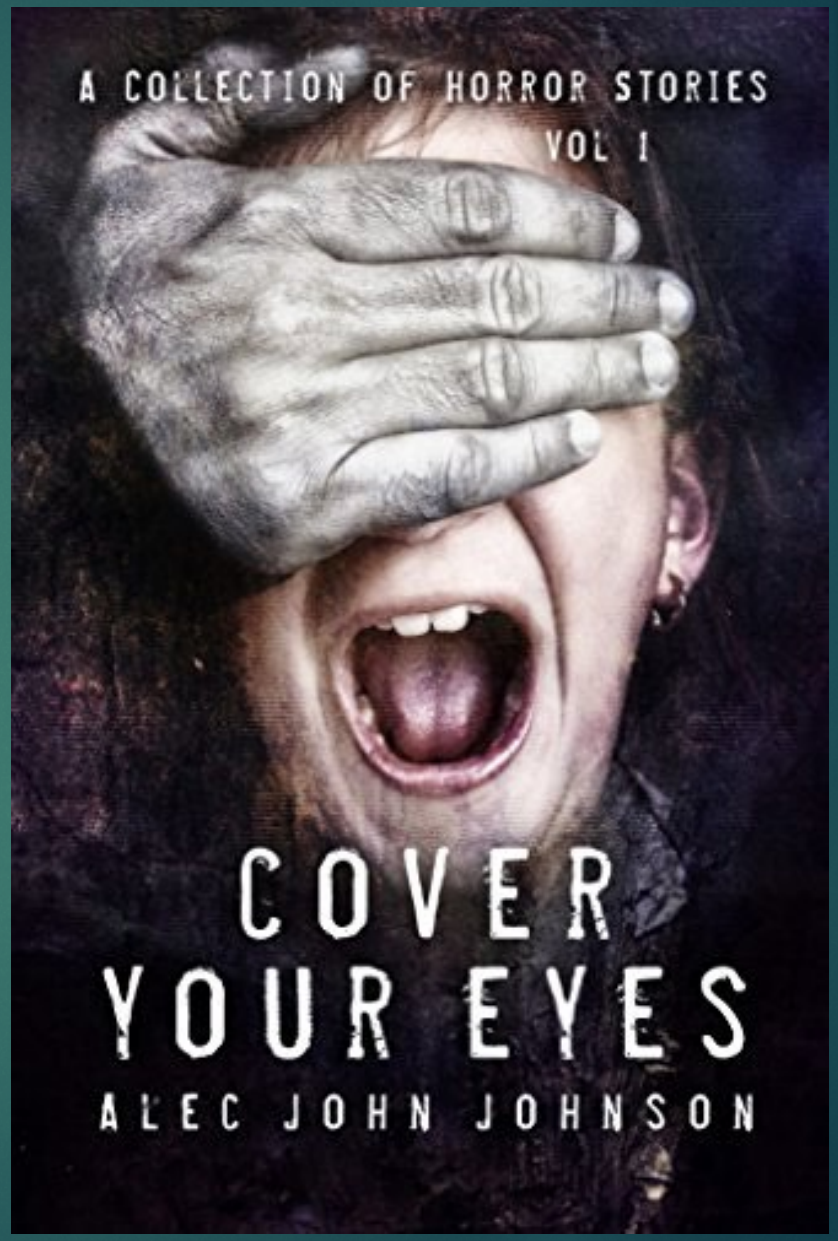
- Important considerations for single-handed practice include:
- Planned nail avulsion procedures should not take place in the lone working environment; another person should be on site and close enough to assist in the event of an emergency.
- Other staff / work colleagues should be informed that you are undertaking a nail avulsion prior to beginning any procedure
- Other staff (e.g. HCP / Admin / receptionist) should be in the immediate vicinity and able to respond to a call for help within 30 seconds

- (College of Podiatry, 2021)
- Section 8.6 Working arrangements and diverse environments

Local Sepsis

- Google search for picture of septic toe





Known Allergy

- Just don't