

## Core Topic 9

# Correct administration of vaccines



# Learning Objectives



- Identify the correct dose and site of administration of all vaccines for each age group
- List true contraindications for all vaccines and describe common false contraindications for vaccines

# Vaccine Administration



- Preparation
- Injection technique
- Choice of needle length
- Injection site

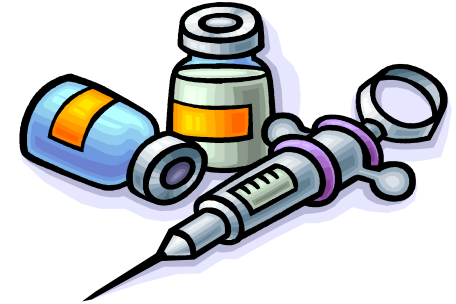
These are all important considerations as each factor can affect both the immunogenicity and the risk of local reactions at the injection site

# Reconstitution of vaccine



•Each vaccine should only be reconstituted and drawn up **when required** in order to:

- Avoid errors
- Maintain efficacy and stability



•Before administration:

- Check colour and composition of vaccine is as specified in description in vaccine's SPC
- Check vaccine to ensure is right product and correct dose for patient
- Check expiry date

# Route of Injection



**Vaccines should not be given intravenously**

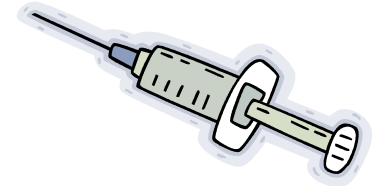
**Most vaccines\* should be given intramuscularly:**

**This reduces the chance of local reactions and leads to a better immune response to the vaccine**

**It is important the vaccine is injected into muscle and not into fat. This is why the deep subcutaneous route is no longer recommended for most vaccines**

**However:**

**Individuals with a bleeding disorder should receive their vaccines by deep subcutaneous injection to reduce risk of bleeding**



# Needle Size



<b>Orange</b>	<b>25 gauge</b>	<b>16 mm long</b> <b>25 mm long</b>
<b>Blue</b>	<b>23 gauge</b>	<b>25 mm long</b>
<b>Green</b>	<b>21 gauge</b>	<b>38 mm long</b>

For IM injection, needle needs to be long enough to ensure vaccine is injected into muscle

**A 25mm needle length is preferable and suitable for all ages**

**16mm needle length is only recommended for pre-term or very small infants**

**In larger adults, a longer length (38mm) may be required – individually assess patients**



# Injection site



**For older infants and adults:**

**Deltoid area of upper arm generally preferred but anterolateral aspect of thigh can also be used**





# Injection Site

The injection site needs to avoid major nerves and blood vessels

Immunisations should not be given into the buttock due to risk of:

**-sciatic nerve damage**

**-injecting the vaccine into fat rather than muscle**

Injection of vaccine into fatty tissue of the buttock has been shown to reduce the immunogenicity of HepB and rabies vaccines



# Skin cleansing



Clean skin does NOT require cleansing

Visibly dirty skin need only be washed with soap + water

If alcohol and other disinfecting agents are used, skin must be allowed to dry as these could inactivate live vaccines



# Anatomy of the skin – Label the skin



**Melanocytes**

**Blood vessels**

**Sebaceous gland**

**Hair shaft**

**Hair follicle**

**Pacinian corpuscle**

**Epidermis**

**Hair erector muscle**

**Subcutaneous tissue**

**Sweat pore**

**Dermis**

**Sweat gland**

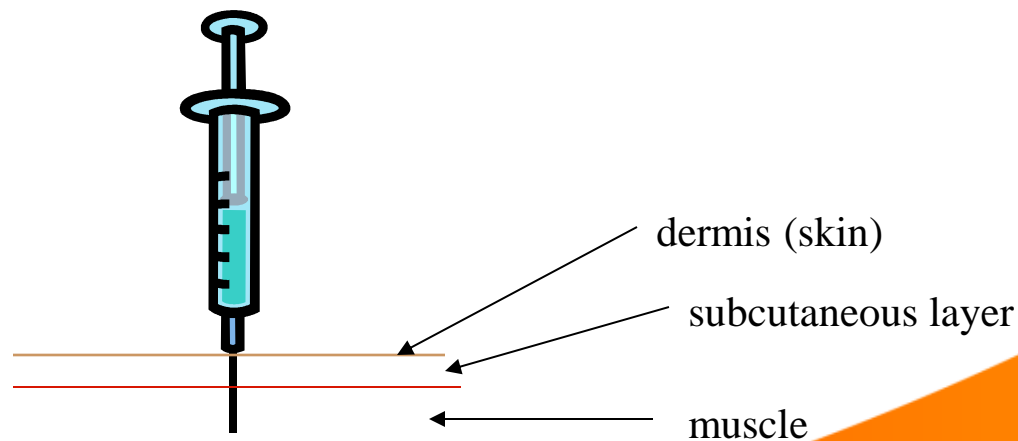
# Injection Technique



IM injections should be given with needle at a 90° angle to the skin

The skin should be stretched flat (NOT bunched)

It is not necessary to aspirate the syringe after the needle is put into the muscle





# Prior to Administration.....

Vaccinators should ensure that:

- There are no contraindications to the vaccines being given
- Consent has been obtained
- The vaccinee or carer is fully informed about the vaccines that are being given and understands the vaccination procedure
- The vaccinee or carer is aware of possible adverse reactions and how to treat them

# True Contraindications

- Live vaccines in immunocompromised individuals
- Anaphylaxis to previous dose of vaccine or a vaccine component

## Definition of anaphylaxis:

Typically rapid and unpredictable with variable severity and clinical features including cardiovascular collapse, bronchospasm, angioedema, pulmonary oedema, loss of consciousness and urticaria



# Severe allergic reactions (not anaphylaxis)

**are not** a contraindication

specialist advice should be sought before continuing

# Positioning of Patient



**All ages:** ensure vaccination area is completely exposed

- Sit the patient down and relax the arm

# Disposal of vaccination equipment



All:

- empty vials and ampoules
- used needles and syringes



Sharps bins should be replaced once 2/3rds full



# Recording



**The following information should be recorded accurately:**

- Vaccine name, batch number and expiry date
- Dose administered
- Site
- Date immunisation(s) were given
- Name and signature of vaccinator

**This information should be recorded in:**

**Patients form**

**General Practice within 5 working days**





**Minimum slide set created by:**

**Immunisation Department,  
Centre for Infections,  
Health Protection Agency**

**to assist teaching of the *Core Curriculum for  
Immunisation Training***

**(see [http://www.hpa.org.uk/infections/topics\\_az/vaccination/training\\_menu.htm](http://www.hpa.org.uk/infections/topics_az/vaccination/training_menu.htm))**