

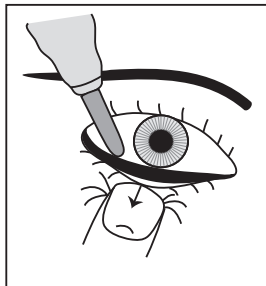
## ROUTES OF ADMINISTRATION

### Special dosage forms and the methods for their administration

Step by step guidance for administering different dosage forms is given herewith. This may be used to explain to the patient on how to administer a treatment correctly. It may also be useful to teach health workers.

#### Eye ointment

1. Wash your hands.
2. Do not touch anything with the tip of the tube.
3. Tilt the head backwards a little.
4. Take the tube in one hand, and pull down the lower eyelid with the other hand, to make a 'gutter'.
5. Bring the tip of the tube as close to the 'gutter' as possible.
6. Apply the amount of ointment prescribed.
7. Close the eye for two minutes.
8. Remove excess ointment with a tissue.
9. Clean the tip of the tube with another tissue.

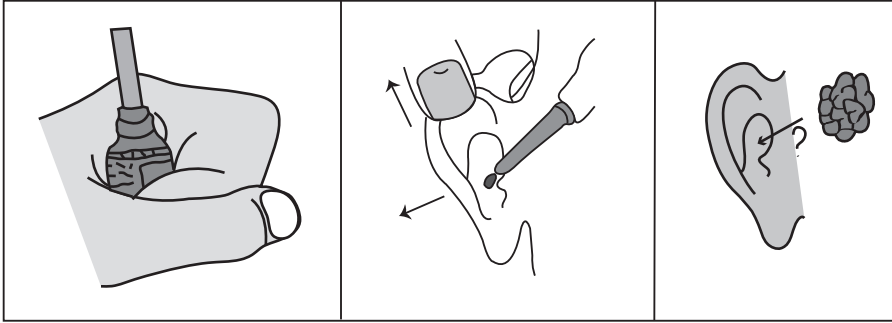


Steps 4 and 5

#### Eardrops

1. Warm the eardrops by keeping them in the hand or the armpit for several minutes.  
Do not use hot water tap.
2. Tilt head sideways or lie on one side with the ear upward.
3. Gently pull the lobe to expose the ear canal.

4. Apply the amount of drops prescribed.
5. Wait five minutes before turning to the other ear.
6. Use cotton wool to close the ear canal after applying the drops ONLY if the manufacturer explicitly recommends this.
7. Eardrops should not burn or sting longer than a few minutes.



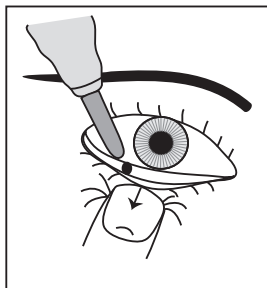
**Step 1**

**Steps 2 and 3**

**Step 6**

### **Eyedrops**

1. Wash your hands.
2. Do not touch the dropper opening.
3. Look upward.
4. Pull the lower eyelid down to make a ‘gutter’.
5. Bring the dropper as close to the ‘gutter’ as possible without touching it or the eye.
6. Apply the prescribed amount of drops in the ‘gutter’.
7. Close the eye for 2 minutes. Do not shut the eye too tight.
8. Excess fluid can be removed with a tissue.
9. If more than one kind of eyedrop is used, wait for at least five minutes before applying the next drops.
10. Eyedrops may cause a burning feeling but this should not last for more than a few minutes. If it does last longer, consult a doctor or a pharmacist.



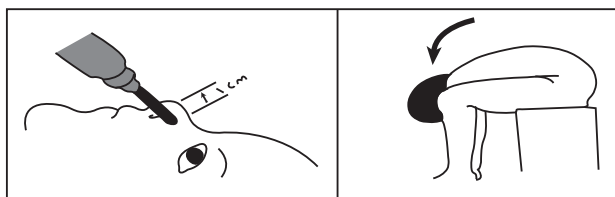
**Steps 4 and 5**

***When giving eyedrops to children***

1. Let the child lie back with head straight.
2. The child's eyes should be closed.
3. Drip the amount of drops prescribed into the corner of the eye.
4. Keep the head straight.
5. Remove the excess fluid.

**Nasal drops**

1. Blow the nose.
2. Sit down and tilt head backward strongly or lie down with a pillow under the shoulders; keep head straight.
3. Insert the dropper one centimetre into the nostril.
4. Instill the amount of drops prescribed.
5. Immediately afterwards tilt head forward strongly (head between the knees).
6. Sit up after a few seconds; the drops will then drip into the pharynx.
7. Repeat the procedure for the other nostril, if necessary.
8. Rinse the dropper with boiled water.

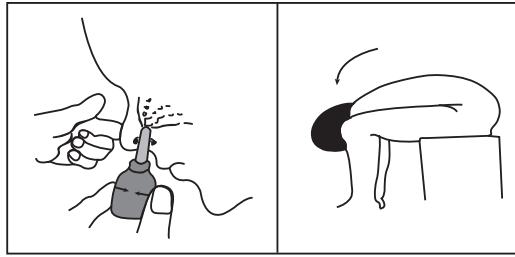


Step 4

Step 5

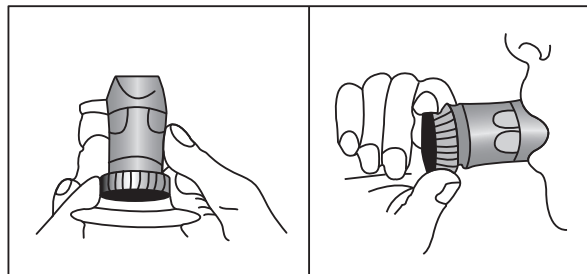
**Nasal spray**

1. Blow the nose.
2. Sit with the head slightly tilted forward.
3. Shake the spray.
4. Insert the tip in one nostril.
5. Close the other nostril and mouth.
6. Spray by squeezing the vial (flask, container) and sniff slowly.
7. Remove the tip from the nose and bend the head forward strongly (head between the knees).
8. Sit up after a few seconds; the spray will drip down the pharynx.
9. Breathe through the mouth.
10. Repeat the procedure for the other nostril, if necessary.
11. Rinse the tip with boiled water.


**Steps 4 and 5**
**Step 7**

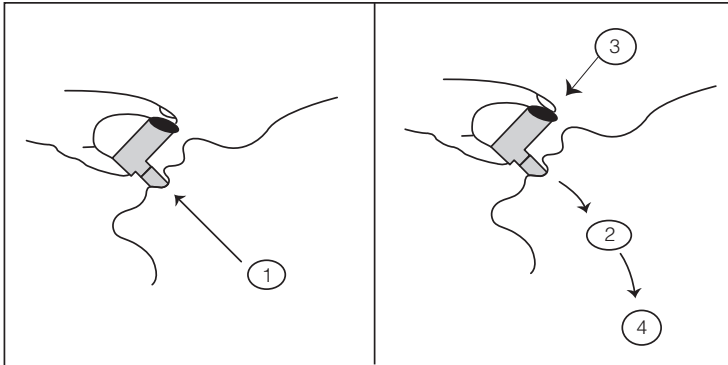
### Inhaler with capsules

1. Cough out as much sputum as possible.
2. Place the capsule(s) in the inhaler according to the manufacturer's instructions.
3. Breathe out slowly and empty lungs of as much air as possible.
4. Place lips tightly around the mouthpiece.
5. Tilt head backward slightly.
6. Take a deep breath through the inhaler.
7. Hold the breath for 10 to 15 seconds.
8. Breathe out through the nose.
9. Rinse the mouth with warm water.


**Step 4**
**Step 5**

### Aerosol

1. Cough out as much sputum as possible.
2. Shake the aerosol before use.
3. Hold the aerosol as indicated in the manufacturer's instructions (This is usually upside down).
4. Place the lips tightly around the mouthpiece.
5. Tilt the head backward slightly.
6. Breathe out slowly, emptying the lungs of as much air as possible.
7. Breathe in deeply and activate the aerosol, keeping the tongue down.
8. Hold breath for 10 to 15 seconds.
9. Breathe out through the nose.
10. Rinse the mouth with warm water.

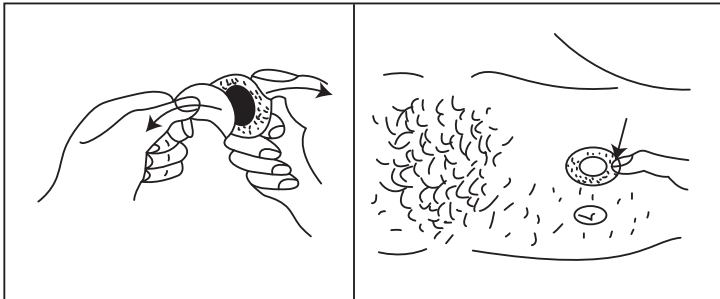


Steps 4 and 5

Step 8

### Transdermal patch

1. For patch site, see instructions included with the drug or check with your pharmacist.
2. Do not apply over bruised or damaged skin.
3. Do not wear over skin folds or under tight clothing and change spots regularly.
4. Apply with clean, dry hands.
5. Clean and dry the area of application completely.
6. Remove patch from package, do not touch 'drug' side.
7. Place on skin and press firmly. Rub the edges to seal.
8. Remove and replace according to instructions.



Step 7

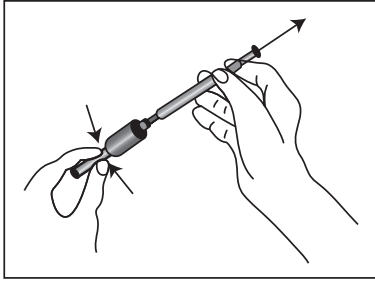
Step 8

### Applying vaginal creams, ointments and gels

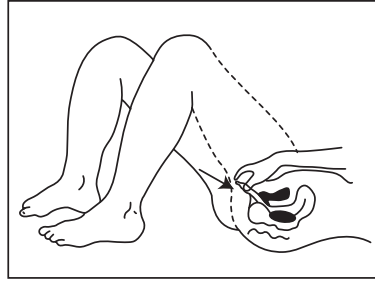
(Most of these drugs come with an applicator)

1. Wash your hands.
2. Remove the cap from the tube containing the drug.
3. Screw the applicator to the tube.
4. Squeeze the tube until the required amount is in the applicator.
5. Remove the applicator from the tube (hold the cylinder).
6. Apply a small amount of cream to the outside of the applicator.
7. Lie on your back, draw your knees up and spread them apart.

8. Gently insert the applicator into the vagina as far as possible, do not use force.
9. Hold the cylinder and with the other hand push the plunger down thus inserting the drug into the vagina.
10. Withdraw the applicator from the vagina.
11. Discard the applicator, if disposable or clean thoroughly (boiled water) if not.
12. Wash your hands.



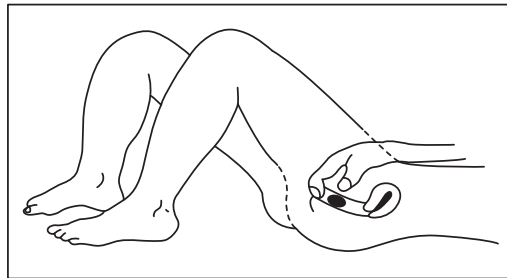
**Steps 4 and 5**



**Steps 7 and 8**

**Vaginal tablet without applicator**

1. Wash your hands.
2. Remove the wrapper from the tablet.
3. Dip the tablet in lukewarm water just to moisten it.
4. Lie on your back, draw your knees up and spread them apart.
5. Gently insert the tablet into the vagina as high as possible, do not use force.
6. Wash your hands.

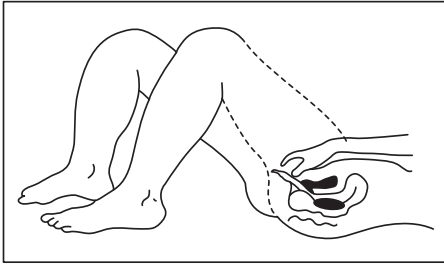


**Steps 4 and 5**

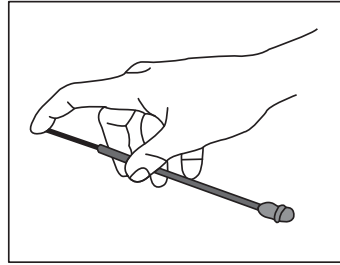
**Vaginal tablet with applicator**

1. Wash your hands.
2. Remove the wrapper from the tablet.
3. Dip the tablet into the open end of the applicator.
4. Lie on your back, draw your knees up and spread them apart.
5. Gently insert the applicator with the tablet in front into the vagina as far as possible, do not use force.
6. Depress the plunger so that the tablet is released.
7. Withdraw the applicator.

8. Discard the applicator (if disposable).
9. Clean both parts of the applicator thoroughly with soap and boiled lukewarm water (if not disposable).
10. Wash your hands.



Steps 4 and 5

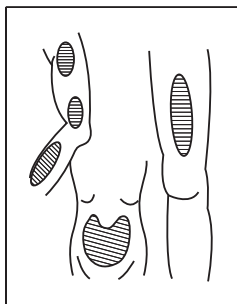


Step 6

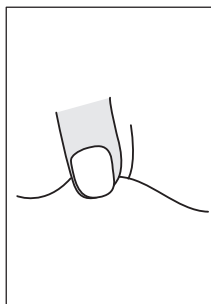
### General practical aspects of injecting

Apart from the specific technique of injecting, there are a few general rules that you should keep in mind.

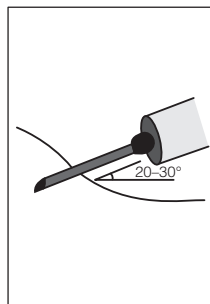
1. **Expiry dates.** Check the expiry dates of each item including the drug. Check the drugs in your medical store regularly to make sure that they have not passed the expiry date.
2. **Drugs.** Make sure that the vial or ampoule contains the right drug in the right strength.
3. **Sterility.** During the whole preparation procedure, material should be kept sterile. Wash your hands before starting to prepare the injection. Disinfect the skin over the injection site.
4. **No bubbles.** Make sure that there are no air bubbles left in the syringe. This is more important in intravenous injections.
5. **Prudence.** Once the protective cover of the needle is removed, extra care is needed. Do not touch anything with the unprotected needle. Once the injection has been given, take care not to prick yourself or somebody else.
6. **Waste.** Make sure that contaminated waste is disposed of safely.



Step 3



Step 5



Step 6

**Subcutaneous injection**

Materials needed: Syringe with the drug to be administered (without air), needle (Gauge 25, short and thin; on syringe), liquid disinfectant, cotton wool, adhesive tape.

**Technique**

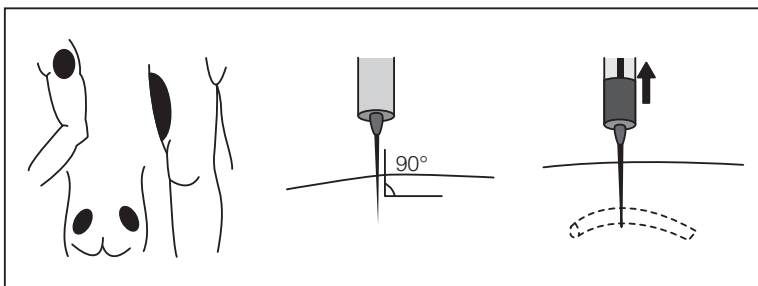
1. Wash hands.
2. Reassure the patient and explain the procedure.
3. Uncover the area to be injected (upper arm, upper leg, and abdomen).
4. Disinfect skin.
5. ‘Pinch’ fold of the skin.
6. Insert needle in the base of the skin-fold at an angle of 20 to 30 degrees.
7. Release skin.
8. Aspirate briefly; if blood appears: withdraw needle, replace it with a new one, if possible, and start again from point 4.
9. Inject slowly (0.5-2 minutes).
10. Withdraw needle quickly.
11. Press sterile cotton wool on to the opening. Fix with adhesive tape.
12. Check the patient’s reaction and give additional reassurance, if necessary.
13. Clean up; dispose of waste safely; wash hands.

**Intramuscular injection**

Materials needed. Syringe with the drug to be administered (without air), needle (Gauge 22, long and medium thickness), liquid disinfectant, cotton wool, adhesive tape.

**Technique**

1. Wash hands.
2. Reassure the patient and explain the procedure.
3. Uncover the area to be injected (lateral upper quadrant major gluteal muscle, lateral side of upper leg, deltoid muscle).
4. Disinfect skin.
5. Tell the patient to relax the muscle.
6. Insert the needle swiftly at an angle of 90 degrees (watch depth).
7. Aspirate briefly; if blood appears: withdraw needle, replace it with a new one, if possible, and start again from point 4.



Step 5

Step 6

Step 7



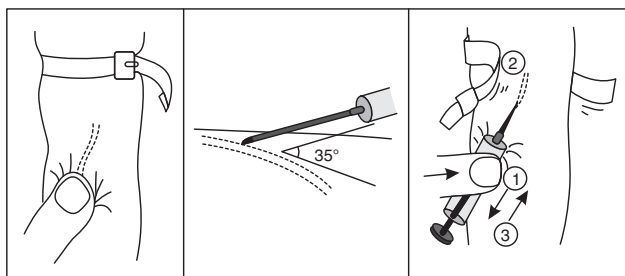
8. Inject slowly (less painful).
9. Withdraw needle swiftly.
10. Press sterile cotton wool on to the opening.
11. Check the patient's reaction and give additional reassurance, if necessary.
12. Clean up; dispose of waste safely; wash your hands.

### Intravenous injection

**Materials needed.** Syringe with the drug to be administered (without air), needle (Gauge 20, long and medium thickness; on syringe), liquid disinfectant, cotton wool, adhesive tape, tourniquet.

#### Technique

1. Wash hands.
2. Reassure the patient and explain the procedure.
3. Uncover arm completely.
4. Have the patient relax and support his arm below the vein to be used.
5. Apply tourniquet and look for a suitable vein.
6. Wait for the vein to swell.
7. Disinfect skin.
8. Stabilize the vein by pulling the skin taut in the longitudinal direction of the vein.  
Do this with the hand you are not going to use for inserting the needle.
9. Insert the needle at an angle of around 35 degrees.
10. Hold the syringe and needle steady.
11. Aspirate. If blood appears hold the syringe steady, you are in the vein. If it does not come, try again.
12. Loosen tourniquet.
13. Inject (very) slowly. Check for pain, swelling, haematoma; if in doubt whether you are still in the vein aspirate again!
14. Withdraw needle swiftly. Press sterile cotton wool on to the opening.
15. Check the patient's reaction and give additional reassurance, if necessary.
16. Clean up; dispose of waste safely; wash your hands.



Step 8

Step 9

Steps 11 to 14

#### Reference

1. Model Guide to Good Prescribing, Published by Action Programme on Essential Drugs, WHO.