

Practical Pharmacology

injection issues

- **needles**
- **bottles**
- **syringes**

needles

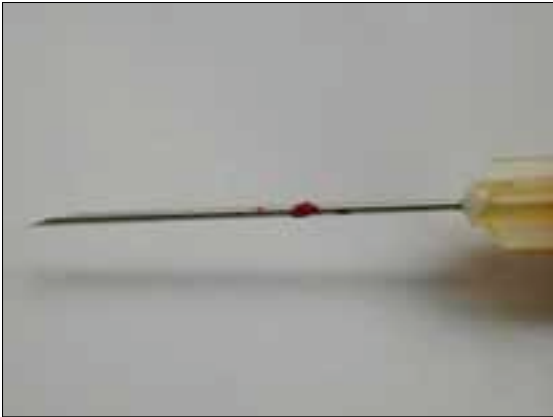
- **use correct size**
 - as small as possible
- **maintain sterility**
 - new needle for each injection



needles

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 - as small as possible
- **maintain sterility**
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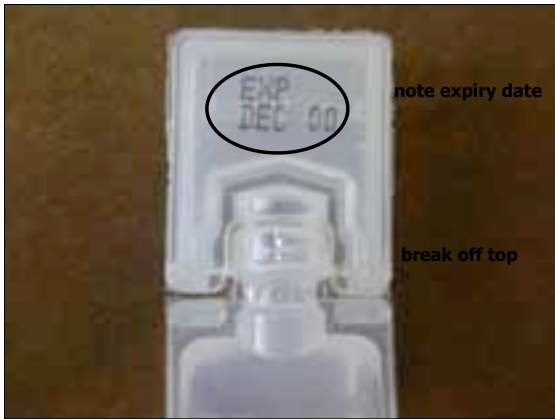
injection issues

- **needles**
- **bottles**
- **syringes**

bottles

- **single use vials**
- **multi use bottles**
- **multi use flexible plastic packs**



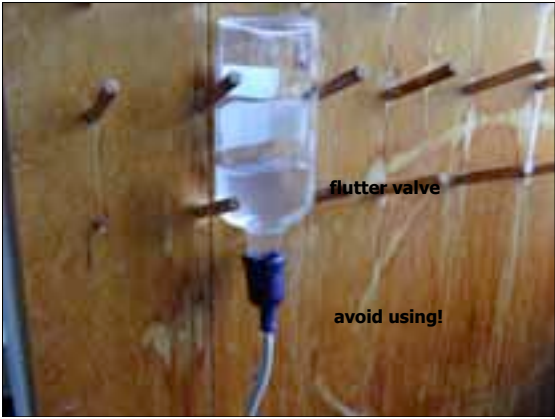




air injection?

- **air injection**
 - contents under pressure
 - contents can spray out
 - air is not sterile
- **no air injection**
 - difficult to get contents out







diluting injections

- for very small animals
- for aqueous solutions
 - water for injections
 - normal saline
- for non-aqueous solutions
 - must know physical chemistry
 - eg, ivermectin - propylene glycol

anaesthetic bottles

- modern vaporisers have keyed fillers





syringes

- **offset nozzle for iv use**
- **central nozzle for sc or im use**
- **care with dispensing**
 - iv drug abusers



injection technique

- **site?**
- **swab the injection site?**
- **use a catheter?**

oral drugs

- tablets
- capsules
- liquids

most tablets are coated



cutting exposes active ingredient





oral solutions

- **for small animals**
 - dilute as necessary
 - only as much as necessary

practical pharmacology

- **mostly common sense**
- **use small needles**
- **keep injections sterile**
- **use oral drugs where possible**