Drug therapy for leishmaniasis:

- **Drug of choice: pentavalent antimony compounds**
  - Sodium stibogluconate: this is found in English-speaking countries.
  - Meglumine antimonite: this is found in French-Spanish-speaking countries.

**Notes for these 2 drugs:**
- They are poorly absorbed from the GIT. Therefore they cause GIT irritation/disturbance.
- They are prodrugs: which means that they need to undergo biotransformation (metabolism) in the liver to be converted to their active forms.
- They inhibit the process of glycolysis in parasites (which is necessary to keep them alive!).
- They can be given intralesionally instead of being given orally.

- **Liposomal amphotericin-B:**
  - It is one of drugs of choice but it is very expensive (50mg vial costs £96!). In contrast, conventional amphotericin-B which is one of the alternative drugs is cheap (50mg vial costs £4).
  - This drug is highly uptaken by macrophages. Therefore, they reach the phagosomes and attack amastigotes which are present and multiplying there.
  - **What are liposomes?**
    - They are very effective drug-delivery system transporting the drug to the desired target.
    - They are minute spherical oil droplets.
    - The membrane is composed of a phospholipid bilayer with 2 regions (hydrophilic and hydrophobic).

- **Alternative drugs (preserved for antimony failure):**
  - Pentamidine isethionate.
  - Conventional amphotericin-B.
  - Miltefosine.

- **Systemic therapy with pentavalent antimony compounds is reserved for:**
  - Multiple, inflamed, ulcerated and large sores.
  - Sores where scarring would be disfiguring.
  - Sores that will not heal easily (ex. Lower leg or over a joint).
  - Sore involving mucosa or cartilage.
  - Sores that might be due to parasites of the L.brazilinesis group (to avoid the risk of development of mucocutaneous “espundia”).
  - Sores that are due to L.tropica (to reduce transmission since man and domestic dogs seem to be the main host).

- **Life cycle of leishmania:**
  - A sand fly carries promastigotes in its midgut → it bites the skin of a human → leading to the release of promastigotes which will interact with reticuloendothelial cells (macrophages) → inside macrophages, promastigotes will be converted to amastigotes which will start to multiply intracellularly → amastigotes will be released and they will infect new cells.

- **Drug therapy for scabies:**
  - **Drug of choice:**
    - Permethrin 5%:
      - Treatment of choice for pregnant women and infants as young as 2 months old. This topical cream is applied for 8-14 hours followed by thorough bathing. Note that for neonatal scabies in infants less than 1 month → permethrin is applied for 6 hours only.

  - **There are other 5 alternative drugs:**
    1. Ivermectin: the only drug of scabies which is given orally in addition of being given topically.
    2. Lindane 1%
    3. Crotamiton 10%
    4. Benzyl benzoate: it is recommended for:
Infants: by mixing it with 3 parts of water (diluting it in a proportion of 1:3)  
Children: by mixing it with equal quantity of water (diluting it in a proportion of 1:1).  
Pregnancy.

5. Malathion 0.5%  

- **Disinfectants and antiseptics:**
  - Disinfectant: a chemical agent which destroys or inhibits the growth of pathogenic micro-organisms in the non-sporing or vegetative state (الحالة الخامدة). It is used to treat inanimate objects (الأجسام) and materials.
  - Antiseptic: a disinfectant which is used on the skin and other living tissues thereby limiting or preventing infections.
  - **Types of disinfectants and antiseptics:**
    - Alcohols: ethanol 70% and isopropanol 90% (skin disinfectants).
    - Aldehydes:
      - Alkaline glutaraldehyde (2% alkaline solution in 70% isopropanol) → instrument disinfectant
      - Methenamine → urinary tract antiseptic.
    - Acids:
      - Benzoic acid 0.1% → food preservative.
      - Benzoic acid 6% (fungicidal) + salicylic acid 3% (kerolytic) from white fields ointment for → dermatophytosis (ex. Athlete’s foot).
      - Undecylenic acid (fungicidal for tinea pedis which is causing athlete’s foot).
      - Mandelic acid → urinary tract antiseptic.
    - Iodine:
      - Iodine solution (2% iodine + 2.4% sodium iodide in water).
      - Iodine tincture (2% iodine + 2.4% sodium iodide in 50% alcohol) → skin disinfectant.
      - Povidine iodide → pre-operative skin disinfectant.
    - Chlorine:
      - Chlorine 0.25-0.5 ppm → water purification.
      - Halazone (chloramine) → water sterilization (4-8 mg/L water).
      - Diluted sodium hypochlorite (modified Dakin’s solution for cleansing and disinfecting wounds).
    - Heavy metals:
      - Mercury:
        - 0.1% thimerosal solution or tincture → bacteriostatic antiseptic.
        - 2% mebromin → bacteriostatic antiseptic.
      - Silver:
        - 1% silver nitrate ophthalmic solution → for gonococcal ophthalmia.
        - 1% silver sulfadiazine cream → suppress normal flora in burns.
    - Phenol and related compounds:
      - 3% hexachlorophene liquid soap → bacteriostatic, pre-operative scrubs antiseptic.
      - 4% chlorhexidine gluconate solution (cleansing of wounds) → added to soap as skin antiseptic, pre-surgery antiseptic.
      - 0.2% chlorhexidine gluconate solution → oral rinse against teeth plaque and gingivitis.
    - Cation surface active agents:
      - Benzalconium chloride.