Appearance:
- Small (1/3 of the size of a mosquito – max. 3mm long)
- Hairy
- Wings held in a upright “V” shape
- Called “sand” flies because of their colour and not the habitat where they live

Location:
- Sand flies exist in many parts of the World but not all transmit *Leishmania*:
  - from Western Canada and Northern France in the northern hemisphere to Argentina in the southern hemisphere
  - Sand flies capable of transmitting *Leishmania* are common throughout warm parts of the World in tropical and sub-tropical areas.

Behaviour:
- “hop” across skin to find a blood meal.
- They generally bite at dusk and dawn usually around the exposed areas (i.e. face, ears, arms and hands, feet and legs).
- The saliva injected while feeding helps them by preventing clotting and promoting blood vessel enlargement.

Sand flies and leishmaniasis:
- Only female sand flies (Figure 1) transmit *Leishmania* when they blood feed:
  - Sand flies need blood to make eggs
- In Europe transmission of *Leishmania* is spreading Northwards from Greece and Turkey and occurs in southern France and is currently spreading through Italy.

Life cycle (Figure 2):
- Sand flies develop slowly - It takes 5 weeks for an egg to develop into an adult fly, compared to 2 weeks for mosquitoes.
- Sand fly larvae are known to live on land rather than water. They require a moist, cool temperature, and organic matter for food. Animal sheds and rodent burrows appear to be the most likely place for sand fly larvae to live.
- Exactly where sand flies naturally breed remains a mystery. This is important to know because we may be able to target and control the developing larvae with insecticides.