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# Mammals: General features and classification

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- Mammals are amniotes that have hair and produce milk
  - Mammals, class Mammalia
    - Are represented by more than 5,000 species
  - Mammals evolved from synapsids
    - In the late Triassic period
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# Derived Characters of Mammals

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- Mammary glands, which produce milk
  - Are a distinctively mammalian character
- Hair is another mammalian characteristic
- Mammals generally have a larger brain
  - Than other vertebrates of equivalent size

- The jaw was remodeled during the evolution of mammals from non mammalian synapsids
  - And two of the bones that formerly made of the jaw joint were incorporated into the mammalian middle ear
- **Monotremes**
  - Are a small group of egg-laying mammals consisting of echidnas and the platypus



# Marsupials

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- Marsupials
  - Include opossums, kangaroos, and koalas
- A marsupial is born very early in its development
  - And completes its embryonic development while nursing within a maternal pouch called a marsupium

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**(a) A young brushtail possum.** The young of marsupials are born very early in their development. They finish their growth while nursing from a nipple (in their mother's pouch in most species).



**Figure 34.34a**

# Eutherians (Placental Mammals)

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- Compared to marsupials
  - Eutherians have a longer period of pregnancy
- Young eutherians
  - Complete their embryonic development within a uterus, joined to the mother by the placenta
- The mammalian order **Primates** include
  - Lemurs, tarsiers, monkeys, and apes
- **Humans** are members of the ape group

# Derived Characters of Primates

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- Most primates
  - Have hands and feet adapted for grasping
- Primates also have
  - A large brain and short jaws
  - Forward-looking eyes close together on the face, providing depth perception
  - Well-developed parental care and complex social behavior
  - A fully opposable thumb



# Derived Characters of Hominids

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- A number of characters distinguish humans from other hominoids
  - Upright posture and bipedal locomotion
  - Larger brains
  - Language capabilities
  - Symbolic thought
  - The manufacture and use of complex tools
  - Shortened jaw

# References

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- [www.smackslide.com](http://www.smackslide.com)