

## Teaching Materials Associated With Module 5

### Subsistence Methods:

- Gathering: foraging in the local area for plants
- Hunting: killing animals as a source of meat, may need to move to follow animals, involves the production of tools
- Agriculture: not until much later- involved planting and tending to crops (hallmarked by an increase in leisure time)
- Pastoralism: keeping and grazing flocks of domesticated animals

### *Homo rudolfensis*:

- Environment: grassland environment
- Diet: mainly herbivorous and able to cope with tough fruits and plants (maybe some meat)
- Evidence: molars were larger and tooth wear shows that they were worn horizontally

### *Homo heidelbergensis*:

- Environment: cooler climates
- Diet: hunted large animals (cooperative hunting)
- Evidence: smaller molars and the archaeological record (artifacts, including tools, and remains of butchered animals)

### Cooperative Hunting:

- Pros = safer, more efficient, can take down bigger game, can better protect their kill from scavengers
- Cons = must share meat with other hunters, may need to travel further when there is nothing local left to hunt, must live in close proximity to other hunter (not good for those who prefer a solitary lifestyle)
- Cooperative hunting is seen in *Homo heidelbergensis*!

### How does diet impact cranial morphology?

- Differences in tooth size/shape: sharp teeth that are good for tearing vs. big flat teeth that are good for grinding
- Tougher foods require stronger masticatory muscles, which lead to a more prominent sagittal crest and muscle attachment sites
- Different dietary habits cause different patterns of microwear. Biological anthropologists can analyze these patterns in order to shed light on past diets.
- Thicker tooth enamel tends to correlate with a diet consisting of more hard/abrasive food items
- As a result of natural selection, beneficial cranial morphology will be selected for, leading each species to be well adapted for its specific environment.

This module has been adapted from the following sources:

<https://australianmuseum.net.au/homo-rudolfensis>

<https://australianmuseum.net.au/homo-heidelbergensis>

<http://www.pbs.org/wgbh/evolution/humans/humankind/m.html>

<http://www.becominghuman.org/node/human-lineage-through-time>