

BIOGERONTOLOGY WITH DR JENNIFER TULLET

TALKING POINTS:

1. What are three advantages of model organisms over humans for scientific research? (See *How is Jenny studying ageing if it is difficult to study the ageing process in humans?*)
2. What are molecular mechanisms? (See *What exactly is Jenny's lab investigating?*)
3. Give an example of how researchers can identify when certain genes are being expressed. (See *How do the researchers use worms as a research tool?*)
4. Why is collaboration important in scientific research? (See *What has Jenny's team discovered so far?*)
5. What is SKN-1, and how is it important? Might it have other functions as well? (See *What has Jenny's team discovered so far?*)
6. How is Jenny's research important for society? (See *What do these worms really have to do with us, though?*)
7. What is biogerontology, and how does it differ from related fields? (See *About biogerontology*)
8. What are some important skills for a career in scientific research? (See *What skills are needed for a career in biogerontology?*). Do you have these skills?

ACTIVITIES FOR HOME OR IN THE CLASSROOM

Model organisms are widely used by researchers for understanding more about biology, including for studying behaviour, genetics, biochemistry and many other topics. Copy out the following table and use the internet to investigate the different model organisms and their role within scientific research. Consider factors such as practicality, cost, ethics, timescale and applicability to humans in your answers. This blog post provides a good starting point: <https://blog.addgene.org/plasmids-101-five-popular-model-organisms>

Model Organism	Advantages	Disadvantages	Research examples
<i>C. elegans</i> (nematode worm)			
<i>Drosophila melanogaster</i> (fruit fly)			
<i>Mus musculus</i> (mouse)			
<i>Danio rerio</i> (zebrafish)			
<i>Pan troglodytes</i> (chimpanzee)			
<i>Saccharomyces cerevisiae</i> (yeast)			
<i>Arabidopsis thaliana</i> (rockcress)			

MORE RESOURCES

- Caltech have created a 'virtual worm' model of *C. elegans*, an online interactive anatomical model that allows exploration of the worm's different tissues and organs, and searches even down to the cellular level. Find it on the App Store, or online here: <http://browser.openworm.org/>
- Listen to Jenny talk about her work on The Naked Scientist podcast, one of the world's most popular science shows: <https://www.thenakedscientists.com/podcasts/naked-genetics/genes-ageing-and-metabolism>
- If you are interested in taking Jenny's advice to follow the latest news in the field, the Biogerontology Research Foundation is a good place to start: <http://bg-rf.org.uk/news>