

# INTEGRITY



This project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824586.

## Animal Experimentation Module



INSTITUTE FOR MOLECULAR AND CELL BIOLOGY



## **Animal Experimentation**



### **Animal Welfare and the Ethical issues**



### **The Research Process**



### **Research Integrity: principles and importance**



### **Practical Activity**



### **Conclusion/Wrap-up**

# What is Animal Experimentation?

Use of non-human animals in experiments to assess the effect of procedures, so then it can be applied in human and/or animal biology

## Where is it applied?

- Biological and biomedical research
- Teaching (higher education)
- Toxicology and safety testing



# Which animals are used in experiments?



Rat (*Ratus norvegicus*)



Mouse (*Mus musculus*)



Guinea pig (*Cavia porcellus*)



Syrian (golden) hamster (*Mesocricetus auratus*)



Chinese hamster (*Cricetulus griseus*)



Mongolian gerbil (*Meriones unguiculatus*)



Rabbit (*Oryctolagus cuniculus*)



Dog (*Canis lupus*)



Cat (*Felis catus*)



Non-Human Primates (*Rhesus macaques*)



Frog (*Anura* Order)



Zebrafish (*Danio rerio*)

# Why use animals?

- To help scientists understand **diseases** that affect animals and/or humans
- To **test the safety** of new chemical and pharmaceutical products
- To **test new medical treatments** for human and/or animal diseases
- To help scientists understand the **basic biology** of animals





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# Animal Welfare

- Animals are cared by trained people
- Limit number of people in the facilities
- Appropriate housing conditions
- Close monitorization of health
- Daily monitorization of environmental conditions

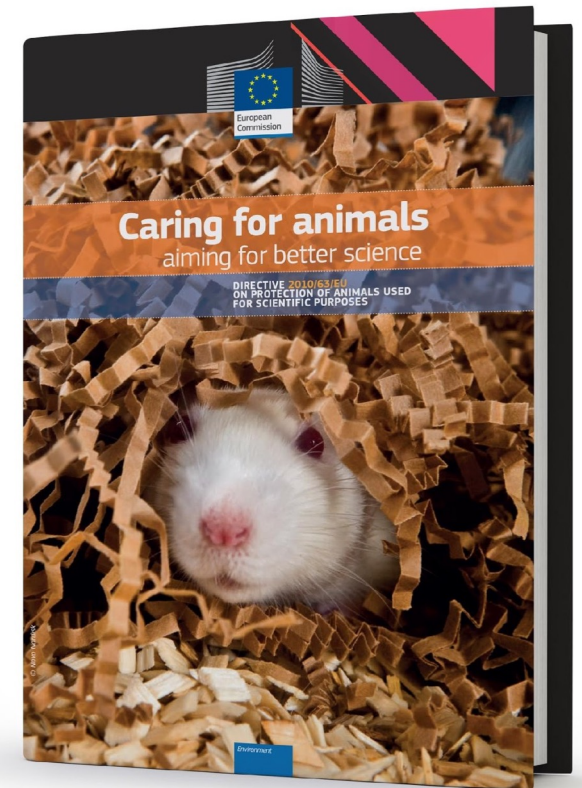


- Anesthesia and analgesics are used if procedures are likely to cause pain
- Animals are euthanized if they become seriously ill

# EU and Animal Experimentation

**Directive 2010/63/EU:** animal experimentation is acceptable if:

- a) There are no alternative methods to achieve the same goals
- b) The harm caused to animals is minimized
- c) The benefit outweighs the harm





# The Ethical issues in Animal Experimentation



Video from **Understanding Animal Research**)

 [understandinganimalresearch.org.uk](http://understandinganimalresearch.org.uk)

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# What is Research?

- To **investigate**, using certain tools, procedures and/or data, to **create new knowledge**
- To **answer** a research question
- To use previous **knowledge**, in a creative way, to generate **new concepts, methodologies** and **understandings**



# Research Design

01

## Search for related studies

- To learn more about the topic
- To know which methodology to use
- To avoid repeating the same study and establish the research question

02

## Understand Animal Biology

- To choose the animal with the desirable characteristics for the study
- Animals should be reliable, practical and desirable to answer the question

# Choice of Methodology and Data analysis

- Are there **standard protocols**? ➤ Methodology validated by the scientific community
- Choose the method that is likely to **produce successful results** with:
  - 01.** The **minimum** number of animals
  - 02.** Animals with the **lowest capacity** to experience pain, suffering, distress or lasting harm
  - 03.** Cause the least **pain, suffering, distress or lasting harm**
- Data should be analysed employing transparent, robust and honest methods



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# Research Integrity: principles and importance - Video 1

**CLICK HERE TO  
WATCH THE VIDEO**



Or visit - <https://youtu.be/B1iWPB7UfuE>

# Research Integrity: principles and importance - Video 2

**CLICK HERE TO  
WATCH THE VIDEO**



Or visit – <https://youtu.be/Mc3febrGrvQ>



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# Practical Activity – 55 minutes - Structure

Activity	Description	Suggested Time
<b>Groups</b>	<ul style="list-style-type: none"><li>• 4 groups of 5-6 students</li><li>• Each group receives 1 board + 1 set of post-its (face-to-face session!)</li><li>• Watch video (find the link and QR code in the board)</li><li>• 1 spokesperson to fill in the board and represent each group</li></ul>	10 minutes
<b>Group Discussion</b>	<ul style="list-style-type: none"><li>• Discussion of the 2 dilemmas and propose solutions</li><li>• Fill in the boards using post-its or sticky notes (online session only!)</li></ul>	25 minutes
<b>Presentations</b>	<ul style="list-style-type: none"><li>• Spokespersons of each group present their boards</li></ul>	10 minutes (2-3 min/spokesperson/group)
<b>Class Discussion</b>	<ul style="list-style-type: none"><li>• Discussion of the ideas and solutions shared by the spokespersons</li></ul>	10 minutes



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# Conclusion/Wrap-up



What is Animal Experimentation? What are the key ethical issues? What are the steps involved in research?



What is Research Integrity? How does it apply to your school work? Why is it important to avoid misconduct and questionable practices?



Thanks for your attention

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