REFINEMENT STRATEGIES FOR ANIMAL EXPERIMENT

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Reinforcement

• Reduce or eliminate harm or damage to sensitive beings

• Optimize well being

• Reinforcement is a complex concept. The aim of this presentation is to pinpoint some targets that commonly have potential for refinement.
Refinement strategies for Surgery

• Consider Non-Survival surgery
• Preemptive analgesia
• Post-surgical analgesia
• Aseptic techniques
• Least invasive techniques
• Least traumatic needles and sutures
• Skilled experienced personnel
• Avoid bleedings
Refinement strategies for Anaesthesia

- Minimize handling and restrain unless the animal is especially trained for this
- Minimize induction and recovery time
- Use an approach that is easy to adjust anesthesia depth
- Monitor and support vital physiological functions
  - (Temperature, breathing, and O₂-uptake, Circulation)
- Keep monitoring the animal until it is completely recovered and wakes up after anesthesia
- Allow the animal to recover and take up normal activities between repeated anesthesia
Refinement strategies - injections

- Use subcutaneous route whenever possible
- Use solutions with physiological properties
  - Salinity, pH, temperature
- Use pyrogenfree solutions intended and produced for injection in live animals or humans
  - Avoid injection solutions mixed on the lab bench
  - If necessary, use a pharma equipped with necessary competence and facilities to prepare solutions for injections