Technical session V

Approaches to restraining Wildlife

Speaker

Dr Karma Choezang

Veterinary Officer
National Veterinary Hospital

JOIN US

Venue: NVH Conference Hall
Date and time: 12/09/25 at 3:15pm

Join us for a live session!

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Approaches to Restraining Wildlife

Chemical and Physical

Presenter: Dr Karma Choezang
National Veterinary Hospital, Motithang

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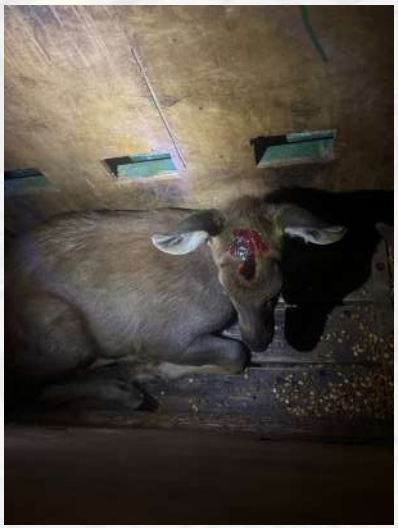
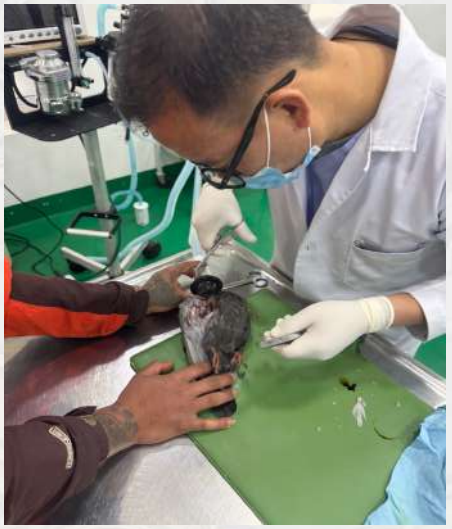
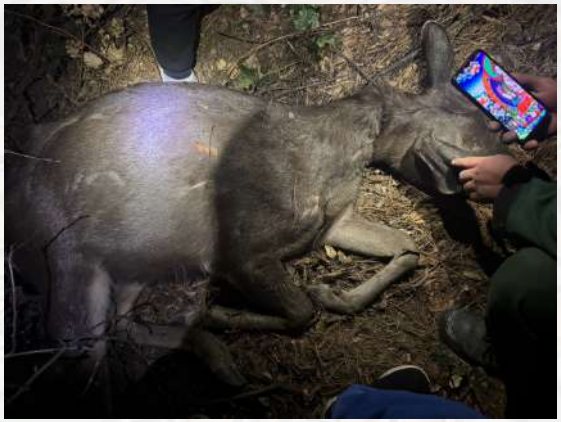
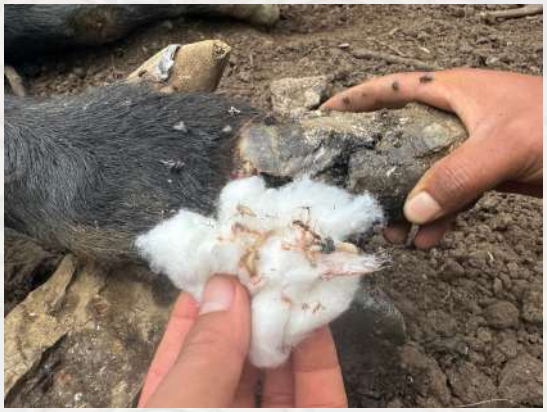
Reasons for Restraining



- Trauma (vehicle collisions, attacks)
- Handler safety
- Disease outbreaks
- Examination, treatment and relocation







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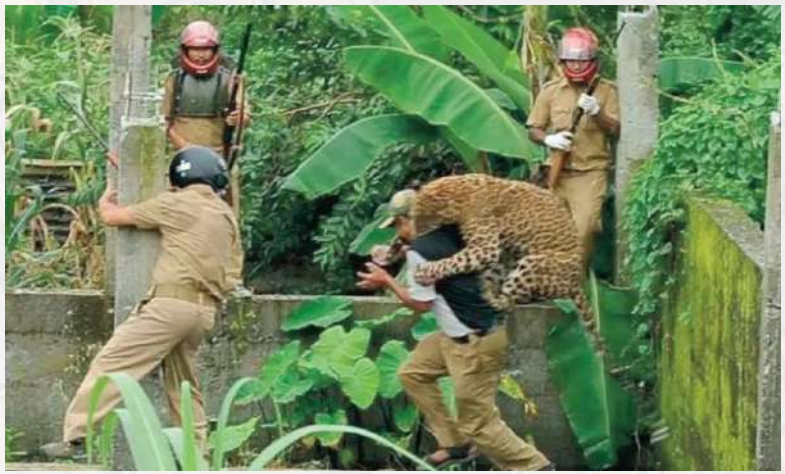

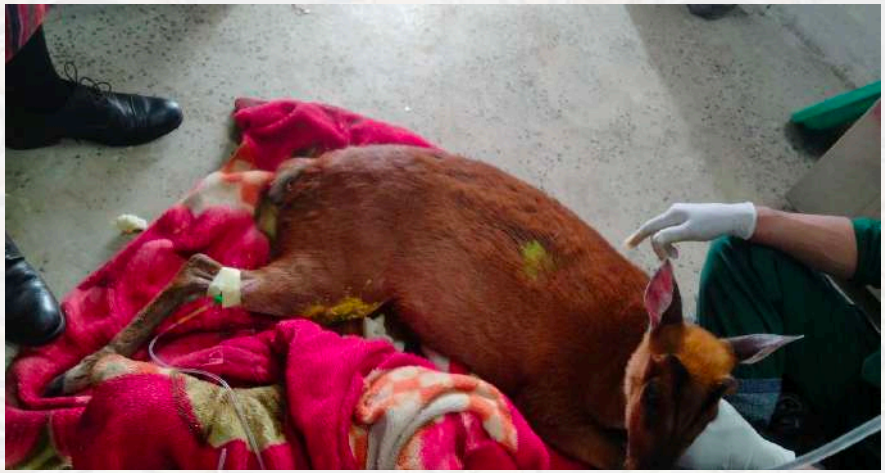

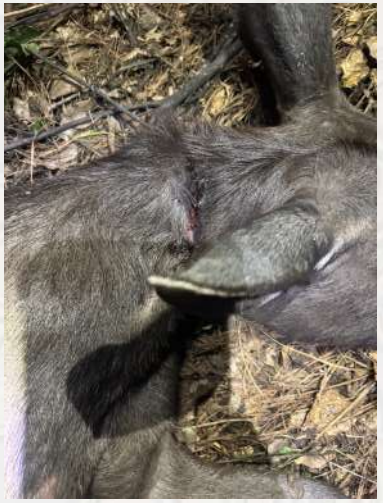

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Field Assessment and First Response

- Approaching safely
- Assessing the animal's condition
- Immediate interventions

SAFETY FIRST IS

SAFETY ALWAYS

Immobilization and Handling

- Physical vs. chemical restraint
- Safe capture techniques
- Reducing stress and injury risk
- Reduce or prevent Capture Myopathy

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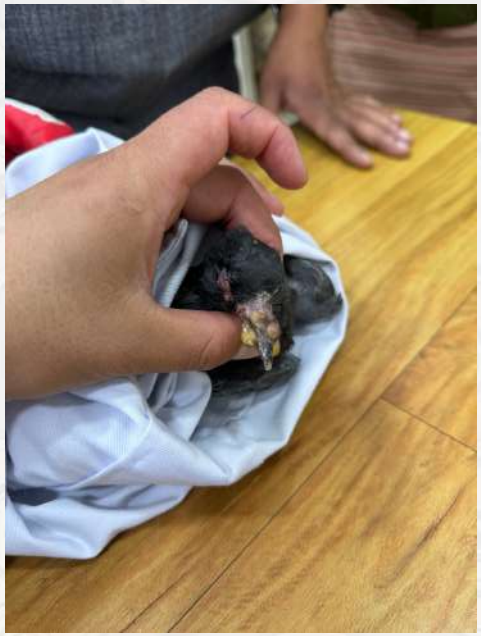
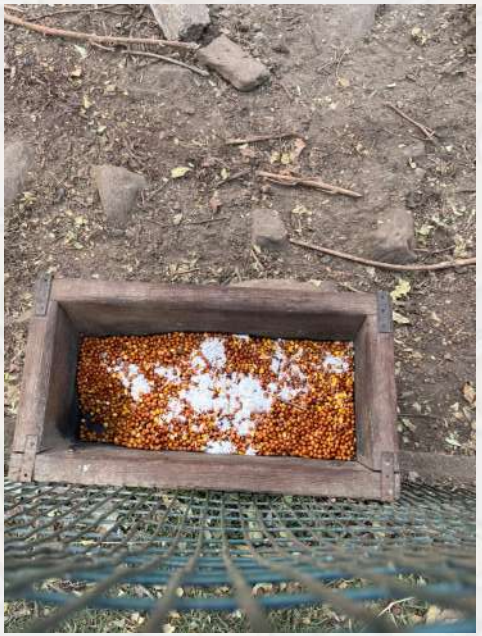
Physical vs. Chemical restraint



Using towel / net

Using cage / trap

Using dart



Oral sedation

Physical vs. Chemical restraint

Aspect	Physical Restraint	Chemical Restraint
Cost	Low	High
Risk to handlers	High	Low
Stress to animal	High	Low (if managed)
Large species suitability	Not practical	Practical
Equipment needed	Simple (nets, cages)	Complex (darts, drugs)

Chemical Immobilization

Chemical immobilization is the use of drugs to safely immobilize and temporarily sedate wild or captive animals.

An immobilized animal should never be left unattended.

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Chemical Immobilization

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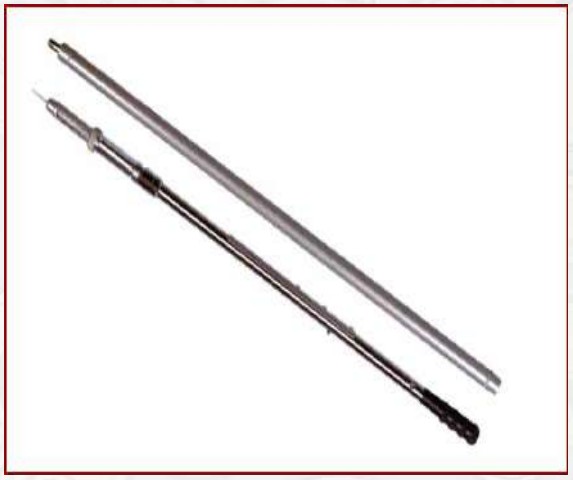
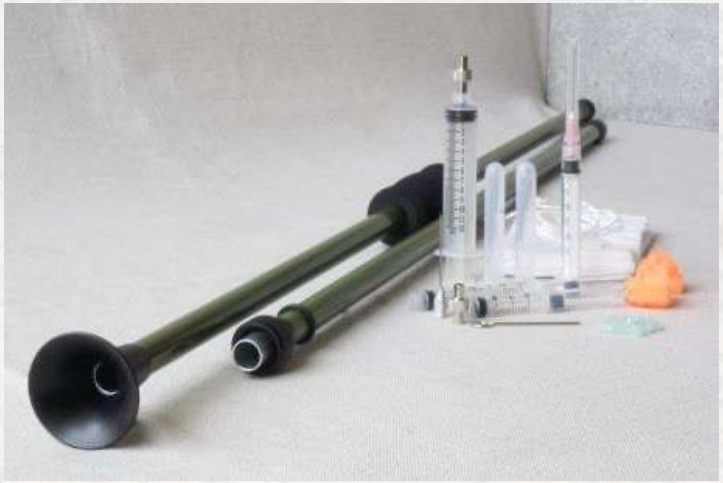
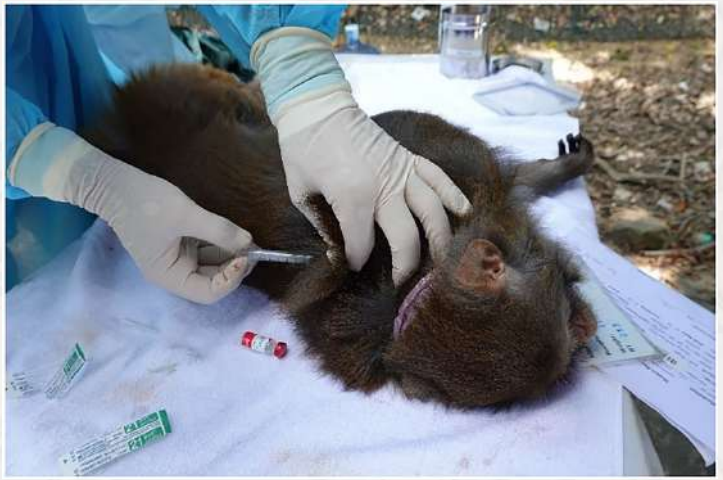


Using Jab stick



Using Blow dart or pipe



Direct injection

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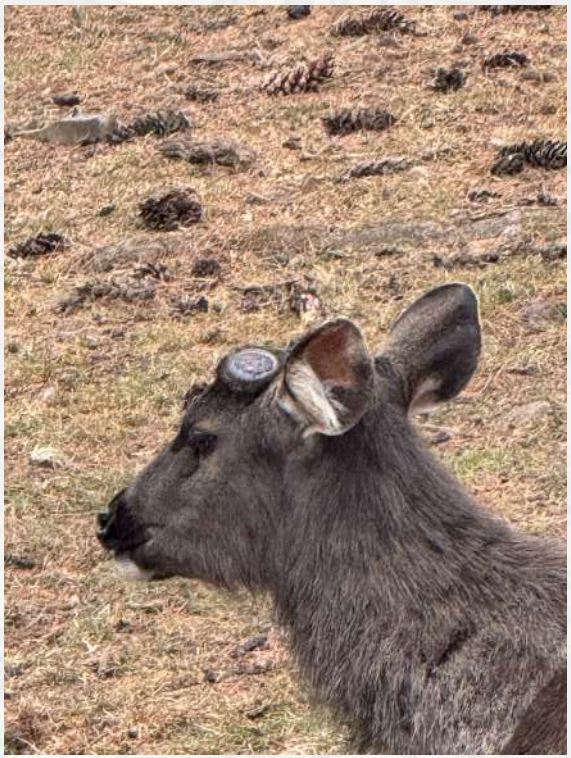
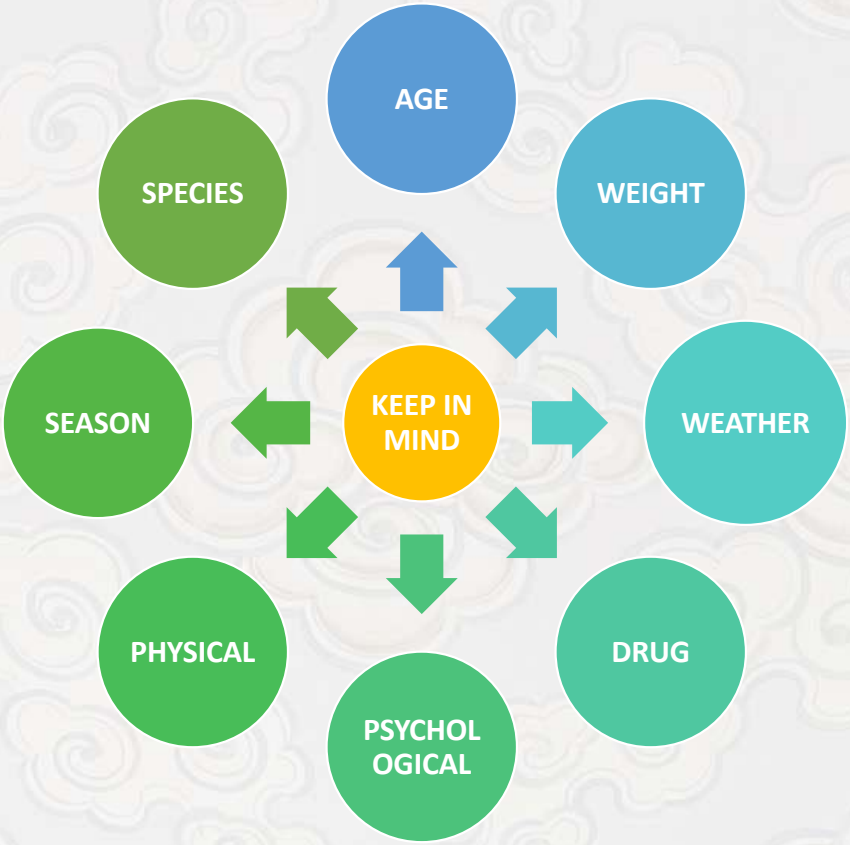
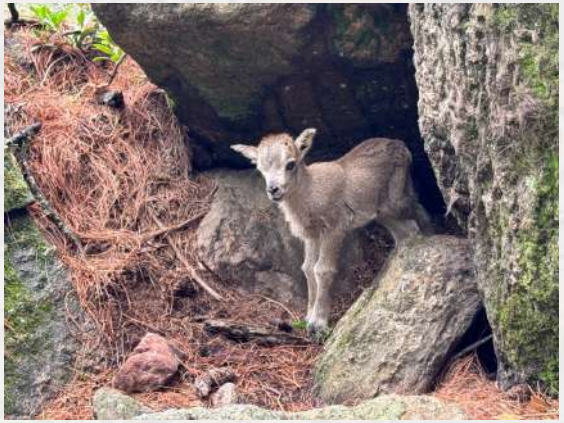
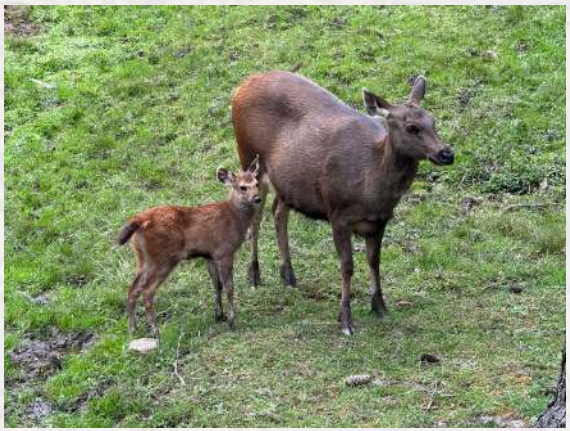
Considerations Prior to Chemical Immobilization.









PHASES OF IMMOBILIZATION

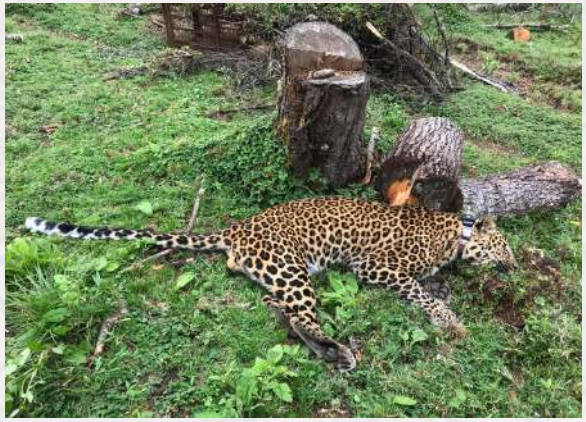
To avoid complications, YOU must follow this sequence of events:

- Planning and Preparation Phase
- Approach Phase
- Induction Phase
- Handling and Monitoring Phase
- Reversal/Recovery phase and
- Reflection phase

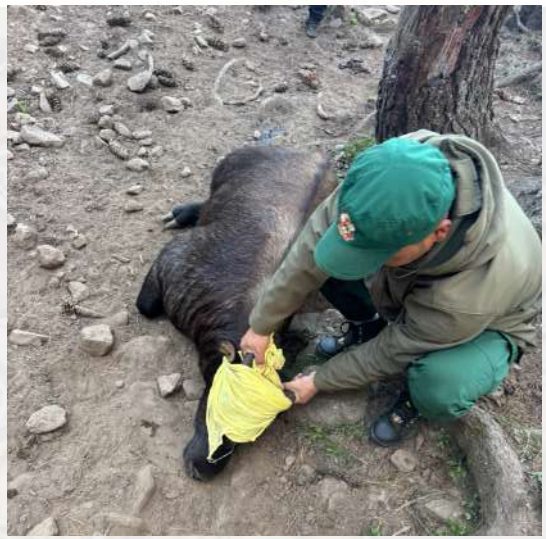
"Remember the goal is to achieve immobilization with a single dose."

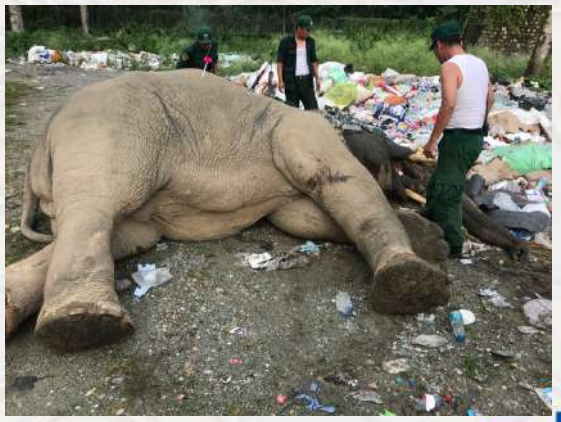
Handling the Immobilized Animal

- When the animal is finally down and can be safely handled.
- **Body Position**: Ensure that nothing obstruct with breathing (neck straight, nose/trunk clear). Ruminants Sternal recumbent. Elephants- Lateral.
- The head should preferably be higher than the throat with the nose pointing down to avoid aspiration of fluids.
- Try to keep the animal on the relatively flat ground to avoid occlusion of the trachea,



- **BLIND FOLD:** Covering the eyes will further calm the animal even though effectively immobilized, reduces drying of eyes, protects from the sun.
- **Hobble Legs**: Particularly necessary with ungulates (Hoofed Mammals) to avoid spontaneous kicking which may injure someone.
- Check **Vital Signs**: (TPR) Temperature, Pulse and Respiration.
- Check for wounds, injuries and general conditions.

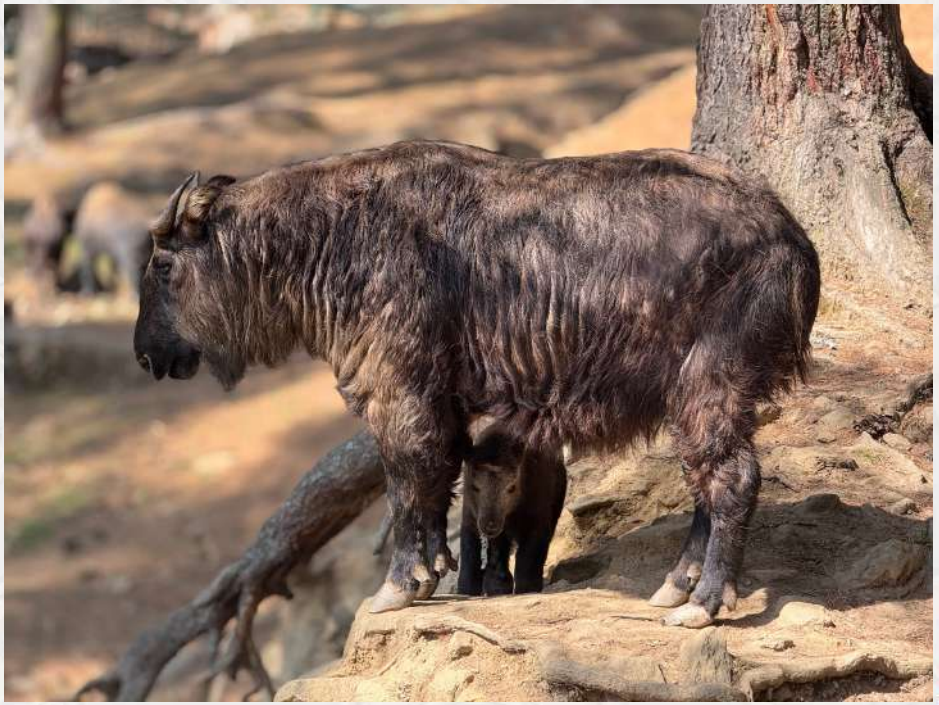




Drug for Chemical immobilization

The ideal immobilizing drug for wildlife:

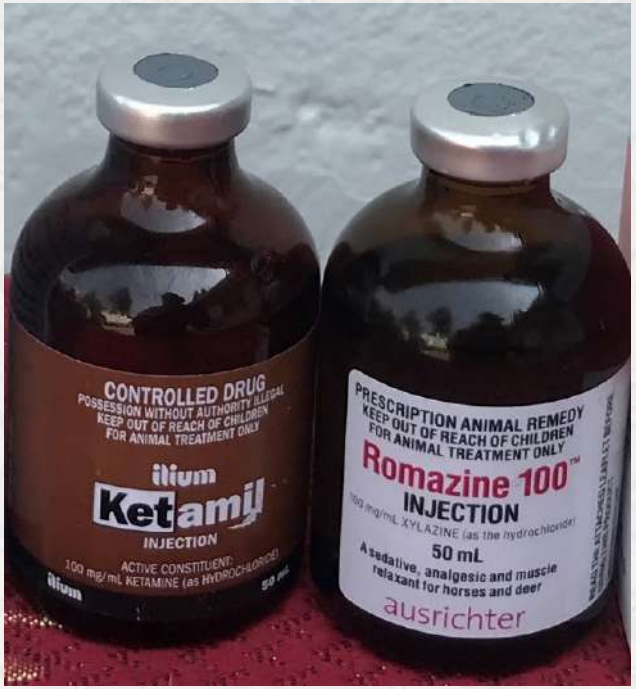
- Versatility to be used in different species,
- High potency in a small volume,
- Wide margin of safety,
- Quick action,
- Reversible effects,
- Rapid elimination from the body,
- Minimal side effects,
- Calm induction and recovery,
- Minimal handling risk,
- Analgesic properties



IMMOBILIZIG DRUGS

1. Ketamine hydrochloride

Carnivores, Birds, Reptiles, Ruminants
Used in combination with Sedatives / Tranquilizers
Induction: 8-15 min in I/M, Rapid in I/V,
Short acting: Metabolized faster
Advantage: Rapid absorption
Disadvantages: Salivation, convulsion, poor muscle relax, catalepsy, hyperthermia, poor analgesia



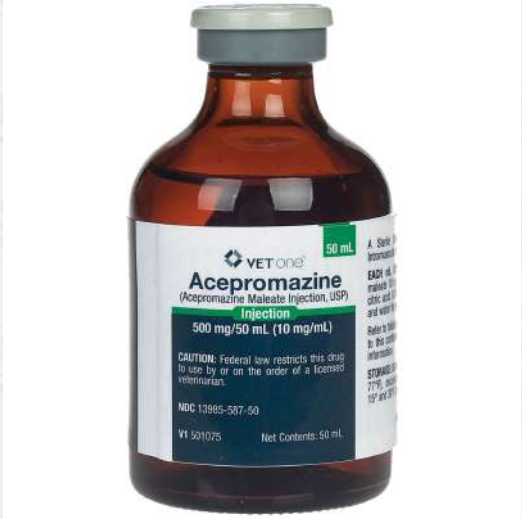
2. Xylazine hydrochloride /Medetomidine

Used in carnivores, primates, equids, elephants & ruminants,
Often used in combination with Ketamine or Opioids
Advantage: Rapid absorption, good muscle relaxation
Disadvantages: Regurgitation in cats, low BP, bloat in ruminants, salivation
Reversal: Atipamezole hydrochloride or Yohimbine.

3. Etorphine Hydrochloride (M99/Immobilon/Captivon)

Induction: 4-8 min I/M, rapid in I/V.
Advantage: wide safety margin, rapid reversal, rapid knock out
Disadvantage: Dose varies, respiratory depression, possible intoxication in humans.
Contraindicated in Cats.
Reversal: Diprenorphine

4. Acepromazine Maleate



Has no analgesic effect and therefore to be mixed with anesthetics for chemical capture
Has negligible side effects.
Often used in combination with Etorphine hydrochloride

Zoletil or Telazole (Dissociative anesthesia)

Zoletil contains a combination of **tiletamine** (a dissociative anesthetic) and **zolazepam** (a benzodiazepine). Zoletil provides rapid induction and a moderate duration of anesthesia with muscle relaxation.

Advantages of Zoletil

✓ **Rapid onset** – Quickly induces anesthesia.
✓ **Longer duration** – Provides extended sedation compared to some other agents.
✓ **Good muscle relaxation** – Due to zolazepam component.
✓ **Wide species use** – Effective in many animal species.
✓ **Minimal cardiovascular effects** – Relatively stable heart function.

Disadvantages of Zoletil

✗ **Poor analgesia** – Limited pain relief; often combined with analgesics.
✗ **Prolonged recovery** – Especially in some species like cats.
✗ **Excitation during recovery** – Can cause rough or unpredictable wake-up.
✗ **Accumulative effects** – Can build up with repeated dosing, leading to prolonged sedation.

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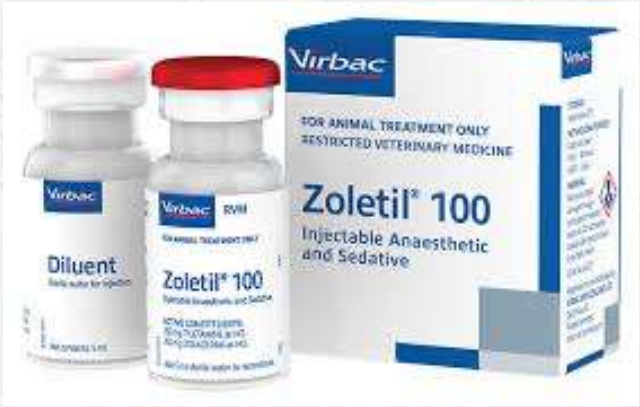
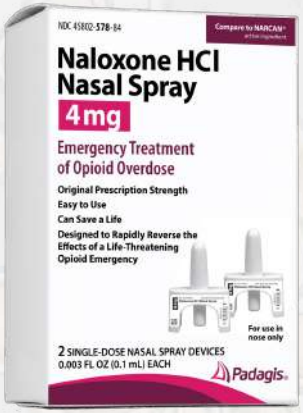
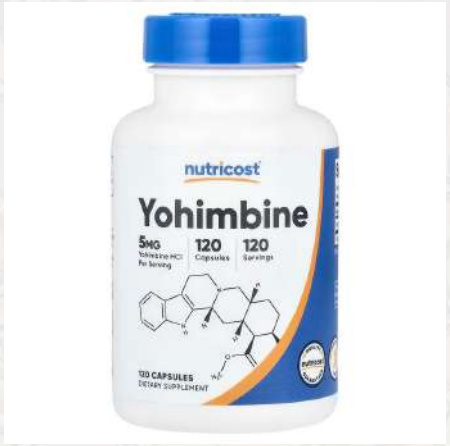
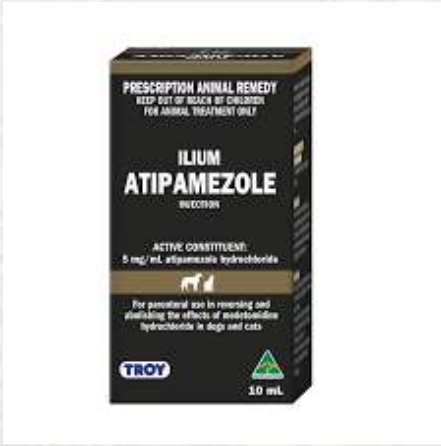
EXAMPLE !









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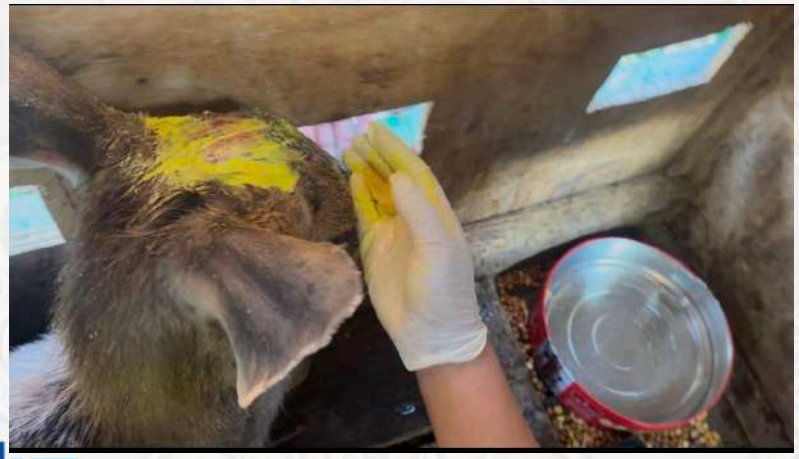
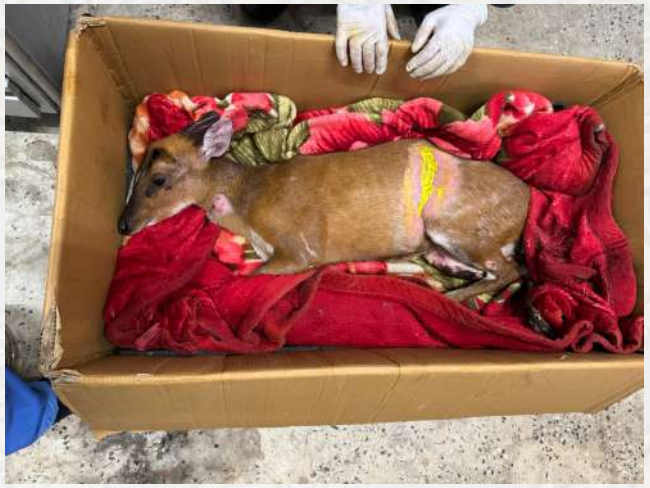
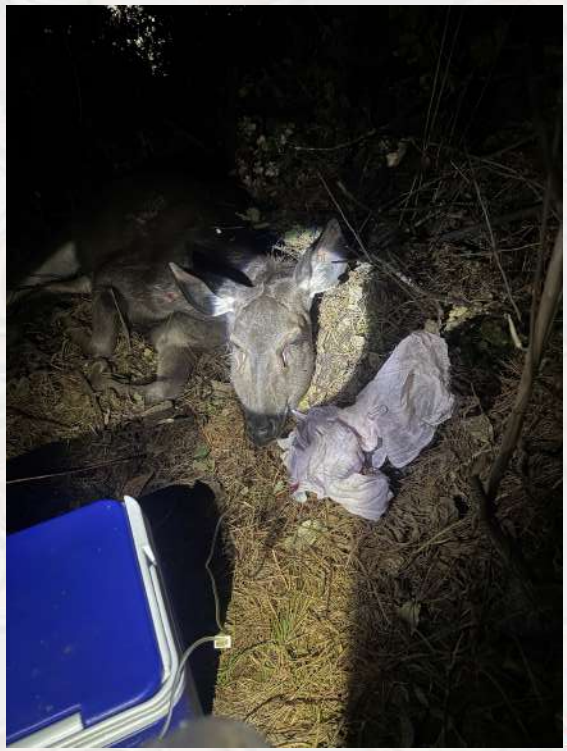
Emergency Treatment and Critical Care

- Treating shock and dehydration based on triage
- Controlling bleeding and fractures
- Pain management
- Monitoring vital signs
- Transportation, post care and rehabilitation







Precautions and Warnings During Wildlife Handling

- Approach animals cautiously to avoid stress and aggression
- Be aware of zoonotic disease risks (rabies, avian flu, etc.)
- Use appropriate restraint techniques for different species
- Avoid direct handling when possible; use nets or traps
- Monitor the animal's vital signs during handling
- Ensure proper ventilation when using chemical immobilization
- Minimize handling time to reduce stress and injury
- Always wear protective gear (gloves, masks, eye protection during handling anesthetic drugs)

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THANK YOU