

OPTIMA ANIMAL PHYSIO

Canine Fitness Classes

Six-week Exercise Programme

Presented By Katrinka Geelen



Class Exercises:

- Sit – stand
- Three-legged stand
- Balance Disc (forelimbs)
- Limbo
- Sit to Stand (on a ramp)
- Cavaletti
- Walking up the ramp
- Down to Stand
- Backward Walking
- Sideways
- Walking/Stepping
- Diagonal balance
- Figure of Eight
- Cavaletti – lateral, backwards, rotational, trotting
- Step-Stand (forelimbs) with hindlimbs on a balance disc
- Jumping (low)

Week 2: Foundation, Hindlimb Awareness and Conditioning

Week 3: Strength and Hindlimb Awareness

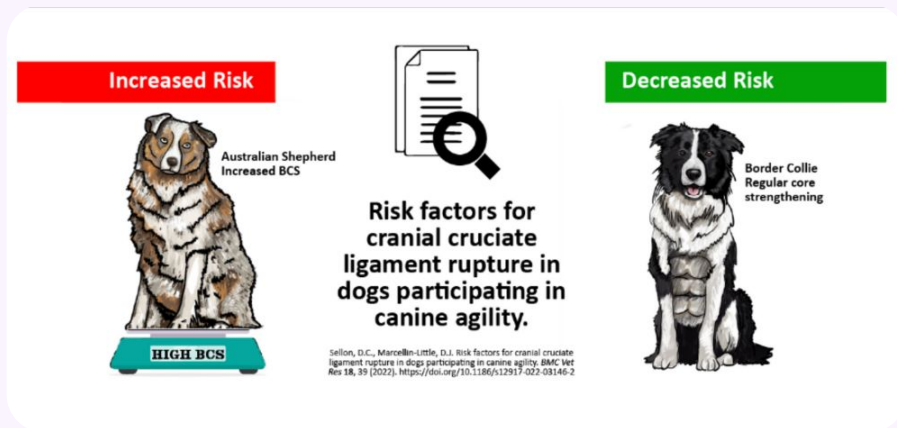
Week 4: Strength, Coordination, Proprioception

Week 5: Power, Coordination, Agility

Week 6: Power and Agility

Warming Up & Cooling Down

Canine Sports Injuries



Only 60% of dogs participating in agility return to competition following TPLO surgery

Heidorn et al, 2018

Internet based survey on Injuries in Agility Dogs:

Pechette-Markley et al, 2021

- 41.7% dogs competing in dog sports sustain an injury
- Common injury sites: shoulder region 30.1%, iliopsoas muscle 19.4%
- Border Collies were overrepresented for injury at 51.9%

Research and experience show injury rates could be reduced by 25% through: proper warm up, cool down, conditioning programmes, wellness exams, and maintenance treatment

Basic Guidelines for Warm-Up & Cool-Down

Young Dogs:

- Warm up exercises can begin as a fun training tool when puppy starts sports training
- Stretches: NOT to be completed until a dog is fully grown (bone maturity)

Aging Dogs:

- Continue warm-up and cool-down in training and/or performance events, BUT modify (as per Vet Physio) as their joints are often stiffer and muscles less flexible





Safety's sake: NOT recommended to strengthen or stretch someone else's dog

If you dog is experiencing the following:

Pain, neurological diagnosis such as disc disease, hip/elbow dysplasia, cranial cruciate injury, patellar luxation, acute injury, recent surgery

Ensure they are evaluated by a veterinarian or Animal Physiotherapist before returning to training and competition

Why warm up?

- Increases blood flow to the working muscles, tendons, and ligaments
- Elevates muscle temperature → increasing muscle metabolism and muscle fibre conduction speed
- A 1% increase in muscle temperature can lead to a 2-5 % increase in exercise performance

- Warming up leads to greater contraction rates of Type 2 muscle fibres
 - Essential for speed and acceleration sports
- Improves musculotendinous extensibility → reducing susceptibility to muscle, tendon, or ligament strain

Why warm up?

- Muscular performance is enhanced when preceded by a near-maximal neuromuscular activation → Add running and jumping to the warm-up!
- Encourages mental focus and connection between dog and handler
- Allows you to detect if something feels “off” or wrong with your dog

- Evidence for canine warm-up exercises is extrapolated from human evidence
- Humans and quadrupeds have very similar musculoskeletal systems and tissue response and recovery rates

Stretching: Static Stretching

- As part of a warm up routine **does not reduce overall injury rates** (Small, McNaughton, & Matthews, 2008)
 - Static stretching between repeated bouts of sprinting and change of direction sprint drills **results in slower sprint times** (Beckett et al., 2009)
 - **Decreases maximal strength performance, results in greater acute flexibility**
 - contraindication for activities that require high levels of force as elongated muscles cannot contract as quickly (Bacarau et al., 2009)
- Reserved for end of the training session or competition day

Stretching: Dynamic Stretching

- Dynamic stretching **does not negatively affect maximal strength** (Bacarau et al., 2009)
- Dynamic warm ups show **better immediate performance in power and agility-based tasks** and for sprinting and vertical jumping (McMillian, Moore, Hatler, & Taylor, 2006); Haddad et al., 2014)

→ **DYNAMIC STRETCHES ARE THE CHOICE FOR WARM-UPS!**



Warm-up Foundations

- **Duration:** Total warm up time ≤ 10 minutes is ideal (Bishop, 2003)
- **Aim for 5 reps** for each dynamic warm up stretch or exercise, x 2 sets
- **Optimum # sets:** 1-2 sets of dynamic exercises before sprint work improves athletic performance (Turki et al., 2012)
- **Warm-ups should include movements that mimic what the athlete will do!**
Recovery period 5+ minutes but NO MORE than 15-20 minutes between warm up and competition (McMillian et al., 2006)
- **WATCH FOR Signs of fatigue:** yawning, excessive panting, walking away from you, difficulty maintaining posture or form in the warm up

Warm Up

- 5 mins minimum walk/trot on lead (prior class)

Exercise	Reps/Duration	Sets
Walk/Trot (before session)	2 – 3 mins	1
Shadow Handling/Circles	1 – 2 mins	1
Weaving Between Legs	5 x	1
Down to Stand	5 x	1
Side Stepping	5 x	1
Jump Practice (Week 6 only)	5 x	1

Why Cool-down?

Cool-down aids in the following:

- **Stretching the working muscles** – restores shortened muscles to their normal resting length
 - shortened muscles create less power
 - potential for uneven pressures on the articular cartilage, and muscle compensations (Calleja-González et al., 2015)
- **Returning the heart rate to its normal resting rhythm**

Cool Down

Exercise	Reps/Duration	Sets
Walk/Trot	3 mins	1
Cookie Stretches	5 x	1
Play Bow	5 x	1
Passive Stretches	5 mins	1
Hip Flexor Stretch	5 x	1

Behavioural Learning

**"Our patients should be willing
participants for physiotherapy
and fitness"**

Rehabilitation and Stress

- **Physiologic Stress**
 - Illness
 - Trauma
 - Surgery
- **Psychogenic Stress**
 - Separation from care take
 - Exposure to a novel environment

*Inability to return to homeostasis
or overwhelming psychogenic
stress leads to normal stress
becoming **DISTRESS***

Chronic Distress affects patient morbidity and mortality

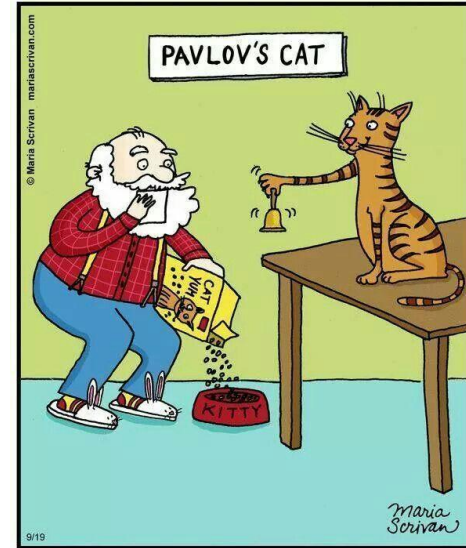
- Susceptibility to infection
- Slowed wound healing
- Gastric Ulceration
- More

Learning Science Principles

- **Classical Conditioning**
 - Ivan Pavlov 1849-1936
- **Operant Conditioning**
 - B.F. Skinner 1904-1990
- **Premack Principle**
 - David Premack 1925-2015

Classical Conditioning

The process of associating a neutral stimulus with an involuntary response until the stimulus elicits the response.



Classical Conditioning

Always Occurring

- Environment
- Situation
- People

Fundamental Learning Process

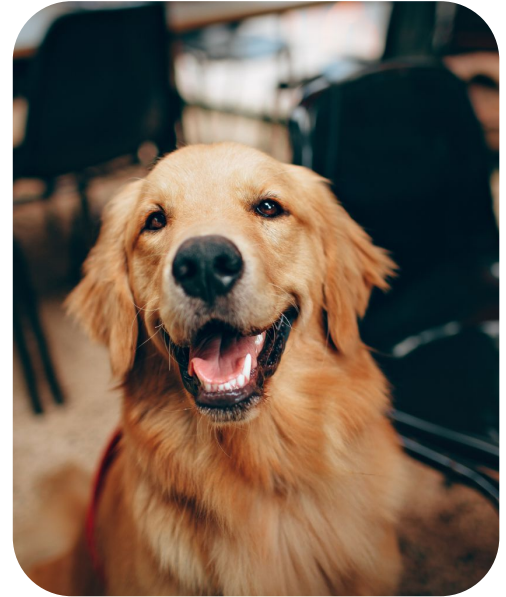
- Take a neutral stimulus and make it positive



Conditioned Emotional Response

MUST START AT THE INITIAL CONSULT

- Can Be Positive 😊 or Negative 😞
- Manifests as reflexive and voluntary behavior

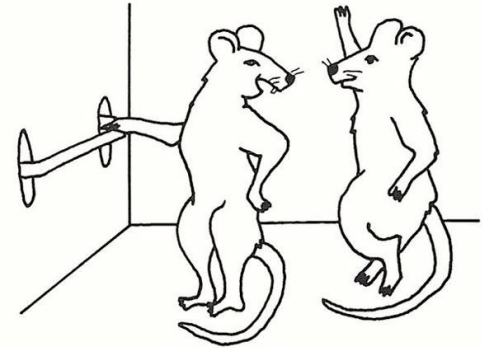


Operant Conditioning

The process of changing an animal's response (behavior) to a certain stimulus (antecedent) by manipulating the consequences that immediately follow the response.

- Antecedent -> Behavior -> Consequence
- Classical Associations Develop

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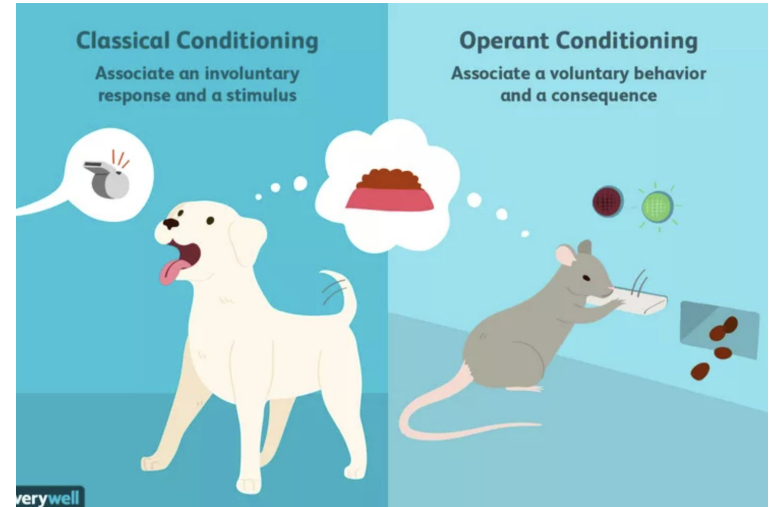


"Boy, have I got this guy conditioned! Every time I press the bar down he drops in a piece of food."

[Used by permission of JESTER, Columbia College.]

Operant Conditioning

- "Dog Training"
- Voluntary Behaviors
- Classical associations form during the process of operant learning



Operant Quadrants

- Positive: Something is added
- Negative: Something is taken away
- Reinforcement: Behavior increases
- Punishment: Behavior diminishes

	Increase Behaviour	Decrease Behaviour
ADD	Positive Reinforcement	Positive Punishment
REMOVE	Negative Reinforcement	Negative Punishment

Premack Principle

Relatively Theory of
Reinforcement

*Probable behaviours will
reinforce less probable
behaviours*



Always let your dog retreat

And know it's okay to encourage the retreat

Create a Plan

- Classical Conditioning
- Non-contingent variable reinforcement
- Observe Behavior
- Operant Conditioning

Set up an Area for Success

- Dry, non-slippery floor
- Treats ready
- Easy access to the area



Scatters - Seeking Systems

Jaak Panksepp theorized there are 7 innate emotional systems in the mammalian brain.



Perimeter Sweeps

**Non-Contingent variable
reinforcement - Treat given
every 30-60 seconds
interdependent of behaviour**



Problem Solving

- Food Motivation
- Anxiety
- Food Obsession



Not Food Motivated

Finicky eaters are made, not born - Sue Alisby

- Food is a primary reinforcer
- Overweight
- Shaping of Inappetence



Contra-Free-Loading

Animals choose to perform a learned response to obtain reinforcers even when the same reinforcer is freely available.

- Ditch the Bowl!
- Stop Free-feeding

Not Food Motivated

- Figure out why
- Luring can be coercive
- Poisoned reinforcement
- Food predicts something bad is going to happen



Anxiety

- Flight
- Give them the choice to leave
- Slow is Fast



Food Obsessed

- Getting interest in food is not a problem
- The patient is blindly following the food rather than thinking about their body
- Frustration
- Food Manners

Three Steps to Take Home

1. Get the food out of your hand
2. Take a break
3. Reinforce behaviors the dog has already offered/knows

Questions?

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