The Importance *of* Equine Topline Health *and* Longevity

in Adaptive Riding Programs

Supporting Equine Welfare, Safety, and Program Sustainability

Objectives:

- Define what the equine topline is and its functional importance
- Identify adaptive riding impacts on the topline
- Describe the relationship between topline health and longevity
- Recognize signs of topline decline
- Apply strategies for maintaining topline health
- Identify strategies for considering retirement

Disclaimer

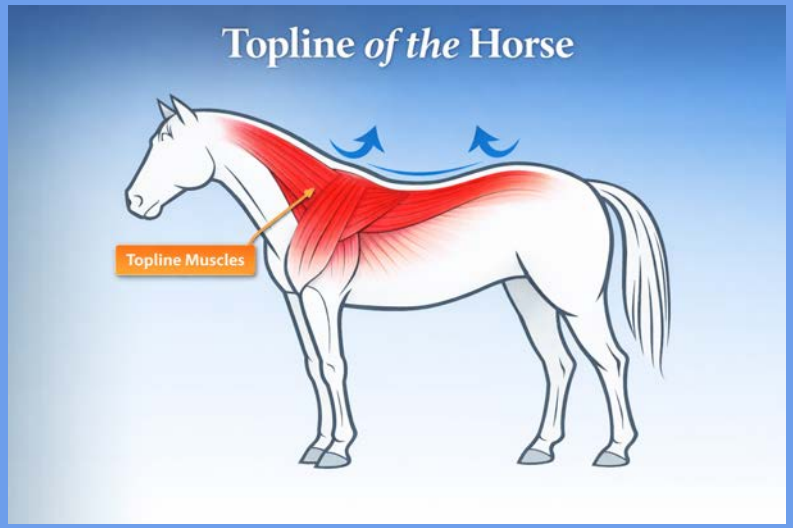
I am not a veterinarian and do not hold formal training in equine physiology or nutrition. Please consult you vet prior to making any changes in diet and exercise.

Common Myths

- Walking is not hard work on a horse
- Toplines are only built through correct riding
- An overweight horse has a good topline
- Older horses can’t build topline
- If the horse is willing, it’s comfortable
- Therapy horses don’t need advanced conditioning

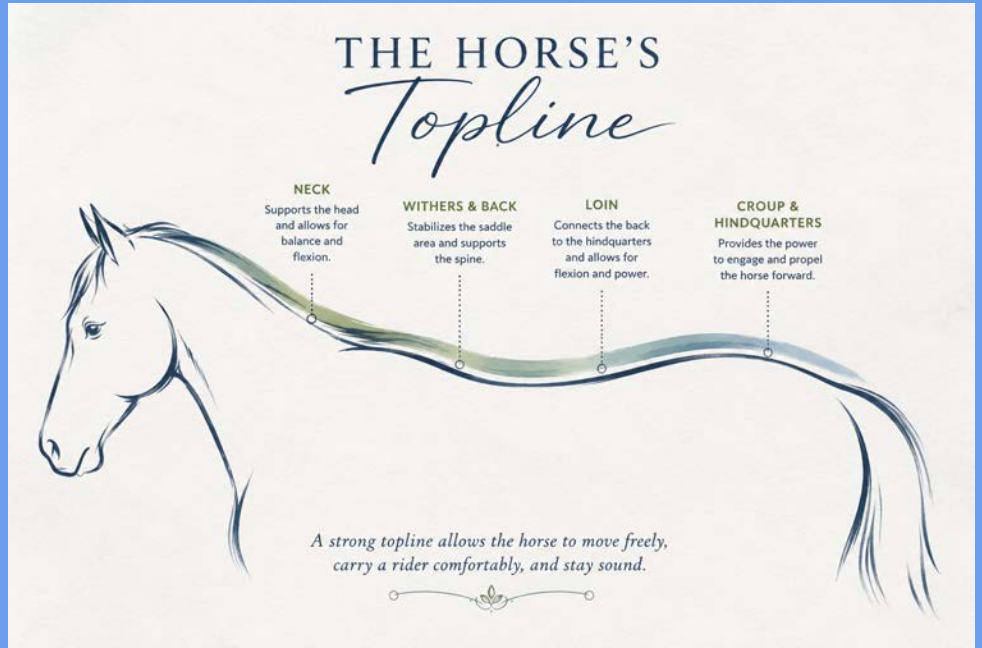
What Is the Equine Topline?

- Muscles of the neck, back, loin, and hindquarters
- Supports weight-bearing, balance, and posture

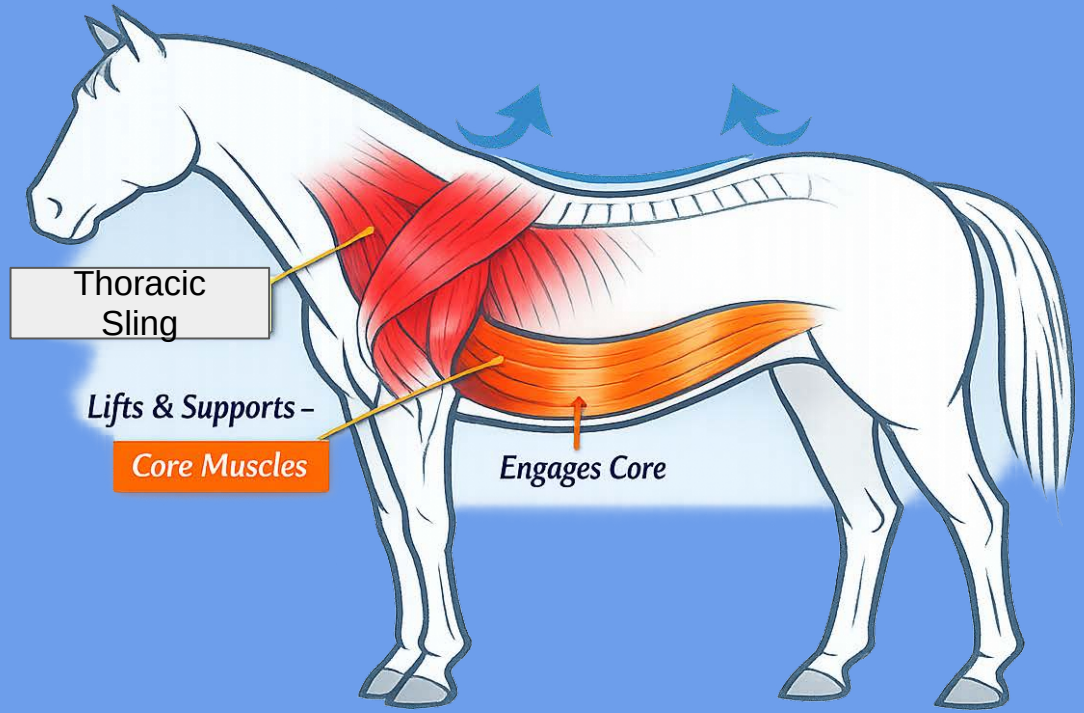


Functional Role of the Topline

- Supports lifting and stabilizing the back
- Protects joints and spine
- Distributes rider weight appropriately



Lifting & Stabilizing *the* Back



Suspension Bridge

What a suspension bridge does:

Cables: support and anchor the structure so that the bridge doesn’t sag

Towers: Suspend and lift the bridge

Bridge Deck: Supports cars driving across

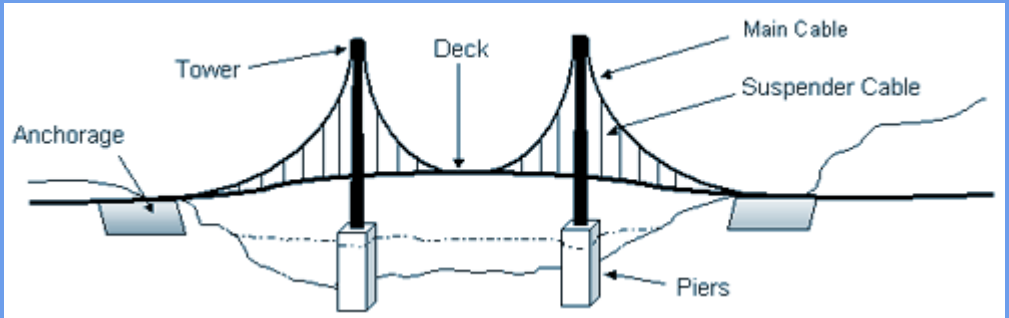
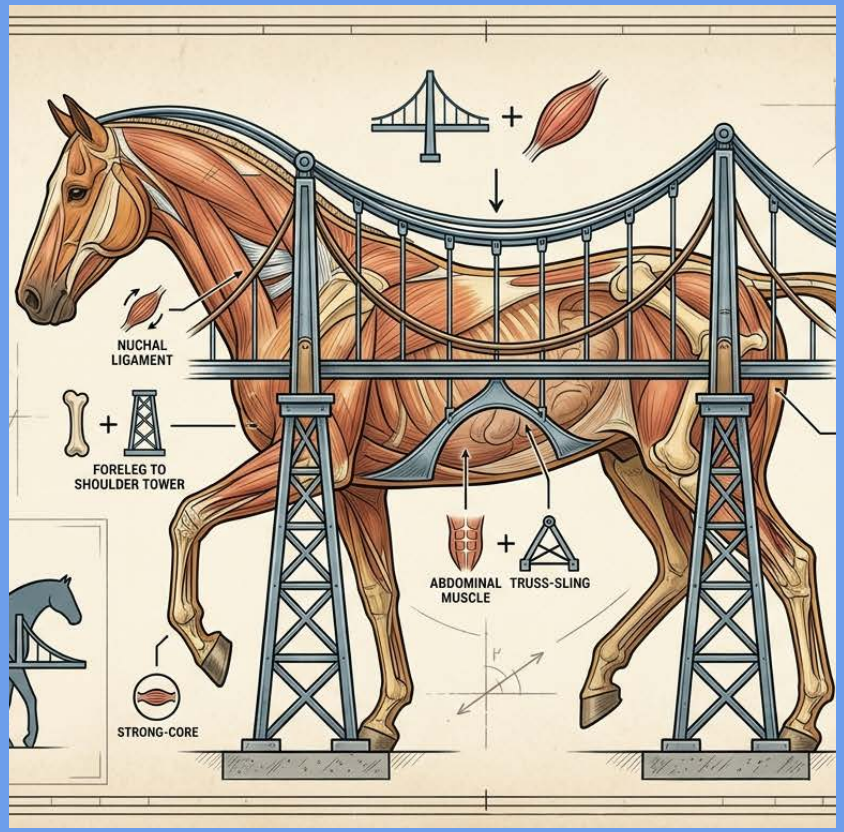


Photo: wsdot.gov

Horse as a Suspension Bridge



Suspension Bridge Analogy

Cables: Hind end and muscles of the back support the spine, stabilize movement and distribute force.

Front tower: Thoracic sling suspends the front end to help lift shoulders and back.

Rear tower: Hindquarters generate power from behind, propel the horse forward and lift through the back.

Bridge deck: The spine lifts to support the rider.

How it Supports and Protects the Joints and Spine

Proper topline use:

- Reduces concussion on joints
- Supports ligaments and tendons
- Stabilizes the spine

Compensation patterns (from weak topline):

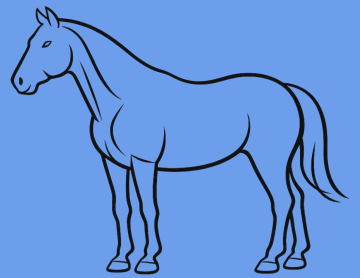
- Increased risk of lameness
- Lead to uneven wear and tear

How it Distributes Rider Weight

- The topline helps distribute weight across the whole body, not just the back
- Proper function allows:
  - Engagement of the hindquarters
  - Reduced strain on the spine
- When the topline is weak:
  - Weight sits heavily on the back
  - Increased pressure points and discomfort

Why Equine Topline Health Matters

- Topline health affects comfort, safety, and movement quality
- Ethical equine use supports sustainability
- The quality of what we can provide in EAS is directly dependent on how well horses move and function

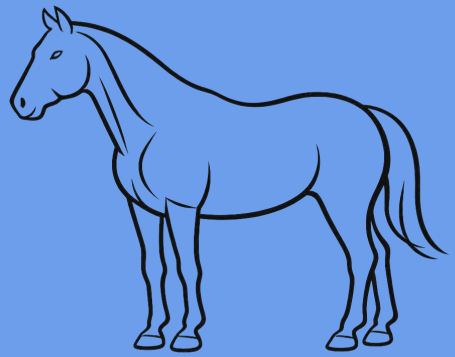


A Healthy Topline

Photo: horsesandpeople.com

Signs of Topline Decline

- Hollowing or muscle loss
- Uneven development
- Behavioral or performance changes



An Unhealthy Topline

Photos: thehorse.com and albertafarmexpress.ca

An Unhealthy Topline

Body Condition Score (BCS)

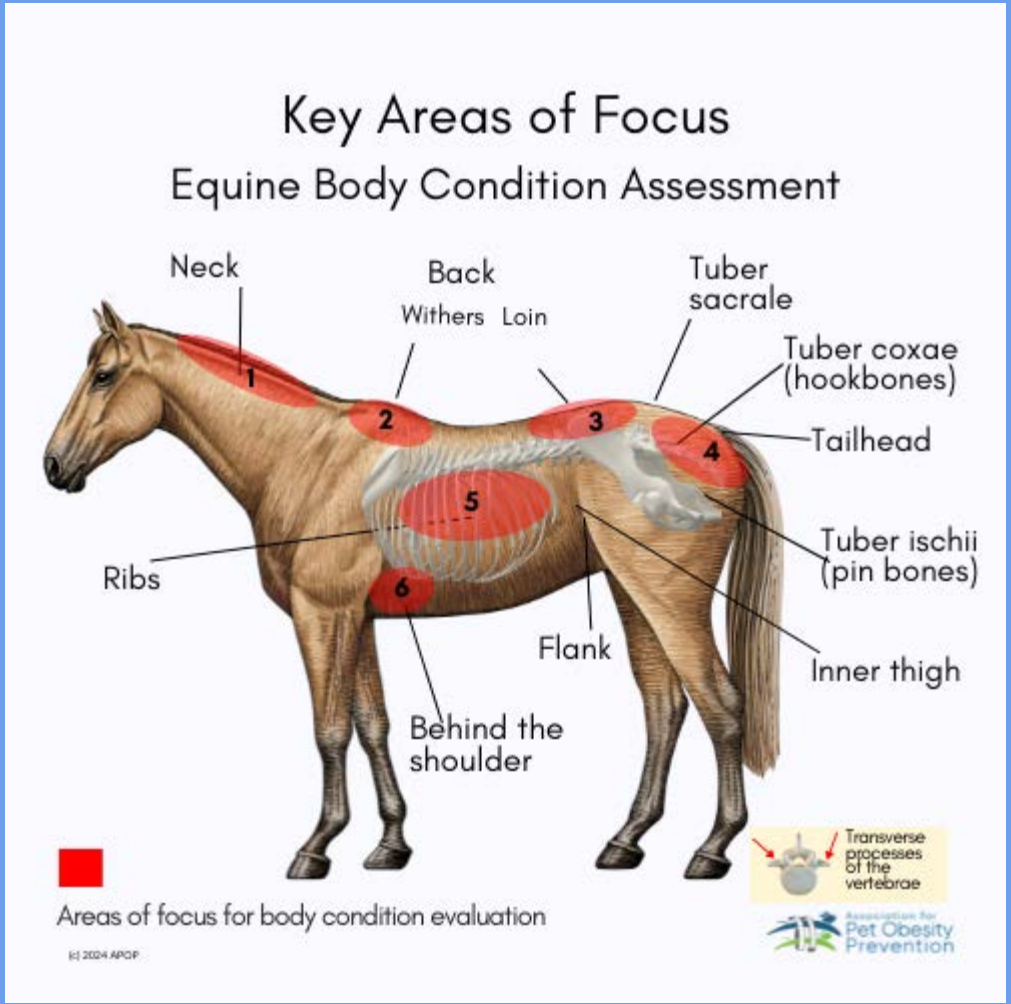


Photo:thehorse.com

BCS 1-2: Poor to Very Thin

Photo:advancedequinedentistry.com

BCS 3-4: Thin to Moderately Thin

baileyshorsefeeds.com

BCS 5: Moderate

Photo: baileyshorsefeeds.com

BCS 6-7: Moderately Fleshy to Fleshy

BCS 8-9: Fat to Extremely Fat

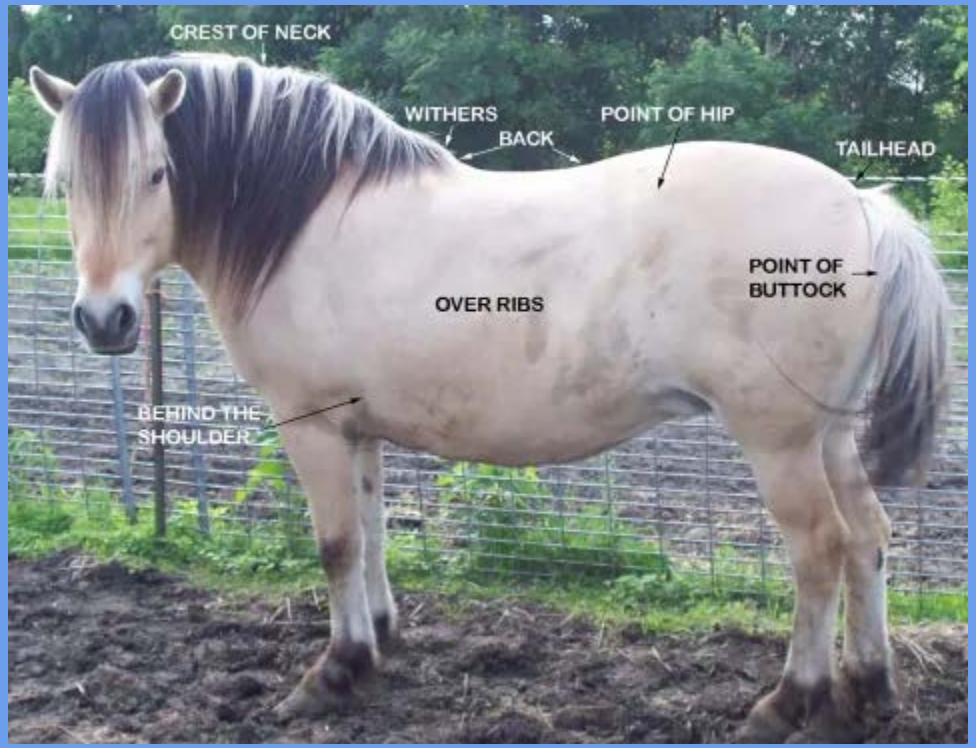


Photo: extension.iastate.edu

Causes of Poor Topline Health

Lack of Proper Muscle Use:

- Horses moving:
  - On the forehand
  - With a hollow back
  - Without hindquarter engagement
- Common causes:
  - Inconsistent or incorrect riding
  - Limited conditioning work

Correct Movement

Photo: horsejournal.com

Correct Movement

Photo:theintuitiverider.com

Correct Movement

Incorrect Movement

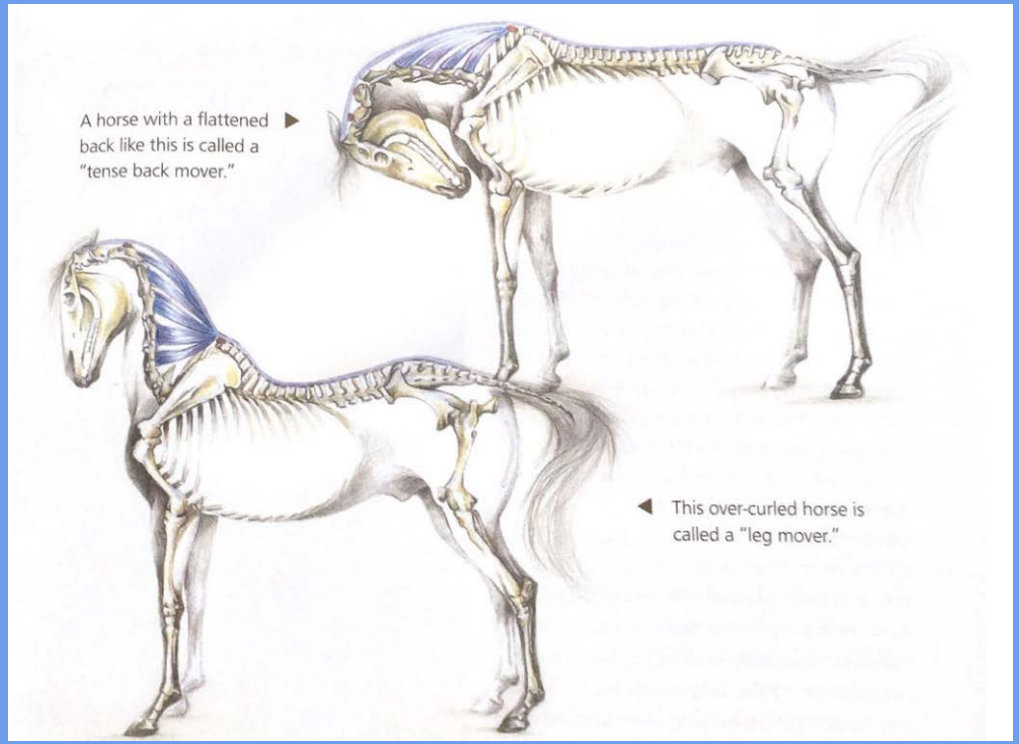


Photo: theplaidhorse.com

How to Identify If Topline is Lifting While Riding

- Back moves freely, does not feel choppy
- Swinging thru your pelvis
- Rib cage rises and horse feels broader under your seat bones
- Increase balances while turning and on circles

Causes of Poor Topline Health

Inadequate Conditioning or Workload Imbalance:

- Too little work → muscle atrophy
- Too much work without correct form → fatigue and breakdown
- In adaptive programs:
  - Horses may do repetitive, low-intensity work
  - Limited variation can reduce muscle development
- Long periods of walking without engagement can actually decrease topline strength

Causes of Poor Topline Health

Poor Saddle Fit:

Even pressure distribution along the panels → no focal pain points

Wither and spine clearance → allows the back to lift

Freedom of shoulder → enables reach and engagement

Stable balance (not tipping forward/back) → rider weight stays centered

If the saddle fits correctly: Horse can engage the core, lift the back, and use the topline correctly

Tree too wide.
Pinching at top of bars and no contact in middle and bottom of bar.
Gullet too low on withers.

Good fit.
Even bar contact throughout and angle of bar matches horse.

Tree to narrow.
No contact in middle and top of bars. Saddle not sitting down on horse in the gullet.

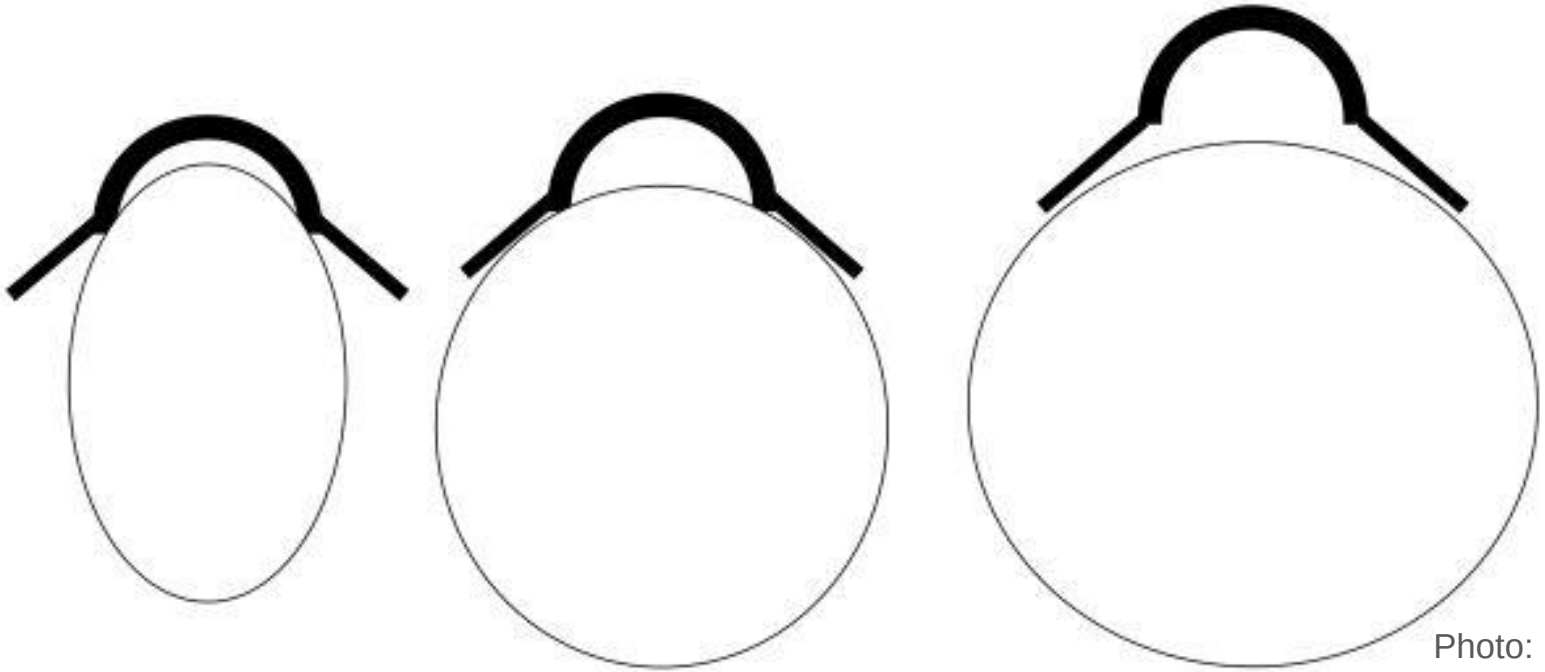


Photo:
youngrider.com

Saddle Fit

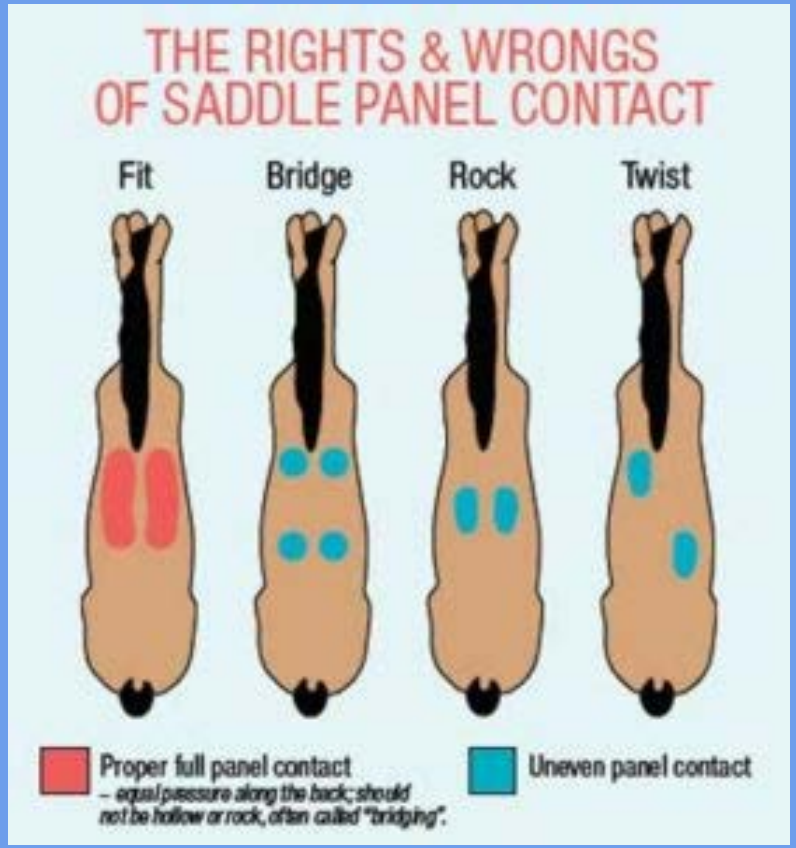


Photo: animalwellnessacademy.org

Causes of Poor Topline Health

Nutritional Deficiencies:

- Muscle development requires:
  - Adequate protein
  - Amino acids (Lysine, methionine, threonine)
  - Overall caloric support (forage, fats and protein)
- Poor nutrition leads to:
  - Muscle wasting
  - Inability to rebuild topline

Protein and Amino Acid Options

Source	Type of Nutrition	Best Use
Alfalfa	Protein (high), amino acids	Add to forage
Ration Balancer	Protein, amino acids	Best option for building topline
Soybean Meal	Protein, amino acids	Supplement for muscle support
Grass Hay	Protein (low), amino acids (low)	Needs supplements to actually improve topline

How Amino Acids Work

- Horses cannot build them all on their own
- Lysine: the primary muscle-building amino acid
- Methionine: Supports muscle repair
- Threonine: Supports overall muscle function

Calorie Options

Source	Primary Role	Impact on Topline
Hay	Provides energy, supports gut health	Provides a foundation, but not sufficient alone
Fat (oil, rice bran, flax)	Sustained energy	Supports muscle development
Beet pulp	Digestible fiber	Supports calories for muscle building

Supporting Topline Health

- Consistent conditioning and cross-training
  - 2-3 30 minute schooling rides a week (depending on how often horses are in adaptive classes)
  - Riding up and down hills, over varied terrain (trail riding), over ground poles
  - Turnout with enough space to move around
- Consistent Nutrition
  - Have an individualized nutrition plan
- Appropriate horse and rider matching
  - Limit amount of unbalanced rides per week
  - Do not have unbalanced riders ride until the horse is stronger
  - Set weight limits for both unbalanced (10-12% of horse’s body weight after tack) and balanced riders (15-20% horse’s body weight after tack)

Supporting Topline Health

Consultation with the following professionals:

- Body work
- Massage
- Veterinarian
- Chiropractic
- Nutritionist
- Trainer specializing in equine rehab
- Saddle fitter

Considerations for Retirement

1. Identify the root cause of a change in behavior and/or body condition
2. Consult with a vet and nutritionist
3. Take recommendations of the vet and nutritionist and give the care plan time to work (6-8 weeks).
4. Consider if your program has the time and financial resources to follow the care plan.
5. Retire the horse if no improvement or if recommended by vet

Common Signs of Need for Retirement

Behavioral Changes

Often the earliest indicator:

- Pinning ears at mounting
- Resistance to grooming/tacking
- Irritability
- Shutting down or disengagement

Commons Signs of Need for Retirement

Progressive Muscle Loss

- Muscle wasting along:
  - Back
  - Loin
  - Hindquarters
- Prominent spine or dropped topline
- Especially important if already on a good nutrition and exercise program

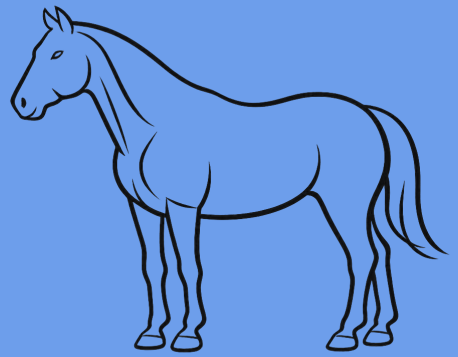
Common Signs of Need for Retirement

Increased Fatigue

- Topline weakens more quickly during lessons
- Horse struggles to maintain posture through the day

Signs:

- Shortened stride
- Loss of rhythm
- Heavy movement



Common Signs of Need for Retirement

Recovery Declines

- Increased soreness after work
- Stiffness the next day
- Longer recovery periods
- The horse may no longer have enough muscular support for repetitive workload

In Conclusion

- The topline is an important group of muscles that supports the overall physical health and comfortability of the horse
- The topline is important for the safety of our clients
- A strong topline will lead to longevity of a horse in a riding program
- A strong topline can be maintained with ethical treatment and care planning
- Retirement should be considered if the topline is too weak or unable to rebuild

Sources:

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