

Clenbuterol use in California

What have we noticed?

“I refuse to answer that question on the grounds that I don't know the answer”

— Douglas Adams

Don Shields, DVM

Why is Clenbuterol administered?

- Valid Medical Reasons

- Bronchodilation
- Increased Ciliary Action
- Beneficial in IAD, EIPH, Respiratory Infections, RAO

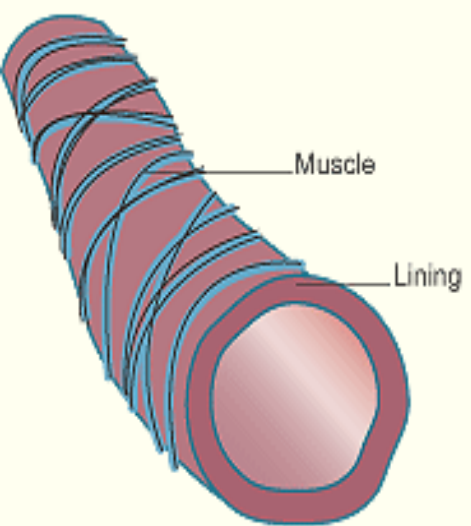
- Potential Abuse

- Stimulation/Increased Heart Rate
- Repartitioning - Anabolic Activity
- Toxicity with very high doses

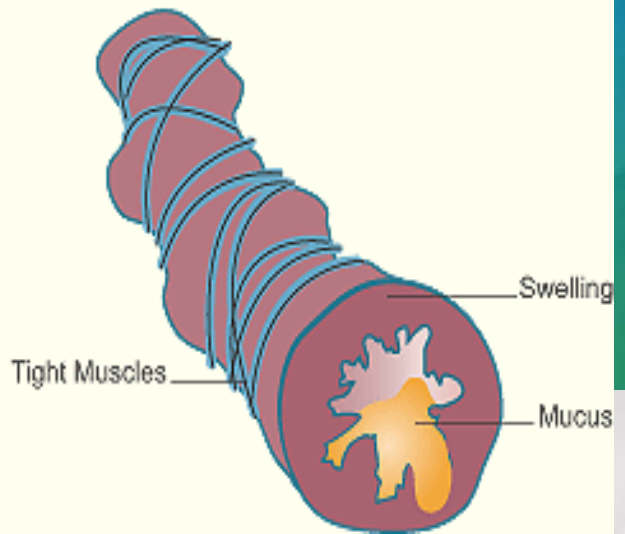


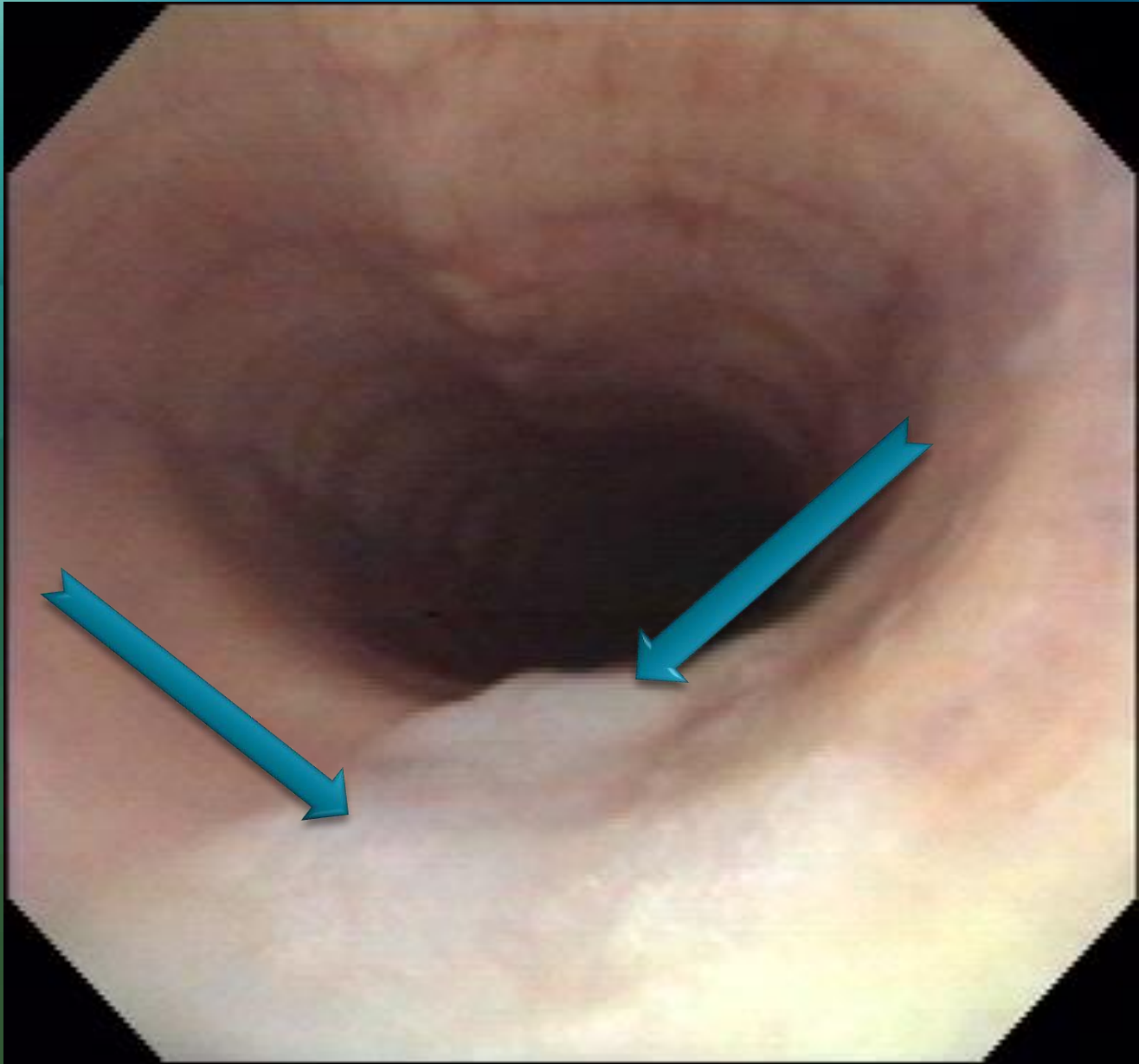
Asthma

Normal Airway



Airway in Person with Asthma







Brief Historical Perspective

- 2001 CHRB Press Release
 - **Clenbuterol receives approved medication status**
 - 5 nanogram threshold
 - Residual level, won't affect performance

Clenbuterol use below expectations in California

- **RMTC 2007**

- 1/3 of racing samples contain clenbuterol residue

- 30% of the horses have small airway disease

Clenbuterol in California

- March 2012 out-of-competition samples
- 58% of the horses had clenbuterol in their system
- 89% in one barn to 0% in another

Only 38% of TCO2 samples
contain clenbuterol

➤ Clenbuterol use suspended in
Quarter Horses

➤ Clenbuterol use restricted in
Thoroughbreds – 21 day
withdrawal

How are California horses doing without Clenbuterol

- Trainers' Comments - survey
- Veterinary Practice Data
- General Scientific Statistics

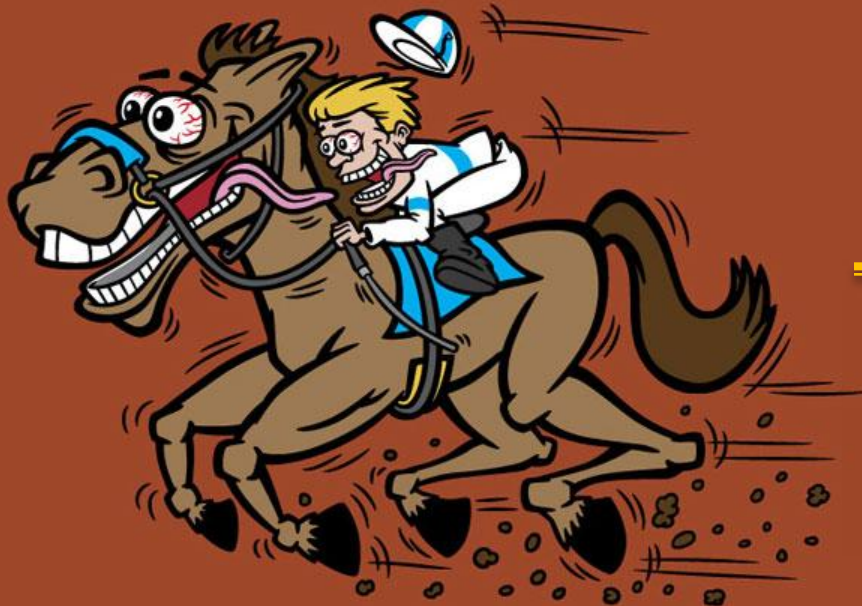
Trainers' Comments

non-scientific survey

- What changes have you noticed in your horses?
 - No Changes
 - Decrease in energy
 - Don't look as good, less muscle
 - Decreased appetite
 - Increased mucus, coughing - respiratory signs

Decreased Performance??

-- affected by multiple variables



SPEED FREAK!

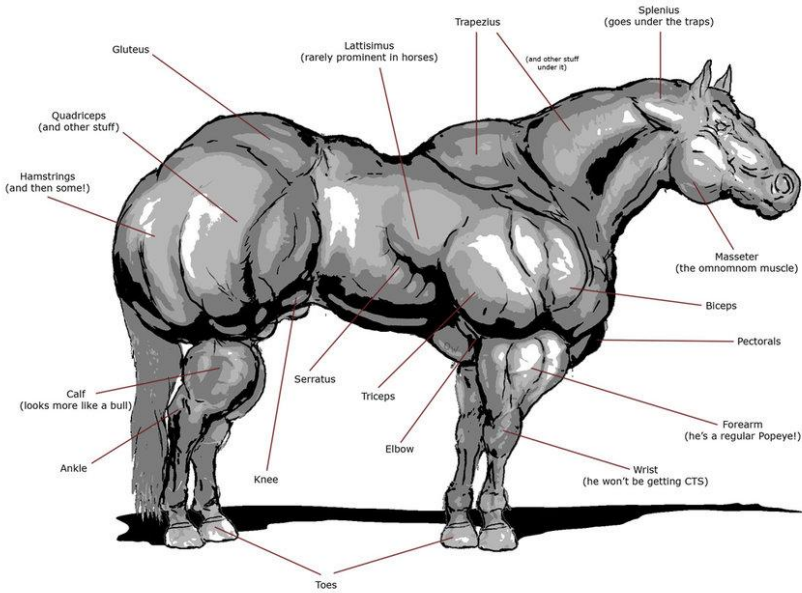
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Have we gone from:

Orcawolf's Equine Muscle Chart
muscular anatomy the quick way



Chart, Artwork © 2008 Orcawolf



Pee Wee

Arnold



Clenbuterol and Muscle

- Anabolic Activity

- Weak, if at all
- 3 of 4 anabolic genes down-regulated
- Large doses for muscle changes

****Not seen in tested Thoroughbreds**

Clenbuterol and Muscle

- Repartitioning
 - Fat-free muscle
 - Fiber type
 - Exercise counteracts/delays
 - Decreases aerobic performance

Why a Change in Appearance?

“The scientist is not a person who gives the right answers, he's one who asks the right questions.”

— Claude Lévi-Strauss

Why a Change in Appearance?

- Anabolic
- Repartitioning
- Sub-clinical Disease

Respiration DOES Affect Performance

- IAD - second leading cause of wastage in the Thoroughbred industry behind lameness of all types.
- Respiratory problems accounted for 20.5% of lost training days.

What Have I Seen?

- No muscle loss
- No change in energy level
- No increase in disease

- Not much of anything...

Veterinary data

- Scopes

- Antibiotic usage

“Being open-minded is hazardous
to your own opinion”

— Me

Clenbuterol Testing

- ❖ **Testing for abuse**
- ❖ **Balancing treatment with integrity**

