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# HIGH ALTITUDE DISEASE, PAP, FEEDLOT HYPERTENSION, AND RESPIRATORY ISSUES

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 TEXAS TECH UNIVERSITY

**HIGH ALTITUDE DISEASE, PAP,  
FEEDLOT HYPERTENSION, AND  
RESPIRATORY ISSUES**

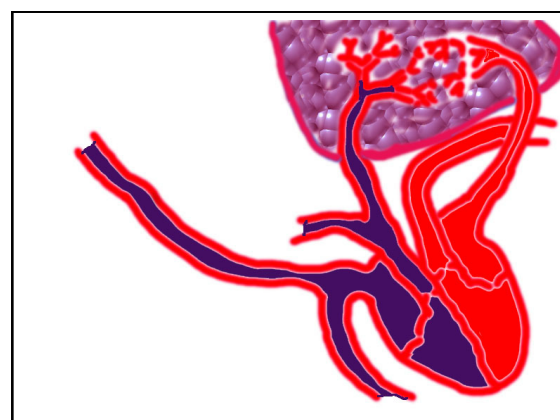
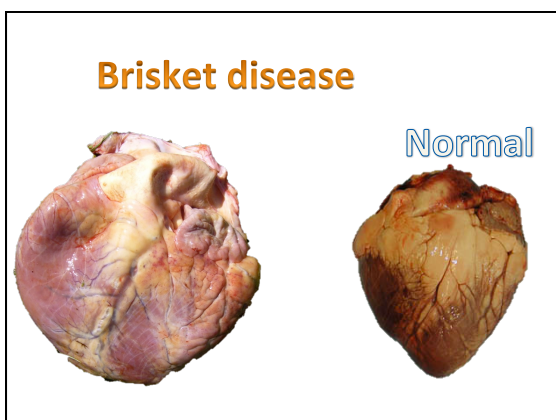
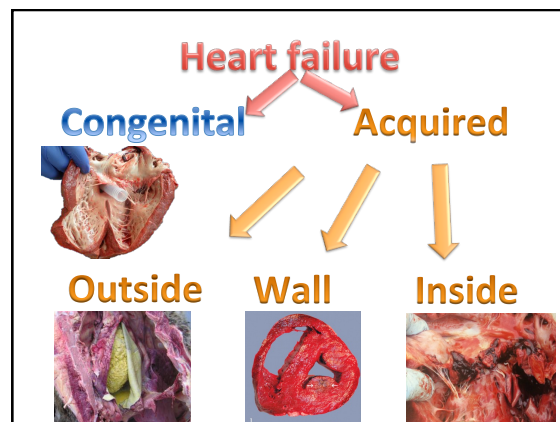
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*Range Beef Cow Symposium,  
November 18<sup>th</sup>, Loveland, CO.*

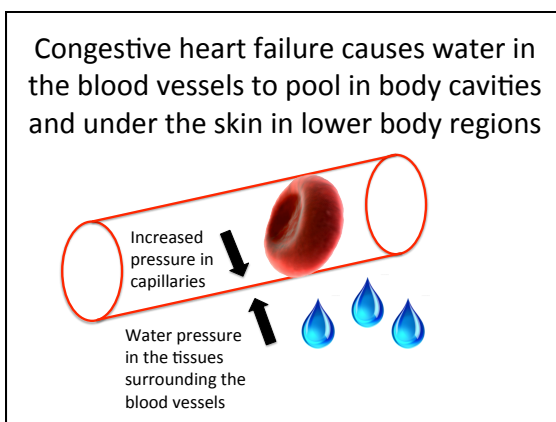
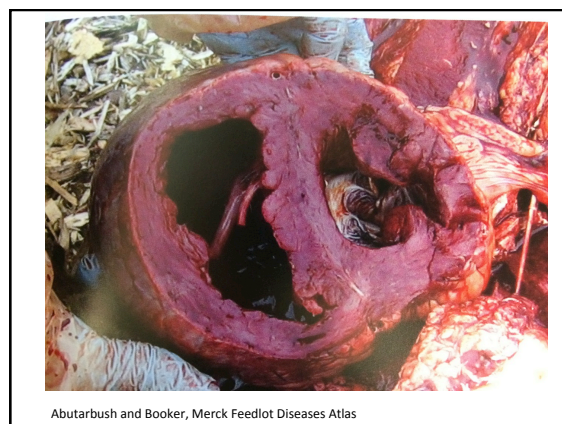
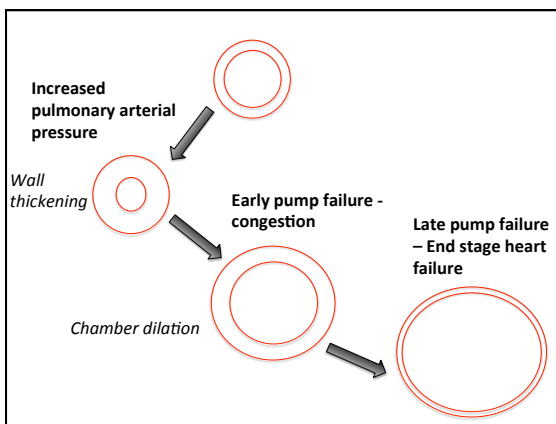
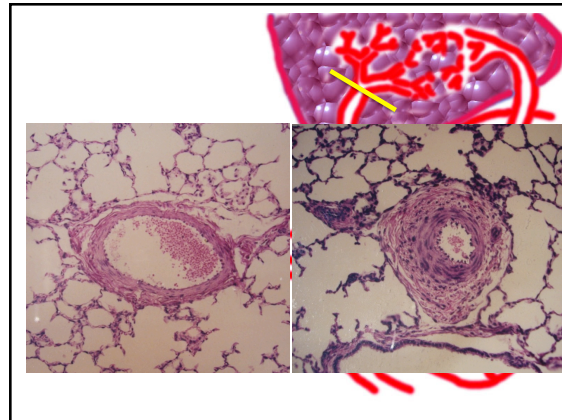
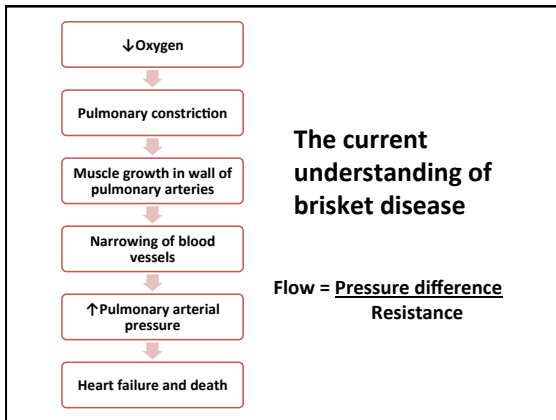


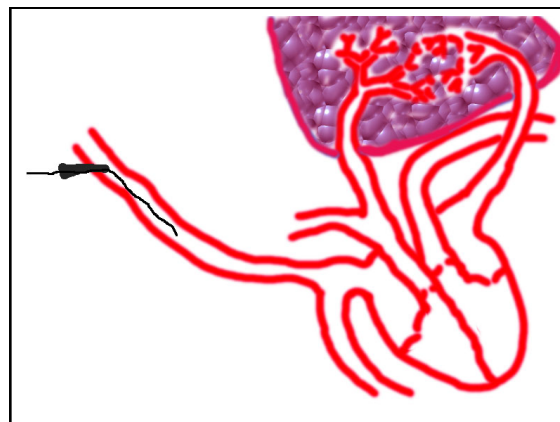
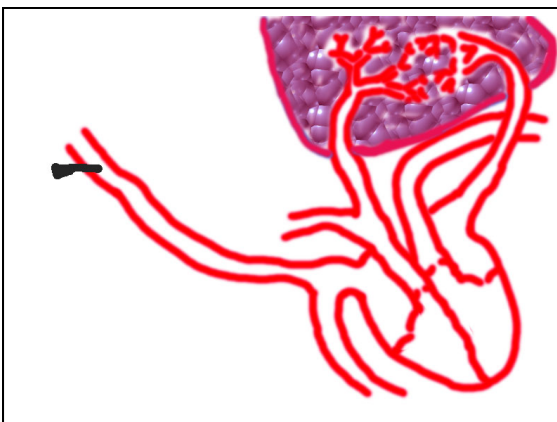
1. BRISKET DISEASE, or congestive heart failure, IS NOT UNIQUE TO HIGH ALTITUDE
2. Congestive heart failure is becoming INCREASINGLY PROBLEMATIC
3. TAKE A CLOSER LOOK – it may not be a chronic pneumonia!

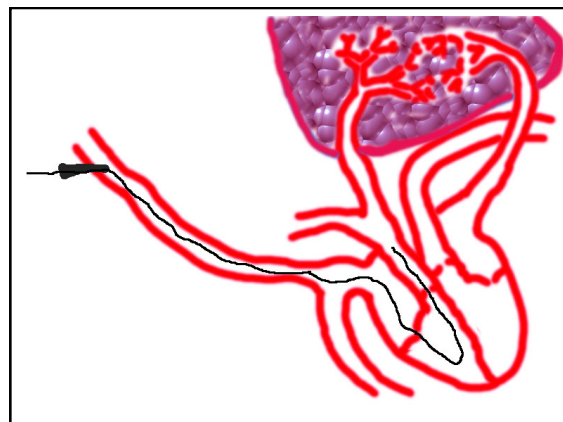
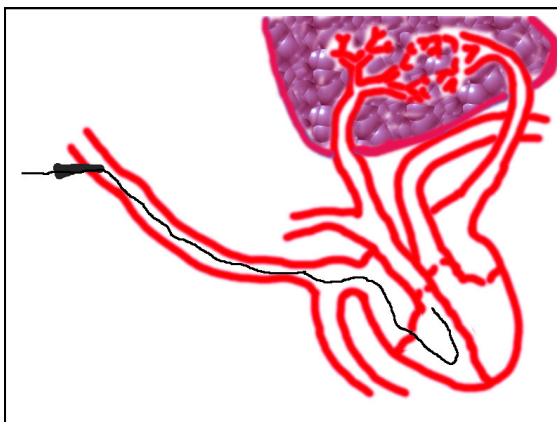
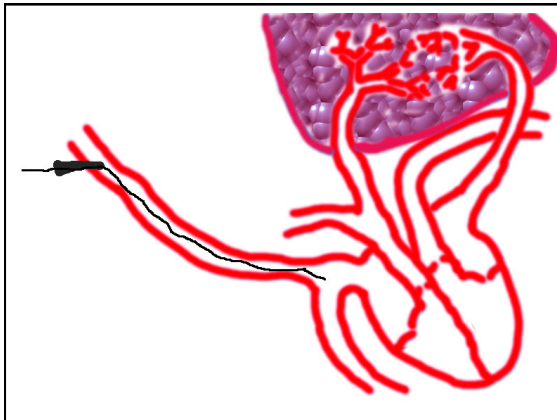
**OVERVIEW** 

1. Background: the various types of heart failure
2. What is congestive heart failure?
3. What are we doing to manage it?
4. How big of a problem is it? And what are the risk factors?
5. How do pulmonary arterial pressures change with age?
6. Summary









#### The importance of PAP screening of the breeding herd



Variable	n	Survived		Died		p-value
		n	Mean $\pm$ SD	n	Mean $\pm$ SD	
Mean PAP, mm Hg	51	39.5 $\pm$ 5.1		6	48.8 $\pm$ 11.1	< 0.001

Calves with high PAP at 3 months of age are significantly more likely to die of brisket disease

Congestive heart failure is becoming INCREASINGLY PROBLEMATIC



### How big of a problem is congestive heart failure?

Study of 1.6 million cattle

Feedlot Health Management Services (Okotoks, AB, Canada) provided the data.

10 Canadian feedlots: 657-1,145 m (2,150 - 3,760 ft.)

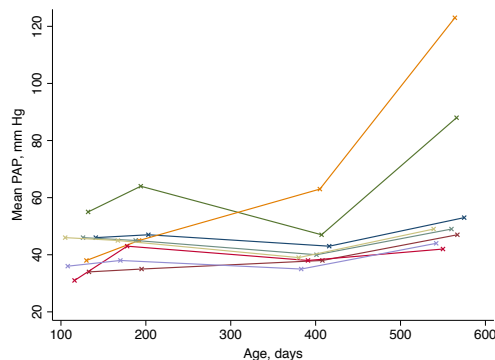
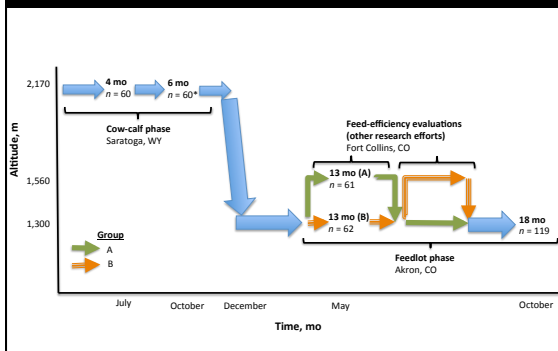
5 US feedlots: 596-1,282 m (2,000 - 4,210 ft.)

Variable	Category
Feedlot	15 feedlots identified by a unique number
Placement year	2000, 2004, 2008 and 2012
Season of placement	January 1 <sup>st</sup> to April 30 <sup>th</sup> May 1 <sup>st</sup> to August 31 <sup>st</sup> September 1 <sup>st</sup> to December 31 <sup>st</sup>
Age	Cal or yearling
Gender	Male or female
Risk of undifferentiated fever/ respiratory disease	High or low

### Risk of CHF from the year 2000 to the year 2012

Year	Disease	Attack risk per 1,000 cattle		p-value
		Mean	95 % CI	
2000	CHF	0.27	0.18, 0.37	ref.
	DD	1.75	1.32, 2.19	
2004	CHF	0.37	0.26, 0.47	0.18
	DD	1.77	1.40, 2.15	
2008	CHF	0.61	0.45, 0.78	< 0.001
	DD	2.32	1.82, 2.81	
2012	CHF	0.52	0.37, 0.67	0.003
	DD	2.82	2.13, 3.50	

### How do pulmonary arterial pressures change with age?



**BRISKET DISEASE IS NOT  
UNIQUE TO HIGH ALTITUDE**

