

# BREEDING SOUNDNESS EXAMINATION (BSE)

The breeding soundness examination (BSE) involves a complete and systematic evaluation of the reproductive potential of a given male.

1. General physical examination

2. Mating ability

3. Libido

4. Inspection and palpation of the genital organs

5. Assessment of sperm production and quality

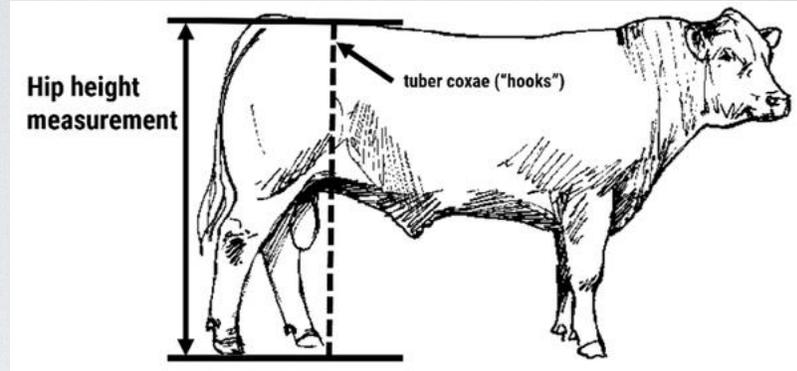


<https://www.ntnews.com.au/business/>

# WHY BSE



Deciding for future



Stud selection

Population management

Genetic selection

Genetical Traits (Genotype & Phenotype)

Structural soundness

Herd Health

Fertility

Service capacity

Estimated Breeding value (EBVs)

Estimated Progeny Differences DVs

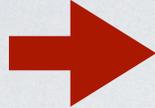
Preservation strategies

Trait	Hol.	Jer.	Trait	Hol.	Jer.
<b>Production traits</b>					
ME (mature equivalent) milk yield	0.30	0.35	Lifetime actual milk yield		0.15
ME fat yield	0.30	0.35	Lifetime actual fat yield		0.15
ME protein yield	0.30	0.35	Lifetime actual protein yield		0.14
Fat percent	0.58		Days of productive life		0.13
Protein percent	0.51		Somatic cell score, lactation average		0.10
Lactose percent	0.43		Lifetime net income		0.20
Age at first calving	0.14		Productive life, USDA		0.085
First calving interval	0.05				
<b>Linear type traits</b>					
Stature	0.42	0.39	Feet and leg score		0.17
Strength	0.31	0.25	Fore udder attachment	0.29	0.22
Body depth	0.37	0.25	Rear udder height	0.28	0.26
Dairy form	0.29	0.23	Rear udder width	0.23	0.23
Rump angle	0.33	0.31	Udder cleft	0.24	0.20
Thurl width	0.26	0.20	Udder depth	0.28	0.38
Rear legs side view	0.21		Front teat placement	0.26	0.24
Rear legs rear view	0.11	0.10	Teat length	0.26	0.26
Foot angle	0.15	0.10	Final score	0.29	0.23
<b>Health, fitness, and reproductive traits</b>					
Dry matter intake	0.30		Incidence of mastitis		0.06
Body condition score	0.25		Incidence of ketosis		0.01
Energy balance	0.20		Incidence of retained placenta		0.02
Persistency of milk yield	0.11		Incidence of metritis		0.01
Days to first breeding	0.04		Days to last breeding		0.06
Number of inseminations	0.02		Interval to first luteal activity		0.16

# 1. General physical examination



History



Complete description (ID, Name, age, breed, health, total rep. history)

Initial Observation



Attitude, senses, Hair coat, Gait, posture, BCS, Conformation,

Examination (Head to toe)

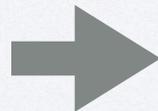
Visual examination

Pre-copulatory, copulatory and post copulatory

Hand-on examination

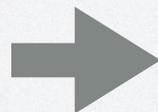
GENERAL PHYSICAL EXAMINATION

External reproductive organs



Inspection, Palpation, Measurement,

Internal reproductive organs

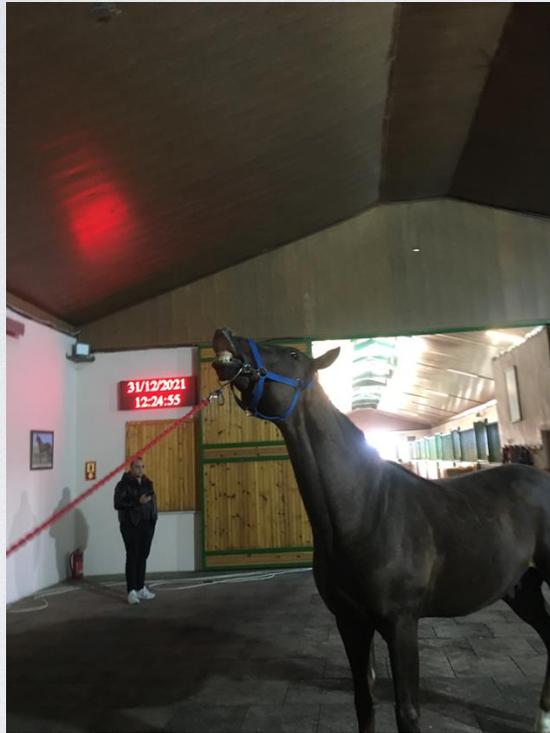


Thermal and USG monitoring



# 1. General physical examination

## Visual Examination



## Hand-on examination



Sahip	Veteriner Fakültesi	Tarih	05/12/2014
Adres	Lalahan	Yaş	2
Kulak Numarası	TR061225206	İrk	Ankara
PARAMETRE			
Vucüt Kondisyon Skoru	2,75	1 to 2 3 to 4 5	İyi Şüpheli Yetersiz
Fiziksel Muayene			
Göz	Normal Abnormal Hereditabile defect	1	İyi Şüpheli Yetersiz
Ağız/Çene	Normal Abnormal Hereditabile defect	1	İyi Şüpheli Yetersiz
Ayak/Bacak	Normal Abnormal Hereditabile defect	1 Hoof	İyi Şüpheli Yetersiz
Prepusyum	Normal Mild Pizzle rot Severe Pizzle rot Frostbite	1	İyi Şüpheli Yetersiz Yetersiz
Penis	Normal Adhesions Deviations	1	İyi Şüpheli Yetersiz
Skrotum	Normal Dermatitis Frostbite Mange Cryptorchidism Hernias Epididymitis Abscesses Granulomas Varicocele Testicular Atrophy		İyi Şüpheli Yetersiz Yetersiz Yetersiz Yetersiz Yetersiz Yetersiz Şüpheli Şüpheli
Scrotal Circumference	Cm 5 to 14 Ay > 14 Ay	<30 30 to 36 cm >36 cm <32 cm 32-40 cm >40	Şüpheli İyi İstisnai Şüpheli İyi İstisnai
Testiküler US	Skor Echo	0 1 2 3	İyi İyi Şüpheli Yetersiz
GNRH challenge test	T0 Süre T60 Süre Delta Süre		TESTO TEST60 Delta Test
Sperm Motillite	0% 10-30% 31-70% 71-100%		Yetersiz Şüpheli İyi İstisnai
Sperm Morfoloji	<30% 30-50% 51-80% >80%		Yetersiz Şüpheli İyi İstisnai

# HOW TO GET CLOSE ?

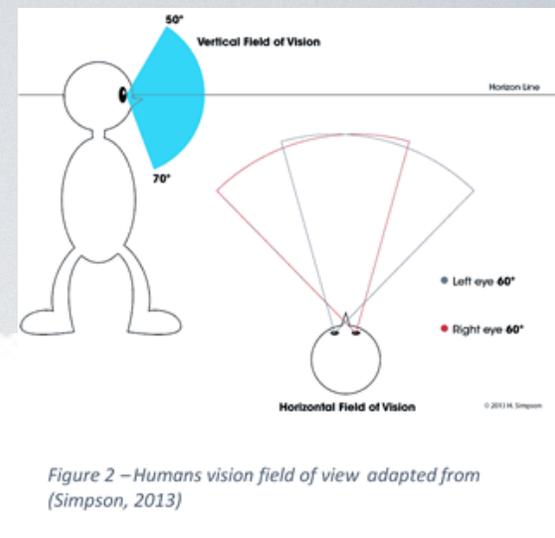
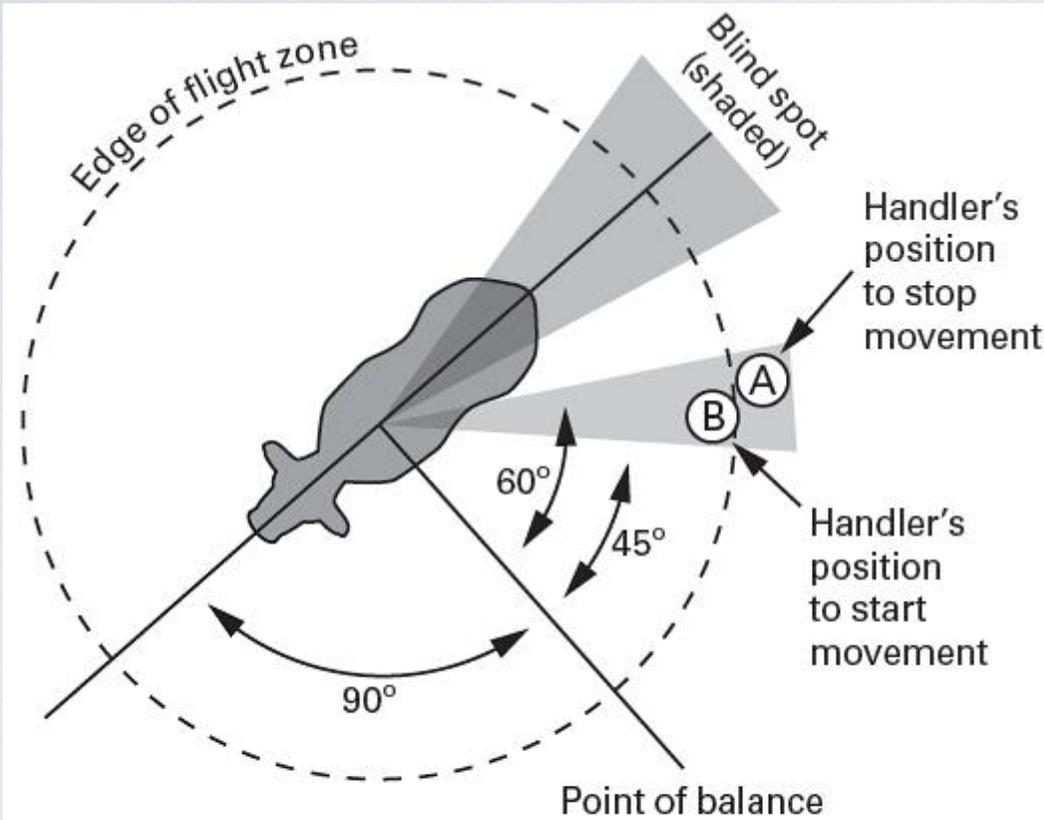


Figure 2 – Humans vision field of view adapted from (Simpson, 2013)



A stressed cow may kick, charge, or ram workers who enter its flight zone or blind spot during various work activities.

Image courtesy of Migrant Clinicians Network

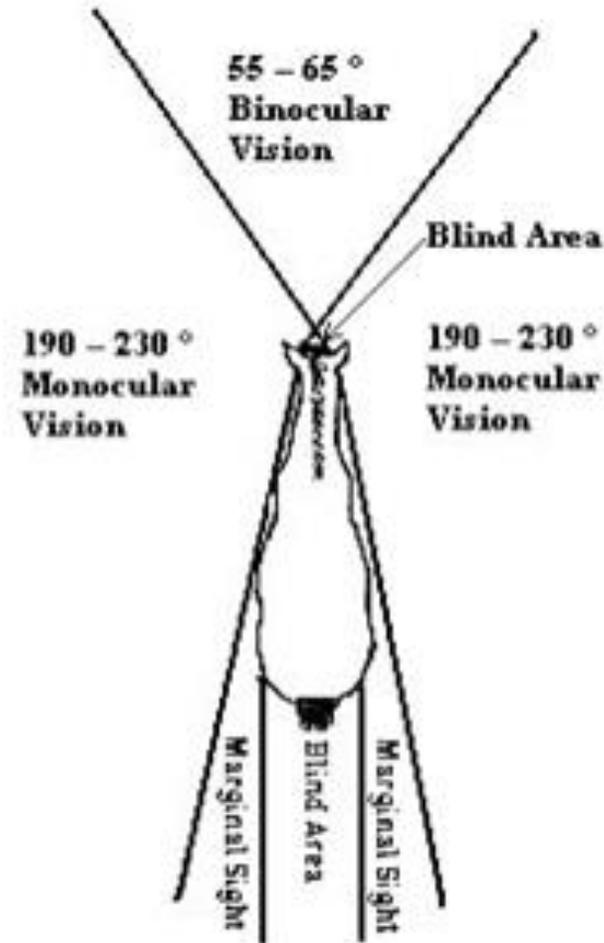


Figure 1 – Horse's field of vision adapted from (Williams, 2004)

# GENERAL PHYSICAL EXAMINATION

Sense of sight



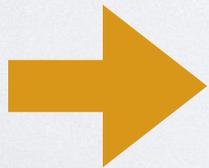
Hearing



Smell



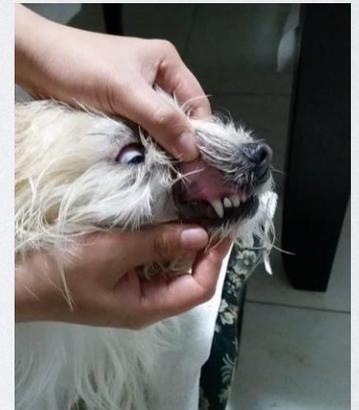
Anxiety



Aggression



Touch



# GENERAL PHYSICAL EXAMINATION

Body Condition score (BCS)



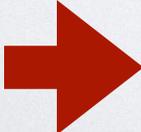
Evaluation of fat

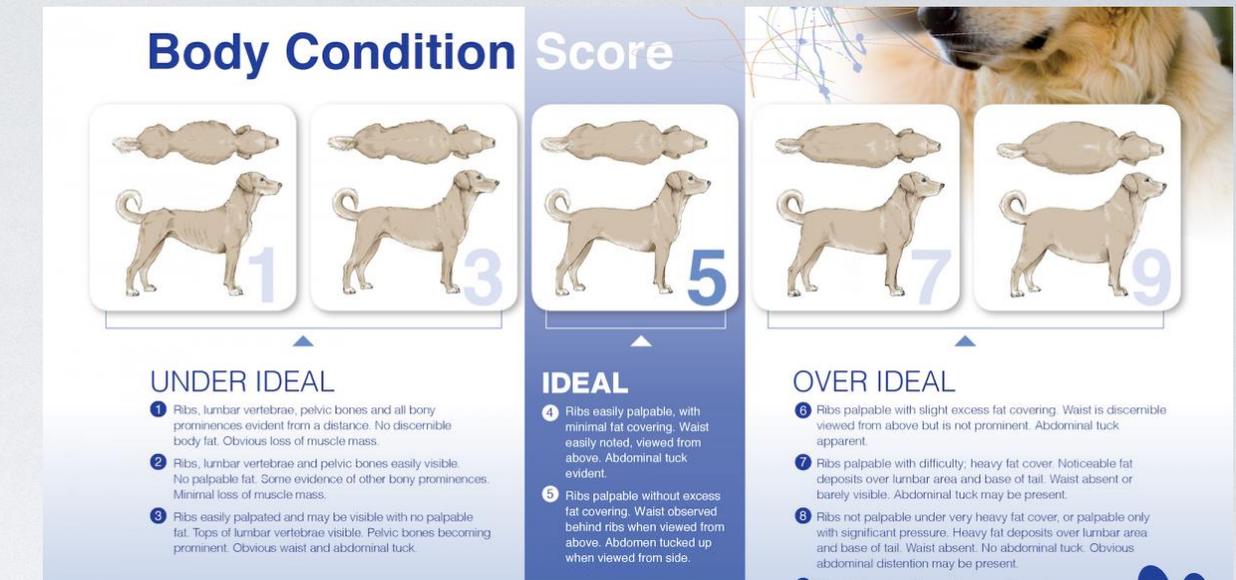


Productivity, reproduction and health



Nutritional deficiencies, health problems and improper herd management

Decrease libido  Service capacity



 **TRANSLATIONAL ANIMAL SCIENCE**

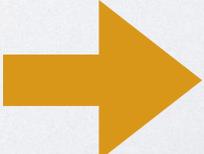
[Transl Anim Sci.](#) 2022 Jan; 6(1): txac001. PMID: PMC8903886  
Published online 2022 Jan 9. doi: [10.1093/tas/txac001](https://doi.org/10.1093/tas/txac001) PMID: [35274080](https://pubmed.ncbi.nlm.nih.gov/35274080/)

**The effects of differing nutritional levels and body condition score on scrotal circumference, motility, and morphology of bovine sperm**

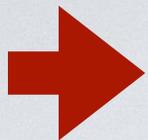
[Taylor D Harrison](#), [Elizabeth M Chaney](#), [Kiernan J Brandt](#), [Taylor B Ault-Seay](#), [Liesel G Schneider](#), [Lew G Strickland](#), [F Neal Schrick](#), and [Kyle J McLean](#)<sup>✉</sup>

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Transl Anim Sci

Extreme low and high BCS  Abnormal sperm

High BCS



Low T

OBESE

Hypogonado trophic hypogonadism



a reduction in sex hormone binding globulin (SHBG) production by the liver



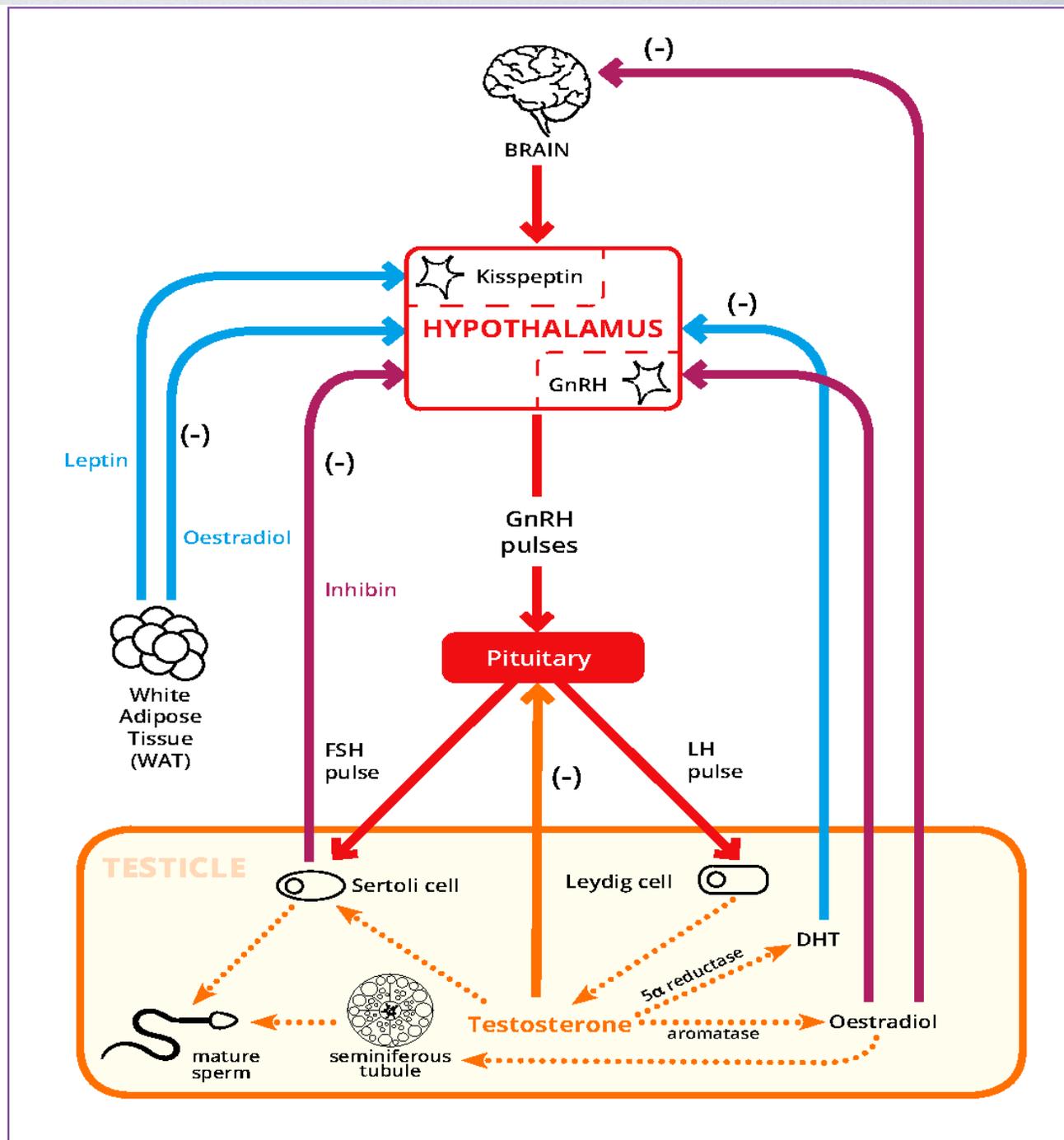
Greater adipocyte aromatase activity



Resulting in an increase in the conversion of testosterone to estradiol



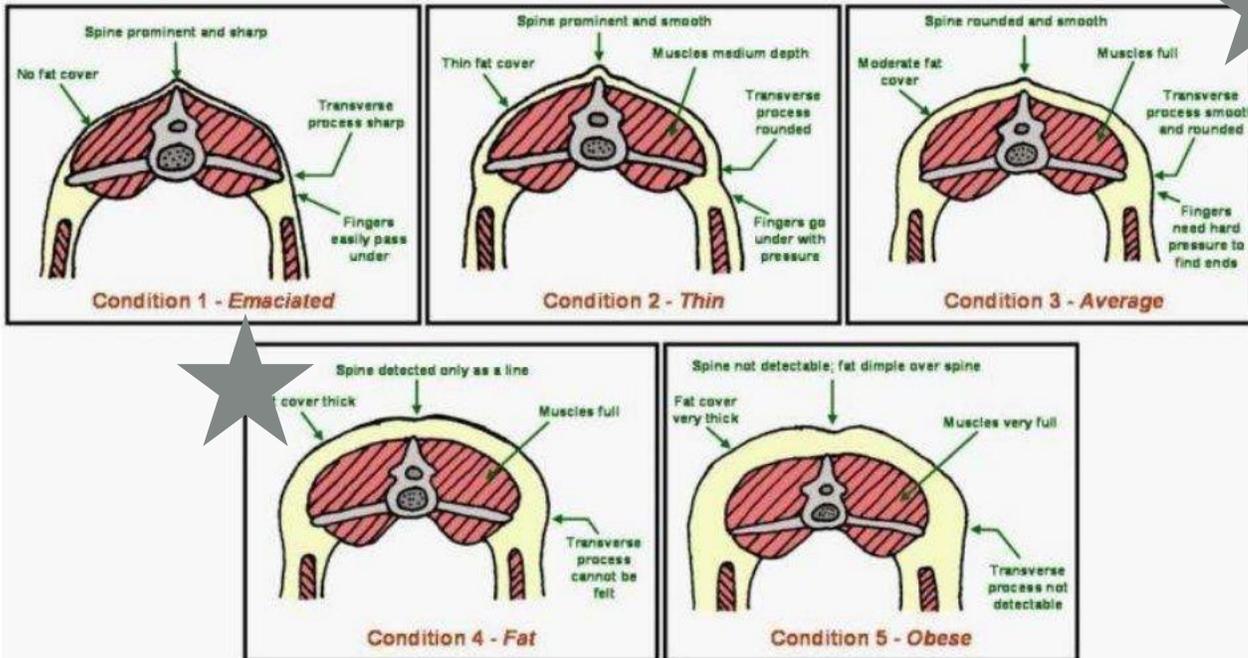
Altered hypothalamic and pituitary negative feedback



# GENERAL PHYSICAL EXAMINATION

## Body Condition score (BCS)

### Body Condition Scores – Sheep/Goats



Adapted from "Body Condition Scoring of Sheep" by J.M. Thompson and H. Meyer (Oregon State University)

Table 2. Key points for condition scoring beef cows.

Reference point	1	2	3	4	5	6	7	8	9
Physically weak	yes	no	no	no	no	no	no	no	no
Muscle atrophy <sup>1</sup>	yes	yes	slight	no	no	no	no	no	no
Outline of spine visible	yes	yes	yes	slight	no	no	no	no	no
Outline of ribs visible	all	all	all	3 to 5	1 to 2	0	0	0	0
Fat in brisket and flanks	no	no	no	no	no	some	full	full	extreme
Outline of hip and pin bones visible	yes	yes	yes	yes	yes	yes	slight	no	no
Fat udder and patchy fat around tailhead	no	no	no	no	no	no	no	slight	yes
Backfat estimate, inches	0	0	.05	.11	.19	.29	.41	.54	.68

<sup>1</sup> Muscles of loin, rump, and hindquarter are concave, indicating loss of muscle tissue.



Fig. 1. Condition score 1—severely emaciated.



Fig. 4. Condition score 4—slightly thin.



Fig. 2. Condition score 2—extremely thin.



Fig. 5. Condition score 5—moderate.



Fig. 3. Condition score 3—very thin.

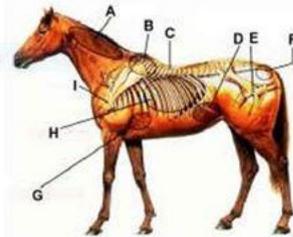


Fig. 6. Condition score 6—slightly fleshy.

# GENERAL PHYSICAL EXAMINATION



## BODY CONDITION SCORING CHART



### Areas of Emphasis for Body Condition Scoring

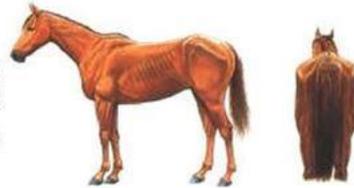
- A: Thickening of the neck
- B: Fat covering the withers
- C: Fat deposits along backbone
- D: Fat deposit on flanks
- E: Fat deposits on inner thigh
- F: Fat deposits around tailhead
- G: Fat deposit behind shoulder
- H: Fat covering ribs
- I: Shoulder blends into neck

### 1 Poor

Animal extremely emaciated; spinous processes, ribs, tailhead, tuber coxae, and tuber ischii projecting prominently; bone structure of withers, shoulders, and neck easily noticeable; no fatty tissue can be felt.

### 2 Very Thin

Animal emaciated; slight fat covering over base of spinous processes; transverse processes of lumbar vertebrae feel rounded; spinous processes, ribs, tailhead, tuber coxae, and tuber ischii prominent; withers, shoulders, and neck structure faintly discernable.



### 3 Thin

Fat buildup about halfway on spinous processes; transverse processes cannot be felt; slight fat cover over ribs; spinous processes and ribs easily discernable; tailhead prominent, but individual vertebrae cannot be identified visually; tuber coxae appear rounded but easily discernable; tuber ischii not distinguishable; withers, shoulders, and neck accentuated.



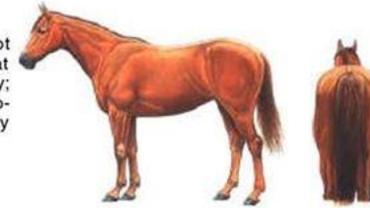
### 4 Moderately Thin

Slight ridge along back; faint outline of ribs discernable; tailhead prominence depends on conformation, fat can be felt around it; tuber coxae not discernable; withers, shoulders, and neck not obviously thin.



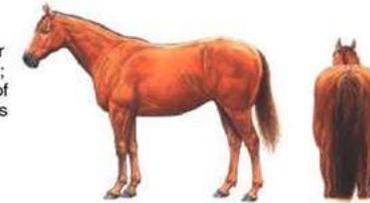
### 5 Moderate

Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt; fat around tailhead beginning to feel spongy; withers appear rounded over spinous processes; shoulders and neck blend smoothly into body.



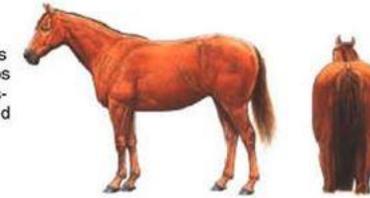
### 6 Moderately Fleshy

May have slight crease down back; fat over ribs fleshy/spongy; fat around tailhead soft; fat beginning to be deposited along sides of withers, behind shoulders, and along sides of neck.



### 7 Fleshy

May have crease down back; individual ribs can be felt, but noticeable filling between ribs with fat; fat around tailhead soft; fat deposited along withers, behind shoulders, and along neck.



### 8 Fat

Crease down back; difficult to feel ribs; fat around tailhead very soft; area along withers filled with fat; area behind shoulder filled with fat; noticeable thickening of neck; fat deposited along inner thighs.



### 9 Extremely Fat

Obvious crease down back; patchy fat appearing.



ASSURANCE  
Excellence in Equine Nutrition

Henneke et al., 1983

Illustrations by Japan Racing Association

# GOOD CONFORMATION



# GOOD CONFORMATION



\$60, 2009

\$1000, 2020

Over his lifetime Toystory produced 2.4 million units of semen

# GENERAL PHYSICAL EXAMINATION

Locomotor problem ?

## Abnormal Gait



Rupture of flexure tendon

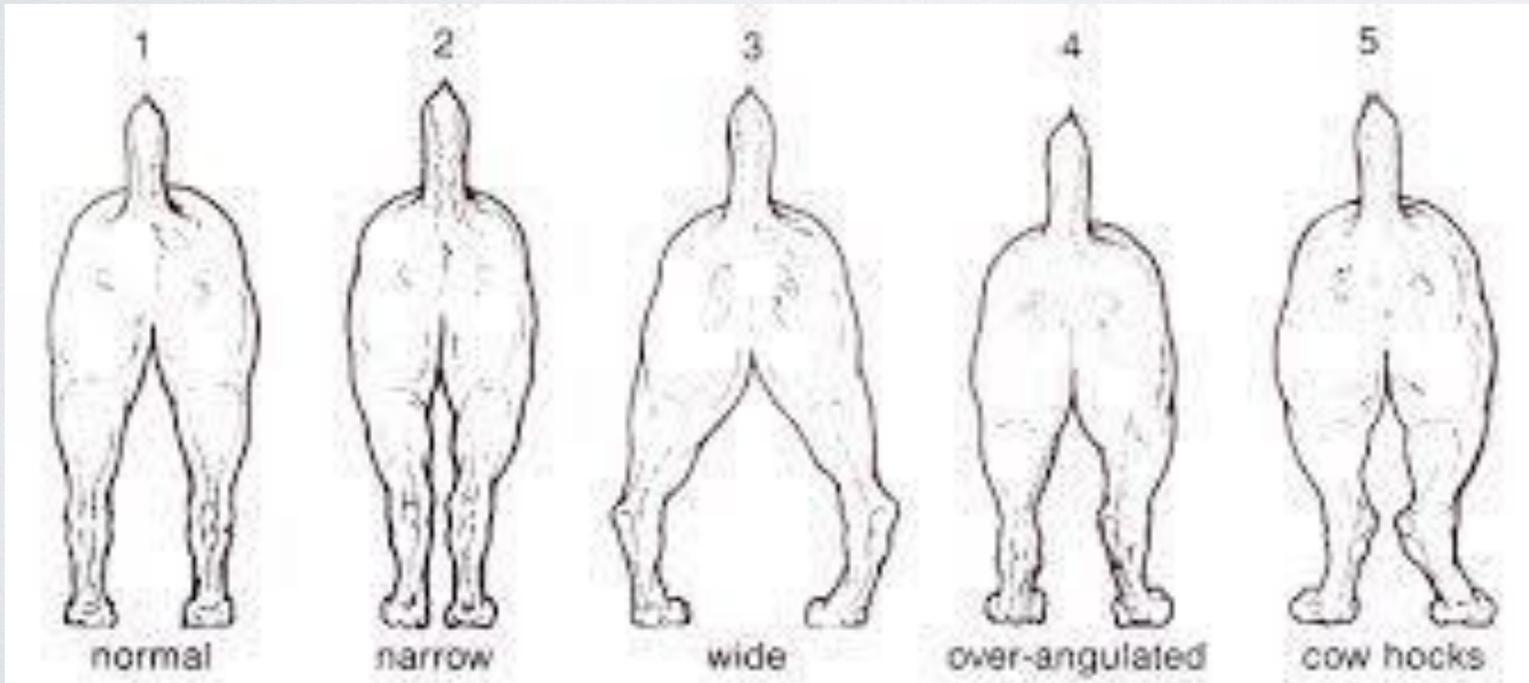


Long toes

# GENERAL PHYSICAL EXAMINATION

Abnormal Gait

Hereditary problem ?



Spider leg syndrome  
chondrodysplasia

# GENERAL PHYSICAL EXAMINATION

## Abnormal Gait



Enzootic ataxia

Copper def.

Incoordination of the pelvic limbs and difficulty in locomotion



Opisthotone

B12



Disease or digestive problem ?