

# Body Condition Scoring in Dairy Cattle



BCS > 4.00

BCS > 3.75

BCS < 3.00

BCS < 2.50

BCS > 4.00



## BODY CONDITION SCORING

Body condition scoring (BCS) refers to the relative amount of subcutaneous body fat or energy reserve in the cow. It is an important management tool for maximizing milk production and reproductive efficiency while reducing the incidence of metabolic and other peripartum diseases.

### The 5-point Body Conditioning Scoring System

A 5-point scoring system developed in 1982<sup>1</sup> measures the relative amount of this subcutaneous fat. Most BCS systems in dairy cattle use this 5-point scoring system with quarter-point increments. An organized process for determining body condition scoring was created at the University of Pennsylvania<sup>2</sup> to help achieve consistency and repeatability in BCS. This system concentrates its accuracy toward the mid-range scores (2.50 to 4.00), which includes most





cows. This mid-range is the most critical for making management decisions. Scores outside this range indicate significant problems (1.00 denotes a very thin cow, while 5.00 indicates an excessively fat cow). Exact BCS scoring of extremes is less critical.

This BCS process directs the scorer to view certain anatomical sites in the cow's pelvic and loin areas. While the majority of cows conform to the described criteria, a few cows may not fit exactly. The final BCS may need to be adjusted based upon consideration of observations from all designated areas. Using the quarter-point system may cause many cows to fall between two scores (e.g., between 2.75 and 3.00). Under those circumstances, the scorer will need to make a judgment as to the closest score. Quarter-point differences in scores are not significant under most circumstances. The diagrams inside this piece will help guide you through the scoring process.

1 Wildman, EE, GM Jones, PE Wagner, RL Boman, HF Trout, and TN Lesch. 1982. A dairy cow body conditioning scoring system and its relationship to selected production variables in high producing Holstein dairy cattle. *J Dairy Sci.* 65:495.

2 Ferguson, JD, DT Galligan, and N Thomsen. 1994. Principal descriptor of body condition score in Holstein cows. *J Dairy Sci.* 77:2695-2703.

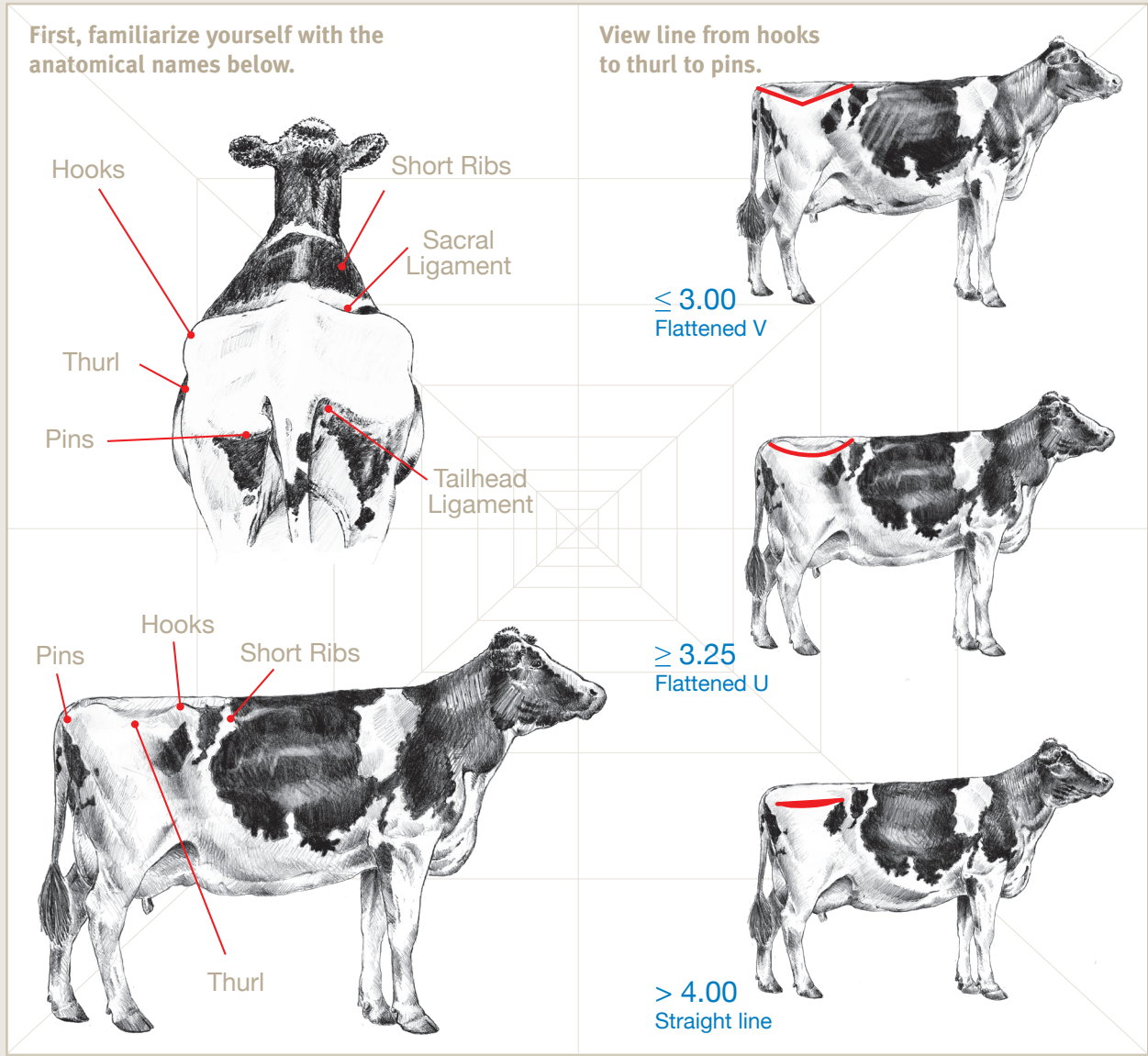


BCS <math>< 2.50</math>



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Begin by viewing the cow's pelvic area from the side. Check the line formed from hooks to thurl to pins to determine if it is angular (V-shaped) or crescent (U-shaped). If the line forms a flattened V, the BCS  $\leq 3.00$ . If the line forms a crescent or a flattened U, the BCS  $\geq 3.25$ . If the line is straight, the BCS  $> 4.00$ . This is the most difficult part of the scoring process, especially if the cow is near the 3.00 or 3.25 score.



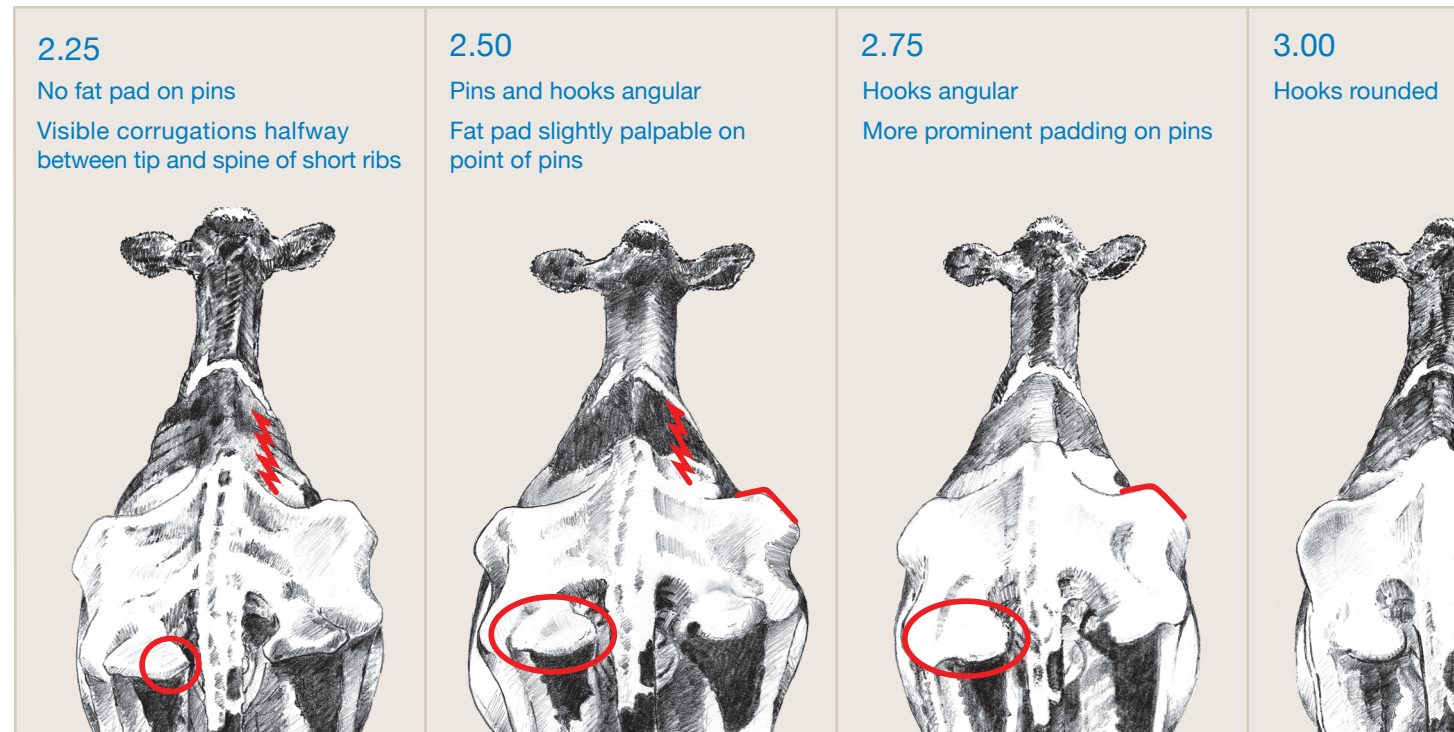
## HOW TO DETERMINE BO

### 5-Point Scoring System

Next, view the cow from the rear to observe the amount of padding over the hook and pin bones and the prominence of the tailhead and sacral ligaments. This helps determine an appropriate quarter-point score. Once the BCS is identified, the scorer should continue the evaluation process an additional step (e.g., using tactile evidence) to confirm the final score.



### BCS Working Range (2.25 - 3.75)

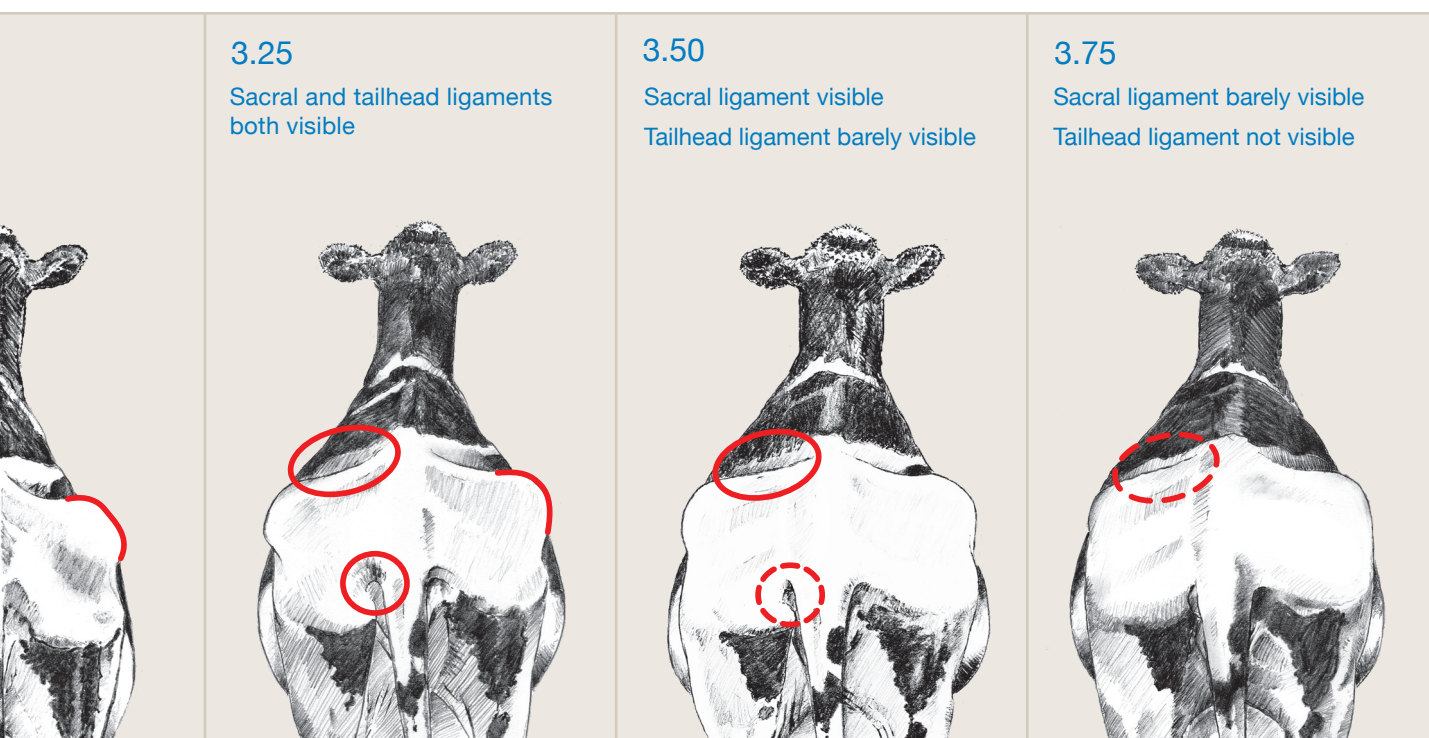
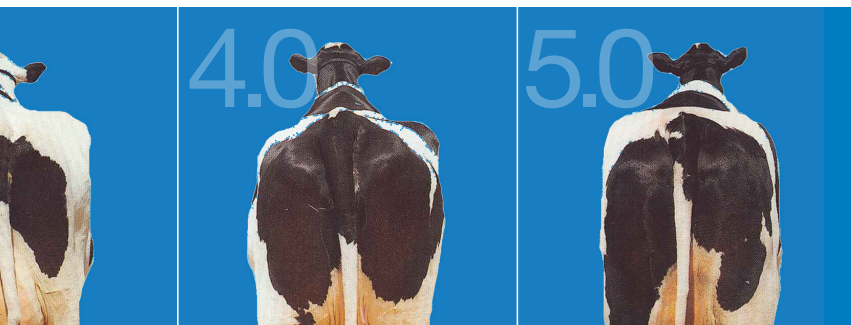


If no fat pad is evident on pins, BCS is < 2.50. Look for corrugations along the top of short ribs as fat covering disappears. If corrugations are visible halfway between tip and spine of short ribs, BCS is 2.25. If corrugations are visible three-quarters of the distance between tip to spine, BCS is 2.00. If thurl is prominent and spine is saw-toothed, BCS is < 2.00 (indicating a very poor condition).

Check the pins and hooks. If pins are angular, BCS is < 2.75. If fat pad is slightly palpable on point of pins, BCS is 2.50. More prominent padding on pins indicates a BCS of 2.75. If the hooks are angular, BCS is  $\leq$  2.75. If the hooks are rounded, BCS is 3.00.



## BODY CONDITION SCORING

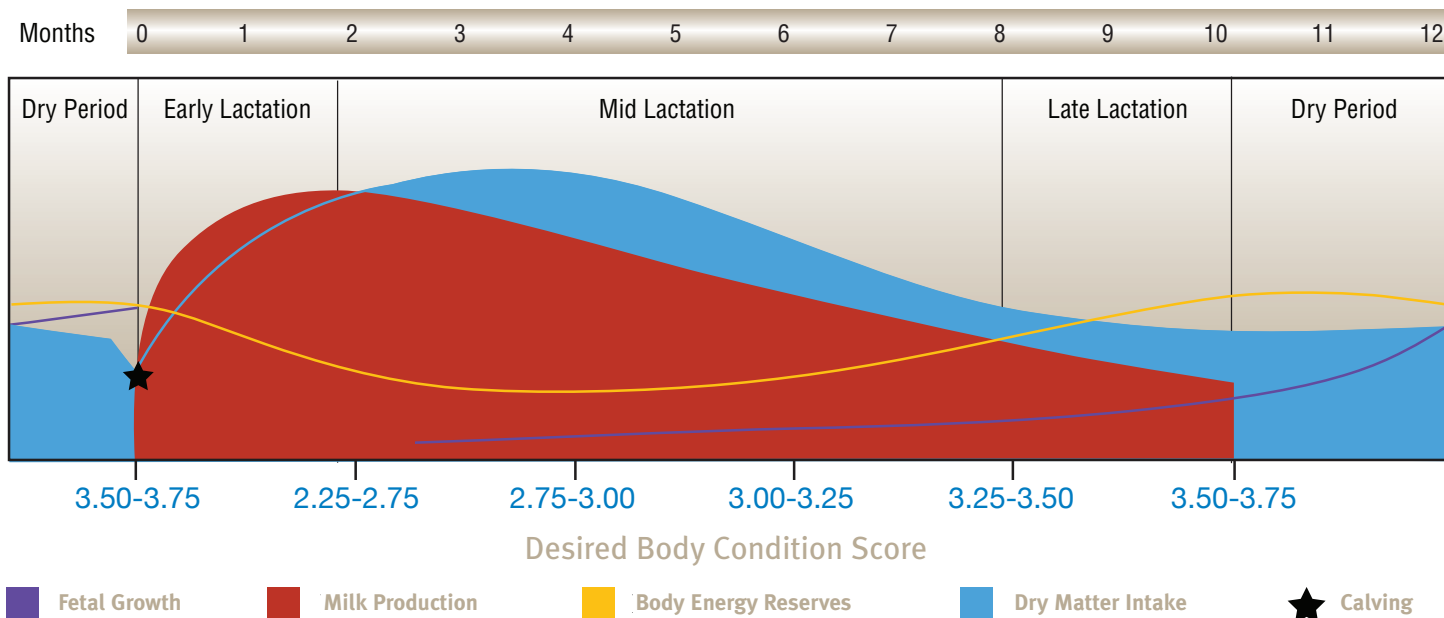


If a BCS of 3.00 or greater is determined, observe the sacral and tailhead ligaments. If they are both clearly visible, the BCS is 3.25. If sacral ligament is visible, but the tailhead ligament barely visible, BCS is 3.50. If sacral ligament is barely visible and the tailhead ligament not visible, BCS is 3.75. If both the sacral and tailhead ligaments are not visible, BCS is  $\geq 4.00$ .

To further define a quarter-point score  $\geq 4.00$  as indicated by a flat thurl, use the following guidelines. If tip of short ribs is barely visible, BCS is 4.25. If thurl is flat and pins are buried, BCS is 4.50. If hooks are barely visible, BCS is 4.75. If all bony protrusions are well rounded, the BCS is 5.00.



# PROACTIVE MANAGEMENT THROUGHOUT LACTATION CYCLE



## Goals Challenges Management Tips

Goals	Challenges	Management Tips
<b>Calving</b>		
Deliver healthy calf, maintain good appetite, avoid clinical mastitis		
Ideal BCS at calving is 3.50 to 3.75		
DMI is low (1.4 percent of body weight)		
Energy demand can double in first 24 hours		
Examine milk for mastitis		
Disinfect teats before calf nurses or cow is milked		
<b>Calving to Peak Milk</b>		
Maximize milk production, increase intake, maintain low incidence of disease		
Energy needs increase threefold		
Most metabolic and infectious disease occurs in first 2 weeks		
Weight loss can be 2.25 kg/day		
Excessive fat loss predisposes cow to ketosis		
Reduce environmental stresses		
Provide highly palatable diet		
Use rations that provide most available energy		
Avoid BCS losses in excess of 1.00		
<b>Peak Milk to Peak Intake</b>		
Reduce time between peak milk and peak intake to 5 or 6 weeks, maintain 90 percent or more of peak production level		
Energy above that needed for maintenance will be used for growth, milk production, and reproduction once positive energy balance is reached; additional energy will replenish body fat		
Keep things constant to minimize loss: consistent diet, animal grouping and cow comfort		

<b>Breeding</b>		
Achieve heat detection efficiency above 80 percent, require fewer than 2 services per conception, improve herd genetics		
First ovulation should occur by 40 days postpartum		
Reproductive performance declines when negative energy balance increases		
Focus on heat detection		
Use profit/cow/day as a measure of breeding performance		
Consider longer waiting period before breeding		
<b>Breeding to Dry Period</b>		
Attain BCS of 3.50 to 3.75 by dry off, avoid mastitis, enter dry period free from disease		
Remodeling of mammary gland takes place		
Rumen papillae decrease in size and rumen pH increases		
Volatile fatty acid production and absorption decreases		
Treat every quarter with effective dry cow therapy		
Achieve desired BCS by dry-off period		
Trim feet and administer any needed vaccinations		
<b>Close-up</b>		
Achieve highly efficient rumen by calving, avoid mastitis, maintain intake near 2 percent of body weight		
Nutrient demand increases and feed intake begins to decline		
Low rumen efficiency		
Mastitis susceptibility increases		
Supplement vitamin E and selenium as needed		
Prepare cow for lactating ration by feeding same ingredients now		
Consider anionic salt diet to avoid milk fever		