

lifetimewool

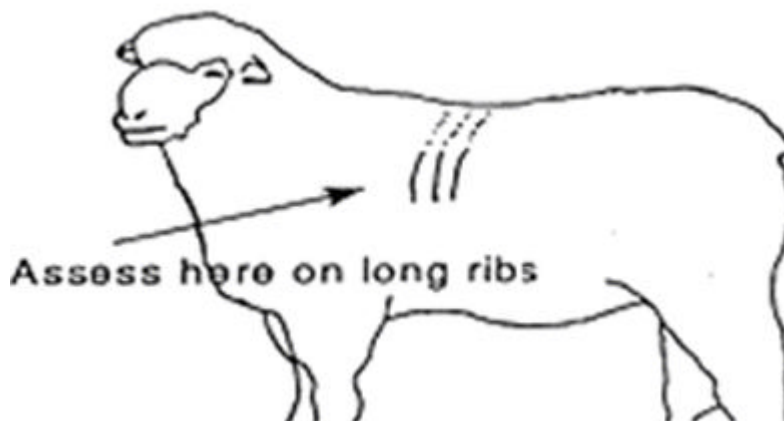
Condition Score and Fat Score - What's the difference?

Condition scoring uses estimates of the flesh cover on the spine and over the ends of the short ribs and the fullness of the eye muscle between the two. Full details on this method can be found in the Lifetimewool toolkit or at the [condition score page \(www.lifetimewool.com.au/conditionscore.aspx\)](http://www.lifetimewool.com.au/conditionscore.aspx).



Condition score is assessed immediately behind the last long ribs over the loin area

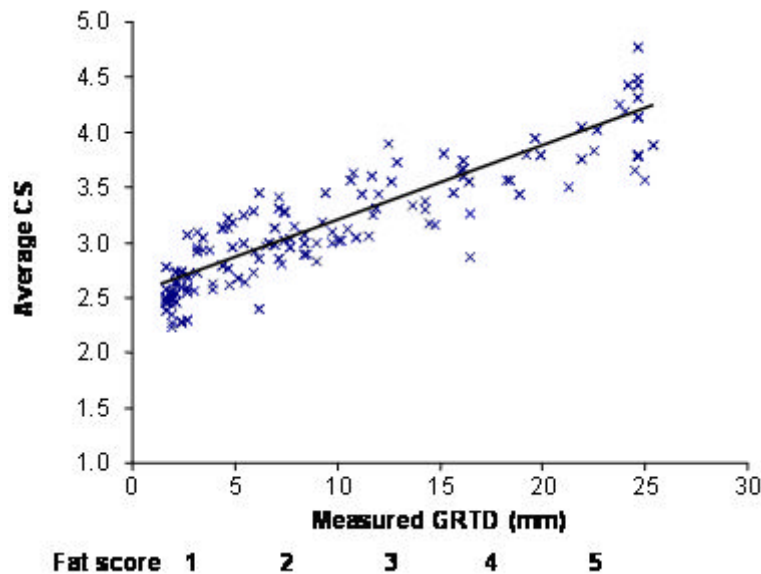
Fat scoring is used with liveweight to estimate the yield of saleable meat (%) of young sheep being marketed for meat. Fat scores are related to 5 mm ranges in total tissue depth (fat and muscle) at the GR site over the 12th rib and their accuracy can be verified by comparing estimated values to measured tissue depth at the GR site (GRTD) on carcasses. See [NSW DPI](#) for further details.



The best site for assessing fatness is over the ribs.

Fat score can also be used to estimate the 'nutritional well-being' or 'reproductive fitness' of adult ewes (see [NSW DPI](#) for more details).

Recently an experiment funded by MLA was conducted (WA 2005 & NSW 2006) to establish the relationship between the two alternative methods of assessing condition. In both experiments four expert assessors of either condition score or fat score independently assessed groups of adult ewes twice at random and the ewes were then slaughtered at a commercial abattoir. In the NSW experiment the experts assessed 90 Merino and 45 BL x Merino ewes and their assessments were compared to the measured tissue depth at the GR site on the carcasses. The assessment of both groups of experts was highly repeatable and the two measures of body condition were highly correlated.



The relationship between measured GRTD on the carcass and the average condition score (CS) assessed by 4 skilled assessors for adult fine and medium merino ewes and adult merino border leister ewes

In the range of GRTD>5mm every 5mm increase in GRTD (i.e. each increase of one fat score) corresponded to a 0.3 increase in condition score in both experiments. However, for flocks being managed around an average condition score target of 2.5 or below, it can be argued that condition score is the superior measure as over half the sheep in the flock would be assessed as fat score one. Ewes with a condition score of 2 to 2.5 represent healthy sheep in 'store' condition that are commercial reality in many flocks in late summer or mid lactation.

Converting between Fat Score and Condition Score

A regression of the average fat score (4 operators) and average condition score (4 operators) from the NSW experiment gives the conversion equation **Condition score = 1.93 + 0.102 * GRTD** (R-squared=88%). While this equation may be our best available option for now, it is important to be aware of the errors introduced when using it for converting between fat score and condition score in general. Since the Average condition score and Average fat score are based on 4 operators at a given time and location, both could have some bias. The errors would also vary depending on the bias of the operator whose scores are being converted.

There is also the question of whether one should convert to the average fat score (estimated GRTD) or whether one should convert to actual GRTD. In the latter case

the conversion equation becomes **Condition score = 2.49 + 0.060 * GRTD** (based on the data from the NSW 'medium merino' and 'first X' groups).

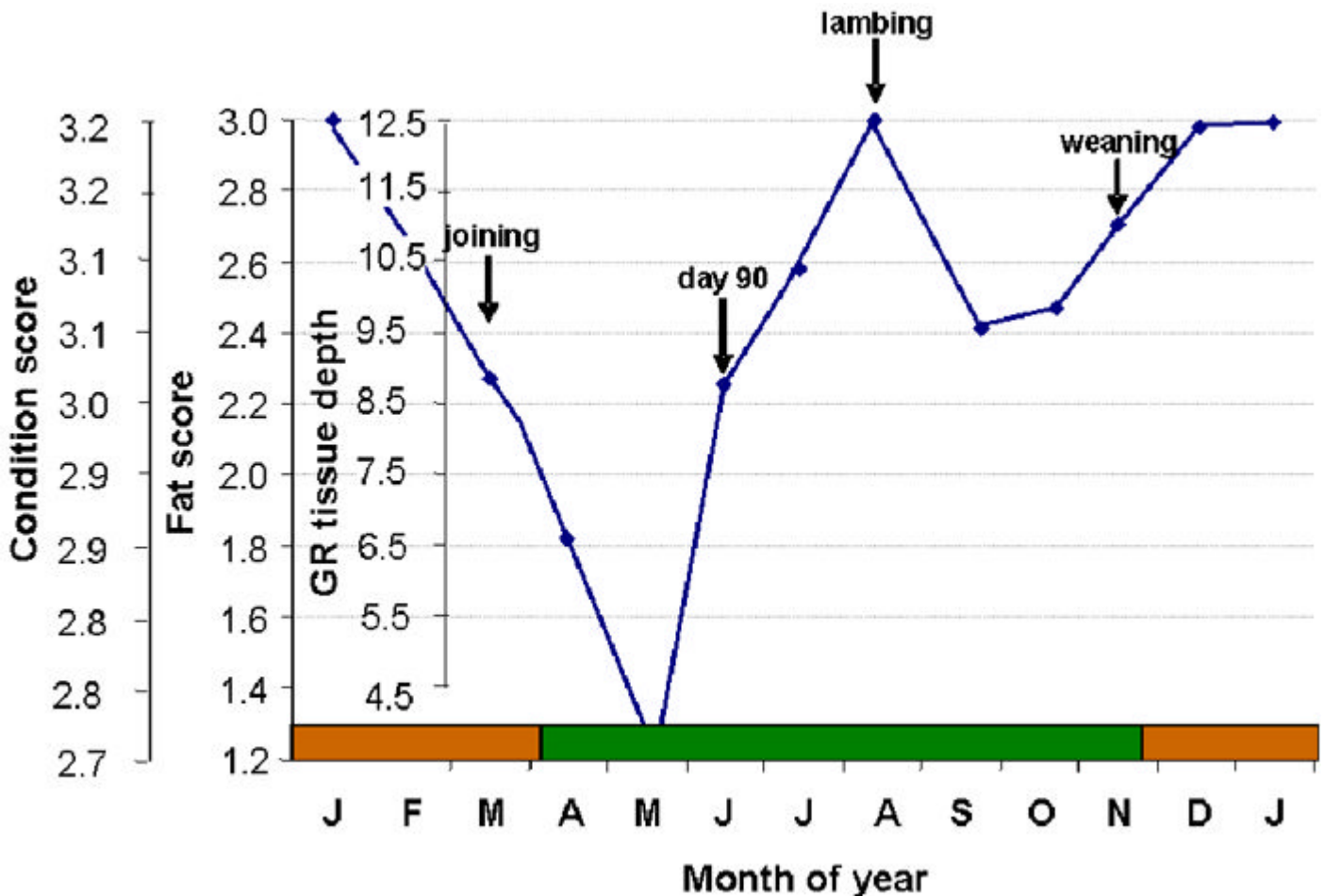
The table below shows the conversion of fat score = 1, 2, 3 and 4 under different scenarios.

	CS (a)	CS (b)
FS=1 (GRTD=3mm)	2.2	2.7
FS=2 (GRTD=8mm)	2.7	3.0
FS=3 (GRTD=13mm)	3.3	3.3
FS=4 (GRTD=18mm)	3.8	3.6

Conversion of fat score (FS mean of the range 1 to 5 etc) to condition score (CS) using the two equations

(a) using NSW Average estimated CS and Average estimated FS: **CS = 1.93 + 0.102 * GRTD**

(b) using NSW Average CS and measured GRTD on carcass: **CS = 2.49 + 0.060 * GRTD**



A condition score profile for a theoretical flock of ewes prepared by the Lifetimewool staff illustrating the conversion to FS or estimated GRTD via the second method (see Table highlighted in yellow).