

## Cortisol and $\beta$ -endorphin levels in peripheral circulation around weaning in primiparous sows

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### **Abstract:**

Peripheral plasma patterns of cortisol and  $\beta$ -endorphin were compared around weaning in primiparous sows. Blood samples for hormone analysis were collected repeatedly on the day before weaning, on the day of weaning and on the day after weaning. Peak cortisol and  $\beta$ -endorphin levels occurred shortly after weaning on the day of weaning. Cortisol concentration on the day of weaning was greater ( $P < 0.001$ ) than on the day before weaning, which in turn was higher ( $P < 0.05$ ) than on the day after weaning.  $\beta$ -Endorphin concentrations on the day before weaning and on the day of weaning were similar, but were greater ( $P < 0.01$ ) on both these days than on the day after weaning. Overall, cortisol and  $\beta$ -endorphin patterns followed a similar trend, which was more marked on the day before weaning and on the day of weaning than on the day after weaning. Pearson's correlation coefficients for peripheral plasma cortisol and  $\beta$ -endorphin secretion were 0.61 ( $P < 0.001$ ) on the day before weaning, 0.63 ( $P < 0.001$ ) on the day of weaning and 0.15 ( $P < 0.13$ ) on the day after weaning. The present study indicates that suckling and weaning are stressful stimuli during which the peripheral plasma concentrations of cortisol and  $\beta$ -endorphin follow a similar trend.