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The effects of ovarian biopsy and blood sampling methods on salivary cortisol and behaviour in  
sows

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#### Abstract

In reproductive physiology research, experimental animals are often subjected to stressful procedures, including blood sampling and biopsy. In this present study, presence of pain or distress induced by four different procedures was examined using a measurement of salivary cortisol levels and activity observations in sows. The treatments were: 1) PAL: The ovary was palpated through the rectum without snaring, 2) TUB: transvaginal ultrasound-guided biopsy of the ovary was conducted without snaring, 3) SNA: a soft rope snare was placed around the maxilla, 4) CAT: A soft rope snare was placed around the maxilla, and an intravenous catheter was inserted through the ear vein of the sows. Activities, social cohesion and other pain-related behaviour, and salivary cortisol concentrations were recorded. Salivary cortisol concentrations in CAT sows increased in response to the procedure ( $P < 0.05$ ), whereas the other treatments did not trigger a significant response. The CAT sows had higher cortisol concentrations than the other groups for 10 min after initiation of the procedures ( $P < 0.01$ ), and they maintained higher cortisol levels than the PAL and TUB groups 15 min post-treatment ( $P < 0.05$ ). Furthermore, the CAT sows showed the highest

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