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## Ultrasonography of the urinary tract in 29 female Saanen goats

Steininger, K ; Braun, Ueli

**Abstract:** The left and right kidneys, ureters, urinary bladder and urethra of 29 female clinically healthy Saanen goats were examined via transcutaneous and transrectal ultrasonography. In order to establish reference values the examinations were performed using a 5.0 MHz linear transducer to scan the right caudal costal part of the abdominal wall, right and left dorsal flanks and right and left inguinal regions of standing goats. A 5.0 MHz intracavity probe was used for transrectal ultrasonographic examination of the urinary bladder and urethra. The kidneys were examined in longitudinal and cross section and assessed subjectively. They could usually be seen from the 12th intercostal space on the right side and dorsal right flank. The right kidney was  $8.0 \pm 0.67$  cm long and the left was  $8.4 \pm 0.64$  cm long. The ureters could not be visualized in any of the goats. The length of the urinary bladder was  $5.1 \pm 1.38$  cm, and its largest cross-sectional diameter was  $2.6 \pm 1.01$  cm. The urethra was seen in 23 goats and appeared as echogenic lines with no visible lumen. The transition from the neck of the bladder to the internal urethral orifice extended beyond the brim of the pelvis in only one goat.

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Other titles: Sonographische Untersuchung des Harnapparats bei 29 Saanenziegen

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Table 2: Measurements of the kidneys in 29 female Saanen goats ( $\bar{x} \pm s$ , range in brackets).

Variable	Right kidney	Left kidney
Length of kidney (cm)	n = 28 8.0 ± 0.67 (6.6 – 9.4)	n = 27 8.4 ± 0.64 (6.4 – 9.7)
Width of kidney (cm)	n = 26 5.2 ± 0.75 (3.9 – 6.4)	n = 25 5.0 ± 0.64 (3.9 – 6.3)
Thickness of kidney (cm)	n = 26 4.3 ± 0.63 (3.2 – 5.5)	n = 25 4.4 ± 0.55 (3.1 – 5.6)
Thickness of renal cortex (cm)	n = 28 0.9 ± 0.21 (0.4 – 1.3)	n = 27 1.0 ± 0.22 (0.6 – 1.4)
Thickness of renal parenchyma (cm)	n = 25 1.8 ± 0.53 (1.0 – 3.6)	n = 25 1.7 ± 0.41 (1.1 – 3.2)
Thickness of renal sinus (cm)	n = 25 0.9 ± 0.19 (0.5 – 1.2)	n = 25 0.9 ± 0.25 (0.4 – 1.5)
Diameter of medullary pyramid 1 (cm)	n = 28 1.2 ± 0.27 (0.7 – 1.8)	n = 25 1.2 ± 0.18 (0.9 – 1.5)
Diameter of medullary pyramid 2 (cm)	n = 27 1.2 ± 0.21 (0.8 – 1.7)	n = 25 1.2 ± 0.24 (0.9 – 1.8)
Diameter of medullary pyramid 3 (cm)	n = 27 1.3 ± 0.24 (0.9 – 2.0)	n = 25 1.2 ± 0.24 (0.8 – 1.8)