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The effect of pituitrin and adrenalin on the urea-excreting function of the kidney.

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When the rate of urea excretion is determined for successive periods of time of short duration (15 to 75 minutes) changes in the rate are frequently noted which cannot be accounted for by synchronous alterations in the concentration of urea in the blood.

Such a change in the rate of urea excretion may be produced in man by the intravenous injection of pituitrin (Parke, Davis & Co.). Immediately after the injection there is a decrease in the rate of urea excretion without any corresponding alteration in blood urea concentration.

In rabbits whose kidneys were placed under conditions calling for a maximal exercise of their urea-excreting function by the administration of 5 grams of urea by stomach tube, the subcutaneous injection of 0.25 c.c. of pituitrin was accompanied by a decrease in the hourly rate of urea excretion, although the blood urea concentration was not lower than in control experiments, in which no pituitrin was given.

Adrenalin (Parke, Davis & Co.) injected subcutaneously in doses of 0.5 c.c. of 1 in 1,000 solution into rabbits under the same conditions did not alter the hourly rate of urea excretion, although the blood urea concentration was not so high as in the control experiments without adrenalin.

Pituitrin therefore decreases, and adrenalin increases, the urea-excreting capacity of the kidneys.