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REPEATED SALMON CALCITONIN INJECTION LOWERS BODY WEIGHT AND BODY FAT

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Single injection of the amylin-agonist salmon calcitonin (sCT) produces a potent, long-lasting (>24 h at 5µg/kg) reduction in feeding being mediated by irreversible binding of sCT to amylin receptors. While chronic amylin administration decreases body weight gain in rats, similar experiments with sCT were not reported. We therefore tested the effect of repeated sCT injection on food intake and body weight. Once daily IP injection of sCT (1.25, 2.5µg/kg) reduced feeding in rats (40% [w/w] fat diet) by 60 [1.25 µg/kg] to 80 [2.5 µg/kg] % on day 1 and 35 to 55% on day 2. Thereafter, food intake was reduced by 20 to 30% vs. control. Over 1 week of treatment, body weight change was -33g [1.25 µg/kg] to -37g [2.5 µg/kg] vs. -5g in controls. Retroperitoneal fat was 30 to 35% lower than in controls. In a similar experiment, chow-fed rats were treated with sCT (0.3, 1.25, 2.5 µg/kg) once daily for 7 days. Food intake was reduced dose-dependently by sCT by 15 to 45% on days 1 and 2. Reduced food intake persisted (-20% vs. control) throughout the study except for the lowest dose. Over 1 week of treatment, body weight change was -10g [2.5 µg/kg], +7 g [1.25 µg/kg], +13 g [0.3 µg/kg] and +17 g [control]. Retroperitoneal fat was reduced by 25 [1.25 µg/kg] to 45 [2.5 µg/kg] % vs. control. We conclude that repeated sCT treatment potently lowers food intake in rats fed chow or a high-fat diet. Decreased food intake lead to a reduction in body weight and retroperitoneal fat mass.