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**BEHAVIORAL EFFECTS OF PERINEURAL CAPSAICIN APPLICATION IN A RAT MODEL FOR POSTOPERATIVE PAIN.**

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Capsaicin-sensitive afferent fibers have been implicated in heat hyperalgesia. In this study, we examined the role of capsaicin-sensitive afferent fibers in pain behaviors caused by plantar incision. Cotton pledgets soaked in capsaicin (1% in olive oil) or vehicle were applied to the tibial, sural and saphenous nerves of the hindlimb. 4 days later, rats underwent plantar incision. Heat withdrawal latency, punctate withdrawal threshold, nonevoked pain behaviors, and response frequencies to a plastic disk were examined. Rats were tested before capsaicin treatment, before and 2 hrs after incision and on days 1, 2, and 3.

Paw withdrawal latency to heat stimulus did not decrease after vehicle treatment (12 to 10s). Withdrawal latency decreased after incision (5s) and through postoperative day 3 (8s,  $P < 0.05$ ). The withdrawal latency to heat increased after capsaicin (11 to 17s). Withdrawal latency did not decrease after incision (16s) and through postoperative day 3 (18s,  $P < 0.05$  vs vehicle). The median nonevoked pain score increased from 0 to 13, 9, 7, and 3 in vehicle-treated rats on days 0-3, respectively. The scores were 6, 3, 2, and 1 in capsaicin-treated rats ( $P < 0.05$  vs vehicle). The median withdrawal threshold decreased from 522 to 37, 50, 63, and 106mN in vehicle-treated rats and to 84, 106, 90, and 106mN after capsaicin treatment. The average response frequency increased from 0 to 96, 88, 96, and 58% in vehicle-treated rats; the frequencies were 96, 79, 88, and 38% in capsaicin-treated rats.

After capsaicin treatment, incision-induced pain behaviors are affected differently. Responses to mechanical stimuli are affected less. Nonevoked pain behavior and exaggerated responses to heat after incision may have similar mechanisms