C-polymodal nociceptors activated by noxious low temperature in human skin

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1. Fifty-five C-polymodal nociceptors innervating hairy skin in human volunteers were tested for discrete stimulus-response properties through microneurography. 2. All fifty-five units were responsive to mechanical and heat stimuli. Twenty-two (40%) of these exhibited an additional response to noxious low temperature. The twenty-two mechano-heat-cold nociceptors displayed similar receptor responses to heat and mechanical stimuli, and conduction velocity, as those of the pure mechano-heat C-polymodal nociceptors. 3. Low temperature stimuli between 19 and O°C evoked responses at low discharge frequency (0.4 ± 0.22 impulses s-1, mean ± S.E.M.) in the twenty-two units sensitive to such energy. These units displayed a tendency to decrease their discharge after a few seconds of steady stimulation. 4. Three units tested with a freezing stimulus responded with relatively vigorous discharge, which never exceeded the maximal discharge frecquency elicited by either mechanical or heat stimuli. One