

Letters to the Editor

unquestionably needs further attention. We observed, in one study, that some men exhibited diurnal variations in heat pain thresholds and others did not (Strian et al. 1989). Hence, rhythmic changes in pain sensitivity may differ between individuals due to the effects of various chronologically changing influences and due to missing or dysfunctional biological pacemakers.

Recent studies (e.g., Goolkasian 1980, 1985; Hapidou and De Catanzaro 1988) have confirmed the existence of menstrual cycle effects on pain responsiveness in women. The mechanisms underlying this effect are not, however, sufficient to explain why women appear to have lower pain thresholds, since we could demonstrate that the phenomenon is dependent on the stimulation method used. As well, thresholds for men are often 50% or more greater than those of women, whereas menstrual cycle variability is about 5–10% (Rollman and Harris 1987).

Still, anecdotal reports indicate that clinical pain often varies with menstrual cycle status. Recent studies in the animal literature point to gender effects and cyclical effects on pain response. The International Association for the Study of Pain has taken admirable steps to increase our understanding of the implications of such findings by establishing a Task Force on Special Pain Problems in Women, by publishing provocative reviews on sex and chronobiology (Berkley 1993), by presenting a topical seminar on Gender Differences in Pain and Analgesia at the 7th World Congress on Pain, and by highlighting research on pain and gender in several recent issues of *PAIN* (Ruda 1993).

References

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Sex differences and biological rhythms affecting pain responsiveness

We thank Professor Procacci for his kind words. His studies of individual differences in responsiveness to experimental pain have clearly influenced our own research efforts (Rollman 1983) and those of many other investigators.

The issue of chronobiological variations is an intricate one and

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