Age and race effects on pain sensitivity and modulation among middle-aged and older adults.

UNLABELLED: This study tested the effects of aging and race on responses to noxious stimuli using a wide range of stimulus modalities. The participants were 53 non-Hispanic blacks and 138 non-Hispanic white adults, ages 45 to 76 years. The participants completed a single 3-hour sensory testing session where responses to thermal, mechanical, and cold stimuli were assessed. The results suggest that there are selected age differences, with the older group less sensitive to warm and painful heat stimuli than middle-aged participants, particularly at the knee. This site effect supports the hypothesis that the greatest decrement in pain sensitivity associated with aging occurs in the lower extremities. In addition, there were several instances where age and race effects were compounded, resulting in greater race differences in pain sensitivity among the older participants. Overall, the data suggest that previously reported race differences in pain sensitivity emerged in our older samples, and this study contributes new findings in that these differences may increase with age in non-Hispanic blacks for temporal summation and both heat and cold immersion tolerance. We have added to the aging and pain literature by reporting several small to moderate differences in responses to heat stimuli between middle- and older-age adults.

PERSPECTIVE: This study found that the greatest decline in pain sensitivity with aging occurs in the lower extremities. In addition, race differences in pain sensitivity observed in younger adults were also found in our older sample.