

Pulling together increases your pain threshold

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Oxford winning the 2009 boat race.

(PhysOrg.com) -- A study of Oxford rowers shows that members of a team who exercise together are able to tolerate twice as much pain as when they train on their own.

In the study, published today in the Royal Society journal *Biology Letters*, researchers from the University of Oxford's Institute of Cognitive and Evolutionary Anthropology found the pain threshold of 12 rowers from the Oxford Boat Race squad was greater after group training than after individual training.

They conclude that acting as a group and in close synchrony seems to 'ramp up' pain thresholds. The underlying endorphin release may be the mechanism that underpins communal-bonding effects that emerge from activities like religious rituals and dancing.

Each of the 12 rowers participated in four separate tests. They were asked to row continuously for 45 minutes in a virtual boat in the gym (as in normal training), in an exercise carried out in two teams of six and then in a separate session as individuals, unobserved by other team members. After each of the sessions, the researchers measured their pain threshold by how long they could stand an inflated blood pressure cuff on the arm.

The study found there was a significant increase in the rowers' pain threshold following exercise in both individual and group sessions (a well established response to exercise of any kind). However, after the group training there was a significantly larger increase as compared with training carried out individually.

Since close synchrony is the key to successful competition-class racing, these results suggest that doing a synchronised activity as a group increases the endorphin rush that we get from physical exertion. The study says that since endorphins help to create a sense of bonhomie and positive effect, this effect may underlie the experience of warmth and belonging that we have when we do activities like dancing, sports, religious rituals and other forms of communal exercise together.

Professor Robin Dunbar, Head of the Institute of Cognitive and Evolutionary Anthropology at Oxford University, said: 'Previous research suggests that synchronised physical activity such as laughter, music and many religious activities makes people happier and is part of the bonding process. We also know that physical exercise creates a natural high through the release of endorphins. What this study shows us is that synchrony alone seems to ramp up the production of endorphins so as to heighten the effect when we do these activities in groups.'

Lead author Dr Emma Cohen, from the Institute of Cognitive and [Evolutionary Anthropology](#), said: 'The results suggest that endorphin

release is significantly greater in group training than in individual training even when power output, or physical exertion, remains constant. The exact features of group activity that generate this effect are unknown, but this study contributes to a growing body of evidence suggesting that synchronised, coordinated physical activity may be responsible.’

Provided by Oxford University ([news](#) : [web](#))

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