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Researchers explore how we sync together in song

By Melissa Healy

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When people join their voices in song, their hearts come along for the group ride -- speeding up, advertisement slowing down and (figuratively) swelling in unison while much of the chorale's muscular movement and brain activity synchronizes as well. It's probably the same phenomenon experienced by field workers, worshipers, soldiers and attendees of sporting events through the ages. But it might also be harnessed for strengthening working relationships in teams and at schools, say the Swedish researchers who explored the effect of choral singing on cardiac synchrony.

The new research, [released Monday in the open-access journal Frontiers in Neuroscience](#), is the latest to explore the [health benefits of making music](#). Cognitive scientists have found that learning to play a musical instrument can have [long-term cognitive benefits](#), and that listening to music can lower blood pressure, ease pain and provide connections to happier, healthier times and memories.

That it can synchronize the heartbeats of choral singers very quickly offers a health benefit that's harder to characterize. In individuals, the Swedish researchers found, singing of several different kinds imposes a calm breathing pattern, and increases heart rate variability -- the routine changes in heart rate that are considered a measure of "good autonomic tone." The long exhalations that singers use to sing long phrases appears to stimulate the vagus nerve, slowing the heart and achieving the kind of relaxation seen in practitioners of yoga.

But when a whole group experiences these benefits, the effect may be multiplicative. Synchrony -- and the rituals that instill it -- instills a sense of social belonging, which can ward off loneliness and the substantial health risks that attend it. And if a greater sense of cooperation ensues, groups relying on teamwork might work more productively.

The researchers explored the heart rate variability of 15 healthy 18-year-olds with choral experience who sat in a circle and, between reading emotionally-neutral material, sang together. For five minutes, they hummed, maintaining a single tone and breathing at will. For another five minutes, they sang "Fairest Lord Jesus," a well-known hymn in Sweden, accompanied by a pianist. And for another five minutes, they repeatedly sang 10-second relaxation mantras, with instructions to inhale only between mantras.

While humming together did little to unify their heartbeats, singing "Fairest Lord Jesus" and singing mantras together very quickly brought the group members' heart rates into virtual synchrony compared to the reading period.

You can see the researchers performing their own version of the experiment [here](#), and read the study [here](#).

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