If athletes practice meditation for a few minutes a day, they may become better able to withstand the mental demands of hours of strenuous physical training, according to an interesting new study of Division I college football players.

The study, which compared different types of mental training for stress resilience, could have relevance for anyone planning to start exercising or competing more intensely this summer.

Exercise, as most of us know, is a form of stress. The demands of exercise require our bodies to respond and adapt, and the greater the intensity of the exercise relative to our current fitness, the greater the level of stress it generates.

Much of this strain is physical, but some of it also involves the mind, says Amishi Jha, an associate professor of psychology at the University of Miami in Florida, who led the new study. Prolonged, strenuous training "requires attention," she says, and a stern focus on continuing to exercise when it might be more pleasant to stop.
But this process can drain mental resources, she says, just as physical labor tires the body. In past studies at her lab and elsewhere, researchers have found that military recruits and other people experiencing periods of unusually high and sustained stress, especially if the stress is both physical and emotional, begin to perform more poorly on tests of their attention and general happiness.

So for the new study, which was published in April in the Journal of Cognitive Enhancement, she and her colleagues wondered whether teaching people to relax or to hone their focus might improve their overall well-being. In effect, they wanted to find out whether training the athletes' minds while they were also taxing their bodies might help to mitigate some of the undesirable effects of exercise on their thinking and emotions.

To find out, she and her colleagues turned to a group of athletes who face reliably outsize levels of physical and mental stress: Division I football players.

With the cooperation of the team's coaches and student captains, Dr. Jha and her colleagues gathered players for the University of Miami team just as they were about to start four weeks of preseason training. During this time, the players would be attending summer classes while also undertaking a grueling regimen of aerobic and strength training, culminating in evaluations from coaches about starting positions. It is a particularly stressful period for the athletes.

Dr. Jha and her colleagues asked each player to complete a computerized test of his ability to focus and rapidly respond to various combinations of numbers flashing on the screen. The players also filled out questionnaires about their current mood and sense of well-being.

The researchers then divided 100 of the athletes into two groups.

One began a program of supervised relaxation training, during which they listened to calming music and learned to systematically relax their muscles.

The other group was taught mindfulness meditation, which involves paying close attention to breathing and to the present moment.

These sessions, whether of relaxation or meditation, were short, lasting for about 12 minutes, and usually took place immediately after the players had finished strength training and were still gathered in the team gym. The students also were asked to practice the same mental techniques on their own throughout the week.

The mental training was voluntary, though, and some players attended more sessions and practiced more frequently at home than others.

At the end of four weeks of the intense preseason, the players repeated the original tests of their attention and happiness.

The results showed that, in general, they were feeling the strain. For most of them, performance on the test of sustained attention dropped significantly, meaning that they were far more apt to lose focus now. They also were gloomier, according to questionnaires about their moods.

But there were differences. The more an athlete in the relaxation group had practiced relaxing, the less his mood had tended to decline, the researchers found.

And those in the meditation group, if they had practiced often, showed considerable mental resilience, with higher scores than the other athletes in either group on the measures of both attention and mood.

Over all, these data suggest that mental training of almost any kind may help to alleviate some of the emotional and cognitive strains that otherwise occur during physical training, Dr. Jha says.

But mindfulness meditation was more effective than simple relaxation at helping athletes to maintain their ability to focus, she points out.
This study was, of course, specialized, involving young, male, elite football players, whose lives and bodies are not representative of those of the rest of us. The study was also short-term and its scope limited. The researchers did not examine whether mental training improved players’ performance on the field, although Dr. Jha says that they hope to study that issue in the future.

Still, the results are promising, she says, in part because the commitment required was so slight.

“We only asked for about 12 minutes a day” of mental training, Dr. Jha says.

For the rest of us, she says, the study’s message would seem to be that if we plan to substantially ramp up our normal exercise routine, perhaps in anticipation of our first triathlon or a faster 5-kilometer race time, we might wish also to learn to mindfully meditate. (You can find advice about how to start in the Well [Meditation Guide](https://well.blogs.nytimes.com).)