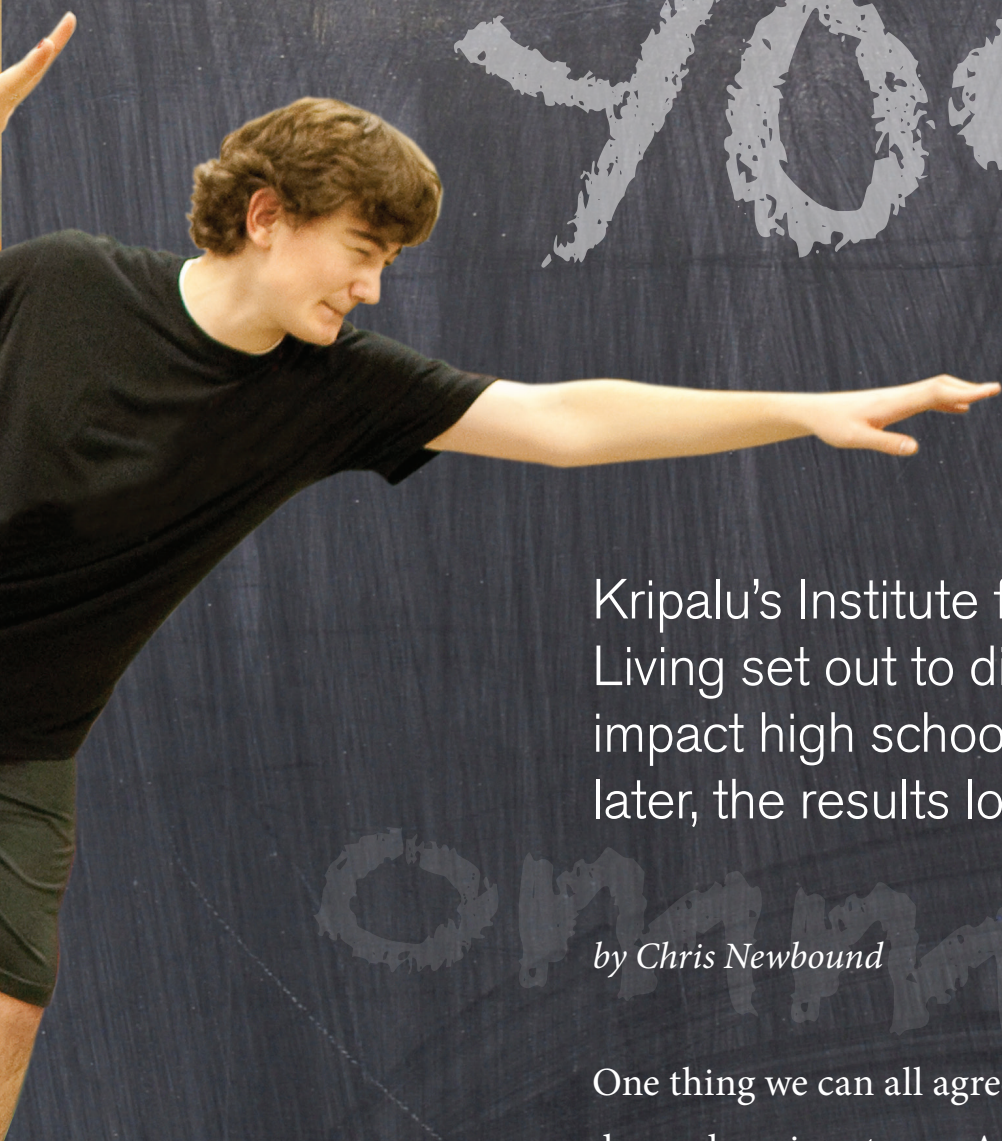




Students practicing yoga at Monument Mountain Regional High School, Great Barrington, Massachusetts

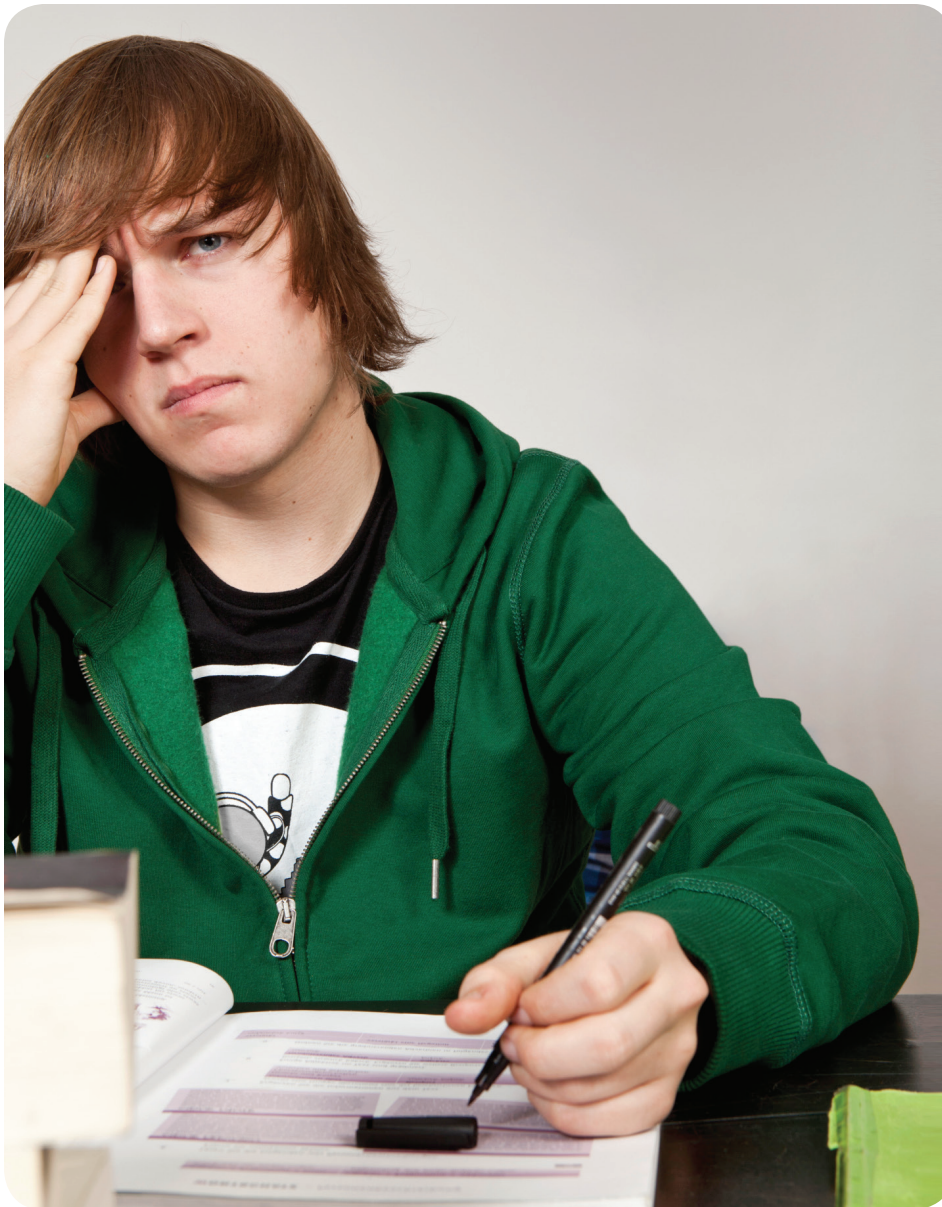


YOGA 101

Kripalu's Institute for Extraordinary Living set out to discover how yoga might impact high school students. Three years later, the results look promising.

by Chris Newbound

One thing we can all agree on: Being an adolescent in this day and age is not easy. According to recent surveys, a staggering 13 percent of American teenagers meet the criteria for a mood, behavior, or anxiety disorder, a far higher percentage than that of any other population group; 25 percent of high school students have experienced some form of binge drinking; 47 percent report incidents of being bullied; and, according to some studies, nine percent of high school students report having attempted suicide.



What if schools were able to provide students with the skills to self-soothe during times of stress, manage their feelings better, breathe through a fight-or-flight situation, or connect with their most mature selves?

As parents and schools continue to look for solutions, Kripalu's Institute for Extraordinary Living (IEL) has been quietly conducting research that sheds a hopeful light on some of these problems. Yoga, it turns out, can give students the tools to more effectively handle the challenges they face in today's society. What if schools were able to provide students with the skills to self-soothe during times of stress, manage their feelings better, breathe through a fight-or-flight situation, or connect with their most mature selves? What if these kids could find an almost instantaneous way to de-stress that didn't involve drugs or alcohol, whether it be before a game, a big test, a big date—or just having to walk into school every day and face whatever it is that awaits them?

Over the past three years, or six

school semesters, Kripalu instructors have been teaching yoga to high school students at Monument Mountain Regional High School in Great Barrington, Massachusetts, and, for the past year, at Waltham High School in Waltham, Massachusetts. Forty-five-minute-long sessions were held two to three times a week throughout a semester. Before the semester began and after it ended, students in both the yoga and control groups (those participating in the schools' usual physical education classes) were asked to fill out a series of questionnaires intended to gauge their overall mood and sense of well-being. Before-and-after results of the two groups were then compared. Though the study is ongoing and still in its preliminary stages, the findings indicate that the 500 or so students who have been practicing

yoga at Monument Mountain are handling their school years better than those students who have not. (IEL is in the early stages of analyzing the Waltham data.)

More specifically, what researchers found was that for students practicing yoga regularly, their ability to cope with the normal stresses and strains of growing up and going to school—their resiliency, in other words—was much greater than that of the control group (students in the same schools who did not participate in yoga classes). Those who were practicing yoga were much more likely to stay in a positive frame of mind than those who were not. According to the IEL study, published as *Evaluation of the Mental Health Benefits of Yoga in a Secondary School: A Preliminary Randomized Control Trial*, answers to questions that attempted to

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measure resilience, perceived stress, and such subtopics as self-confidence during stress, life purpose, and satisfaction, among others, proved illuminating. The three areas identified as statistically significant were resilience, anger control, and fatigue or inertia. In all three of these areas, yoga participants did better or, in some cases, deteriorated significantly less than those not practicing yoga. The yoga group also showed relatively strong improvement when measuring fatigue and inertia, one of the subscales. All this was in contrast to the moods of the students in the control group, which grew steadily worse over the course of the school year.

Stephen Cope, Director of the IEL and author of *Yoga and the Quest for the True Self* and *The Wisdom of Yoga: A Seeker's Guide to Extraordinary Living*,

is encouraged by the results of the study thus far. The findings, he says, support his theory that the impact of yoga could be even more beneficial to adolescents than to any other population group, due to yoga's emphasis on meditation and self-reflection. "Yoga is primarily about self-regulation—managing one's feelings—and adolescent brains are immature in really interesting ways," he says. "The primitive brain [sub-cortical] is quite mature, but the less primitive brain [pre-frontal cortex]—where the seeds of discernment, self-control, decision-making reside—is very immature. Adolescents are often run by the primitive parts of their brain. We know that yoga systematically develops the more mature parts. We've now seen 500 kids go through our program, we've begun to accumulate the data, and the

stunning result we're seeing is resilience. The program seems to inoculate the kids against the usual stresses of being a high school student."

Yoga appears to offer internal protection to high school students. Regular practice may help them stay in the saddle, smooth out the ride through the uphill stretches, and even provide a defense against the day-to-day psychological bumps and bruises. Sat Bir Khalsa, PhD, assistant professor of medicine at Harvard Medical School and principal investigator for the project, compares practicing yoga to taking care of your teeth. "Kids who go home and brush their teeth and floss have less cavities," he says. "It's not a matter of getting better teeth [but rather avoiding deterioration]. Here you have the same preventive medicine approach—reduc-





ing the likelihood of substantial negatives such as substance abuse, anxiety, and stress taking hold and doing real damage.”

While anyone who has spent time with teenagers knows that the transition from childhood to adulthood is a stressful one, what’s also becoming clear from current research is that kids are not coping well with that stress. What they need, it appears, are alternatives to food, drugs, sex, or even watching too much television—the usual suspects teens turn to for self-soothing. “We’re trying to provide them with a skill that will help them cope better with this change that they’re going through,” says Khalsa.

It seems to be working. Some of the responses gathered from the students include such statements as, “I learned that there are all different kinds of breathing techniques [that] I can use anytime and anywhere. I will catch myself at home getting stressed and I say to myself, ‘Okay, let’s just take a few deep breaths.’ It’s amazing how much it helps.” Another student reported that yoga “helped me improve my posture. I’ve had feedback from friends and family that I’m more centered.” Another shared that he “enjoyed being able to let go of everything, zone out, and relax.”

Those teaching the yoga classes say that even the positive initial results of the study may not accurately reflect just how significant the experience is for many of their students. “What we see on the ground is that there seems to be much more benefit than the research may show,” says Iona Smith, one of two Kripalu Yoga instructors involved in the project from

the start. Part of the problem, she says, was the students’ resistance to filling out questionnaires (the researchers also do interviews with the students). Students generally don’t like paperwork, regardless of what it’s for. In preparation for the next iterations of the program, researchers plan to move much of the data collection online, hoping young people will be more comfortable answering questions on their smartphones or iPads than on paper.

Certain students’ stories could not be captured in a survey. “One girl had a huge anxiety disorder,” says Janna Delgado, the other teacher who has been with the project since its inception. “In the beginning, she was almost unable to be in the group setting. By the end of the semester, she was at ease with that group, to the point where she could get up in front of the class and teach others a certain pose she had investigated. When we told other teachers this, they couldn’t believe it.”

Then there was the student whose mother passed away halfway through the semester. “I could see that [the practice] touched him deeply,” recalls Delgado. “I saw him crying as he came out of resting pose.”

“It’s not just yoga poses and breathing,” says Smith. The philosophical teachings of yoga may offer benefits as well. “Like learning to ride through that wave—breathing through situations, as opposed to having a quick reaction,” she explains. “Or when something gets challenging and you want to ditch, you find your way to the other side of that. Learning about what postures you can do to calm the nervous system, to energize yourself. By the

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—Sat Bir Khalsa, PhD



Instructor Iona Smith (below) and instructor Janna Delgado (far right) at Monument Mountain Regional High School.



time they walk out of these classes they have some tools for self-care.”

Marianne Young, principal at Monument Mountain, has observed the impact of yoga not just on individual students but also on the culture of the school. “Initially, there was a range of reactions from, ‘Great, I love yoga’ to ‘I would much rather play basketball.’ But because participation was mandatory, and since the instructors were so skilled in getting the students to try yoga, to do what works for them, as each semester unfolded, you’d find students looking forward to that room and that time of day,” she recalls. “Students were soon working in a close space in a way that created a community with those who would not normally attract one another in any other place in school. The classes really did become a community. They are engaged in the yoga class. There was no one who outshined anyone else because it was such a personal, meditative process. There’s a real leveling.”

What seems clear is that students who go through the program now consider yoga, at the very least, a tool they can reach for to help navigate the rigors of everyday high school life. “We’re seeing kids actually starting to use these practices in real-life circumstances—using them before exams or sports, to help them cope with anxiety and stress, and to help them enhance their performance,” says Khalsa. “These things ended up being skills that are now at their disposal.”

The long-term impact, continues Khalsa, may be even more profound. He believes that future studies following young adults into middle age and beyond

would produce even more significant results. “After a single yoga class, or even a single yoga exercise,” says Khalsa, “you’ll experience an immediate change in stress, relaxation, and well-being. However, after weeks and months of practice, there are more lasting improvements, including resilience to stress, less emotional reactivity, and a more sustained state of equanimity and well-being. Over the course of months and years, there are even more permanent changes that take place. There may be a pervading sense of peace and unity that may start to shift your sense of personal identity. You might begin to reframe this identity with respect to the world and your goals and values. This is evidence of the positive long-term transformative nature of these practices: we become better human beings.”

Khalsa and others emphasize just how young this field of study is; there are fewer than a dozen studies published on yoga’s effect on young people in school settings, Khalsa says. It seems clear that yoga can improve students’ experience of high school and life in general, but just where does it fit into a curriculum? Perhaps, says Khalsa, 15 minutes should be reserved for the whole school to practice yoga. “This is a very first step,” he says. “It’s completely unstudied—a brand-new area of research, and so this is a very preliminary study. Every question we’re asking has maybe never been asked before.”

“It’s pilot data to help fund further research projects,” concurs project leader Jessica Noggle, PhD. “At some point, we would like to scan the kids, to see if, developmentally, there were some changes in

their brains and [to determine] how yoga might be shaping that.”

Eventually, the IEL would like to replicate the program at an inner-city school and at a private school. Cope outlines an even broader plan for the future, including a longitudinal study of students as they age. “We’d like to study kids in middle school and follow them into their adult life—the kind of study that’s never been done,” he says. “The strategy is to go deep and to go broad: four schools that we can go deep with and stay with for years. Eventually we’d do much more sophisticated stuff and, meanwhile, collaborate with all sorts of schools throughout the country.”

“The implication of applying yoga to all the school systems, giving all the children in the United States access to a yoga practice, is huge,” Khalsa says. “The old adage ‘An ounce of prevention is worth a pound of cure’ certainly applies. You teach someone to do slow breathing, over 10 to 20 years, throughout the stresses of different jobs and, say, a divorce, and that simple technique applied may make a huge difference in adulthood and the elderly. Prevention is very powerful.” ■

Chris Newbound is a freelance writer and playwright living in Williamstown, Massachusetts. His most recent article for *Kripalu* was on the IEL’s study of yoga’s effect on post-traumatic stress disorder.