

The Sonima Foundation commissioned the Center for Education Policy and Law (CEPAL) at the University of San Diego to conduct a three-year study of EUSD's yoga program. CEPAL published two full reports analyzing data collected during 2012-2013.¹ **The CEPAL study failed to support the hypothesis that all-year yoga students (at five EUSD schools) would perform better than half-year yoga students (at four control-group EUSD schools) in measures of fitness, behavior, attendance, academic performance, or emotional well-being. In fact, in some measures it shows the opposite, that full-year yoga students did worse than half-year yoga students.**

- In tests of 1) resting heart rate, 2) body mass index (BMI), 3) body composition, 4) aerobic capacity, and 5) abdominal strength and endurance, there was not a significant difference between all-year and half-year yoga students.
- For the upper body strength and endurance test, all-year yoga students scored significantly *lower* than half-year students (91% vs. 82%, $p = .01$), suggesting that yoga was less effective than traditional P.E. in conditioning the upper body.
- For the trunk exterior strength test, 99% of all-year yoga students passed compared with 97% of half-year yoga students, but this result is not statistically significant ($p = .10$, whereas the commonly accepted threshold for statistical significance is $p < .05$). The CEPAL report asserts that $p = .10$ is statistically significant, but few rigorous researchers would agree with this claim.
- For the flexibility test, CEPAL reports a pass rate of 88% for all-year yoga students, compared with 78% of half-year students, which is statistically significant, $p = .01$. However, in order to report this result, CEPAL had to *exclude from their analysis one-fifth of the all-yoga data*. A footnote rationalizes excluding one of five full-year yoga schools “due to what appears to be errors in the administration of the Flexibility activity.” At this school, 100% of tested students scored “Needs Improvement” after a year of yoga, compared with a quarter (23%) and a third (33%) of students who had done traditional P.E. during 2010-2011 and 2011-2012 respectively. **Contrary to researcher expectations, there may have been a trend toward progressively worsening flexibility—and yoga may have exacerbated rather than reversed this trend.** Excluding unwanted data in this particular case with these numbers goes against generally accepted research practice, and it may skew statistical results.
- **Students on average like yoga only “a little.”** On a likert scale from 1.0 “I don’t like it,” “2.0 I like it a little,” to 3.0 “I like it a lot,” students on average reported that they like yoga “a little”: 2.28, with boys (2.18), older grade 5 and 6 children (2.18), and more fit children (2.29) giving lower than average scores.
- **Survey response rates for teachers and parents were “poor.”** Teacher response rates ranged from 0%-62.5% per school, averaging 29.2% for all-year schools and 22.8% for half-year schools. Only 7.9% of district parents responded to the first survey, 1.7% to the second survey, and 2.9% to the third survey. Although responses were “almost uniformly positive (94.3%),” low response rates raise questions about the representativeness of the sample; program supporters may have been more likely to take time to complete surveys.
- **Even so, both teachers and parents reported student complaints about yoga.** Parents commented that some students, “especially upper grade males, were trying to get kicked out of yoga classes on purpose by displaying disruptive behavior.” Teachers commented that older students and males described the classes as “boring,” “too slow paced,” and “lame.” Teachers also reported students complaining about yoga replacing P.E., stating “‘well, that’s not PE, that’s not what we like to do.’ They want to play games.”

- Overall, the quantitative data failed to corroborate stakeholder perceptions of yoga’s benefits. “Although stakeholders report yoga is improving student behavior, academic performance, and emotional wellness, student results do not corroborate all these sentiments.” Indeed, “this disconnect between adult (qualitative) and student (quantitative) findings is intriguing . . . The positive changes parents, teachers and principals shared may be informed by their class or school-level perspectives while students might be drawing their own conclusions based on peer interactions or other experiences to which adults may not have access.”²
- Although school personnel perceived yoga as improving student behavior, both teachers and students reported *more* behavioral problems at the all-yoga compared with the half yoga schools, including incidents of bullying ($p = .01$) and detentions ($p = .05$).³
- Although school personnel perceived yoga as decreasing absenteeism, quantitative data shows that unexcused absences ($p = .05$) increased *more* over the course of the year at the all-year than the half-year yoga schools.⁴
- Although school personnel perceived yoga as motivating students to try harder, students at half-year yoga schools reported “trying harder” than did all-year students ($p = 0.05$).
- Contrary to perceptions by administrators, teachers, and parents that yoga enhanced emotional well-being (for instance by “self-calming”), student survey data showed a slight decline (3.25 to 3.20) in sense of belonging over the course of the school year.
- In sum, the study did not show that yoga caused any observed improvements. “The level of rigor commonly associated with an RCT [randomized controlled trial] could not be achieved. Thus, it would be irresponsible to assert causal inferences related to yoga participation.”⁵

¹ CEPAL, *Yoga in Public Schools: Evidence from the Encinitas Union School District’s Yoga Program 2012-2013*, January 30, 2014), retrieved June 1, 2016, <https://www.sandiego.edu/soles/documents/EUSD%20Yoga%20Student%20Effects%202012-13%20Formattedforwebsite.pdf>; CEPAL, *Implementing Yoga in Public Schools: Evidence from the Encinitas Union School District’s Pilot Yoga Program 2012-2013*, November 8, 2013, retrieved June 1, 2016, http://www.sandiego.edu/soles/documents/cepal/CEPAL%20Report_Implementing%20Yoga_2013%202014.pdf.

² CEPAL, *Yoga in Public Schools*, 22, 21.

³ A CEPAL research brief on the 2013-2014 yoga program isolated a subgroup of 101 (out of 768) fifth graders who reported “being teased by other kids or feeling left out or rejected,” and found that 57% (58/101) improved their “ability to self-regulate” and “adapt to” bullying (which did not seem to decrease) over the course of the school year. As the investigators acknowledge, “because this analysis did not include a control group, this finding cannot be directly attributed to EUSD yoga participation.” See CEPAL, *Encinitas Union School District Health & Wellness Program 2013-14 Research Brief*, January 21, 2015, retrieved June 1, 2016, <http://www.sonimafoundation.org/wp-content/uploads/2015/01/CEPAL-Y2-Briefing-2015.01.21.pdf>.

⁴ A CEPAL research brief on the 2013-2014 yoga program sliced up the data to suggest that “students who participated in highly rated yoga experiences attended school more regularly”—but this seems to be a correlational rather than a causal finding; in other words, the same types of students who “liked” yoga more (generally younger girls) may also have had qualities that made them more likely to attend school regularly.

⁵ CEPAL, *Yoga in Public Schools*, 4.