

## 49. SWACSM Abstract

---

### High School Strength and Conditioning: A Narrative Review of the Literature

ALEXANDER M. WAKELY†, ROBERT G. LOCKIE, Ph.D.‡

Department of Kinesiology, California State University-Fullerton, Fullerton, CA, USA

†Denotes graduate student author, ‡Denotes professional author

---

*Category: Graduate*

#### ABSTRACT

Many high school athletes will complete strength and conditioning programs as part of their sports participation. The programs can vary in quality, and there is limited research specifically investigating programs at this level. **PURPOSE:** To review current literature specific to strength and conditioning training programs for high school student-athletes and calculate magnitude of performance changes. **METHODS:** Studies were searched for using the CSUF Pollack Library database. Search terms included “high school strength and conditioning” and “high school training programs”. Following this process, 5 studies were deemed appropriate for this narrative review. Performance changes from pre- to post-test for the strength and conditioning programs from these studies were interpreted via Cohen’s effect size ( $d$ ). **RESULTS:** A range of programs were used to improve performance in high school athletes. A 16-week functional movement system training program increased in hand grip and trunk extension flexibility in high school baseball players ( $d=0.72-0.83$ ). An 8-week sled pushing program (3 groups: light, moderate, heavy) showed some improvements in sprint interval times within 20 m in rugby and lacrosse high school players ( $d\leq 1.16$ ). A 6-week pelvic and core strength training program was used for high school cross country runners. The program led to faster 4000-5000 m race times for the male ( $d=4.41$ ) and female ( $d=0.47$ ) experimental groups. A 6-week neuromuscular training program led to small-to-moderate performance changes in the drop jump, multistage fitness test, and vertical jump in female high school basketball players ( $d=0.19-0.58$ ). An 8-week Olympic weightlifting program led to small-to-moderate changes in the vertical jump, back squat, and power clean in high school football players ( $d=0.45-0.70$ ). **CONCLUSION:** Strength and conditioning programs from the literature led to small-to-very large performance changes in high school student-athletes across a range of fitness variables. A variety of training programs could be used by high school student-athletes to improve athletic performance. The exercises in the reviewed studies could be programmed based on the athlete’s experience. Nonetheless, specific research is required to investigate strength and conditioning programs implemented at high schools.