

## Abdominal Strength and Endurance

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### What are abdominals?



- Abdominals are the muscles in your stomach.
- You can improve your abdominal strength (how powerful your muscles are) and endurance (how long you can keep using those muscles without getting tired or losing form) by doing curl-ups.

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### Abdominal Strength and Endurance



- Abdominal strength and endurance are important in promoting good posture and correct pelvic alignment.
- Strength and endurance of the abdominal muscles are important in maintaining lower back health.

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### Abdominal curls

- This test is used to measure abdominal strength and endurance, which is important to low-back support and injury prevention.
- Participants lie on their backs with their knees bent and arms at their sides.
- A curl is counted each time the upper torso and shoulder blades are lifted off the floor.
- Participants do as many as they can without stopping until they break form or reach fatigue.

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### More about Curls

- This **IS NOT A SIT UP**. It is a modified sit up.
- Students begin this test by lying on the floor with their feet approximately 12 inches away from their buttocks. Students must also extend their arms so that the hands are on the thighs.
- Students have to contract their abdominals and raise themselves off the ground.
- A student is at the top of the partial curl up when the shoulder blades/scapula are approximately 2 inches off the ground.
- A general key here is that the hands should be somewhere around the knee area when in the up position.

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### THINGS TO REMEMBER

- hands can never leave the thighs or knees
- shoulders and head cannot touch the ground on the downward phase. It is suggested that students pretend there is a ball between their chin and chest and they are trying to hold it in place
- students must stay with the beat (1.5 seconds on the up phase, 1.5 seconds on the down phase)
- a student's score will be recorded when they perform two (2) curl ups incorrectly. For example, if a student completes 10 correct curl ups, but #'s 11 and 12 are incorrect, the student is done with the test and given a score of 10. Misses DO NOT have to be consecutive.
- The best way to practice is to do sit ups or curl ups. Age appropriate resistance training may also be beneficial, as well as leading a physically active lifestyle.

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## A Study of California Students

- In the study, reading and mathematics scores were matched with fitness scores of 353,000 fifth graders, 322,000 seventh graders, and 279,000 ninth graders. Key findings of the study are:

Higher achievement was associated with higher levels of fitness at each of the three grade levels measured.

The relationship between academic achievement and fitness was greater in mathematics than in reading, particularly at higher fitness levels.

Students who met minimum fitness levels in three or more physical fitness areas showed the greatest gains in academic achievement at all three grade levels.

Females demonstrated higher achievement than males, particularly at higher fitness levels.

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