Using Heart Rate Monitors in High School Weight Training

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HEART RATE MONITORS ARE primarily used to monitor cardiovascular responses to aerobic activity. At Del Campo High School, heart rate monitors (Polar Vantage XL) have been used extensively and quite effectively in Olympic-style weight training classes over the 4 years that I have been football and strength coach.

Using heart rate monitors has allowed the student in weight training to (a) control exercise intensity, (b) quantify periods of rest and recovery, and (c) create an aerobic training effect in an exercise program that is typically classified as anaerobic.


Moderate gains in aerobic power, however, have been observed during circuit weight training (Gettman & Pollack), and high volume Olympic-style weight training (Stone et al., 1983, *Can. J. Appl. Sport Sci.* 8:134-139).

Empirical evidence from heart rate data over the last 4 years at Del Campo supports the more favorable conclusions from this research.

Our speed and power development class trains in the weight room on Monday, Wednesday, and Friday. Our block schedule allows for 50 minutes of training. All students train exclusively using free-weight, multi-joint exercises, i.e., squats, presses, pulls, cleans, snatches, plyometrics, and core strength.

The workout is set up circuit style. Following flexibility training and warm-up, the students are allowed 10 minutes in each of four stations: pressing, squatting and jumps, platform, and core strength. Each day 8 to 12 students are selected to wear a heart rate monitor. Following the warm-ups, the watch is started and data is collected for the 40-min training session.

Parameters on the monitor are set at 135 bpm minimum and 175 bpm maximum. The students are expected to keep their heart rate between these values for the entire 40 minutes. We expect to see 80 to 100% of the training time in the target HR training zone (Figures 1 and 2).

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After a cooldown and post-stretch, the data is then downloaded into a file and the students are given immediate feedback on the quality of their workout.

The heart rate monitor allows individualization of training. Depending on fitness level, the student is restricted as to training intensity. Rest periods between sets are controlled based on fitness level, with the more fit students getting less rest. Loads are controlled as well. Too heavy or too light a load will produce too high or too low a heart rate, respectively.

By using large-muscle-mass exercises such as squats, pull-ups, and multiple jumps, heart rates are easily elevated. By keeping the heart rate in the prescribed zone, an aerobic effect is achieved, similar to that of interval training.

Many of the students in the speed and power development class are football players. In 1995 the school won its first league championship in 32 years. During the past 3 years, our players have had no season-ending injuries and no knee injuries.

Of course, training with heart rate monitors cannot guarantee victory on the playing field, but it can allow players to perform at their optimum level.