Lactic Acid Training for Wrestlers

In-Season Progression

Steve Kimpel, M.S., CSCS
Head Wrestling Coach Colorado School of Mines
skimpel@mines.edu

Background

Three metabolic systems contribute to energy production in a wrestling match: the phosphogen system (also called the ATP-PC system), glycolysis (sometimes called the lactic acid system), and the oxidative, or aerobic, system. It is estimated that 90% of the energy used in wrestling comes from phosphagen and lactic acid metabolism, while the remaining 10% can be obtained through aerobic mechanisms (1,3,5). The phosphogen and lactic acid systems are anaerobic; therefore, the focus of training should be anaerobic in nature.

Exercise intensity determines exercise duration. Anaerobic metabolism provides the majority of energy during maximal bouts less than 3 minutes (4). When anaerobic systems fail to meet the demand of the exercise, the wrestler must either decrease the pace or stop exercising. Thus, effective anaerobic training requires several high-intensity bouts followed by a rest. These training intervals allow the wrestler to be able to apply MORE force and MORE intensity throughout a match, during which time the actual *wrestling* will last no more than seven or eight minutes.

It is essential to train with high intensity, utilizing fast, explosive movements. Such training enhances the ability of fast-twitch muscle fibers to produce force. Fast-twitch fibers not only produce more force, than their slow-twitch counterparts, they also reach peak muscle tension (force) more quickly. This is a tremendous advantage in a match.

Early in the season, wrestlers should have a strong aerobic base, which will allow the body to utilize oxygen more efficiently and sustain the long, continuous bouts of drilling necessary in the early season. The work to rest ratio should be 1-to-1/3 or even 1-to-0 or no rest. As the season progresses, the work:rest ratio should evolve to 1:1 or 1:2 to allow the body to tolerate and more effectively utilize lactic acid. As a wrestler peaks for state or nationals the work:rest ratio should be 1:3 or greater, so that the work is performed at maximal intensity and supported by anaerobic sources (2).

For training purposes, the “peaking phase” should be considered the period 6-8 weeks prior to most important competition. In the week prior to competition the number of training intervals should be reduced to decrease the risk of overtraining.

Application

Early-season 30-minute Endurance Interval Workout (Air Dyne)
October – November (3 days per week)

RPM at each stage by wrestler weight									
	Wrestler Weight								
Stage	115 lbs	125	135	150	165	180	195	215	245
1. 3 min	*57 rpm*	*60 rpm*	*61 rpm*	*63 rpm*	*65 rpm*	*67 rpm*	*69 rpm*	*72 rpm*	*75 rpm*
2. 3 min	*64 rpm*	*66 rpm*	*67 rpm*	*70 rpm*	*73 rpm*	*74 rpm*	*76 rpm*	*79 rpm*	*82 rpm*
3. 2 min	*69 rpm*	*71 rpm*	*73 rpm*	*76 rpm*	*78 rpm*	*80 rpm*	*83 rpm*	*85 rpm*	*89 rpm*
4. 1 min	*Sprint*	*Sprint*	*Sprint*	*Sprint*	*Sprint*	*Sprint*	*Sprint*	*Sprint*	*Sprint*
5. 30 sec	*Rest*	*Rest*	*Rest*	*Rest*	*Rest*	*Rest*	*Rest*	*Rest*	*Rest*
Repeat x 3									

Transitional Running Workout
December (3 days per week)

Interval Running Workout (30 minutes)	
1.	5-minute warm-up (light jog)
2.	Four 6-second sprints, 18 second rest
3.	Four 20-second sprints, 60 second rest
4.	Four 40-second sprints, 80 second rest
5.	15-minute cool down (light jog and stretching)

Adapted from Kell (3)

Air Dyne Peaking Workout (16-30 minutes)
January – February (2 days per week)

Week	Work	Rest	Reps	Intensity
1-2	:30	:90	12	110%
3-4	:45	2:15	10	110%
5-6	1:00	3:00	7	110%
7-8	1:00	3:00	4	110%

References

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