Exercise prescription:
Needs analysis

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When one starts to design a resistance training program, the first step is to perform a needs analysis for the sport. A number of questions must be answered in order to gain a real understanding about the sport for which you are training.

Needs analysis questions
1. What is the basic energy system profile of the sport?
   This is an important question to answer, as much of your training time will be focused to support this need. For example, in baseball, the primary energy systems are the ATP-PC/LA systems (80%). Thus, most training should focus on development of anaerobic metabolism. As the ATP-PC system is the primary energy system, lactic acid levels (LA) are not high; moderate rest periods of 2-4 minutes can be used in a workout between sets and exercises.

2. What are the movements which must be trained?
   One should complete a basic biomechanical analysis of the sport movements and relate it to what could be trained in the weight room. In our example, baseball would obviously require arm/shoulder work because of the throwing movement. Rotation-cuff exercises, and general shoulder exercises would help prevent injury and develop throwing movements. The sport needs to be further analyzed from a movement standpoint.

3. What are the most common injury sites?
   Along with question 2, this question will help you determine the most important movements to be trained. Lower back, shoulder, elbow and hamstrings would be a few obvious areas prone to injury in baseball. Because there are an infinite number of possible training angles or exercise movements, the coach needs to choose exercises based upon specific movement needs.