

Effective Resistance Program Design to Maximize Training Results

Designing a safe and effective resistance training program involves the manipulation and consideration of different variables, which make resistance training programs more complex than aerobic training programs. In this seminar, Alan began by introducing the benefits of resistance training. He then discussed the fundamental principles of resistance program design and how to manipulate training variables to achieve different goals.

Resistance training is a potent physiological stimulus for our body. It has substantive positive effects on almost every system in the body. Benefits include improved body composition, increased muscle strength and power, increased muscular endurance, improved neuromuscular efficiency, stronger bones and connective tissues. These changes can improve the quality of life and have significant benefits to our health status.



Alan then introduced the process of designing a training program. It begins with an initial consultation for health and fitness assessment and risk stratification, which determines the resistance training status, exercise technique and primary training goals. Goal setting is a powerful strategy for increasing the level of participation in training programs and can be done according to the “SMART” criteria: Specific, Measurable, Attainable, Realistic and Timely.

After the initial assessment and goal setting, a training program can be designed. Alan introduced different training variables that need to be considered when designing a training program. It includes exercise selection and order, training frequency, intensity, number of repetitions and sets, rest periods and many more. The table below shows the recommended training volumes to achieve specific goals.

Objective	Repetitions	Sets	Load (% 1-RM)	Rest
Strength	≤6	2-6	≥ 85%	2-5 minutes
Power				
- Single-effort event	1-2	3-5	80 - 90%	2-5 minutes
- Multiple-effort event	3-5	3-5	75 - 85%	2-5 minutes
Hypertrophy	6-12	3-6	67 - 85%	30 seconds-1.5 minutes
Muscular Endurance	≥12	2-3	≤ 67%	≤30 seconds

Alan finally concluded the seminar by introducing different training phases and types of variation and progression. He also stressed the need of periodization if athletic performance is the major goal of resistance training.