

# Exercise Therapy

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## REPETITION MAXIMUM

REPETITION MAXIMUM is one method of measuring the effectiveness of a resistance exercise program and calculating an appropriate exercise load for training is to determine a Repetition maximum.

This term was first reported decades ago by DeLorme in his investigations of an approach to resistance training called progressive resistive exercise (PRE).

A repetition maximum (RM) is defined as the greatest amount of weight (load) a muscle can move through the available range of motion (ROM) a specific number of times.

Use of a repetition maximum.

- (1) To document a baseline measurement of the dynamic strength of a muscle or muscle group against which exercise-induced improvements in strength can be compared
- (2) To identify an exercise load (amount of weight) to be used during exercise for a specified number of repetitions.

DeLorme reported use of a 1 RM (the greatest amount of weight a subject can lift through the available ROM just one time) as the baseline measurement of a subject's maximum effort but used a 10 RM (the amount of weight that could be lifted and lowered exactly 10 times) during training.

**In the clinical setting**, a practical, time-saving way to establish a baseline RM for a particular muscle group is for a therapist to select a specific amount of resistance (weight) and document how many repetitions can be completed through the full range before the muscle begins to fatigue. Remember, a sign of fatigue is the inability to complete the available ROM against the applied resistance.

Despite criticism that establishing a 1 RM involves some trial and error, it is a frequently used method for measuring muscle strength in research studies and has been shown to be a safe and reliable measurement tool with healthy young adults and athletes as well as active older adults prior to beginning conditioning programs

Reference: Kisner, Carolyn Therapeutic exercise : foundations and techniques / Carolyn Kisner, Lynn Allen Colby. — 5th ed.

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