

Strength Training

Strength Training

- Strength can be defined as the ability of the neuromuscular system to develop force under specific conditions.
 - isometric, concentric, eccentric, speed-specific, (un-)stable conditions
- Strength training methods:
 - Maximum load method
 - Isometrics
 - Eccentrics

Maximum Load Method (MLM)

- Training variables:
 - Loads: 85% 1RM or greater
 - Reps: 3 – 6 RM
 - Sets: 3+
 - Rest b/w sets: 3 – 5 min
- MLM should only be used with multi-joint exercises
 - The value of MLM with 'isolation' exercises is questionable as these are accessory movements

Isometrics

- In multi-joint exercises (ex. bench press or squat) our ability to develop force is at its highest near the end-range, and lowest at the point of reversal from eccentric to concentric action.
- Isometrics is ideally performed in the weakest range.
 - Usually 2 or 3 angles in the ROM are selected.
- Types of isometrics
 - Yielding: prevent the movement of an external load
 - Overcoming: pushing or pulling against an immoveable resistance

Eccentrics

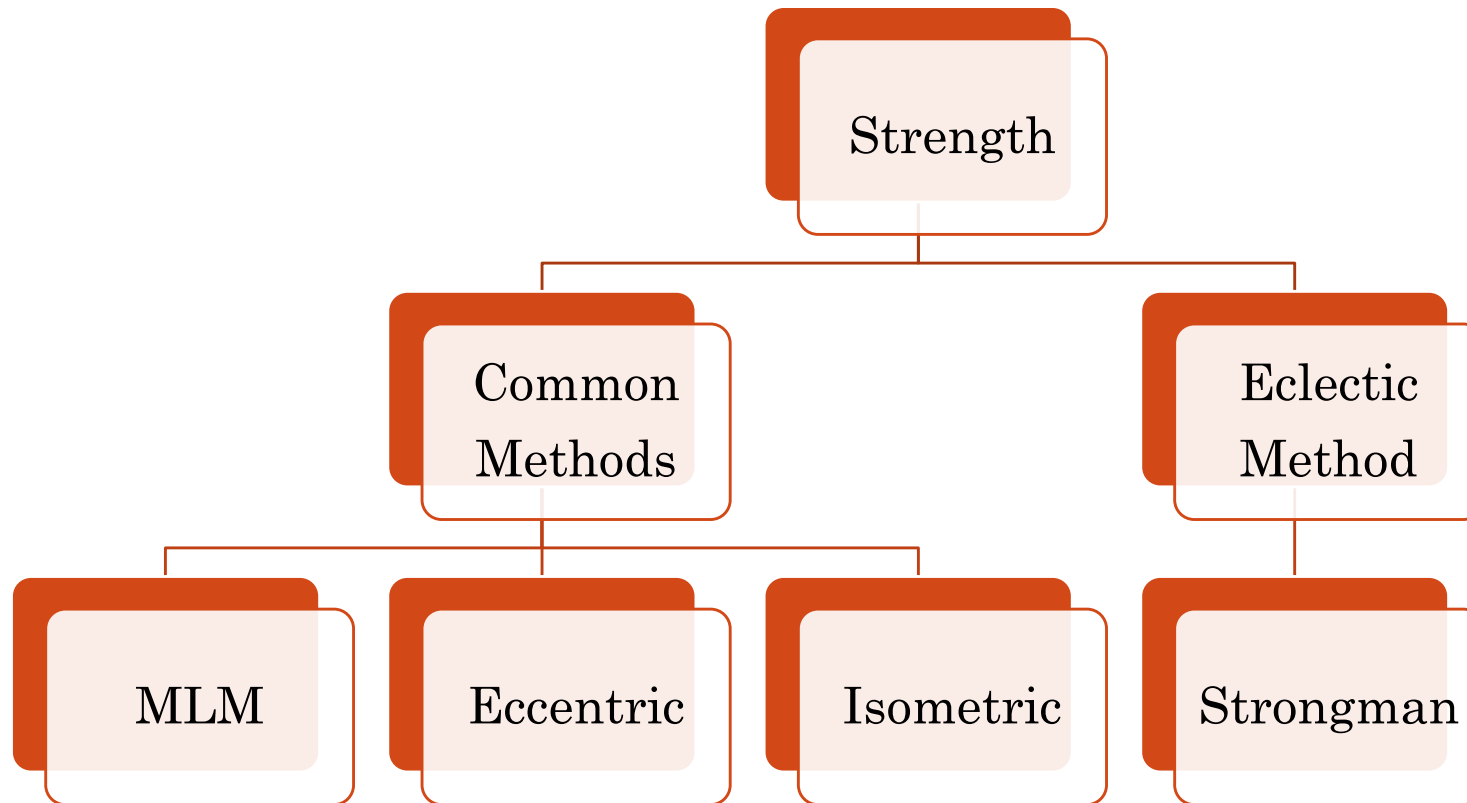
- Background: 3-4 years experience
- Loads can range widely from 110-160% 1RM
 - training range is usually 130-140%
- Assistance of spotters (preferably two) is mandatory
 - Spotter must assist with concentric phase
- Frequency: 1 – 2 times per week
- Sets and Reps same as MLM (3 sets 3 – 6 reps)
 - Eccentric rep performed in around 4-6 sec



Example: Improving Chin-ups

- Monday: Isometric
 - Upper and midpoint positions
 - 4-5 sets of 30-45 seconds
- Wednesday: Eccentric
 - 4-5 sets of 4-5 reps using a 6 second eccentric
- Friday: MLM
 - Select target reps (ex. goal 12 reps + 20 = 32 total)
 - Perform multiple sets of 5-6 until target rep is attained
 - Fast concentric movement

Strength Training



Common Methods

- Maximum load method
 - Compound movements
 - Push, pull, squat, lunge, bend, twist
 - Range of motion: full & partial
- Exercises to be performed (full & partial ROM)
 - Squat
 - Deadlift
 - Bench press
 - Pull-ups

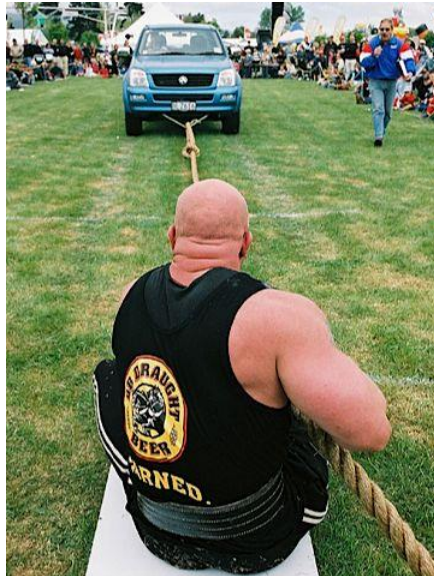
Common Methods

- Isometrics
 - Hold the following positions for a few seconds (<10 s)
 - 2-Arm Chin-Up: top and middle position
 - Variation: “Isodynamic” method: hold top pos 5 sec, down, up to 90° hold for 5 sec, down, up to 135° hold 5 sec
 - 1-Arm Chin-up holds: top and middle position
 - Squat: lowest and mid-point positions



Strongman Training

- Pulling Motion
 - Rope pulls
 - Horizontal: body perpendicular to rope and parallel
 - Vertical: Pull-ups



Strongman Training

- Pushing Motion
 - Landmines
 - Single & double arm press
 - Semi-circular pattern



Strongman Training

- Pushing Motion
 - Landmines
 - Single & double arm press
 - Semi-circular pattern

Correct



Incorrect



Strongman Training

- Pushing Motion
 - Sled



- Combined with squat motion - tire flipping
 - Caution, may develop back pain



Strongman Training

- Squatting Motion
 - Zercher squats

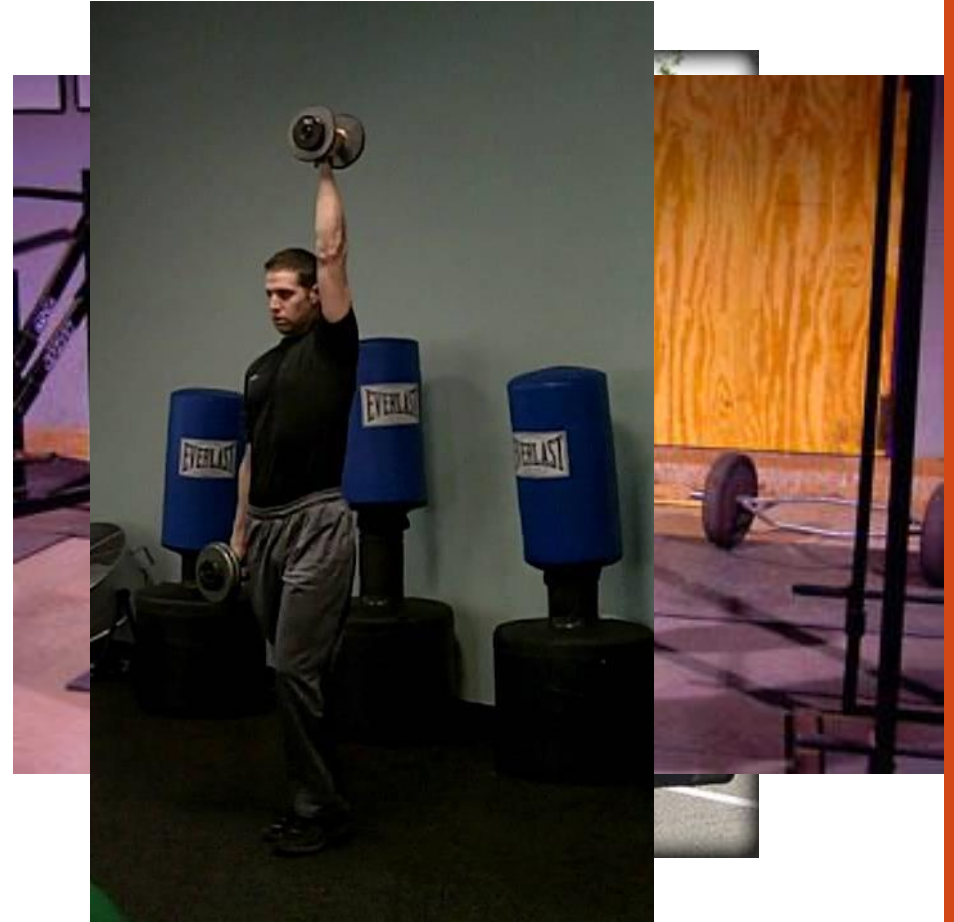


- Rotation Motion
 - Tire / sandbag throws



Strength Exercises - Strongman

- Carries
 - Bilateral
 - Sandbag
 - Farmers walk
 - Barbell overhead carry
 - Deadlift carry
 - Cross walk (w/ DB 1-arm extended overhead and 1-arm by side)
 - Heavier DB w/ lower hand



Strength Exercises - Strongman

- Carries
 - Unilateral
 - Waiter carry (w/ DB 1-arm extended overhead)
 - Suitcase carry (w/ DB)

