

Bond University
Research Repository



'Get Stronger' on effective ways of creating strong, symmetrical and intelligent muscles

Orr, Rob Marc

Licence:
CC BY-NC-ND

[Link to output in Bond University research repository.](#)

Recommended citation(APA):
Orr, R. M. (2002). *'Get Stronger' on effective ways of creating strong, symmetrical and intelligent muscles.* Fitness ACT Fitness Seminar Series, Canberra, Australian Capital Territory, Australia.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

For more information, or if you believe that this document breaches copyright, please contact the Bond University research repository coordinator.

fitness seminar series



Presentation 2: 'Get Stronger' on effective ways of creating strong, symmetrical and intelligent muscles

Date: Thursday 05 December 2002, 7:30pm

Presenter: Rob Orr

ADFPTI, B.FET, Ass Dip App Sci (Phys Trg), Adv Cert. Physical Training, L2 Pers Trainer, Cert Exercise for rehabilitation,

strength

what is strength?

Generically strength is seen as feats or efforts that involve moving enormous loads or, more scientifically, 'the maximum amount of weight lifted in a single voluntary contraction'.

There are however numerous subclasses of strength, these include:

- absolute strength: Regardless of body weight (eg. Lifting a barbell)
- relative strength: In relation to body weight (eg. Chin ups)
- strength endurance: Repeated efforts of strength (eg. Rowing, Push Ups)
- functional strength: Strength for everyday life (eg. Opening a jar)

where does strength come from?

Strength is influenced by two key factors:

- Cross Sectional area of muscle (muscle mass)
- Number of Motor Units that can be fully activated (the nervous system)

why do you need strength?

- Ability to carry out everyday tasks
- May improve endurance
- Life skill (relative strength)
- Quality of life

symmetry

Symmetry is more than just front and back, up and down. Symmetry of training should be based on muscle balance as well as movement balance:

- Muscle balance includes Chest and Upper Back
 - This is more than just training common muscles of the Chest and Back, ie the Pectorals and the Latissimus, as both of these muscles are also internal rotators.
- Movement balance includes basic patterns like Lift, Push and Pull.
- For functional strength symmetrical training may in fact require asymmetrical training.
 - If your lifestyle requires repetitive actions to maintain a symmetrical framework the form of training required, whilst in isolation may seem asymmetrical, combined with lifestyle may in fact be required to ensure a symmetrical frame.



'intelligent' muscle

'Intelligent' muscle is muscle that is 'useable', has high synergistic ability and developed in unison with its movement values.

A great quote from Paul Check is 'you can't fire a cannon from a row boat'. Suffice to say you cannot develop effective strength if the musculo-skeletal foundation and foundation skills are not developed.

In order to develop intelligent muscle you need to:

- learn posture.
- learn technique.
- Stabilise, both statically and dynamically.
- utilise large muscle groups in co-ordinated movement.

resistance training

potentially harmful exercises

Potentially Harmful	Alternatives
Pulldown — Behind The Head	Pulldown — To the Front
Shoulder Press — Behind The Head	Shoulder Press — To the Front
Pec Dec	Bench Flye
Stick Twists	ROM exercises for the exercise to follow
Straight Leg Sit Ups	Bend knees to 90*
Feet Anchored Sit Ups	Unanchored Sit Ups

REMEMBER: Any exercise performed incorrectly is potentially harmful.

safety when weight training

- ✗ Do not drop the weights. Besides the damage this could cause falling on you or a passer by, the integrity of the equipment can also be compromised.
- ✓ Always use collars on free weight bars. Not only do they prevent the weight from falling off, they also prevent the weights from sliding and causing the bar to become unbalanced.
- ✓ Be familiar with the equipment you are about to use.
- ✓ Always use correct lifting technique. Lift with the legs and keep the back upright and straight, even when picking up and placing away weights.
- ✓ Ensure you have a firm grip and are well balanced before you commence with your next set.
- ✓ Know your limit.

starting out

When you first start training your primary emphasis should be on technique. You need to develop what is known as the mind muscle link, feeling how the muscle works. If you start out lifting weights that are too heavy, you will tend to mis-learn proper form and become dependent on cheating.

strength training guidelines

repetition range

Absolute Strength	1 - 6 repetitions (As heavy as you can lift).
Relative Strength / endurance	Max reps with own body weight
Functional strength	Task specific



set range

The amount of sets performed depends on your experience level. Beginners only require one to two sets per muscle group in order to make gains, whereas the more advanced trainers perform up to 15 sets.

Beginner	1 - 2 Sets
Novice	3 - 8 Sets
Intermediate	6 - 12 Sets
Advanced	6 - 15 Sets

rest time

The amount of rest you require between sets also depends on your training goal.

Absolute Strength	3 to 6 mins
Relative Strength / endurance	3 to 6 mins
Functional strength	Task specific

FITTOR

frequency

How often one should train a particular muscle group depends on the time taken for recovery and the intensity of the previous work outs.

For the average weight trainer at least *48 hours* recovery is needed for a muscle group. (Discussed more under **rest / recovery**). With this in mind a full body work out can be conducted every second day or alternately, if your program is split over a period of two days, (Day 1. Upper body and Day 2. Lower body), you could train every day.

- For the beginner and novice 3 - 4 times a week is more than adequate.
- For the intermediate trainer 5 - 6 times a week, utilising split programs is recommended.
- The more advanced trainer may train up to 7 times a week (ensuring they have good recovery periods programmed in).

intensity

High intensity sessions should be followed by lighter sessions in order to prevent over training. There are many different intensity techniques, you have no doubt already heard of a few. Listed below are a few of the more basic methods used.

- **Forced Reps** : These are extra reps conducted after failure when a partner or assists. (AKA. Assisted reps.)
- **Pyramid** : Increasing or decreasing weight after each set. Types include Full Pyramid, Pyramid up and Reverse Pyramid (down) AKA. Up and down the rack.
- **Super Sets** : There are two methods of super setting. Antagonistic (opposing muscle groups eg. chest and back) or agonist (same muscle group). They are performed by continuing from one exercise, either after a short break or immediately, to another break. Once the second exercise is complete a longer break is taken and then the routine commences with the same exercise first. When conducting an antagonistic super set a short break of up to a minute can be taken in between exercises.

time

This relates to how long we train. Power, strength and muscle growth training sessions should last no more than 40 minutes per session. (Research has shown that if you are training to failure your intensity level drops rapidly after 40 or so minutes. It is therefore recommended, if needed your work out be divided into 2 sessions a day.

type of training

The type of training conducted should remain goal orientated, Eg. If your goal is strength then the strength training guidelines are best suited for maximal gains. By performing different strength exercises variety can be added. For muscular endurance a wider range is available including new body aerobics and circuits.

overload and progression

Basically these two training factors mean steadily making the exercise harder. The most important part for both the beginner and intermediate exerciser is 'to begin each new activity and / or program from the start'. This will insure less chance of initial over-training and injury.

rest / recovery

Recovery and adaptation for a muscle that has been involved in weight training takes on average around 48 - 72 hours, therefore the same muscle should not be trained two days consecutively. If you do not have a sufficient recovery phase, your trained muscles will not have time to repair and adapt. This means that rather than breaking down and adapting, the muscle will just break down.

more is not better

Do not believe that if doing 2 sets is good then doing 4 is better. As with most fitness training *doing more than recommended is not better*. It will not help you achieve your goals earlier but instead will cause over training and injury and in fact delay your progress. Learn to listen to your body and recognise the symptoms of over training.

