

Seminar- Benchpress.

Biomechanics of bench

Strength improves muscles, which in turn improves bone, ligament and tendon strength.

Measuring strength is easy, how much force can be exerted or how much is lifted (i.e work done). Power is the speed the lift is completed in (power= work/time)

Strength exercises are design to improve strength, power and endurance.

Different types of exercise:

- Isometric- Isometric exercise is a form of resistance training in which the participant uses the muscles of the body to exert a force either against an immovable object or to hold the muscle in a fixed position for a set duration of time. In this type of exercise, the muscle is contracted but does not change length during the exertion of force. Additionally the joint most closely associated with the effort remains static throughout the exercise.
Example- exercises with weights raised or lower and held for a time period.

- Isokenetic - Exercise performed with a specialized apparatus that provides variable resistance to a movement, so that no matter how much effort is exerted, the movement takes place at a constant speed. Such exercise is used to test and improve muscular strength and endurance, especially after injury.

Example-Tai-chi

- Isotonic (Isoinertial)- Isotonic exercise is a very popular form of muscle- strengthening. Isotonic exercise can be carried out either with:
 - Free weights -- dumbbells
 - Barbells; or fixed equipment -- e.g., the Nautilus

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In both forms exercises are carried out against a fixed resistance. As each muscle moves through its complete range, isotonic contraction creates tension with maximum effort at the beginning and end of each exercise.

- Plyometric- The idea of plyometrics is to develop the greatest amount of force in the shortest amount of time. Plyometrics are generally used in athletes, but can be tried by anyone looking to gain, strength, speed and power. Plyometric exercises sometimes require a bench, stairs, jumping rope; everything that you could find in your house. Examples- Burpies, clap push-ups, jumping jacks
- Concentric/Eccentric- The description of the positive and negative work done during a lift.
- Muscle Torque- The effect of increased movements of force on joints emphasising the anthropometric effect and importance of posture.

Anthropometrics- body size over all plus limb proportions. Differences in anthropometric characteristics result in differences in the work done by two persons lifting the same weight.

This means a lifter with short arms will do less work to lift the same weight as a lifter with long arms, even if they are the same bodyweight. Other differences such as chest shape, and different arm proportions will also effect the outcome.

Position on the bench:

Head- flat.

Shoulders- dropped.

Chest- up.

Distance between bar and chest reduced.

Wrists- straight.

Elbows- slightly inward to avoid flaring.

Buttocks- on bench.

Small of back- Arched to bring up chest and top of buttocks.

Feet flat on floor and 30-45 deg from body.

Starting position- before starting: spend a good 15-20secs getting position right.

Wrists straight, elbows in, chest elevated, back arched. Chest/arms tensed- waiting for 'start' call.

Weight transferred to feet. Feet evenly spaced and level.

Descent- slow to medium speed in straight line.

Position on chest- nipple height best, but between bottom of sternum and top of pectoral. Body tense/tight, bar stationary- waiting for 'press' call

Ascent

If raw- slightly backwards

With shirt- straighter descent (smallest distance for bar to travel). Explode off chest like coiled spring, transferring weight throughout body down to feet. Use momentum generated by shirt to push through sticking point and keep weight even throughout press out.

Finish- fully extended to arms length and hold waiting for 'rack' signal.

Weaknesses

Unable to hold weight up-

Stuck on chest-

Stalls part way up-

Stalls at top-

Before starting an exercise.

When training a particular muscle, make sure your posture is correct for that exercise, ensuring maximum benefit and minimising risk of injury.

Identify the goal of the exercise specifically; what exercise(s) can you use to increase your bench strength/power. Remember to take into account age, experience, physical conditioning and convenience.

Identify possible risks in performing an exercise. Think about stress to joints, ROM and possible dangers (spotting, for example).

Mentally perform the exercise by visualising the sequence of movements.

Evaluate the movement by asking your training partner if you are correctly performing it. Modify if necessary.

Determine DIF (duration, intensity and frequency)

Good exercises for the above weaknesses.

Stabilising exercises- bench light weights with your feet up, and practise dropping shoulders and inverting elbows to minimise leverage weaknesses.

Core strength training will also improve stability.

Avoid machines where possible, more stabilising muscles are used with free weights.

Stuck on chest- need to work on pectoral development. Good exercises for this.

Incline dumbbells

Incline barbell

Pec dec movements

Dumbbell Flyers

Pull over head dumbbell.

Stalling part way up or near the top - Tricep and bicep development

Narrow grip bench.

Block bench/Pin press/Floor pressing.

Using bands.

Overhead tricep.

Tri-cep pushdowns with cable or bands.

Weight not pressed in correct line- slightly forward/back

Also practise lift-offs and pauses.

Benchpress Lifting Shirts

Common Brands

Titan, Inzer, Metal, Crane

Hints regarding sizes

If at all possible try on a shirt before buying, but outside shoulder and biceps measurements are the usual indicator. Different brands have different fittings and brand selection is a personal decision. Talk to lifters who have them and get their opinion as to what works for them and why.

I personally use Titan Fury or F6 competition size 46C(Chest)/48A(Arms). For training I use 50, then a 48 then comp shirt. I weigh around 112-115kg for training and 110 for competition.

The Shirts

The purpose of a shirt is to amplify strength, not replace it. You must concentrate on strength first and use the shirt to augment your lift. New lifters should avoid shirts to start with and then start with a lighter grade before progressing to heavier ones.

In the last few years I have seen numerous lifters bomb because of excessively tight shirts. The trap it is easy to fall in is getting a shirt which is so tight you can't get the bar to your chest without a weight you have done before, thereby not knowing whether you can press it or not.

Be sensible and go one size bigger. Always be able to do a complete lift with a pause in a shirt before using it for a competition. Otherwise you will put yourself under unnecessary pressure during a competition.

Putting a shirt on

When putting on a shirt, the main method is to slide the arms up first until they are past the elbows, usually with the assistance of slippery type fabric, Check the seams are on the elbows as you do this, and the shirt is not twisted in the torso. Pull the shirt over the head and gradually work it down so that there are not folds in the fabric. Then your helper should grasp

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behind the shoulder and hold firmly while you "swim" with your arms, until the shirt is snug under the armpits and under the pectorals. Use a belt to stop the shirt from slipping as you lift.

Before each attempt, pull the shirt down again. Check in a minimum of two shirts in case your first choice rips while lifting. You can expect at least six competitions out of a shirt before they began to stretch and you lose the elastic effect.