GLOBAL FITNESS
INSTITUTE

SIS40215 : Certificate IV in Fitness

Notebook

SISSSTC402A

Develop strength & conditioning programs

Version 1

SISSSTC402A – Develop strength & conditioning programs

Strengths and Weaknesses

- Physical
  - Injury
  - Speed
  - Strength
  - Endurance
  - Flexibility
- Psychological
  - Depression
  - Fear
  - Motivation
  - Denial
  - Foundation skill (commitment, motivation, self-confidence, self-esteem)
  - Performance skills (concentration/attention, coping with pressure and control)
  - Facilitative skills (communication, training motivation, teambuilding, psychological rehabilitation from injury, lifestyle management)
- Tactical
  - Strategy
  - Planning
  - Experience
- Technical and leadership skills
  - Skill
  - Communication
  - Ability

The Periodization of Strength

To promote long term training improvements and avoid over training, an overall training program can be split into specific periods, each with their own objectives and set of training parameters. This concept is called periodization and it is the most effective approach to planning strength training programs for sport.

The overall training program (usually taken as one year long) can be split into set periods and usually consist of the:

- Preparation Period (Pre-season)

- Competition Period (In-season)
- Transition Period (Off / closed-season)

By co-ordinating the different elements of a strength training program with the phases of a typical season, the athlete can reach a peak for the start of the competitive season and most important parts of year.

Just as an overall season is split into distinct periods or phases so is the development of sport-specific strength. As mentioned earlier, it makes sense to develop certain types of strength before others. Here are the phases, in order, of an overall strength training program (which also lasts a year) and how they should coincide with phases of a typical season above:

Phase 1 - Basic Strength
(Transition period – Closed season → Preparation period – Early pre-season)

Training for many sports can have an unbalancing effect on the body's musculoskeletal system. One side of the body may become stronger than the other, agonists may be overly strong compared to antagonists and smaller muscle groups are often neglected. Left unchecked these imbalances can compound and may lead to chronic and acute injury.

A period of basic strength training should occur at the start of the preparation period (early pre-season). For less experienced athletes it may be necessary to start during the transition period (closed season).

Phase 2 - Maximum Strength / Hypertrophy (Preparation period – Pre-season)

Most athletes benefit from a period of maximal strength training. The length of this phase will vary depending on the sport. Strength and power athletes will spend more time in this phase compared to endurance athletes for example. If a period of hypertrophy training is required (i.e. football or rugby players) it usually occurs before maximal strength training (2).

Hypertrophy and maximal strength training programs usually occur midway through the preparation period (pre-season).

Phase 3 – Conversion (Late preparation phase → Early Competitive Season)

Until this point strength training has been generic in nature. To be effective however, this general base of strength must converted into sport-specific power or muscular endurance or both. The conversion of maximal strength occurs late in the preparation phase and may continue into the start of the competitive season.

Phase 4 – Maintenance (Competitive Season)

When strength training stops the benefits gained previously quickly diminish. In order to avoid this detraining effect a certain level of conditioning is required to maintain the gains made in the preparation phase.

Fortunately, the volume required to maintain strength is less than that required to build it. But with the onset of competitive matches and events, plus a greater emphasis on tactical and skill-based training, less time is available for strength conditioning and sufficient recovery. The maintenance phase occurs throughout the competitive season.

Phase 5 - Active Recovery (Transition Period → Off Season)

Following a strenuous season, a break from structured training and the rigors of competition is crucial for physical and mental respite. This can mean a complete break from all types of strength training programs for several weeks. Any longer than 3-4 weeks however, and fitness, particularly strength and power, diminishes rapidly. The active recovery phase occurs in the transition period (off / closed season).

Detraining

According to the principle of training reversibility, regular physical training induces various physiological adaptations that improve sports performance, whereas cessation or a major reduction in training brings about a partial or complete loss of these adaptations, thus compromising sports performance. In other words, the principle of reversibility is the principle of detraining. The training process and competition plans of athletes are often disrupted by illness, injury, rest periods or other factors that may induce a reduction or stoppage of usual levels of physical activity. It is therefore important to identify the effects and understand the mechanisms responsible for the changes that occur in an athlete's physiological capacities and sports performance.

Detraining is defined as the partial or complete loss of anatomical, physiological and performance adaptations induced by training, as a consequence of training reduction or cessation.

Intensity

The principle addressing the amount of effort applied in a training session. Intensity should be monitored to ensure the athlete remains above the training threshold and achieves a training effect. Intensity should be specific to the energy system and fitness component being developed If intensities are too high (above anaerobic threshold) or too low (below training threshold) the athlete will not be achieving specific training goals.

High intensities

- ATP/CP (85-95%max)
- Lactic Acid (80-90%max)
- Strength (80-95% max)
- Power (60-80% max)

Sub max intensities

- Aerobic (70-80%max)
- Endurance 40-60% max)

Monitoring intensities

- heart rates (heart rate monitors used by many athletes)
- times
- repetition maximums

Repetition

The performance of a single exercise. A group of repetitions performed after one anther is makes up a set.

Load

Intensity (load) of training- is usually expressed as a 1 rep maximum effort (1RM), and is determined by muscular effort and CNS energy expended. Training load refers to the mass or weight lifted. In iso-kinetic training, load refers to the force the client generates against the resistance provided by the machines.

Volume

Training volume refers to the quantity of work performed, the duration of training hours, the load lifted per session, the number of exercises per session, reps and sets per session. High volume training is for clients attempting to develop muscular endurance or maximal strength. Medium volume is typical for training different elements of power, with a low to medium load and long rest interval.

Plyometric Exercise (Speed-Strength Training)

An athlete utilizes plyometric exercises to train muscles to reach maximum strength in as short a time as possible, or simply put uses plyometrics to develop explosive power. Plyometrics involve techniques and training programs for optimizing the use of the stretch-shortening cycle, which are important for developing superior performance in athletics. Lower body plyometric exercises are utilized to develop quick feet movement, and the ability to quickly get off the ground. Lower body plyometric exercises include jumps-in-place, standing jumps, multiple hops & jumps, bounding, box drills, and depth jumps. Upper body

plyometric exercises involve the use of medicine balls to train the muscles to respond to external forces more quickly.

Considerations:

- Athlete needs sound strength and endurance
- Use less stressful drills for beginners
- Not recommended for children under 15 years old.
- Train on shock absorbing surfaces
- Frequency – 2 (off-season) and 1 (in-season).
- Recovery time – 48 hours

Exercise selection

Power and strength athletes will likely build their most common phases around core lifts such as squats, dead lifts, bench presses and the Olympic lifts such as Clean and jerk etc. Speed athletes may be using more close functional exercises such as single dumbbell variations to highlight core balance and agility. Periodisation will generally focus on all these areas at one point, depending upon your goals. But the important of exercise selection can greatly alter the success of a particular cycle.

Number of exercises:

Total volume of work may have a major bearing on your training but this can also vary depending on whether you choose to dedicate all your sets to one big exercise or break it down into a variety of multi-discipline ones to alternate developmental stressors. Generally when aiming for sheer strength time can be dedicated to the most productive lift, when looking at conditioning or flexibility a variety of exercises can have focus spread across them.

Exercise placement:

There is often the simple piece of wisdom that an exercise done earlier in a workout will get more stimulus than one done at the end as fatigue sets in. But it is also important to remember that the nervous system needs stimulation to fire up to its maximum contractive ability and the very first sets may not be as powerful as later ones. So it is important to understand and vary the placement of your exercises in a routine. Periodisation may mean that different muscle groups are hit first at different times. This also includes advanced techniques such as pre-exhaustion methods and drop-down or pyramid sets, as well as A/B supersets (one exercise paired with another)

Adaptations to include athletes with a disability

- athletes with sensory, physical, intellectual impairment

- sight loss
- hearing loss
- physical disability, eg, amputees, wheel chair athletes

Sport is an excellent vehicle for providing opportunities for building confidence, providing sense of future and connecting people back into community. What is often overlooked is the contribution that people with disability can make to the sports sector and wider community. Being part of 'sport' does not necessarily have to be in a playing context. Many people with disability also contribute as club administrators, officials, coaches, volunteers and spectators.

Adapting and Modifying
Make sure everyone is challenged and participates to their full potential while maintaining the integrity of the activity

How do you adapt or modify sport?
Being inclusive is about providing a broad range of options to cater for people of all ages, abilities and backgrounds. Sometimes this may mean modifying a sport to provide a more appropriate version for a particular group of participants.

Modifying the rules or even the competition structure of a sport is nothing new. In fact, most national sporting organisations in Australia provide modified versions of sports for their junior programs. For example, Basketball Australia has developed Aussie Hoops, AFL provides Auskick, Cricket Australia provides In2CRICKET, Athletics Australia has Little Athletics and Hockey Australia has developed Minkey hockey — these are just a few examples of national sporting organisations modifying the way their sports are delivered to make them more inclusive, safe and fun for younger players.

This strategy also enables new rules and equipment to be introduced as players mature and their skills improve. Modifying sport to include people with disability is no different. In some cases, people with disability can be included with no modifications at all, and in other situations some modifications may be needed.

The purpose of adapting and modifying sport is to minimise or eliminate disadvantage caused by the environment in which a sport is played. Modifications may only be minor — where a change in a rule or piece of equipment is straightforward and immediate to implement — yet may have provide significant assistance to an individual. Sometimes major modifications are necessary, particularly for people with high support needs. These modifications may require some planning in advance or may be ad hoc.

Things to consider

Remember the following points:

- Change part of an activity, for example, allowing a person with vision impairment to hit off a tee might enable them to participate in a game of softball or baseball.

- Changes do not have to be permanent: some may be phased out over time as skills and confidence increase.

- Try as much as possible to include all of the members of your group in the game. Question group members, when appropriate, as they will be your best source of solutions.

- Always maintain the integrity of the game: do not modify a game so much that it no longer resembles the game you were playing at the outset. Always be conscious of keeping all participants challenged. It may not be necessary to modify the game's rules or equipment for everybody to include one person — it may only require a change for that one person.

- There are situations where including everybody all the time may not be possible. Safety considerations are always a priority for each individual and the entire group. Use your common sense.

Adaptations to include pre-adolescent athletes, women and mature aged athletes

- refers to recommended programming guidelines in relation to appropriate sets and repetitions
- preferences for the use body weight support and resistance exercises
- benefits of appropriate training
- should follow the best practice principles of strength and conditioning

Women have differences in absolute and relative strength due to testosterone levels, but the training program written for them doesn't necessarily need to be different to that of a males. The muscle groups that need to be strong or powerful to be successful in a particular sport

are the same regardless of gender. Muscle of either gender has the same physiological characteristics.

You may need to be mindful of body fat levels, and menstruation cycle, as athletes in hard training may develop menstrual irregularities.

Resistance training of children has gained acceptance and popularity primarily because strength gains can occur, bone development may be enhanced, and injuries might be prevented in other sports and activities with developmentally appropriate training programs. When designing a program, consider the developmental and physical differences among children, exercise tolerance, and safety issues so that acute and chronic injuries are minimized and the benefits to the participating child are maximized.

Adolescent Strength & Conditioning Training

For many years, the use of resistance training to increase muscular strength and endurance in prepubescent and adolescent boys and girls was highly controversial.

Boys and girls were discouraged from using free weights for fear that they might injure themselves and prematurely stop the growth process. Furthermore, many scientists speculated that resistance training would have little or no effect on the muscles of the prepubescent boys because their levels of circulating androgens were still low.

Fortunately, several studies have been conducted in which both prepubescent and adolescent children have participated in resistance training. From these studies,

Kraemer and Fleck have concluded that the risk of injury is very low. In fact, resistance training might offer some protection against injury, for example, by strengthening the muscles that cross a joint. Still a conservative approach is recommended in prescribing resistance exercise for children, particularly preadolescents.

For actual training programs, resistance training for children should be prescribed in much the same way as for adults.

In closing, it is important to understand that the mechanisms allowing strength changes in children are accomplished largely without or little increases in muscle size.

A comprehensive study of the mechanisms responsible for increases in prepubescent boys concluded that the likely determinants of the strength gains achieved are:

Improved motor skill coordination,

- Increased motor unit activation and
- Other neurological adaptations

Furthermore, regular training has no apparent effect on growth in height. It does, however, affect weight and body composition. Generally, regular training results in:

- Lower total body fat
- Higher fat-free mass, and
- Higher total body mass

Strength Training Recommendations for Prepubescent Children

1. It should be of appropriate design to accommodate the size and degree of maturity of the prepubescent.

2. It should be cost effective.

3. It should be safe, free of defects, and inspected frequently.

4. It should be located in an uncrowned area free of obstruction with adequate lighting and ventilation.

5. Strength training should be preceded by a warm-up and cool-down.

6. Emphasis should be on dynamic concentric actions.

7. All exercises should be carried through a full range of motion.

8. Competition is prohibited.

9. No maximal lift should ever be attempted.

Program Considerations

1. A pre-participation physical exam is mandatory.

2. The child must have the emotional maturity to accept coaching and instruction.

3. There must be adequate supervision by coaches who are knowledgeable about strength training and the special problems of prepubescent.

4. Strength training should be a part of a comprehensive program designed to increase motor skills and level of fitness.

Prescribed Program

1. Training recommended two or three times a week for 20 to 30 minute periods.

2. No resistance should be applied until proper form is demonstrated. Six to 15 repetitions equal one set, one to three sets per exercise should be done.

3. Weight or resistance is increased in 0.5 to 1.4 kg (1-3 lb) increments after the prepubescent performs the exercise with good form.

Basic Guidelines for Resistance Exercise Progression in Children

7 or younger - Introduce child to basic exercises with little or no weight; develop the concept of a training session; teach exercise techniques; progress from body weight calisthenics, partner exercises and lightly resisted exercises; keep volume low.

8-10 - Gradually increase the number of exercises; practice exercise techniques in all lifts; start gradual progressive loading of exercises; keep exercises simple; gradually increase training volume; carefully monitor toleration to the exercise stress.

11-13 - Teach all basic techniques; continue progressive loading of each exercise; emphasize exercise techniques; introduce more advanced exercises with little or no resistance.

14-15 - Progress to more advanced youth programs in resistance exercise; add sport-specific components; emphasize techniques; increase volume.

16 or older - Move child to entry-level adult programs after all background knowledge has been mastered and a basic knowledge level of training experience has been gained.

Adolescent Aerobic and Anaerobic Training

Do prepubescent boys and girls benefit from aerobic training to improve their cardio-respiratory systems? This has also been a highly controversial area because several early studies indicated that training prepubescent children did not change their VO2 max values. Interestingly, even without significant increases in VO2max, the running performance of the children studied improved substantially. They could run at a fixed distance faster following a training program. More substantial increases in VO2max appear to occur once children have reached puberty. The reason for these findings are not well defined at this time. Because stroke volume appears to be the major limitation to aerobic performance in this age group, it is quite possible that further increases in aerobic capacity depend on heart growth.

Anaerobic training appears to improve children's anaerobic capacity.

Following training, children have:

-Increased resting levels of phosphocreatine, ATP, and glycogen;

-Increased phosphofructokinase activity; and

-Increased maximal blood lactate levels.

When designing aerobic and anaerobic training programs for children and adolescents, it appears that standard training principles for adults can be applied.

However, it would be prudent to be conservative to reduce the risk of injury, overtraining, and loss of interest in sport. This is also an appropriate time in life to focus on learning a variety of motor skills by exploring a number of activities and sports. Table 3 provides us with some cautionary measures when training children during aerobic and anaerobic activity.

Cautionary Thermal Stress Measures for Anaerobic and Aerobic Training in Children and Adolescents

-Children's ability to perform anaerobic activities is limited. A child has a lower glycolytic capacity, possibly because of a limited amount of phosphofructokinase.

-Children cannot attain high respiratory exchange ratios during maximal or exhaustive exercise, suggesting less lactate production.

-Children are capable of less evaporative heat loss than adults are because children sweat less (less sweat is produced by each active sweat gland).

-Young boys acclimate to meat more slowly than adults do. Data on this topic are not available for girls.

-Children appear to have greater conductive heat loss than adults, which should place children at a greater risk for hypothermia in cold environments.

Older adult considerations for exercise

Exercise Purpose/ Target Muscle Group	Modification for Frail Elderly	Modification for Robust Elderly
Full-body warm-up; strengthens legs	Repeated chair stands using arms to help push off (if able to get out of a chair or wheelchair)	Repeated chair stands with arms folded across the chest
Muscles used to lift and carry	Seated* biceps curls; use very light or no resistance and alternate arms	Standing bicep curls, both arms at the same time
	Seated lateral raises	Standing lateral raises
	Seated triceps pushdowns using light to medium resistance tubing or band tethered to a doorjamb or ballet bar**	Standing triceps pushdowns using medium to heavy resistance tubing or band tethered to a doorjamb or ballet bar**
Postural muscles	Seated rows using light to medium resistance tubing or band tethered to a doorjamb or ballet bar	Standing rows using medium to heavy resistance tubing or band tethered to a doorjamb or ballet bar
Abdominals	Seated abdominal contractions coordinated with forced exhalation	Seated or standing abdominal contractions coordinated with forced exhalation
Hip flexors	Seated knee raises with or without added ankle weights	Standing knee raises with or without added ankle weights
Muscles used for ambulation	Seated knee extensions with or without added ankle weights	Seated knee extensions with ankle weights
	Seated calf raises	Standing calf raises
	Seated hamstring curls using light resistance tubing or band	Standing hamstring curls using ankle weights or resistance tubing or band

		Standing hip extensions with or without resistance
		Standing lateral leg raises with or without resistance

Recover & Injury

10 Ways To Recover Quickly After Exercise

There are as many methods of recovery as there are athletes. The following are some of the most commonly recommended by the experts.

Rest. Time is one of the best ways to recover (or heal) from just about any illness or injury and this also works after a hard workout. Your body has an amazing capacity to take care of itself if you allow it some time. Resting and waiting after a hard workout allows the repair and recovery process to happen at a natural pace. It's not the only thing you can or should do to promote recovery, but sometimes doing nothing is the easiest thing to do.

Stretch. If you only do one thing after a tough workout, consider gentle stretching. This is a simple and fast way to help your muscles recover.

Cool Down. Cooling down simply means slowing down (not stopping completely) after exercise. Continuing to move around at a very low intensity for 5 to 10 minutes after a workout helps remove lactic acid from your muscles and may reduce muscles stiffness. warming up and cooling down are more helpful in cooler temperatures or when you have another exercise session or an event later the same day.

Eat Properly. After depleting your energy stores with exercise, you need to refuel if you expect your body to recover, repair tissues, get stronger and be ready for the next challenge. This is even more important if you are performing endurance exercise day after day or trying to build muscle. Ideally, you should try to eat within 60 minutes of the end of your workout and make sure you include some high-quality protein and complex carbohydrate.

Replace Fluids. You lose a lot of fluid during exercise and ideally, you should be replacing it during exercise, but filling up after exercise is an easy way to boost your recovery. Water supports every metabolic function and nutrient transfer in the body and having plenty of water will improve every bodily function. Adequate fluid replacement is even more important for endurance athletes who lose large amounts of water during hours of sweating.

Try Active Recovery. Easy, gentle movement improves circulation which helps promote nutrient and waste product transport throughout the body. In theory, this helps the muscles repair and refuel faster.

Have a Massage. Massage feels good and improves circulation while allowing you to fully relax. You can also try self-massage and Foam Roller Exercises for Easing Tight Muscles and avoid the heavy sports massage price tag.

Take an Ice Bath. Some athletes swear by ice baths, ice massage or contrast water therapy (alternating hot and cold showers) to recover faster, reduce muscle soreness and prevent injury. The theory behind this method is that by repeatedly constricting and dilating blood vessels helps remove (or flush out) waste products in the tissues. Limited research has found some benefits of contrast water therapy at reducing delayed onset muscle soreness (DOMS).

How to use contrast water therapy: While taking your post-exercise shower, alternate 2 minutes of hot water with 30 seconds of cold water. Repeat four times with a minute of moderate temperatures between each hot-cold spray. If you happen to have a spa with hot and cold tubs available, you can take a plunge in each for the same time.

Get Lots of Sleep. While you sleep, amazing things are taking place in your body. Optimal sleep is essential for anyone who exercises regularly. During sleep, your body produces Growth Hormone (GH) which is largely responsible for tissue growth and repair.

Avoid Overtraining. One simple way to recovery faster is by designing a smart workout routine in the first place. Excessive exercise, heavy training at every session or a lack of rest days will limit your fitness gains from exercise and undermine your recovery efforts.

Listen to Your Body for a Faster Recovery
The most important thing you can do to recovery quickly is to listen to your body. If you are feeling tired, sore or notice decreased performance you may need more recovery time or a break from training altogether. If you are feeling strong the day after a hard workout, you don't have to force yourself to go slow. If you pay attention, in most cases, your body will let you know what it needs, when it needs it.

Delayed onset of muscle soreness (DOMS)
Delayed onset muscle soreness (DOMS) describes a phenomenon of muscle pain, muscle soreness or muscle stiffness that is felt 12-48 hours after exercise, particularly at the beginning of a new an exercise program, after a change in sports activities, or after a dramatic increase in the duration or intensity of exercise.

This muscle pain is a normal response to unusual exertion and is part of an adaptation process that leads to greater stamina and strength as the muscles recover and build hypertrophy).

This sort of muscle pain is not quite the same as the muscle pain or fatigue you experience during exercise>. This delayed pain is also very different than the acute, sudden pain of and injury such as muscle strains and sprains, which is marked by an abrupt, specific and sudden pain that occurs during activity and often causes swelling or bruising.

The delayed soreness of DOMS is generally at its worst within the first 2 days following the activity and subsides over the next few days.

Delayed onset muscle soreness is quite common and quite annoying, particularly for those beginning an exercise program or adding new activities. A beginning exerciser who bikes 10 miles, followed by push-ups and sit-ups is likely to experience muscle pain and soreness in the next day or two.

Delayed Onset Muscle Soreness - Causes

Delayed onset muscle soreness is thought to be a result of microscopic tearing of the muscle fibers. The amount of tearing (and soreness) depends on how hard and how long you exercise and what type of exercise you do. Any movement you aren't used to can lead to DOMS, but eccentric muscle contractions (movements that cause muscle to forcefully contract while it lengthens) seem to cause the most soreness.

Examples of eccentric muscle contractions include going down stairs, running downhill, lowering weights and the downward motion of squats and push-ups. In addition to small muscle tears there can be associated swelling in a muscle which may contribute to soreness.

Delayed onset muscle soreness - treatment

There is no one simple way to treat delayed onset muscle soreness. In fact, there has been an ongoing debate about both the cause and treatment of DOMS. In the past, gentle stretching was one of the recommended ways to reduce exercise related muscle soreness, but a study by Australian researchers published in 2007 found that stretching is not effective in avoiding muscle soreness.

So does anything work to reduce delayed-onset muscle soreness? Nothing is proven 100 percent effective, but some people have found the following advice helpful, but it's best for an individual to try a few things to see what works for them. Ultimately, best advice for treating DOMS is to prevent it in the first place.

Tips for dealing with muscle soreness after exercise

If you do find yourself sore after a tough workout or competition, try these methods to deal with your discomfort. Although not all are backed up with research, many athletes report success with some of the following methods.

Use Active Recovery. This strategy does have support in the research. Performing easy low-impact aerobic exercise increasing blood flow and is linked with diminished muscle soreness. After an intense workout or competition, use this technique as a part of your cool down.

Rest and Recover. If you simply wait it out, soreness will go away in 3 to 7 days with no special treatment.

Try a Sports Massage. Some research has found that sports massage may help reduce reported muscle soreness and reduce swelling, although it had no effects on muscle function.

Try an Ice Bath or Contrast Water Bath. Although no clear evidence proves they are effective, many pro athletes use them and claim they work to reduce soreness.

Use R.I.C.E., the standard method of treating acute injuries, if your soreness is particularly painful.

Perform Gentle Stretching. Although research doesn't find stretching alone reduces muscle pain of soreness, many people find it simply feels good.

Try a Nonsteroidal Anti-inflammatory. Aspirin, ibuprofen or naproxen sodium may help to temporarily reduce the muscle soreness, although they won't actually speed healing. Be careful, however, if you plan to take them before exercise. Studies reported that taking ibuprofen before endurance exercise is not recommended.

Try Yoga. There is growing support that performing Yoga may reduce DOMS.

Listen to Your Body. Avoid any vigorous activity or exercise that increases pain.

Allow the soreness to subside thoroughly before performing any vigorous exercise.

Warm Up completely before your next exercise session. There is some research that supports that a warm-up performed immediately prior to unaccustomed eccentric exercise produces small reductions in delayed-onset muscle soreness (but cool-down performed after exercise does not).

**** If your pain persists longer than about 7 days or increases despite these measures, consult your physician.**

Learn something from the experience! Use prevention first.

Tips to Help Prevent Delayed Onset Muscle Soreness
While you may not be able to prevent muscle soreness entirely, you may reduce the intensity and duration of muscles soreness if you follow a few exercise recommendations.

Progress Slowly. The most important prevention method is to gradually increase your exercise time and intensity. See the 10 percent rule if you need some exercise progression guidelines.

Overtraining Syndrome

Overtraining syndrome frequently occurs in athletes who are training for competition or a specific event and train beyond the body's ability to recover. Athletes often exercise longer and harder so they can improve. But without adequate rest and recovery, these training regimens can backfire, and actually decrease performance.

Conditioning requires a balance between overload and recovery. Too much overload and/or too little recovery may result in both physical and psychology symptoms of overtraining syndrome.

- Common Warning Signs and Symptoms of Overtraining Syndrome
- Washed-out feeling, tired, drained, lack of energy
- Mild leg soreness, general aches and pains
- Pain in muscles and joints
- Sudden drop in performance
- Insomnia
- Headaches
- Decreased immunity (increased number of colds, and sore throats)
- Decrease in training capacity / intensity
- Moodiness and irritability
- Depression
- Loss of enthusiasm for the sport
- Decreased appetite
- Increased incidence of injuries.
- A compulsive need to exercise

Recognizing Overtraining Syndrome
There are several ways you can objectively measure some signs of overtraining. One is by documenting your heart rates over time. Track your aerobic heart rate at a specific exercise intensities and speed throughout your training and write it down. If your pace starts to slow, your resting heart rate increases and you experience other symptoms, you may heading into overtraining syndrome.

You can also track your resting heart rate each morning. Any marked increase from the norm may indicated that you aren't fully recovered.

A training log that includes a note about how your feel each day can help you notice downward trends and decreased enthusiasm. It's important to listen to your body signals and rest when you feel tired.

You can also ask those around you if they think you are exercising too much.

While there are many proposed ways to objectively test for overtraining, the most accurate and sensitive measurements are psychological signs and symptoms and changes in an athlete's mental state. Decreased positive feelings for sports and increased negative feelings, such as depression, anger, fatigue, and irritability often appear after a few days of intensive overtraining. Studies have found increased ratings of perceived exertion during exercise after only three days of overload.

How to Treat Overtraining Syndrome
If you suspect you are overtraining, start with the following:

Rest and Recover. Reduce or stop exercise and allow yourself a few days of rest.

Hydrate, Drink plenty of fluids and alter your diet if necessary.

Get a sports massage. This may help relax you mentally and physically.

Begin Cross Training. This often helps athletes who are overworking certain muscles or suffering from mental fatigue.

Research on overtraining syndrome shows getting adequate rest is the primary treatment plan. New evidence indicating that low levels of exercise, or active recovery, during the rest period speeds recovery, and Moderate exercise increases immunity.

Total recovery from overtraining can take several weeks and should include proper nutrition and stress reduction.

How to Prevent Overtraining Syndrome
It's often hard to predict overtraining because every athlete responds differently to certain training routines. It is important, however, to vary training through the year and schedule in significant rest time.

Identify clinical factors that influence the program are identified

Liaise with *other coaches and specialists*

Other coaches and specialists

- health professionals
- physiologists
- biomechanics
- Establish ongoing liaison between coaches/instructors where coaches/instructors work with the same ***athlete***
- Identify and document role and responsibilities of the individual coaches/instructors
- Identify ***potential conflicts*** and ***conflict resolution***

Potential conflicts

- coaching/instructing styles
- training program
- competition/performance program
- discipline procedures
- techniques
- tactics and time commitments
- **Conflict resolution**
- discussion
- mediation

- negotiation

RESISTANCE TRAINING EXERCISE TECHNIQUES

BB SQUAT

Instructions

• Rack should be slightly lower than shoulder height
• Step under bar and position it on upper trapezius muscles and back of shoulder
• Hands as close as possible to shoulders (depending on flexibility) with elbows pointing down
• Stand up and take one step backwards
• Stand with feet shoulder width apart OR shoulder width plus width of foot apart, head and chest up and eyes looking forward- NORMAL POSTURE
• Begin movement by bending at the hips and the knees, keeping the feet flat on the floor, head and chest up, body balanced and spine maintaining normal lordotic curve
• Descend as far as possible while keeping spine in neutral position (slight curve in back)
• Keep knees over toes and heels on the floor
• Reverse movement on way up maintaining correct posture at all times

Teaching Points

• Stable body position
• Head and chest up
• Bend at knees and hips- bum out
• Keep heels on floor

Common Errors

• Heels lifting off floor- trying to keep back vertical (straight)
• Knees travelling excessively forward over toes
• Bending at waist and losing lordotic curve
• Head and chest dropping
• Heels lifting off the floor

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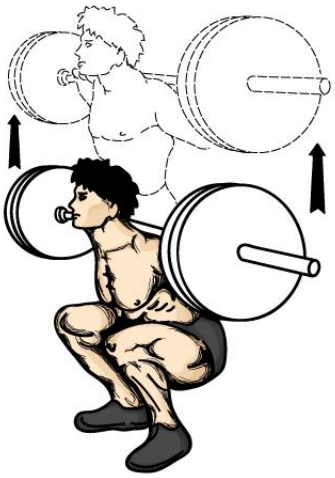

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SPLIT SQUAT

Instructions

• Rack should be slightly lower than shoulder height
• Step under bar and position it on upper trapezius muscles and back of shoulder
• Hands as close as possible to shoulders (depending on flexibility) with elbows pointing down
• Stand up and take one step backwards
• Assume a split stance position with one leg forward (non-dominant or weaker side first) and the other behind approximately a foot distance apart
• Shift weight forward over the front leg with the trail leg bent at the knee and resting on the toes
• Begin movement by bending at the hips and the knee, keeping the feet flat on the floor, head and chest up, body balanced and spine maintaining normal curve
• Continue to squat downwards keeping the weight on the front leg and the foot flat on the ground
• Descend as far as possible while keeping spine in neutral position (slight curve in back)
• Keep knee over toes and heel on the floor
• Reverse movement on way up by driving up and forward through the front leg, maintaining correct posture at all times, until fully erect

Teaching Points

• Stable body position
• Head and chest up
• Bend at knees and hips- bum out
• Keep heels on floor
• Push through the floor with front leg
• Back leg is for stability only

Common Errors

• Heels lifting off floor- trying to keep back vertical (straight)
• Knee travelling excessively forward over toes
• Bending at waist and losing lordotic curve
• Head and chest dropping
• Heels lifting off the floor
• Pushing weight onto back leg

Variations

• Can be performed with BB, DB or on Smith Machine

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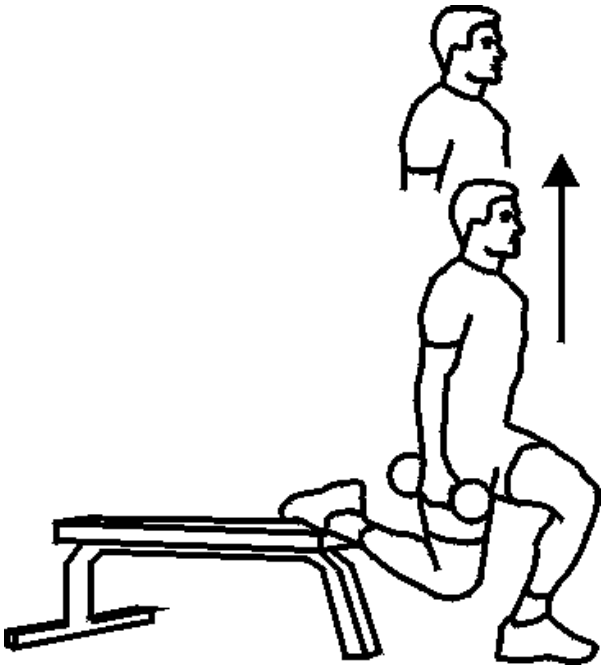
SINGLE LEG SQUAT

Instructions

• Rack should be slightly lower than shoulder height
• Step under bar and position it on upper trapezius muscles and back of shoulder
• Hands as close as possible to shoulders (depending on flexibility) with elbows pointing down
• Stand up and take one step backwards
• Stand with weight balance on one leg (non-dominant or weaker side first) and the other leg bent at the knee and lifted off the ground
• Begin movement by bending at the hips and the knee squatting downwards keeping the weight on the front leg and the foot flat on the ground
• Descend as far as possible keeping spine in neutral position (slight curve in back)
• Keep knee over toes and heel on the floor
• Reverse movement on way up by driving up and forward through the front leg, maintaining correct posture at all times, until fully erect



Teaching Points

• Stable body position
• Head and chest up
• Bend at knees and hips- bum out
• Keep heels on floor

Common Errors

• Heels lifting off floor- trying to keep back vertical (straight)
• Knee travelling excessively forward over toes
• Bending at waist and losing lordotic curve
• Head and chest dropping
• Heels lifting off the floor
• Pushing weight onto back leg and performing split squat movement

Variations

• Can be performed with BB, DB or on Smith Machine

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BB DEADLIFT

Instructions

• Grip the bar with hands in a pronated position and slightly wider than shoulder width apart (can use alternate grip one hand forward / back)
• Feet shoulder width apart with the bat positioned over the mid part of the foot
• Squat down keeping normal curve in lumbar spine, chest up, head facing forwards and shoulders over the bar
• Keep arms straight, hold scapulae down, and pull belly button in to stabilise trunk
• Commence lift by pushing through the floor with the legs and letting hips and knees rise at the same rate
• Keep bar close to shins
• When the bar clears the knees, continue to extend the legs and the lower back until body is fully upright
• Lower the bar under control keeping lower back slightly curved and the bar close to the body until the plates lightly touch the ground

Teaching Points

• Assume squat position over the bar, back slightly curved
• Bar over mid part of the feet and shoulder in front of the bar
• Push through the floor using legs, keeping bar close to the body and back tight
• Lower the weight under control keeping bar close to body

Common Errors

• Poor posture at starting position of movement: lower back rounded, head and chest forward
• Bar too far in front of the feet
• Shoulders not over the bar
• Bending arms to help pull the bar up
• Hips rising faster than knees
• Bar too far out in front of body
• Rounding the lower back at any stage of the lift
• Hyperextending the lower back at the top of the lift
• Head and chest dropping forward during descent phase of the lift

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LEG PRESS

Instructions
• Position body in machine so that lower back is in normal posture
• Position feet shoulder width apart, keeping hips knees and toes in natural alignment
• Begin movement by keeping feet flat on the base plate and extending hips and knees
• Extend legs until fully straight but do not snap knees into hyperextension
• Lower weight under control under lower back begins to lose neutral curve

Teaching Points
• Keep lower back in neutral position against seat
• Hips, knees and toes in alignment
• Push through whole foot not toes
• Straighten legs completely BUT don't lock them out forcefully
• Lower weight until back comes off seat

Common Errors
• Lower back not fully supported against seat
• Hips, knees and toes not aligned- most common knees bend towards each other
• Knee joint being forcefully extended
• Pushing through toes and not heels

Start/Finish

LEG EXTENSION

Instructions

• Position body so knees are opposite pivot point of machine, leg pad is just above the ankle joint, and back is in neutral position on seat
• Keeping upper body stable, contract quads to extend leg until fully straight
• Keep the toes dorsiflexed (pulled up towards shins) throughout the movement
• Lower the weight under control until knee angle is approximately 45o to the horizon

Teaching Points

• Body stable on machine
• Straighten leg fully under control
• Pull toe towards shin
• Lower pad to 45o

Common Errors

• Knee not fully extended at top of movement
• Lowering weight too fast
• Bending knee too far
• Not pulling toes up towards shins

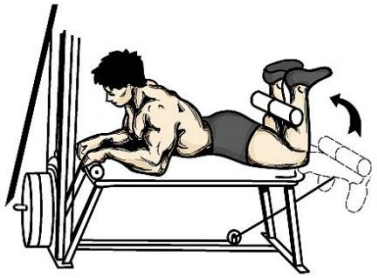
LEG CURL

Instructions

• Position body face down on the machine so that knees are opposite pivot point of machine, leg pad is just on the Achilles Tendon, and back is in neutral position
• Stabilising the body on the machine, begin the movement by curling the pads towards the gluteals, keeping toes plantarflexed (pointed downwards)
• Curl the weight as high as possible keeping lower back in neutral position
• Lower the weight under control until leg is fully extended

Teaching Points

• Stabilise body on machine, lower back in neutral
• Curl heels up to bottom as far as possible
• Lower until knee is fully straight



Common Errors

• Pulling hips off bench, particularly at top of movement
• Arching lower back particularly at top of movement
• Not fully extending leg
• Using momentum to “kick” the weight up at the end of the movement

FLAT BACK DEADLIFT

Instructions
• Standing upright with bar across thighs, spine in neutral position, knees bent at 15o
• Commence movement by pushing hips backwards, keeping spine in neutral (lordotic) position and knees slightly bent
• Descend until a stretch is felt in the hamstrings or until lumbar spine begins to lose normal lordosis
• Reverse movement by concentrating on using hamstrings to rotate the pelvis / hips forward, keeping spine neutral, until body fully erect

Teaching Points
• Start with normal posture, knees slightly bent
• Push hips backwards, keep back tight / slightly curved
• Stop when spine begins to bend
• Use hamstrings to pull pelvis / hips forward

Common Errors
• Not maintaining normal posture throughout movement
• Knees being locked out
• Knees bending during movement (squat movement)

CHIN UPS

Instructions
• Assume a hand spacing slightly wider than shoulder width with forearms parallel to one another and thumb over the top of the bar
• Position body hanging straight down with spine in a neutral position
• Commence the movement by pulling the body up towards the bar, forearms remaining under the bar and elbows tracking slightly forward in the frontal plane
• Finishing pulling when bar is at chin level and shoulder blades are fully depressed
• Return to start position by following same path downwards with the arms being fully extended at the bottom of movement

Teaching Points
• Stable body position- head in alignment
• Arms fully stretched at bottom
• Pull with forearms underneath bar and elbows tracking slightly forward
• Pull to chin / clavicle with shoulders finishing down and not elevated

Common Errors
• Excessive arching of lumbar spine
• Commencing movement by kicking with lower body
• Elbows not pulling in a straight line
• Protracting chin towards bar at top of movement- taking chin to bar
• Hunching shoulders at top of movement- not depressing scapulae

• Not fully extending arms at bottom of movement

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CLOSE GRIP CHIN UP

Instructions

• Straight bar: Assume a hand spacing with palms in a supinated position and shoulder width apart
• V- handle: Grip the handle with palms facing and thumbs over the top
• Position body hanging straight down with spine in a neutral position
• Commence the movement by pulling the body up towards the bar, forearms vertical and elbows being pulled down and back
• Finishing pulling when bar / handle reaches the upper chest and shoulder blades are fully depressed
• Return bar to start position by following same path downwards with the arms being fully extended at top of movement

Teaching Points

• Stable body position- head in alignment
• Arms fully stretched at top
• Pull with forearms underneath bar and elbows tracking forward
• Pull to upper chest with shoulders finishing down and not elevated

Common Errors

• Leaning too far backwards
• Elbows not pulling in a straight line
• Protracting chin towards bar at bottom of movement
• Hunching shoulders at bottom of movement- not depressing scapulae
• Not fully extending arms at top of movement

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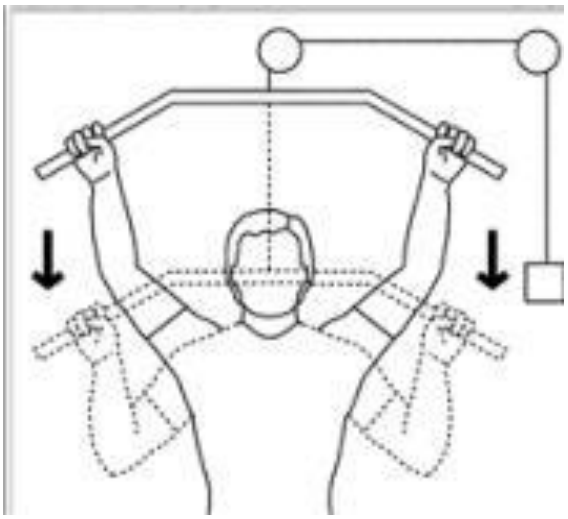
LAT PULLDOWN TO FRONT

Instructions

• Assume a hand spacing slightly wider than shoulder width with forearms parallel to one another and thumb over the top of the bar
• Position body on machine with body slightly behind bar and knee pad at correct height, arms fully extended overhead
• Stabilise body with a slight curve in the lumbar spine
• Commence the movement by pulling the bar down towards the body, forearms remaining under the bar and elbows tracking slightly forward in the frontal plane
• Finishing pulling when bar is between chin and clavicle height and shoulder blades are fully depressed
• Return bar to start position by following same path upwards with the arms being fully extended at top of movement

Teaching Points

• Stable body position- head in alignment
• Arms fully stretched at top
• Pull with forearms underneath bar and elbows tracking slightly forward
• Pull to chin / clavicle with shoulders finishing down and not elevated



Common Errors

• Leaning too far backwards
• Commencing movement by pulling with lower back
• Elbows flaring out to sides /forearms not under bar
• Protracting chin towards bar at bottom of movement
• Hunching shoulders at bottom of movement- not depressing scapulae
• Not fully extending arms at top of movement

SEATED ROWING

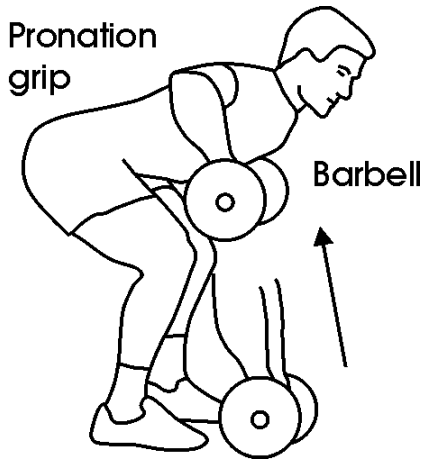
Instructions
• Sit on the on the bench with legs almost fully extended, spine in neutral position with arms fully extended, scapulae slightly protracted
• Commence movement by pulling the handle towards the stomach keeping the elbows close to the sides
• Finish with elbows pulled back past the trunk and scapulae fully retracted and the body in an upright position
• Return the handle to the start position without leaning forward from the lumbar spine

Teaching Points
• Spine in neutral position throughout movement
• Arms fully extended at beginning and end of movement
• Keep elbows close to body
• Scapulae fully retracted at end of pulling

Common Errors
• Leaning forward from lumbar spine
• Pulling handles to chest and elevating scapulae / shrugging shoulders
• Not finishing pull with scapulae fully retracted

BB BENT OVER ROW

Instructions
• Stand upright with hands spacing slightly wider than shoulder width on bar
• Assume a bent over position with knees bent at 15o and the trunk at 45-60o to vertical, spine in neutral position and bar hanging straight down
• Pull bar towards umbilicus (belly button), keeping elbows close to sides of body
• Finish pull with scapulae fully retracted
• Lower bar under control keeping spine in neutral position until arms fully extended



Teaching Points
• Body in stable bent over position- SPINE MUST BE IN NEUTRAL POSITION
• Pull bar to stomach, elbows close to body
• Arms fully extended at bottom of movement

Common Errors
• Spine not in neutral position, head looking up
• Pulling bar to chest, elbows out to sides
• Using legs to help commence / finish movement

Version 1

DB ONE ARM ROW

Instructions
• Place same side knee / hand on bench with spine in neutral position and arm holding DB fully extended with palm facing body
• Begin movement by pulling DB straight up keeping elbow close to body
• Finish with elbow pulled back past trunk and scapula fully retracted
• Lower under control until arm is fully extended
and scapula slightly protracted

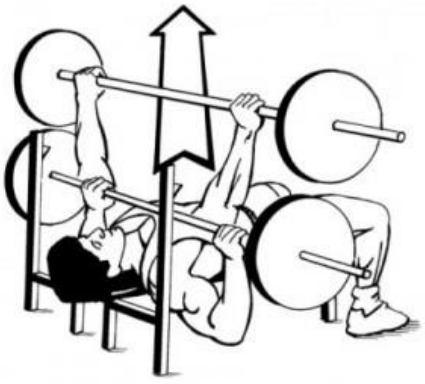
Teaching Points
• Stabilised body on bench, spine in neutral
• Arms is pulled straight up elbow close to body
• Fully straighten arm at bottom

Common Errors
• Spine not stabilised in neutral position
• Arm pulled out from the side
• Trunk rotated at top and bottom of movement
to assist completion

BB BENCH PRESS

Instructions
• Position body supine on bench, eyes slightly in front of the bar and feet on the ground UNLESS bench height leads to excessive lordosis
• Grip width on bar should be so forearms are parallel to each other
• Lift bar off rack and position bar above chin / neck and stabilise scapulae
• Lower the weight under control towards the mid chest / nipple line, keeping forearms under the bar and elbows tracking slightly forward
• Gently touch the bar on the chest and return to starting position by pushing the bar upwards and slightly backwards

Teaching Points
• Stabilise body: feet on ground, scapulae tight, head on bench
• Bar moves in a curved path from chin at top to mid chest at bottom
• Keep forearms under the bar and elbows slightly forward during movement



Common Errors
• Bar too far down the body at start or during movement

• Elbows flare out to side, shoulders hunch up during movement
• Head comes off bench
• Grip is too narrow / wide on the bar

DB INCLINE PRESS

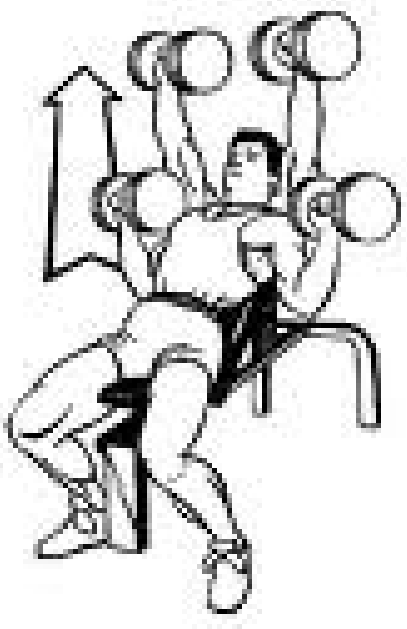
Instructions
• Position body supine on bench, and feet on the ground UNLESS bench height leads to excessive lordosis
• Start with the DB together above the body with arms fully extended and palms facing down the body, scapulae stabilised
• Under control lower the DB out to the side of the body keeping the forearms under the DB, elbows moving directly out to the side
• Lower until a stretch is felt in the chest muscles and return to start position by pushing the DB together in an arc above the chest

Teaching Points
• Stabilise body on bench
• Weight stays directly over forearm and shoulder
• DB move in an arc from bottom position to above chest

Common Errors
• Too much elbow bend allowing DB to touch chest at bottom
• Elbows do not stay out to side- come forward
• DB are pushed straight up and then brought together at top rather than moved in a continuous arc

BB INCLINE PRESS

Instructions
• Position body supine on bench, eyes slightly in front of the bar and feet on the ground UNLESS bench height leads to excessive lordosis
• Grip width on bar should be so forearms are parallel to each other
• Lift bar off rack and position bar above chin / neck and stabilise scapulae
• Lower the weight under control towards the upper chest , keeping forearms under the bar and elbows tracking out to the side
• Gently touch the bar on the chest and return to starting position by pushing the bar straight upwards



Teaching Points
• Stabilise body: feet on ground, scapulae tight, head on bench
• Bar moves in a straight line over the upper chest

• Keep forearms under the bar and elbows out to the side during the movement

Common Errors

• Bar too far down the body at start or during movement
• Shoulders hunch up during movement
• Head comes off bench
• Grip is too narrow / wide on the bar

DB FLYS

Instructions

• Position body supine on bench and feet on the ground UNLESS bench height leads to excessive lordosis
• Start with the DB together above the body with elbows slightly bent and palms facing towards each other, scapulae stabilised
• Keeping the wrist, elbow and shoulder in alignment, lower the weight out to the sides of the body until a stretch is felt in the chest muscles
• Return the DB to the start position by contracting the chest muscles and pulling the arms together
• The elbows should remain bent to the same degree and the palms facing upwards throughout the entire movement

Teaching Points

• Stabilise body on bench
• Keep wrist, elbow, and shoulder in a straight line
• Keep elbow bent throughout movement
• Move DB in an arc, in a hugging motion

Common Errors

• Too much bend in the elbow during the movement, particularly at the bottom
• Not maintaining proper alignment of wrist, elbow and shoulder during movement usually DB dropping towards feet
• Palms being turned forward facing the feet during the movement

DIPS

Instructions

• Position body in between parallel dip handles, hands at side of body, arms fully straight and body in alignment
• Keeping spine in neutral position, commence exercise by bending at elbows and shoulders, leaning trunk slightly forward and lowering body towards the floor
• Lower body under control towards the ground, keeping elbows close to sides and weight evenly balanced until upper arm is parallel to ground
• Return to start position by straightening arms until body is fully upright

Teaching Points

• Stabile body position, head in alignment, hands by side, arms straight
• Bend at elbows and shoulders, lean slightly forward
• Push through elbows and shoulders
• Body fully upright

Common Errors
• Spine not in alignment throughout movement
• Hunching shoulders
• Elbows flaring to side
• Uneven extension of arms

BB SHOULDER PRESS

Instructions
• Standing, feet shoulder width apart, normal posture
• Bar positioned across clavicles, hands outside shoulder width apart, palms forward
• Inhale breath and stabilise trunk
• Keeping forearms under bar, push bar upwards, keeping close to face, elbows slightly forward
• When bar clears head, start pushing slightly backwards until arms fully extended and bar is balanced over body
• Reverse movement on way down, keeping bar close to head
• Stop at level of clavicles

Teaching Points
• Stable body position
• Keep elbows under bar, elbows slightly forward
• Push slightly backwards when bar clears head
• Finish with bar over centre of balance
• Keep close to face on way up and down

Common Errors
• Push too far away from face
• Finish with bar in front of body / too far behind
• Allow elbows to flare backwards
• Drop bar past clavicles at bottom of movement

DB LATERAL RAISE

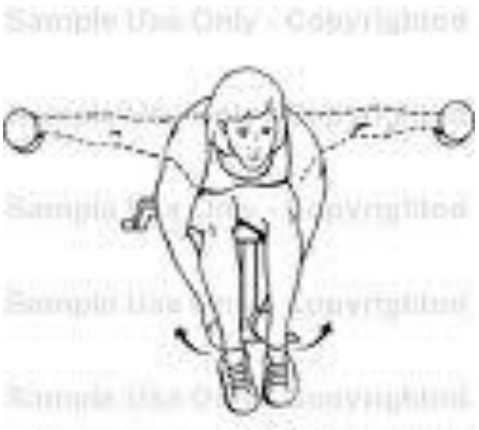
Instructions
• Standing, feet shoulders width apart, normal posture, slight bend at hips
• DB in front of the body with palms facing and arms slightly bent
• Keeping the palms facing the floor and elbows slightly bent, raise the DB away from the body in line with the shoulders until the elbow (DB) is slightly higher than the shoulder
• Lower the DB in the same movement arc under control

Teaching Points
• Stable body position
• Take DB out wide from the body
• Keep palms facing down to ground (little finger higher than thumb)

• Elbow (DB) to slightly above shoulder height

Common Errors
• Palm facing forwards during movement
• Swaying body backwards
• Elbow too straight too bent
• Elbows not high enough at top
• Shrugging shoulders too much at top of movement

DB/CABLE REVERSE FLY



Instructions
• Assume a bent over position with knees bent at 15o and the trunk at 45-60o to vertical, spine in neutral position and DB/cable hanging straight down, elbow slightly bent
• Commence movement by bringing DB/cable out to the side of the body in line with the shoulder
• Finish with the arm fully horizontally abducted, scapula retracted and elbow still slightly bent
• Lower under control until DB are straight down or cable is across body

Teaching Points
• Body stable in bent over position
• Arm pulls in line with shoulder / ear

Common Errors
• Spine not in neutral position, head looking up
• Pulling DB / cable handle towards legs
• Using legs to help commence / finish movement
• Rotating trunk to help start / finish movement

DB BICEP CURL

Instructions
• Stable body position
• DB positioned by sides, forearms supinated
• Keeping elbow locked against side, curl DB in an arc upwards until bicep fully contracted
• Lower under control, keeping elbow by side

Teaching Points

• Stable body position
• Keep elbows in and palms facing up, curl weight
• Keep elbows stable when lowering weight

Common Errors
• Body not stable / swaying
• Elbow moves from side, finishing with weight at chin level
• Failure to keep palm fully supinated

BB BICEP CURL

Instructions
• Stable body position
• Hands shoulder width grip on bar, palms supinated
• Keeping elbows locked against sides, curl BB in an arc upwards until biceps fully flexed
• Lower under control keeping elbows by sides

Teaching Points
• Stable body position
• Keep elbows against side and curl BB in an arc
• Keep elbows stable when lowering weight

Common Errors
• Body not stable / swaying
• Elbow moves from side, weight finishing at chin level

BB PREACHER CURL

Instructions
• Position body / arms on bench so that normal posture is maintained
• Using a shoulder width grip on the BB, lower the weight until elbows fully extended
• Curl weight towards body until forearm is 45o to horizon
• Lower bar under control until arms are fully extended, taking care not to hyperextend elbows

Teaching Points
• Keep body stable on bench

Version 1

• Shoulder width grip lower bar under control until fully arms extended
• Keep elbows in contact with bench
• Raise BB to 45o, keep biceps under tension

Common Errors
• Not stabilising body properly
• Not fully extending arm
• Bringing weight too far up
• Pulling elbows off face of bench

TRICEP PUSHDOWN

Instructions
• Standing, feet shoulder width apart, body slightly leaning forward at hips • Hands shoulder width grip on bar
• Keeping elbows against side, extend forearm until fully straight
• Lower weight under control until elbows fully flexed without moving elbow from side

Teaching Points
• Stable body position
• Straighten arms smoothly until fully locked out
• Fully bend elbow at top
• Keep elbows against side at all times

Common Errors
• Not stabilising body
• Bending forward at hips to help extend arms
• Allowing elbows to come away from sides at top of movement
• Rolling shoulders at top of movement (scapulae elevation / protraction)

LYING TRICEP EXTENSION

Instructions
• Lying on a bench, arms extended, shoulder width grip
• Keeping upper arms stable, lower weight until bar reaches top of forehead
• Keeping elbows pointing straight ahead, return by straighten elbow until weight is positioned above chin

Teaching Points
• Stable body position
• Keep upper arms still
• Lower weight to top of head
• Keep wrists strong
• Straighten arms at elbow not using shoulder

Common Errors
• Not stabilising body
• Flaring elbows out to the side
• Moving upper arm to complete exercise
• Not stopping at forehead level (ouch!)

Variations
DB- As above except
• Allow DB to come down to shoulders

OVERHEAD TRICEP EXTENSION

Instructions
• Standing, feet shoulder width apart, normal posture
• Hands shoulder width grip on bar, arms extended above head
• Keeping upper arms vertical and elbows facing forward, lower the weight behind head until elbows fully flexed
• Contract triceps and extend forearm until weight is overhead

Teaching Points
• Stable body position
• Upper arms stable, elbows forward, lower weight behind head
• Straighten arms using triceps

Common Errors
• Not stabilising body- particularly hyperextension of spine
• Upper arm not remaining vertical
• Elbows flaring outwards

Variations
DB- As above except
• Allow DB to track at an angle behind the head
Cable- As above except

• Bend trunk at 60-70o- keep spine neutral
• Keep elbows close to ears

CLOSE GRIP BENCH PRESS

Instructions
• Lying on a bench, arms extended, shoulder width grip
• Keeping body stable and elbows close to sides of body, lower weight by bending at elbow and shoulder until bar reaches mid-chest
• Keeping elbows close to body, return by straighten elbow until weight is positioned above chin

Teaching Points
• Stable body position
• Elbows close to sides
• Lower weight to mid chest
• Keep wrists strong
• Straighten arms at elbow not using shoulder

Common Errors
• Not stabilising body
• Grip too wide
• Flaring elbows out to the side

Variations
• Lower bar to neck