Team FITNESS

Live Your Best Life

MULTI SPORT: PROGRAM DESIGN

Purpose: To introduce the concepts, philosophy and programming necessary to improve athletic performance in sport.

Speed:
Is the ability to reach a high velocity of movement in whatever mode of locomotion – running, cycling, skating swimming. It is determined by the capacity to apply a large amount of force in a short period of time. (speed is often referred to as 'power') Practising moving and accelerating faster helps to condition the neuromuscular system to enhance the firing power of fast twitch muscle fibres.

The goal is to decrease the time between strides while maintaining or increasing the stride length.

Stride Length: *distance covered in one stride during running. It is developed by improving the* ***speed-strength*** *(max force during high speed movement).*

Training Methods:
Strength Training
Resistive Running: weighted sleds, chutes, bungees, hills, stairs
Plyometrics: exercises that allow a muscle to reach max strength in the shortest possible time. (throwing // jumping // sprinting)
85% Runs 1min >er than 5Km Race Pace: done consistently

Stride Frequency: *is the number of strides taken in a given amount of time.*
Training Methods:
Sprint-assisted running
Downhill Running: 3 –7 degree decline of 30 – 50 metres
Towing: 5-10% increase than non resistive running, using harness and tubing or bungees with two to one athletes

Form
Learned at low speeds (60 –70%) and gradually transferred to higher speeds
The goal is to establish efficient and error free movement
Training Methods:
Drills:
A's /B's marching and skipping
C's stationary Heel Kicks, High Knees, leg turnover (cycling)
quick and efficient

Speed Endurance
The ability to repeat max or near max sprints with sport specific recovery intervals
Training Methods:
Interval training//Circuit training: high intensity exercise alternated with recovery. Increasing distance (40 – 400m), time in training, running intensity, repetitions and reducing recovery time (65% of MHR) can all be manipulated as conditioning improves to see greater improvements.

1. Put your speed training at the beginning of practice when you are fresh.
2. Do your speed training before you lift or do fitness training.
3. Allow for ample rest in between repetitions.
4. Don't do too many repetitions in your speed training.

Basic speed training along with power training maximizes the ability to move rapidly.

Strength: Grip Dynamometer
Maximum force in a single contraction. Strength increases maximal force production.

Power: Vertical Jump
The greatest amount of force in the shortest period of time. Throwing and jumping actions are mainly affected as well as any movement requiring a take-off or quick starts as seen in volleyball, hockey, and football. Although maximum strength is important for the progression of the movement, maximum power focuses more on the quick bursts of energy. If this is your goal, your training must be very fast, and very specific.

Agility:
Agility is the ability to explosively brake, change direction and accelerate again.
Agility training helps an athlete to apply their speed to sport-specific scenarios.

Muscular Conditioning Example: Meso-cycle for a sprinter

Off season	Preparatory Phase Hypertrophy/endurance **Transition**(optional) Strength Phase	Resistance Non specific, high volume low intensity Speed: high Volume low Intensity **All training low volume** **Low intensity** Resistance: Specific exercises moderate volume and intensity Speed: mod volume and intensity: stride frequency/ length and form
Preseason	Power Phase **Transition (optional)**	Resistance Training: specific (train the mvmt not the muscle) low volume high intensity Speed: high intensity, low volume **All training low volume** **Low intensity**
In-season	Competition	Resistance: low volume, high intensity, sport specific
Off-season	**Transition (optional)**	Recreational games/ light unsupervised training

Resistance Training

FACTOR	STRENGTH	POWER
Phase of Training		
Frequency	3-5	3
Intensity	80-92%	92-100% for peak
Reps	4-8	3
Sets	3-5	3-5 + warm up set of 10 reps
Rest(sets)	2-4 min	3-4 min
Rest(days)	48-96 hrs	48 -72hrs
Time/Rep	2-4 sec	.25-1 sec

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Weight Training Objectives:

1. Determine the goal – time line – assess weakness/strengths
    a. Endurance
    b. Strength
    c. Power
    d. Speed

2. Match the training discipline to the goal
    a. Endurance and Hypertrophy (size) however, are the basis for all conditioning and need to be considered before strength programs and most certainly power disciplines to ward off injury and set the foundation.
    b. Strength training improves performance

Power (force and speed) improves performance closer to competition

3. Pick the correct training intensity for the goal
    a. Beginner - inexperienced
    b. Intermediate
    c. Advanced

4. Decide on how long the training period will last
    a. Time available before competition
    b. Level of the athletes condition

5. Determine the sets, reps and load for every exercise
    a. As above

6. Determine the rest between sets and workout days
    a. As above

7. Determine the rate of speed for each repetition
    a. As above

8. Determine which days or weeks will be hard and easy
    a. Variety is the key to success. Workouts do not need to reach the puke index to achieve results, but fatigue with impeccable technique does. The more advanced the athlete's condition the closer the workout reps approach failure.

9. Select the muscles, equipment used and exercises
    a. Break down the movement of the sport for muscle requirement
        i. Path of motion and arc of movement and plane of motion
        ii. Try to mimic movements under load/ pulley/function/med balls stability balls etc. The key for youth conditioning is to develop athleticism not sport specific training results. Focus on movement skills and athleticism with some sport specific application
    b. Determine the cardiovascular energy system requirements
        i. I.e. Is it an anaerobic/aerobic sport
        ii. Aerobic base is always under conditioned for an-aerobic sports. But this is what will keep them in the game when things fall apart.
            Basketball//hockey//lacrosse
            Volleyball//rugby//field hockey

10. Select the exercise sequence
    a. Move from large to small
    b. Simple to complex
    c. Opposing muscle group training
    d. Upper/lower

11. Choose the system of training
    a. Straight Set-same set / reps/ load – young and de-conditioned
    b. Super Set -2 exercises back to back without rest
    c. Pyramid – reps and load change every set
        i. Ascending 8 @ 185 – 10@165 – 12@135
        ii. Descending is the reverse
        iii. Great for developing strength and power – stimulates motor recruitment

12. Determine the starting and training weights
    a. Often determined by trial and error which allows motor learning to take place. You may wish to establish the one rep max to establish a bench mark to compare results to.

Warm Ups

Are essential for all athletes. Circulatory and dynamic warm up is primary. Warm up set is also recommended if the athlete is working at 75% of Rep Max.

Specificity of Training

Regardless of the sport, the more the exercises off the playing field mimic the performance movement the more the training effects will transfer to benefit game skills and improve performance.

Sport-specificity is teaching athletes to move better. Agility, quickness, balance, stopping ability, turns, pivots, jumping sliding, diving, lateral movement and reaction skills.

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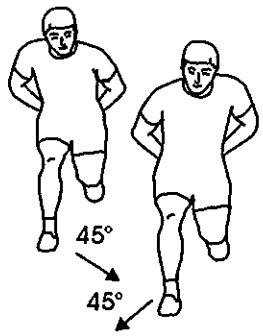
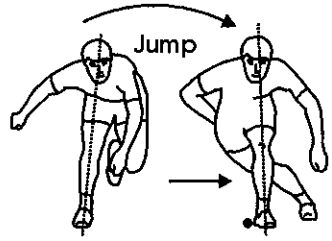
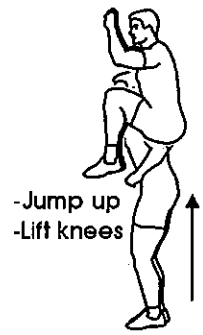
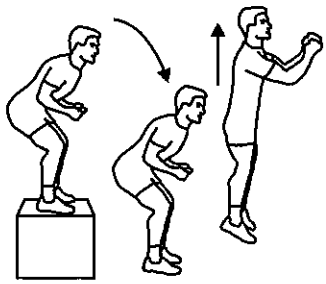
Plyometric Exercises

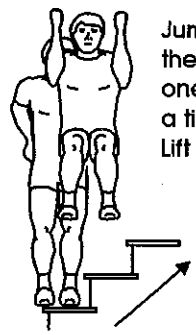
Lower Body



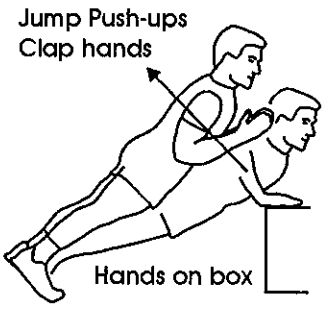


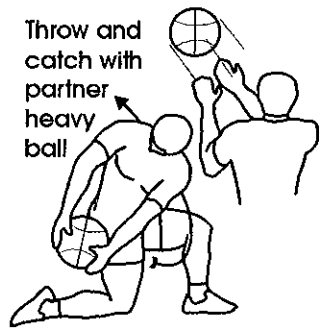




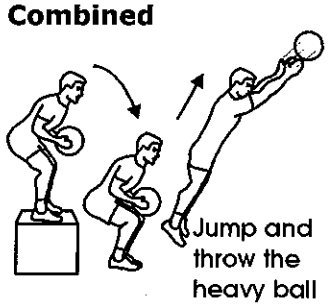


Upper Body





Combined



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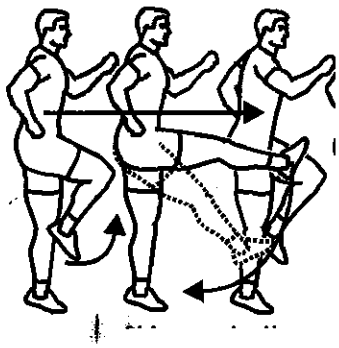
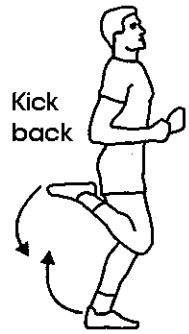
Running Form Drills

A's



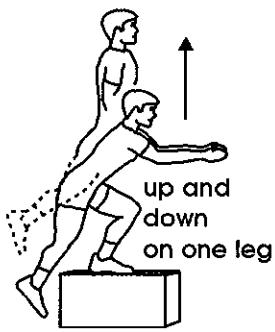
B's



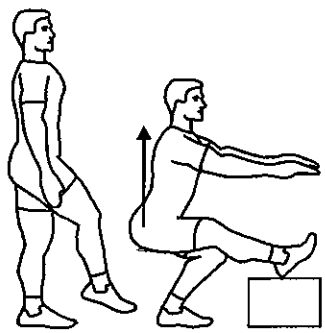
C's

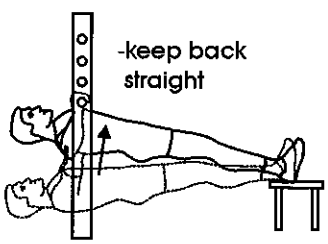
Strength

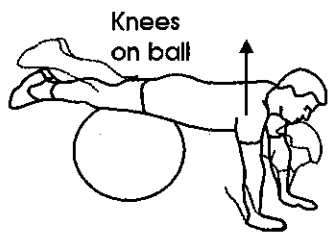
High Bench Step Up:



One Leg Squat







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