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PHYSICAL CONDITIONING



PHYSICAL CONDITIONING

Being conditioned for sport means greater enjoyment, more participation and better performance. What's more, it reduces the risk of injury – so players can play to their maximum potential.

Keep your engine tuned



Remember – training starts before sport even begins

Being conditioned doesn't always mean players need extensive training. Just make sure your programme is right for the style and level of your sport or activity.

What does a conditioning programme involve?

A physical conditioning programme should be balanced and include training exercises for each of the following areas that are relevant to the activity.

STRENGTH

Strength conditioning means players can apply force against resistance.

Strength exercises:

- Body weight strength training or resistance training using stretch bands, free weights or machines.

SPEED

Speed conditioning enables players to move the body or parts of the body rapidly.

Speed exercises:

- Fartlek training – short burst of speed integrated into the normal training session.

POWER

Power conditioning means players can combine speed and strength to produce explosive force.

Power exercises:

- Hill sprints
- Squat jumps.

FLEXIBILITY

Flexibility conditioning will provide a greater range of pain-free motion.

Flexibility exercises:

- Follow the stretches in action point 2 – “Warm-up, Cool-down and Stretch”.

ENDURANCE

Endurance conditioning allows players to repeat the same action, or exercise continuously, without getting too tired.

Endurance exercises:

- Stair walking or circuit training
- Brisk walks/jogs/runs each week.

BALANCE

Balance conditioning reduces the risk of tripping, falling or landing in an awkward position. It also reduces the risk of a player overbalancing on uneven surfaces.

Balance exercises:

- Walking along a straight rope on the ground
- Balancing on one leg with the eyes closed
- Propeller runs.

General conditioning principles

1. Make sure training is planned, directed and purposeful.
2. Follow the F.I.T.T.E. (Frequency, Intensity, Time, Type and Enjoyment) principle of training. Each element should be specified in the training programme and developed for each player's needs.
3. Progressively increase the intensity and/or duration of training as players improve their conditioning levels.
4. Make sure the training is specific to the players and the sport or activity.
5. Remember, when players stop training, their physical condition declines. Maintain physical condition with two to three workouts every week.
6. Reduce the amount of training during competition to prevent “burn out” and fatigue.

NOTE:

This is very general information relating to physical conditioning. Following are further guidelines for aerobic endurance and strength training. To become proficient in a particular sport, more specific information can be obtained by contacting your regional or national sporting organisation.

THE CONDITIONING PROCESS

1

Identify sport/position requirements.



2

Evaluate player's current condition.



3

Determine player's training needs.



4

Design/implement training programme.



5

Monitor progress/evaluate player's condition.



Steps 3-5 are a continuous process

Guidelines for aerobic endurance training

Aerobic endurance training may include activities such as walking, running and circuit training.

GENERAL GUIDELINES

- Buy good shoes if walking/running is the principal form of aerobic exercise.
- Warm up before training or competition to improve performance and decrease the amount of stress on the heart.
- Follow the F.I.T.T.E. principle to achieve an increase in aerobic endurance:
 - *Frequency*: Three to five times per week
 - *Intensity*: 60-85% of heart rate maximum (HRmax)
 - *Time*: 20-60 minutes per session
 - *Type*: Run, brisk walk, bike, swim, dancing, etc
 - *Enjoyment*: Find an enjoyable activity and increase the likelihood of exercise adherence.
- In relation to the above recommendations apply the following principles depending on the players' health, fitness status, and/or playing levels.

Individualisation:

- Prescribe aerobic endurance exercise based on age, gender and fitness level and encourage more vigorous activity in those who are young and healthy.

Progressive overload:

- Progress from three alternate days to five to six sessions per week*
- Progress from 10-15 minutes to 40-60 minutes*
- Progress from 60% to 80% HRmax.

* This will depend on the player's playing levels.

Specificity:

- Select exercises that train the appropriate musculature i.e. to achieve running fitness (legs) don't go swimming (arms).

Intensity:

- HRmax is usually calculated as 220 minus age
- HRmax for an activity can be determined after two to four minutes of all-out exercise in that activity
- HRmax is significantly lower (10-13 beats per minute) in arm exercise.

HEALTH AND SAFETY CONSIDERATIONS

- Make sure players have a medical examination before training, which includes measures of blood pressure and resting heart rate (RHR).
- Supervise training programmes if a player has poor health status.
- The following potential hazards are associated with long-distance running in young players: heel cord injuries, growth plate injuries, chronic joint trauma, thermal intolerance and shin splints. Distances less than two kilometres are recommended for players less than 12 years of age.
- Be aware that younger players are more susceptible to thermal stress owing to their inability to sweat.

Guidelines for strength training

Strength training may include activities such as bicep curls and press-ups.

GENERAL GUIDELINES

- Begin each session with a warm-up.
- Provide thorough instruction on the exercises. Competent and close supervision is vital in the beginning stages of the programme.
- Avoid single maximal lifts (the load you can lift once, i.e. you can't perform two repetitions of the load in succession), in particular overhead lifts, until the end of adolescence. During adolescence, training should be sub-maximal.
- Avoid explosive lifts (high-velocity, low-load lifts) in early adolescence and introduce them with caution in late adolescence. The same applies to high-intensity plyometric (jump) training.
- Progress exercises from using the body weight with a load of low volume to traditional weightlifting exercises with a load of high volume and/or high intensity in a systematic and safe way.
- Progressively overload the training (e.g. apply more load, more repetitions, etc.) in small increments. A general rule is to increase the training load by **no more** than 10% per week (some individuals may require a slower increase).
- Ensure adequate recovery between training sessions. A beginning training frequency of two to three times per week is desirable.
- Include exercises for all muscle groups and provide balance between opposing muscle groups (e.g. quadriceps and hamstrings).

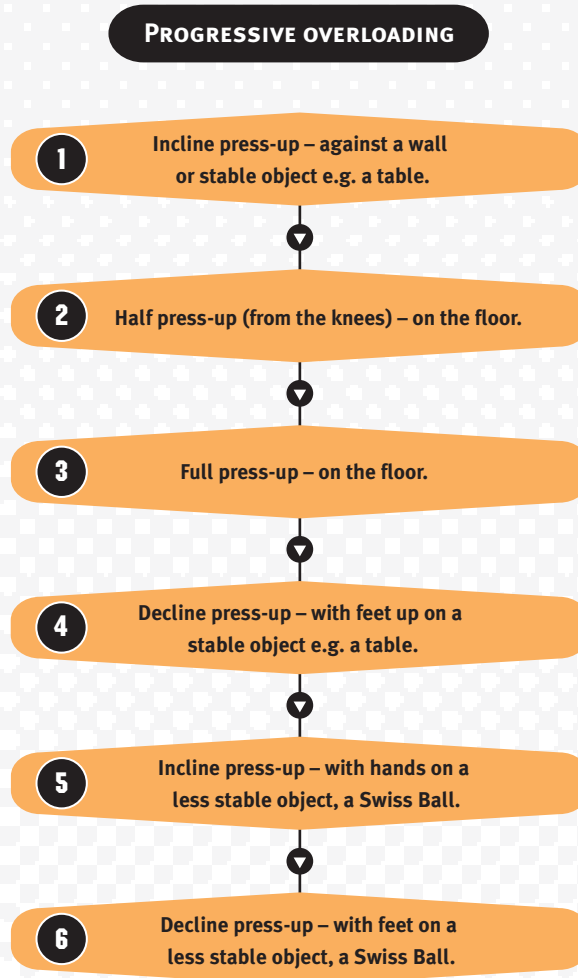
HEALTH AND SAFETY CONSIDERATIONS

- Make sure players have a medical examination before strength training (e.g. large increases in blood pressure are associated with strength training such as lifting or statically holding large loads).
- Players should be mature enough to be “coachable” and to be able to follow prescribed safety and technique factors.
- Parents, coaches, physicians and players should pay particular attention to exercise-related joint pain.
- Build a preconditioning period into the training programme to reflect the developmental lag of the shoulder, abdominal wall and trunk muscles and their overuse.
- Teach proper breathing. Players should avoid prolonged breath holds during repetitions to avoid blackout or fainting.
- Ensure that players maintain the curvature of the spine during exercise.
- Children should never be encouraged to lift more weight than they can comfortably manage.
- Ensure correct techniques are used and there is appropriate supervision.

Example of progressive overloading

In this example (see opposite) the muscles are progressively overloaded by making the player’s base of support less stable or having greater body mass act on the muscles by changing the exercise from an incline press-up to a decline press-up.

Photos of this progression are available on the website www.acc.co.nz/sportmart.



For more information on physical conditioning for your sport, contact: the relevant sports organisation, your Academy of Sport regional centre: www.sportnz.co.nz or Sport Science New Zealand: www.sportscience.org.nz

THE 10-POINT ACTION PLAN FOR SPORTS INJURY PREVENTION

1
SCREENING

2
WARM-UP, COOL-DOWN
AND STRETCH

3
PHYSICAL CONDITIONING

4
TECHNIQUE

5
FAIR PLAY

6
PROTECTIVE EQUIPMENT

7
HYDRATION AND NUTRITION

8
INJURY REPORTING

9
ENVIRONMENT

10
INJURY MANAGEMENT