Fundamentals of a training program

Technique : An efficient technical model is essential for all endurance running. It is essential that running technique is analyzed and practiced to achieve maximum energy efficiency.

Aerobic endurance: Improving the athlete's cardiovascular and respiratory systems through long runs, steady state runs, fast aerobic runs and repetition training. Vital in all endurance events, an efficient cardiovascular system and improved oxygen uptake are achieved through sustained running.

Anaerobic endurance or speed endurance: This is to build up the athlete's tolerance to the effects of an increase of lactic acid and is achieved through fast repetition running with long recoveries. Power and strength endurance can be improved using resistance training such as circuit training, weight training and hill sprints. endurance athletes must be able to delay, and then cope with the effects of, the accumulation of blood lactate. This is achieved through interval training where the number, distance and timing of repetitions and recoveries are pre-planned.

Speed training – To improve the athlete's basic speed using training distances of 30-80 meters.

Flexibility: It is important to work on flexibility to ensure a good range of movement and to prevent injury.

Power: improves elastic strength and speed, achieved through hill training, and plyometric. In endurance events, particularly in the middle-distance events, power increases the ability to accelerate rapidly.

Strength – Improving the athlete's strength through circuit training, weight training and other resistance training.

Tactics – Tactical planning, preparation and awareness are very important in all races where things can happen very quickly.

Skill Development

- A good technical model should be the aim for all endurance runners.
- All endurance runners should include sprint drills in their training.
- Coordination drills are also advantageous.
- Acceleration drills should be included in training.
- Rest and relaxation should be part of every endurance runner's training program.

Adapted from

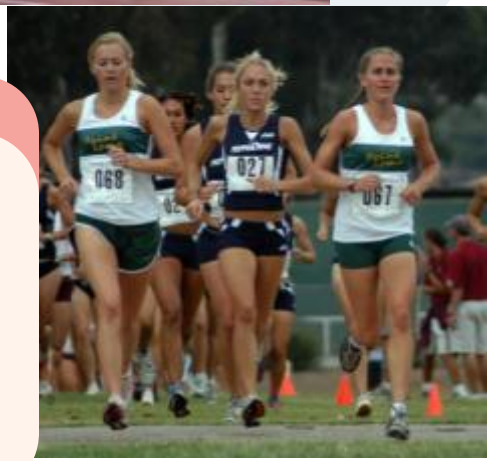
Fredericton Legion Track Club

Endurance Running

Endurance Running Basics

Endurance running covers a wide range of distances on the track from 800 meters to 10,000 meters, as well as encompassing the marathon, road racing, cross-country running, ultra distance running, mountain running and race walking.

All of the events require a good technical model and the emphasis on maintaining speed over distance. The distance, terrain and environment of the event dictate endurance requirements. The fundamental goal in all the endurance events is to maximize average speed over the course of the event. The distribution of effort is optimized by maintaining the rhythm of the movement. Optimal stride length and stride frequency, sound technique, astute tactics and event specific training are all pre-requisites of the endurance events.



Basic Rules of Endurance Running

The normal rules apply for all events except that the first 120 meters of the 800 meters is run in lanes and then the athletes break for the inside of the track. Also in track events longer than 1500 meters when there are more than 12 competitors they can be split into two groups at the start. One group containing 65% of the runners will be on the correct start line and the remainder on an arced line on the outside of the track where they stay until the end of the first bend. In the longer track races and road races drinks and feed stages are allowed in certain places.

Sprint

Endurance Running Technique

Phase: Support

Front Support

Objective: To minimize deceleration at foot strike.
Description: With each stride the foot contacts the ground on the mid or forefoot.
The support leg cushions the ground contact in a controlled way, to minimize braking forces.
Arm action is similar to sprinting except less active or pronounced.

Tips for Coaches:
- Observe that the athlete's foot contacts the ground naturally and that the leg is not rigid or jarring at this moment.
- Observe arm action from front and side.
- Observe the overall rhythm of the action.

Tips for athletes:
- Run naturally and 'lightly'.
- Keep shoulders relaxed.
- Adapt to the running surface.

Drive

Objective: To optimize the forward drive.
Description: Athlete's weight rolls over the foot and off the toe of the shoe. Hip, knee and ankle joints extend during this phase. Thigh of the free leg rises towards the horizontal but not as pronounced as in sprinting.

Tips for Coaches:
- Observe the action of the athlete's feet from the rear, side, and front.
- Observe the extension of the hips, knees, and ankles.
- Check for efficiency of actions.

Tips for athletes:
- Run 'tall' and relaxed.
- Coordinate and relax the actions of the arms and legs.
- Focus on a natural rhythm through all phases.

Phase: Non-Support

Recovery

Objective: To contribute to an efficient action and smooth rhythm.
Description: Heel lift and knee bend are less pronounced than in sprinting.
Generally, this is reduced even more at slower speeds.

Tips for Coaches:
- Observe that the recovery is balanced and not exaggerated.
- Check the relaxation of the arms and shoulders.

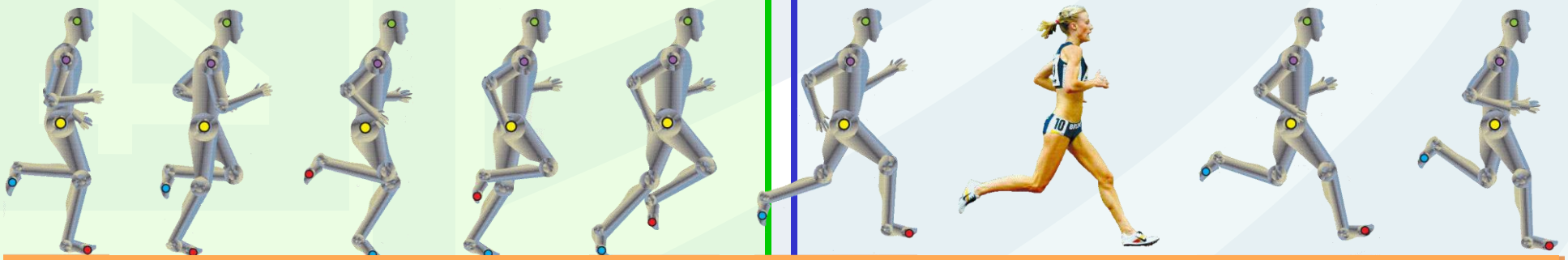
Tips for athletes:
- Run smoothly without 'bounding'.
- Breathe naturally.

Forward swinging

Objective: To prepare for an active foot strike.
Description: The recovery leg swings forward and upward; this is less pronounced than in sprinting. Generally, the slower the speed the lower the knee lift.
The foot then moves down and back relative to the body in preparation to minimize braking at foot strike.

Tips for coaches:
- Observe that height of knee lift is appropriate and efficient.
- Observe the head position and visual focus from different angles.
- Observe signs of fatigue.

Tips for athletes:
- Have an appropriate active landing.
- Focus visual attention ahead to maintain head alignment through all phases.
- Run at a realistic pace for given distances.



Training year depicting where the event requirements have their main emphasis

Periods	General	Specific	Pre-competition	Competition	Transition
Training	Technique Mobility Endurance Strength	Power Mobility Strength-Endurance	Speed-Endurance Mobility Speed	Speed Mobility Event Specific-Endurance	Active rest

Tactics

- Know your own strengths and weaknesses
- Know your opponents strengths and weaknesses
- With this knowledge plan your race strategy
- This strategy could involve any of the following
- Leading throughout at a fast tempo
- Waiting for a sprint finish
- Increasing the pace towards the climax of the race
- Surges to change and break up a steadily paced race