

COACHING THE YOUNG ENDURANCE RUNNER

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FOREWARD:

COACHING THE YOUNG ENDURANCE RUNNER

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The role of the coach is critical to the development of sporting talent in any nation. The quality of a country's coaching is reflected in the number of athletes that attain the international arena. The success of these fortunate athletes depends largely on individual talent, dedication and (sometimes) luck.

Most coaches can exert very little influence on the performance of today's sporting heroes. Tomorrow's heroes are, however, still developing their talents in our sporting nurseries. It is here that a nation's coaches exert their most profound influence. Ironically, it is often less experienced coaches that are entrusted with this important task.

It is therefore appropriate that South Africa invest in its athletics coaches, particularly those coaching our younger athletes. This booklet is a most valuable contribution to this effort. It contains not only sound information of a more scientific nature relating to the coaching of young endurance athletes, but some very practical coaching recommendations and programmes.

One of the messages stressed in the booklet is that children are not simply small adults. As such, and in order to avoid suppressing their natural enthusiasm, the coach should focus on a training programme that favours both pleasure and athletic diversity.

I recommend this booklet to any coach involved with the training of young athletes, especially those athletes that are suited to endurance events. May you and your athletes derive many hours of pleasure from your training and competition.

DR RODERICK CARTER
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1. INTRODUCTION

Life is about movement and is the very essence of our existence. Soon after birth we learn to crawl and walk, which quickly develops into a running action.

Children seem to live life at a run which makes the activity the simplest and most natural of all sporting and recreational activities. In athletics we quickly identify with the running events which is why they are so popular. In Africa this is even more so because of our natural aptitude for those events, they are relatively easy to organise and do not require specialised equipment.

There is also a special appeal for the events because of the race situation. It can be quickly assessed which provides an immediate impact and appeal in terms of speed, staying power and the 'one on one' confrontation.

2. THE GROWING RUNNER

Children are not small adults and therefore it is totally incorrect to assume that they can undertake the training programmes of senior athletes. From the moment they are born they continue to grow until they are between 18 - 22 years of age.

As you will see later this brings with it many complications. Some aspects of training have a positive effect on growth whilst others have a detrimental effect.

It is clear then that any specialisation should be avoided. It is not in the best interests of the athletes. As we provide our children with well rounded academic opportunities so too should we provide them with well rounded sporting opportunities. Children should be exposed to as many different sports and similarly to as many different athletic events as possible. Early specialisation invariably creates too many pressures resulting in the child leaving the sport at an early age. The challenge to coaches in South Africa today is how they can present the endurance events in such a way that the child stays in sport or if they leave, they remember it as an uplifting experience.

Athletics should be a playful experience lacking the intensity, dedication and technical aspects of the more advanced junior and adults in the sport. Severity of competition and the rigidity of training programmes have little place in the life of the younger athlete.

The ages of 8-15 years are the 'skill hungry years'. The emphasis should be on the quantity of training as opposed to quality, varying speeds over natural obstacles, speed practices to sharpen the reflexes all of which lay the foundation for harder training in the years to come.

Training needs to become more balanced and a mixture of aerobic / anaerobic after puberty. Due to hormonal changes athletes are now capable of sustaining this type of work together with other factors such as speed, strength and mobility

Around puberty the development of boys and girls take different directions. Girls experience a rise in the female hormone oestrogen which discourages muscle adaptation to training particularly strength work. Girls are also prone to increases in body weight which make them less efficient aerobically.

With boys there is an increase in the male hormone androgen (testosterone) which encourages muscle adaptation to training. They also continue to develop aerobically.

From 15 years onwards the training environment can become more sophisticated in respect of training, technique and competitive capacity.

Individual peak performances can be expected between 25 - 30 years of age.

The validity of predictive tests and talent identification schemes for young distance runners is questionable. The implications are also unfair in that there may be an inference that we are only interested in the talented with the rest being exposed to feelings of inferiority and secondary ratings. Apparent ability is only one factor on the road to individual achievement and development. We should never underestimate such areas as desire, motivation and perseverance in the individual coupled by encouragement from the athletes peers. Distance runners must be allowed to progress at their own individual pace. Environmental emphasis, be it home, school or the athletics club, must stress physical well being and fitness as opposed results and records. Over ambitious coaches would do well to remember that they ply their trade only with the consent of their athletes. Interest captivates - pressure erodes.

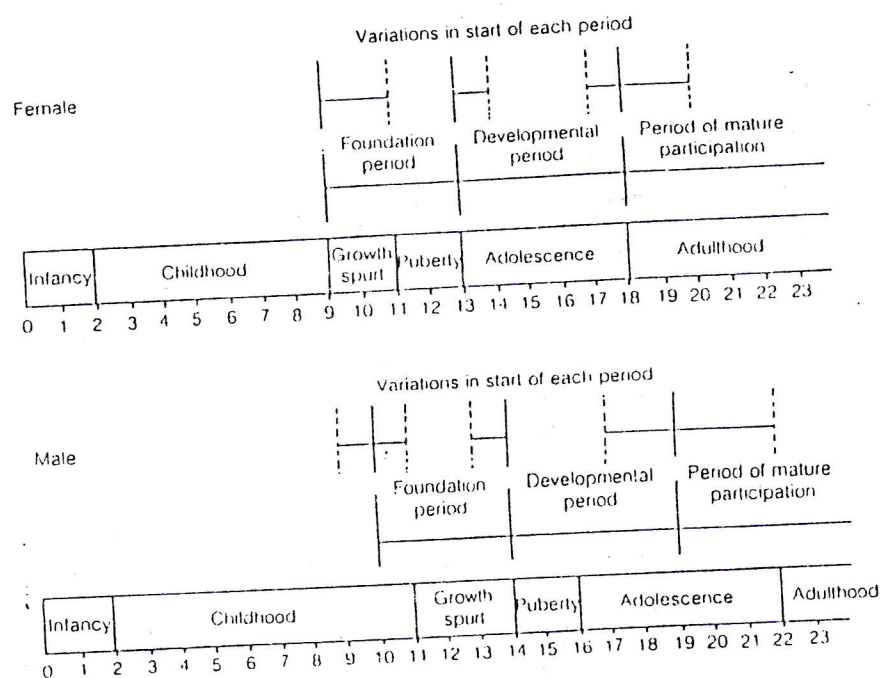
3. THE STAGES OF DEVELOPMENT, TRAINING AND COMPETITIVE EMPHASIS

There are 6 steps to adulthood and it is important that we understand what happens in each of these developmental periods. Each individual matures at their own rate. One girl may reach maturity at 12 years of age whilst another at 18 years.

Girls on average reach puberty 2 - 3 years before boys.

Skeletal growth ends in girls at about 18 years and boys at about 22 year.

STAGES OF DEVELOPMENT



Therefore a lot of care has to be taken in the training of these athletes through the different periods of growth. It is sometimes wise to slightly **undertrain** athletes because they will improve anyway given the fact that they are still growing, i.e. they are getting bigger, taller and stronger.

STAGES OF TRAINING AND COMPETITIVE EMPHASIS

AGE	TRAINING EMPHASIS	NUMBER OF TRAINING DAYS	COMPETITIVE EMPHASIS
<p>Childhood (Introductory phase) Under 9 years</p>	<p>Fun, games Learning to ride a bike, swim (drown proofing) Developing a variety of skills and movements, including gymnastics, tumbling, balance, eye to hand co-ordination (ball and bat), eye to foot co-ordination (football), running (including over obstacles), jumping, throwing</p>	<p>At will</p>	<p>Informal Competitive efforts based on maxim that all participants are winners</p>
<p>Beginners (Foundation) Girls 9-13 years Boys 11-14 years (3-4 years)</p>	<p>Teach technique General 5 x 5's <ul style="list-style-type: none"> • Skill Development and rhythm • Strength using bodyweight as resistance • Stamina • Suppleness (mobility) • Speed development Emphasise games, fun, variety of activities Training of general nature</p>	<p>1/2 - 3</p>	<p>Competition limited, varied, free from major pressures Championship competition and representative fixtures are inappropriate Involvement in Award Schemes Compete in all events</p>
<p>Developing (Novice to specialisation) Girls 13 - 17 years Boys 14 - 22 years (4-6 years)</p>	<p>Refine techniques Establish correct training and behaviour discipline Start becoming event specific Potential talent emerges Co-ordinate training with school P.E. programme Training emphasis more specific over last 2 years Teach weight training techniques with 60% max loadings</p>	<p>3 - 5/6</p>	<p>More importance on formal competition Introduction to championship and representative fixtures as runner advances through this stage Continue competing in other events</p>
<p>Advanced (Mature participation) Girls 17 - 22 years Boys 17 - 22 years</p>	<p>Periodise the training year Sophisticate the training (specific work increases as well as time spent training)</p>	<p>5 - 7</p>	<p>Frequency and difficulty of competition increases Identify competitive problems</p>

Guide to number of Days of Work / Rest ratio :	15 Years :	1:1
	16 Years :	2:1
	17 Years :	3:1
	18 Years :	4:1
	19 Years :	5:1

4. TRAINING CONSIDERATIONS

There are seven areas for consideration and these are:

- 4.1 Aerobic endurance or stamina.
- 4.2 Anaerobic endurance or speed endurance.
- 4.3 Speed
- 4.4 Strength
- 4.5 Mobility or suppleness
- 4.6 Skill or the technique of running
- 4.7 Psychological or the mental approach

4.1 Aerobic Endurance

Children at an early age adapt very easily to aerobic training and this principle applies equally to any stage of their development. Gains are significant the younger they are because of their relatively lower body weight. Unfortunately this encourages many of them to train like adults. So while their cardio-vascular systems develop well the same cannot be said for their muscular-skeletal systems. Large volumes of training leads to injury. Therefore the emphasis should be on steady running over longer, but not excessive, distances as the runner gets older.

The following table provides suggestions for the amount of distance running that should be undertaken by the young runner.

Mileage guidelines for developing aerobic endurance in runners aged 9 - 18 years		
Age	Club Runner	Elite Runner
9	Maximum of 2 x 20 minute runs per week	
10	Maximum of 2 x 20 minute runs per week	
11	Maximum of 2 x 20 minute runs per week	
12	Maximum of 2 x 20 minute runs per week	
13	15-25 kilometers per week	15-25 kilometers per week
14	15-25 kilometers per week	25-30 kilometers per week
15	15-30 kilometers per week	25-30 kilometers per week
16	30 kilometers per week	40-50 kilometers per week
17	35-40 kilometers per week	50-65 kilometers per week
18	50 kilometers per week	65-80 kilometers per week

These individual sessions can vary in pace i.e. they can be at one continuous pace or done at varying speeds throughout.

4.2 Anaerobic Endurance

Similarly fast training repetitions should be done over shorter distances with sufficient recoveries. Young runners should avoid excessive oxygen debt resulting from fast repetitions with short recoveries. This type of training should only be introduced after puberty and it is important that the quality of the session be maintained.

4.3 Speed

Speed, on a 'stop-start' basis, is the fun aspect of most children's lives. It is ever present in their games be it formal or otherwise. Relay races are always an exciting part of any athletic programme. However, the question of speed should be closely linked to the correct technique of running irrespective of whether it is slow or fast running.

4.4 Strength

In the foundation period one session of a variety of exercises per week is sufficient and the exercises should emphasise the strengthening and stabilising of the hip, spine and stomach, i.e. torso.

Similarly in the developmental period carefully selected exercises should be done in the form of circuit training. All the major muscle groups should be strengthened. The session should be organised in such a way that the quality of movement is maintained throughout using a combination of sets, repetitions and recoveries.

Weight training can be introduced at around 16-17 years of age. Weights should not be more than 60% of maximum. Multi-gyms are good starting points before moving to free weights.

Repetitions should always be high, i.e. never less than 8 going up as much as 12, 15 or even 20.

At this same age plyometrics in the form of hopping and bounding can also be introduced.

More important is the presence of the coach to monitor progress and teach the correct lifting techniques.

Loads on the spine and knees must be kept to a minimum prior to 16 years of age. Weights should not be supported on the back. No depth jumping.

To reiterate, great emphasis should be placed on the development of the abdominal and back muscles.

4.5 Mobility

After 8 years of age mobility starts to decline. Therefore stretching of an active nature involving all the body's joint actions should be a regular feature in all training programmes.

Passive and kinetic stretching must only be done under supervision.

4.6 Skill

A number of skills need to be taught.

The skills involved in sprinting are running tall, trunk upright, head naturally aligned, arms swinging straight forward and backwards, knees lifting straight to the front and proper extension of the driving leg.

Good exponents of cross country running invariably try the steeplechase events. The skills involved in hurdling should be taught. The benefit is twofold. It will produce a better hurdling technique in the steeplechase and more confidence in clearing similar obstacles in cross country.

Number of hurdles and water jumps for various steeplechase events			
Age	Distance	Number of Hurdles	Number of Water Jumps
15-17	1500 metres	13	3
17-20	2000 metres	18	5
20 +	3000 metres	28	7

Note : the first hurdle in a 1500m will be hurdle 4 and the first hurdle in a 2000m will be hurdle 3.

4.7 Mental Approach

Not too much importance should be placed upon the race or its outcome in the earlier years. The endurance events are tough enough as it is without the additional pressure from parents, teachers, coaches, club officials and the media.

Winning is important but the value of discipline, determination and hard work make for healthy training attitudes later in the athlete's career.

There can be no greater reward than knowing one has done one's best.

5. RECOMMENDED EVENTS PER AGE GROUPINGS

To avoid undue pressure from competitions young athletes should race appropriately in respect of distance and the number of times they compete.

The exception to the rule may be those with exceptional talent and then again, only those who are approaching senior level anyway.

Suggested running events for different age groups (can be modified, within reason, at will)		
Years	Track Events (M)	
Boys 11-12	60m, 150m, 1000m, 4 x 60m Relay, 2 x 1000m Relay	
Girls 10-11	60m, 150m, 4 x 60m Relay	
Boys 13-14	80m, 300m, 2000m, 4 x 80m Relay, 3 x 1000m Relay	
Girls 12-13	60m, 300m, 600m, 4 x 60m Relay	
Boys 15-16	100m, 400m, 1500m, 3000m, 1500m SC, 4 x 100m Relay, 4 x 400m Relay	
Girls 14-15	80m, 150m, 300m, 600m, 1000m, 4 x 80m Relay, 4 x 300m Relay	
Boys 17-18	100m, 200m, 400m, 800m, 1500m, 3000m, 3000m SC, 4 x 200m Relay	
Girls 16-17	100m, 200m, 400m, 800m, 1500m, 4 x 100m Relay, 4 x 400m Relay	
Boys 19-20	100m, 200m, 800m, 1500m, 5000m, 10 000m, 3000m SC, 4 x 100m Relay, 4 x 400m Relay	
Girls 18-19	100m, 200m, 400m, 800m, 1500m, 3000m, 4 x 100m Relay, 4 x 400m Relay	

SC = Steeplechase

In order to encourage athletic exposure to other events children can be encouraged into multi-event competitions i.e. 2-3 track events plus 1 jump and 1 throw of their choice.

The following are suggestions from Athletics, South Africa for age group, competition distances for cross country:

ASA Recommended Age Group Competition Distances for Cross Country:								
	Boys	Girls	Boys	Girls	Girls	Boys	Boys	Girls
Age Group	U/9		U/11		U/12		U/13	
Distance (kms)	2	2	2	2	4	4	4	4
	Boys	Girls	Boys	Girls	Boys	Girls	Men	Women
	U/15		U/17		U/19		Seniors	
	4	4	6	4	8	4	12	6

6.(A) TRAINING PROGRAMMES (FOUNDATION PERIOD)

Not every child wants to become a runner, however, most children have some sporting ambitions. It should be explained to them that most other sports involve a degree of running and the more proficient they become at cross country and track running, the better they will do in their chosen sport.

Variety

It is essential that training sessions have a fun and competitive element to them, therefore avoid doing the same thing too often. Here are some training sessions which can be done in turn, starting with light sessions and building up to the point where a cross country race of 1 kilometer to 4 kilometers can be done with ease:

Session No. 1

Athletes lie on their backs in a line, the head facing the direction of the run. When the whistle goes they get up and run across the middle of the track or rugby field as fast as possible. When they get to the other side, they lie down again with the head facing the direction of the run. Repeat this 10 times with 30 seconds rest after each run. Those who lead for the first three runs will probably become good sprinters. Those who lead for the last three runs will probably possess good endurance and will do well in cross country. This exercise strengthens the thigh muscles as they turn and get up to run and also raises the pulse rate by 10 beats a minute per run. After the first run it will be about 110 beats per minute and after the final run, around 200 beats a minute. Repeatedly raising the pulse level is good training.

Session No. 2

Pick teams of five children, two tall and three small children per team if possible. Two of the team (A and B) are positioned at the start of the 400 / 800m line. The three others are stationed around the track at 100m intervals. Thus C will be 100m from the start line, D will be 200m from the line and E will be 300m from the line. Athlete A carries a relay baton and runs 100m and hands over to C who then carries it to D who then runs with it to E who then runs to B at the start line, this process continues **non stop** for 5 minutes duration. Athletes should be informed **not to stand still** as the incoming runner comes within 5 metres distance of the changeover, they should start walking **away** from the runner with one arm outstretched to receive the baton. With practice the athlete will learn to **run away** with the arm outstretched. This exercise is exciting and enjoyable because it is competitive and involves the athlete running fast for 100m with less than 45 seconds rest x 5. Stop the session after 5 minutes.

Session No. 3

Pick teams of three children, one tall and two smaller, if possible. Two athletes (A and B) are stationed at the 400 / 800 start line. The third (C) is positioned 200m away at the start of the 200m race. Athlete A runs with the baton to B who takes it to C who then runs to A at the 200m mark. This continuous relay goes on for 7½ minutes duration. In this session the athlete is running 200m fast with about 60 to 80 seconds rest and is good endurance training for the 800 / 1500 and 1 kilometer cross country races.

Session No. 4

Pick teams of three as in Session No. 2. A and B are stationed at the start line for 800m but athlete C is positioned at the 300m mark. A runs to C and has to run 300m. C runs 100m to B and so on. Each athlete alternates running 300 and 100m. Stop the session after 10 mins. This is good for endurance and speed, each athlete being asked to run at different speeds. The short leg enables the sprinters to catch up, while the longer leg gives the endurance runner a chance to catch up.

Session No. 5

Pick teams of two, one tall athlete and one shorter. Athletes A and B are stationed at the start line for 800. A runs with the baton a lap of 400m and hands it over to B who does likewise. This is a major endurance session and one that requires pace-judgement. An athlete who runs the first 400m leg too fast will struggle with the other legs. This session should cease after 12½ minutes.

Session No. 6

Pick teams of two. Athlete A runs 500m (one lap plus 100m) to B, stationed 100m from the start line, B then runs 500m, **meanwhile athlete A will have to jog forward 100m to receive the baton at the end of B's 500m stint**, similarly, A will have to do the same. This session should cease after 15 minutes. This is a magnificent session for preparing athletes to run 1 kilometer to 4 kilometers cross country.

Session No. 7

Run for 15 minutes non stop around the track or rugby field. The distance run by each athlete should be noted to the nearest 25m. The aim of this session is to cover as many laps as possible in the time. A list should be compiled of each athlete's performance so that the next time they try it they can see if there is any improvement. This is a stamina session.

Session No. 8

Run 6 laps of the track and record the times of each athlete. The aim is to improve the time recorded when next done.

Session No. 9

Teams of six are picked. Each team is stationed 100m apart around the track. They must line up immediately behind each other in a chain. When the whistle is sounded they all start together running directly behind each other. The whistle should be sounded every 10 seconds, when this occurs the athlete at the back of the chain runs to the front of the chain by **accelerating fast**, this process continues throughout, the athlete at the back going to the front fast when the signal is heard. It must be stressed at the outset that the chain **must** keep together. They should be advised to start slowly, get used to the overtaking technique and then start speeding up to try and catch the chain in front. This exercise should continue for periods of 5 minutes with 90 seconds rest x 4. This teaches athletes to run as a team and to overtake when tired. Experience will reveal the better athletes who should all be placed in one team and be stationed on the 800m start line. Their job will be to overtake all the other teams within 5 minutes, one team of which will be 300m ahead.

After all these sessions have been executed over a period of a month, start with Session No. 1 again but **double** the number of repetitions. The duration of all the other sessions can be increased by a quarter (25%) and should be increased by this amount every month.

Training Frequency

Training **every other day** for children between 9-11 years is quite adequate for a high standard of fitness to be achieved.

Attitudes

Emphasis with children should be **enjoyment, doing their best**. It is wrong to view not winning as failing. A child should say at the end of a race, "I did my best" and "I enjoyed it". That's what counts. But they will enjoy it more as they get better at it.

6. (B) TRAINING PROGRAMMES (NOVICE TO SPECIALISATION PERIOD TO ADVANCED)

CROSS COUNTRY TRAINING

Weekly Training Routines

1. Training every other day, e.g. Sunday - Tuesday - Thursday - Saturday - Monday - Wednesday - Friday - Sunday.
2. Training three days consecutively with the fourth day off: e.g. Tuesday, Wednesday, Thursday - rest, Saturday, Sunday, Monday - rest or Monday, Tuesday, Wednesday - rest, Friday, Saturday, Sunday - rest.
3. Training for a week with two days rest, e.g. Sunday, Monday, Tuesday - rest, Thursday, Friday, Saturday, Sunday - rest.
4. Training four days consecutively with the fifth day off: e.g. Sunday, Monday, Tuesday, Wednesday - rest, Friday, Saturday, Sunday, Monday - rest.
5. Training five days consecutively with the sixth day off.

It should be noted that 1 above is the minimum requirement and 5 the maximum.

Success comes with a regular training routine each week which must continue for twelve weeks to bring about major fitness improvements.

Stamina

This is the ability to last the distance of the race with ease. If your race distance is 6 kilometers, you should build up in training to run slowly for a 12 kilometer distance. To do this, add 5 minutes more **each week** to your longest run until you reach 12 kilometers. If your distance is 4 kilometers, build up to 8 kilometers distance in the same way.

Speed

This is relative speed. There is sprinting (full effort) for a maximum of 400m. The speed for a 6 kilometer race is at your 3 kilometer pace. The speed for a 4 kilometer race is at your best 1500m pace. By training at these speeds you are better able to cope with the speed of 6 kilometer and 4 kilometer races. One way of doing this is to take segments of the distance (6 kilometers) and to run them fast with a short recovery. Here are specimen sessions:

1. 3 x 2 kilometers in 6 minutes to 7 minutes with 4 minutes rest.
2. 4 x 1500m in 5 minutes to 5 minutes 30 seconds with 3 minutes rest.
3. 6 x 1 kilometer in 3 minutes to 3 minutes 30 seconds with 2 minutes rest.

For the 4 kilometer distance:

1. 2 x 2 kilometers in 6½ minutes to 7½ minutes with 6 minutes rest.
2. 4 x 1 kilometer in 3¾ minutes to 3,3/4 minutes with 3 minutes rest.
3. 6 x 800m in 2 minutes 40 seconds to 3 minutes 10 seconds with 2½ minutes rest.

If you are not used to this sort of training, start off with one repetition once a week, and add one more repetition each week.

Strength

Running up a hill requires good leg strength. A measure of leg strength is to hop the distance of 25m on each leg. 11 hops is good for school athletes, 13 hops is fair and 15 hops is poor. To improve leg strength run up and down a long hill several times each week. If you have no hill hop 25m every other day and aim to reduce the number of hops within six weeks.

Sense

This relates to how you run your race. If you are not too fit and start off too fast, you will slow up badly over the last quarter of the race and you will lose many places, which is bad for your team score. It would be better to run within yourself for 10 minutes and then pass every athlete in front of you. If you are well-trained you can start fast and stay in contact with the leaders. A useful deceptive ploy is that when you are tired, the other runners are tired, so increase speed for 25m, this often fools the opposition into thinking you are fresh and they give up staying with you. You are a member of a team and it is essential that you try and stay in contact with your teammate. This is called packing well. Always sprint the last 100m home, this can gain valuable places. When sprinting a vigorous forwards and backwards arm action is essential.

PROGRESSIVE TRAINING PER DEVELOPMENT PERIOD

STAGE 1	STAGE 2	STAGE 3	STAGE 4
2-3 days per week 8-12/14 years Aerobic 1-3 kms Games Sprinting (Short) Relays (Short) Mobility	3-4 days per week 12-15/16 years Aerobic 4-6 kms Hills Exercises (Body Weight) Speed Endurance 6 x 200 4 x 300 (Long recoveries) Sprinting 40/50m Mobility Drills	4-5 days per week 15/16 - 19 years Aerobic 6-10 kms Aerobic Intervals 4 x 1000 5 x 800 6 x 400 (Long Recoveries) Hills Circuit Training Speed endurance 8 x 200 6 x 300 4 x 400 2 x 600 Sprinting 50/60m Mobility Drills	5 + days per week 19 + years Mature programme Increase in (i) Volume per session (ii) Number of sessions and training days (iii) Intensity of training i.e. shorter recoveries Weight Training (if necessary)

Minimum Training for 6 kilometer Cross Country Racing

Sunday: 12 Kilometer slow run. Build up to this by running 5 minutes extra per week. Stamina.

Tuesday: 3 x 2 Kilometer fast with 4 minutes rest or 4 x 1500m fast with 3 minutes rest. Speed.

Thursday: Run up and down a long hill where the **ascents** equal 3 kilometers in total.
Or run 4 kilometers fast. Strength.

Saturday: Run 8 kilometers acceleration run (Jog 10 minutes, run 2½ kilometers slow, 2½ kilometers medium pace, 2½ kilometers fast.

Minimum Training for 6 kilometers Cross Country Racing

Sunday: 12 Kilometers slow run.
Monday: 35 Minutes steady run.
Tuesday: 3 to 6 x 1 Kilometers fast with 2 minutes rest.
Wednesday: 9 Kilometers fastish run.
Thursday: Run up and down a long hill where ascents equal 3 kilometers.
Friday: Rest
Saturday: 6 Kilometers acceleration run (2 kilometers slow, 2 kilometers medium pace, 2 kilometers full out.

Minimum Training for 4 kilometers Cross Country Racing

Sunday: 8 Kilometers slow. Build up to this by running 5 minutes extra per week.
Tuesday: 5 x 800m in 2:40 to 3:10 with 2½ minutes rest.
Thursday: Run up and down a long hill where ascents equal 2 kilometers.
Saturday: 6 Kilometers steady run.

Maximum Training for 4 kilometers Cross Country Racing

Sunday: 8 Kilometers slow.
Monday: 35 Minutes steady run.
Tuesday: 3 x 1200m in 3:45 to 4 minutes with 4½ minutes rest.
Wednesday: Run up and down a long hill where ascents equal 2 kilometers.
Thursday: Acceleration run 4 kilometers (10 minutes jog, 2 kilometers slow, 2 kilometers fast.)
Friday: Rest
Saturday: 6 Kilometers fastish run.

3. PROGRESSIVE OFF-SEASON AND TRACK TRAINING SESSIONS

Athlete A

January Age 17 years
Day 1 6 kms steady
Day 2 2 x 1000m - 60 seconds recovery
Day 3 Rest
Day 4 3 x 7 minutes steady running including speed-ups of 20,40,60 seconds
4 Minutes recovery between each 7 minutes run
Day 5 6 kms steady
Day 6 Rest
Day 7 Race Junior Cross Country Championship
Total 38 kilometers

January Age 18 years
Day 1 10 kms steady
Day 2 6 kms sustained run
Day 3 5 x 1200m - 4 Minutes recovery
Day 4 10 kms steady
Day 5 12 x 300m long hills
Day 6 6 kms sustained run
Day 7 10 kms steady
Total 58 kilometers

January
Day 1 am 6 kms steady
Day 1 pm 6 kms fartlek
Day 2 11 kms steady
Day 3 6 x 4 minutes runs - 4 Minutes recovery
Day 4 am 6 kms steady
Day 4 pm 6 kms sustained run
Day 5 12 x 600m interval running
Day 6 11 kms steady
Day 7 8 kms sustained run
Total 74 kilometers

August
Day 1 **Age 16 years, 10 months**
1200m - 3 Minutes 6 seconds. 30 minutes rest
2 x 600m 82 secs. 20 Minutes rest between
Day 2 5 kms steady
Day 3 6 x 60m Fast strides
Day 4 Rest
Day 5 3 kms walk
Day 6 Race Junior Championship 1500m Heat
1st in 4 Minutes 0.6 seconds
AAA Youths 1500m Final
1st in 3 minutes 52.78 seconds CBP
Day 7
Total 27 kms

August
Day 1 **Age 17 years, 10 months**
2 x 4 x 300m 42 - 43 seconds (45 seconds recovery)
10 Minutes rest between groups
Day 2 6 kms easy
Day 3 Rest
Day 4 1st 800m in 1 minute 57.9 seconds. Tactical Race.
Day 5 8 kms steady
Day 6 3 kms jog
Day 7 1500m 3rd in 3 minutes 46.9 seconds
Total 38 kilometers

August
Day 1 **Age 18 years, 10 months**
2 x 4 x 400m Average 1st group 59.8 seconds (30 seconds recovery)
(20 minutes rest between groups)
2nd Group 58.3 seconds (45 seconds recovery)
Day 2 10 kms steady
Day 3 10 kms sustained run
Day 4 10 kms steady
Day 5 5 x 300m Relaxed in 40 Seconds. 5 Minutes rest between
Day 6 5 kms jog
Day 7 1500m 3 minutes 44.9 seconds.
Total 48 kilometers

Athlete B

March
Day 1 **Age 16 years**
8 kms steady
Day 2 4 x 800m 2 Minutes 22 seconds (2 Minutes recovery)
Day 3 3 kms sustained run
Day 4 3 x 4 Minute runs. 4 Minutes recovery.
Day 5 6 kms steady
Day 6 Rest
Day 7 5 kms steady run
Total 38 kilometers

August

Age 16 years, 10 months

Day 1

6 kms steady

Day 2

2 x 3 x 400m over 5 hurdles placed as for steeplechase in 69 seconds
(60 seconds recovery)

Day 3

5 kms steady

Day 4

2 x 200m 25-26 Seconds (Walk back recovery)
2 x 150m 18 seconds (Walk back recovery)

Day 5

5 kms easy run

Day 6

Rest

Day 7

National Junior 1500m steeplechase championships
1st in 4 minutes 20.5 seconds

Total 32 kilometers

TRAINING SCHEDULES : 800m / 1500m / 5000m*
Speed - Strength - Stamina - Skill - Suppleness

Event	Foundation * May / June / July / August / September		Pre-Season October / November / December	Competition January / February / March/ April
800m	Mon	10 fast 8 Recovery / circuit training 10 Fartlek with hills 8 recovery 5 x 800m or 1000m (1-1½minutes recovery) 8 Recovery / training drills 16 Slow	10 Steady 6-8 x 200 (60 seconds recovery) or 4 x 2 x 200 (30 seconds/3 minutes recovery) 4 x 400 (2 minutes recovery) or 8-10 x hills (60-100m with 1:3 gradient) 8 recovery 2 x 600m (5 Minutes recovery) 8 Recovery / training drills 16 Slow	5-6 Fast/steady 1 x 600; 2 x 400; 3 x 200; 4 x 100 tactical drills 8 Steady 10 x 60 (Complete recovery) 4/mobility Competition 10 Slow
	Tues			
	Wed			
	Thurs			
	Fri			
	Sat			
	Sun			
1500m	Mon	10 fast 8 Recovery / circuit training 10 Fartlek with hills Steady 10 Recovery 5 x 1000 or 4 x 1500 (1-1½minutes recovery) 8 Recovery / training drills 16 Slow	10 kms steady 8-12 x 200 (60 seconds recovery) or 8-12 x 300 (60 seconds recovery) or 4 x 3 x 200 (30 seconds / 3 minutes recovery) 8-10 x 400 (90 seconds recovery) or 10-12 x hills (60 - 100m with 1:3 gradient) 8 Recovery 2-3 x 1200 (3 minutes recovery) 8 Recovery / training drills 16 Slow	8 kms fast / steady 1 x 1200; 2 x 600; 3 x 300; 4 x 100 tactical drills 8 Steady 15 x 60 or 2 x 7 x 60 (complete recovery) 8 / Mobility Competition 16 Slow
	Tues			
	Wed			
	Thurs			
	Fri			
	Satur			
	Sun			
5000m	Mon	8-10 Fartlek or steady 8 Recovery 13 steady 6-8 x 1500/1600 (90-120 sec recovery - run over undulating course) / Drills 8-10 Recovery 6-8 x 800/1000 (60 seconds recovery) 16-20 slow	5-8 Fast / Drills 8-10 Recovery 13 Steady 6 x 1500 (90 sec rec) undulating course / drills; 8 x 150 10 Recovery 2 x 5 x 400 (90 sec/3 min recovery - reduce time then 2 x 6; 2 x 7 x 400 etc). 16-18 Slow	4 x 1200 (3 minute rec tactical drills) 4 x 200; 4 x 150 2 x 6 x 400 (60 / 3 rec) 10 Steady 6-8 easy 4-5 Easy Competition 10-12 Easy
	Tues			
	Wed			
	Thurs			
	Fri			
	Sat			
	Sun			

* All sessions other than sets / repetitions are reflected in kilometers
 The above schedules are only guidelines and should not be followed without first assessing the athletes strengths and weaknesses. For some the above schedules will be too much and for other too little.
 training background must be taken into account.

* May will be used as a recovery month
 The athletes age and

4. PROGRESSIVE TRAINING SCHEDULES

Short Term

Each year can be split into periods which emphasise different types of training. During each of these periods as we transfer from winter / endurance to speed endurance and precompetition training during November - January, it is usual to gradually decrease the total volume of training and increase the pace at which individual sessions are performed. Training can, therefore, be termed as progressive.

Long Term

As athletes develop through the age-groups to the senior ranks, volumes and speed of training have equally to develop to meet the demands of higher standard competitions. Although Steve Cram was training seven days per week at the age of 15, Steve Ovett was not at this level of training until he was 17-18 years of age. In other words, training has to be progressive in the long term but must also suit the requirements and capabilities of the individual at each stage of his / her career.

Training for a 14-15 year old 800m Athlete

Late January:	Monday:	Rest
	Tuesday:	Warm up plus 4 x 300m (10-15 minutes recovery) at 400m pace.
	Wednesday:	30 Minutes easy (7 min/mile approx) plus speed drills
	Thursday:	Warm up plus 3-4 x 600m (3-5 minute recovery) on grass at 1500m race pace plus speed drills
	Friday:	Rest
	Saturday:	Warm up plus 2 x 4 x 200m (30-40 second recovery between repeats and 15-20 minutes between sets) and run at 800m race pace.
	Sunday:	30 Minute easy plus speed drills.
February: (Non racing week, max winter training)	Monday:	Rest.
	Tuesday:	Warm-up and 5 x 800m (3 minute recovery) plus speed drills and warm down.
	Wednesday:	30-40 minute easy (7 min / mile approximately) or rest plus speed drills.
	Thursday:	30-40 Minute steady (6-6.5 min/mile approximately) plus speed drills.
	Friday:	Rest
	Saturday:	30 Minute fartlek on undulating parkland or warm up and 6 x 45 seconds hill (jog down recovery). Speed drills and warm down.
	Sunday:	40-45 Minute easy (7 min./mile) plus speed drills.

Advanced Schedule for Senior 1500m Athlete

Late January (Non racing week)	Monday am	Rest
	Monday pm	Warm up plus 5 x 800m (2-3 minutes recovery) run at 3000m race pace plus sprint drills.
	Tuesday am	20 Minutes easy.
	Tuesday pm	30-40 Minutes steady plus acceleration fast strides 2 x 100m, 2 x 70m, 2 x 300m plus circuit training.
	Wednesday am	20-30 Minutes easy.
	Wednesday pm	Warm up plus 2 x 5 x 200m (30 seconds recovery between reps and 10-20 minutes between sets) run at 800m race pace plus speed drills and warm down,

	Thursday am	20-25 Minutes easy.
	Thursday pm	20 Minutes steady plus sprint drills and 5 x 25 sec hill sprint with 4-7 minutes recovery plus 4 x 30m fast strides on the flat.
	Friday am	30 Minutes easy plus circuit training.
	Friday pm	Rest.
	Saturday am	Warm up plus 1000m at 1500m race pace (7-15 minutes recovery) 600m at 800m race pace (10-15 minutes recovery) 400m at 400m race pace plus 2-3 seconds (7-15 minutes recovery) 200m run faster than 400m race pace.
	Saturday pm	20 Minutes easy plus speed drills.
	Sunday am	60 Minutes easy plus 5 x 80m (walk back recovery) striding the first 40m at 1500m race pace and then sprinting. NB : All recoveries to be determined for each individual athlete.
February (non racing week, maximum mileage)	Monday am	Rest
	Monday pm	Three miles warm up plus 4-5 x 1 600m. (3-4 minute recovery) plus speed drills.
	Tuesday am	30 Minutes easy (6-6.5 minutes/mile).
	Tuesday pm	40-50 Minutes steady (5.6-6 minute/mile) plus circuit training.
	Wednesday am	30 Minutes easy.
	Wednesday pm	Three miles warm up plus 12-14 x 400m (60 seconds recovery) plus speed drills and warm down or 10 miles tempo (5-5.5 minute/mile).
	Thursday am	30 Minutes easy.
	Thursday pm	35-40 Minutes steady plus circuit training.
	Friday am	40 Minutes easy.
	Friday pm	Rest.
	Saturday am	Three miles warm up plus 10 x 75 sec hill (jog back recovery) plus warm down
	Saturday pm	20 Minutes easy plus speed drills.
	Saturday am	80 Minutes easy.
	Saturday pm	Rest.

TRAINING SCHEDULES (ADVANCED)

800m Summer (Two-thirds anaerobic, one-third aerobic) Target - 2 minutes.

- Day 1: Aerobic - Run 15 kilometers fast (60-70 minutes)
- Day 2: Anaerobic - 8 x 100m sprints full out, walk back recovery
- Day 3: Anaerobic - 4 x 400m in 60 seconds with 400m jog recovery (4 minutes).
- Day 4: Aerobic - Run 10 kilometers fast (38-40 minutes).
- Day 5: Anaerobic - 1 x 350, 1 x 300, 1 x 250, 1 x 200, all full out. Double distance of repeat jog.
- Day 6: Rest.
- Day 7: If no race, 600m time-trial.

1500m Summer (Half aerobic, half anaerobic) Target - 4 minutes.

- Day 1: Aerobic - 3 kilometer pace. 16 x 400 in 68 seconds with 100m jog recovery (45 seconds). 5 Minutes rest. 6 x 60m sprints full out.
- Day 2: Anaerobic - 1500m pace - 6 x 500m in 80 seconds with 2 minutes rest. 5 Minutes rest. 2 x 200m full out.
- Day 3: Aerobic - Run for 1 hour steady.
- Day 4: Anaerobic - 800m pace - 2 x 400m in 60 seconds with 2 minutes rest, 5 minutes rest, 4 x 200 in 30 seconds with 1 minute rest, 5 minutes rest, 8 x 100m in 15 seconds with 30 seconds rest. 5 Minutes rest. 3 x 150m sprints.
- Day 5: Aerobic - Run for 45 minutes steady.
- Day 6: Rest.

Day 7: If no race, 1200m time trial.

3000m Summer - (60% aerobic, 40% anaerobic) Target - 8 minutes 30 seconds.

Day 1: Aerobic - 5 kilometers pace - 3 x 1600m (4 laps) in 4 minutes 48 seconds with 90 seconds recovery. 5 Minutes rest. 4 x 100m sprints.

Day 2: Aerobic - Jog 15 minutes, steady running 15 minutes, full out running 15 minutes.

Day 3: Anaerobic - 1500m pace - 5 x 600m in 96 seconds with 2½ minutes rest. 5 Minutes rest. 3 x 250m sprints.

Day 4: Aerobic - 3 kilometer pace - 6 x 1000m in 2 minutes 50 seconds with 2 minutes rest. 5 Minutes rest. 6 x 80m sprints.

Day 5: Anaerobic - 800m pace - 6 x 300m in 45 seconds with 300m walk back recovery. 5 Minutes rest. Run up 20m, sprint 50m x 6.

Day 6: Rest.

Day 7: If no race - 1 hour fartlek (15 minutes jog, stride hard for 30 seconds with 90 seconds jog decreasing by 15 seconds per run, i.e. 30-90, 30-75, 30-60, down to 30-15, 30-90, down back again.

5000m Summer - (Aerobic 80%, anaerobic 20%) - Target 15 minutes.

Day 1: Aerobic - Run 15 kilometers in 1 hour.

Day 2: Aerobic - 5 Kilometer pace - 4 x 1600m (4 laps) in 4 minutes 48 seconds with 90 seconds rest. 5 Minutes rest. 4 x 200m sprints.

Day 3: Aerobic - Run 10 kilometers fast.

Day 4: Anaerobic - 4 x 800m in 2 minutes 8 seconds with 3 minutes rest. 5 Minutes rest. 8 x 100m sprints.

Day 5: Aerobic - 3 Kilometer pace - 16 x 400m in 68 seconds with 45 seconds rest. 5 Minutes rest. 1 x 350m full out, 1 x 300, full out.

Day 6: Rest.

Day 7: If no race - 2000m time-trial.

10000m Summer - (Aerobic 90 per cent, anaerobic 10 per cent) - Target 31 minutes 40 seconds.

Day 1: Aerobic - Run 20 kilometers in 75 minutes.

Day 2: Aerobic - Run 15 kilometers in 1 hour.

Day 3: Aerobic - 25 x 400 in 76 seconds with 20 seconds rest to get used to 25 laps **without** recovery. 5 Minutes rest. 4 x 100m sprints.

Day 4: Aerobic - Run 10 kilometers accelerating (3 kilometers slow, 3 kilometers steady, 4 kilometers fast.

Day 5: Aerobic - 5 Kilometers pace - 4 x 1600m in 4 minutes 48 seconds with 90 seconds recovery. 5 Minutes rest. 4 x 200m sprint.

Day 6: Rest.

Day 7: If no race - 12 x 500m in 85 seconds with 60 seconds rest. 5 Minutes rest. 3 x 300m sprints.

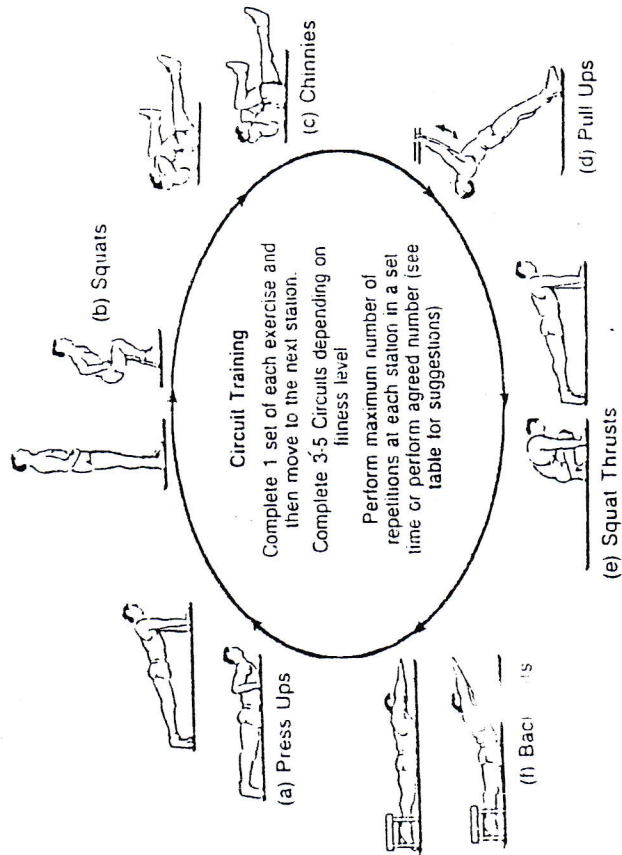
There is considerable opinion in Europe that those athletes wishing to fulfil their potential at 5000m should adhere to the following:

- Concentrate on racing 1500m until about 21 years of age.
- Train like a 1500m runner by emphasising speed endurance, strength, speed and flexibility.
- Race only occasionally 3000m and 5000m events until 21 years of age.



Mobility

Circuit Training

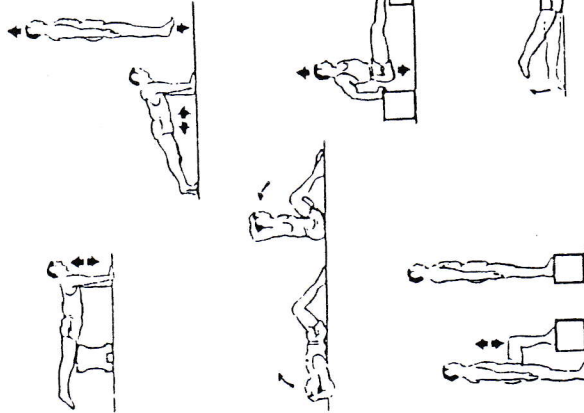


Stage Training

At first station complete a set of repetitions of the exercise. Remain at the station and take short rest of 30-60 seconds. Repeat another set of repetitions of the same exercise.

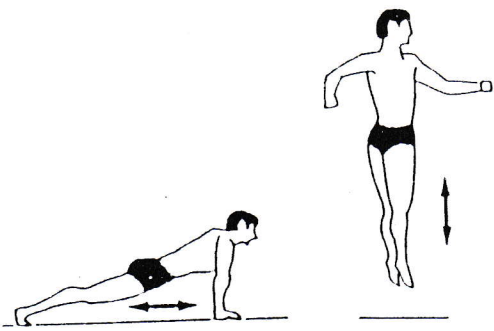
Complete all sets of the exercise before moving to the next station. 6-8 sets are recommended. Perform agreed number of repetitions in each set.
 (See table for suggestions)

Stage training should be viewed as a progression from circuit training.

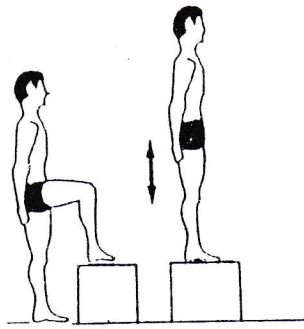


Press Ups	Burpees	Abdominals	Dips	Step Ups	Back Lifts
8 Reps	10 Reps	30 Reps	8 Reps	24 Reps	8 Reps

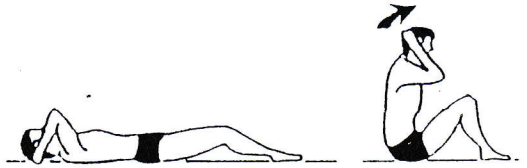
Press Ups	Chinnies	Pull Ups	Squat Thrusts	Back Lifts
12 Reps	30 Reps	6 Reps	15 Reps	10 Reps



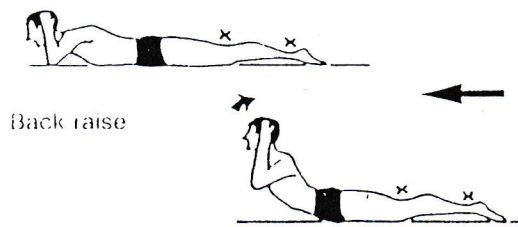
Burpees



Step-ups



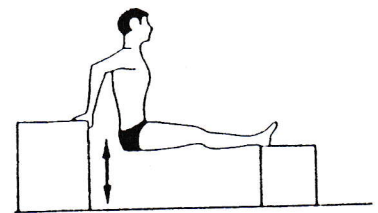
Sit-ups
(or chin-ups / crunchies)



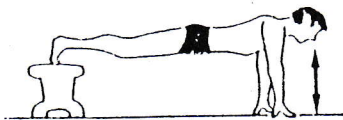
Back raise



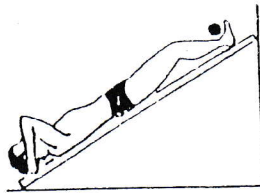
Press-ups



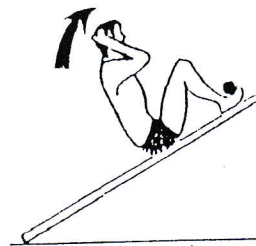
Dips



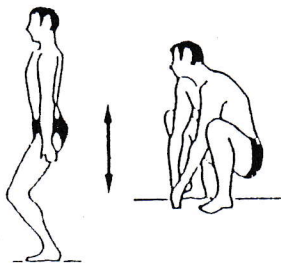
Press-ups



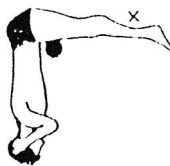
Inclined sit-ups



Side jumps

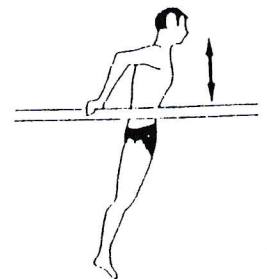


Squats



Back raise

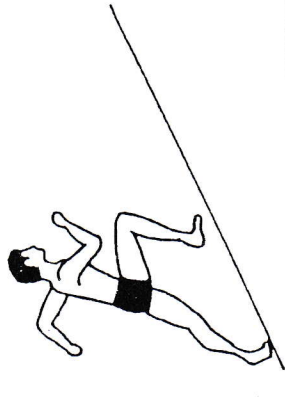
(only 180° / horizontal)



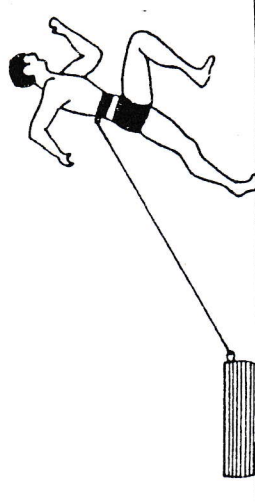
Dips

GENERAL STRENGTH TRAINING

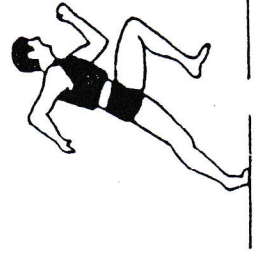
Resistance Runs



Hill runs.

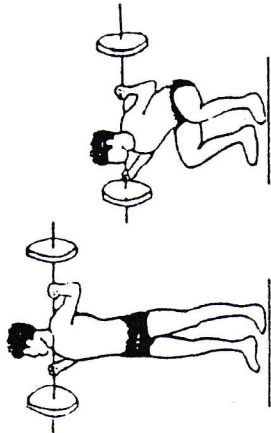


Towing.

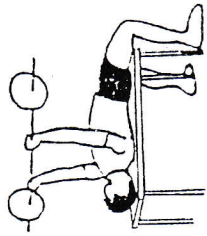


Weighted jacket.

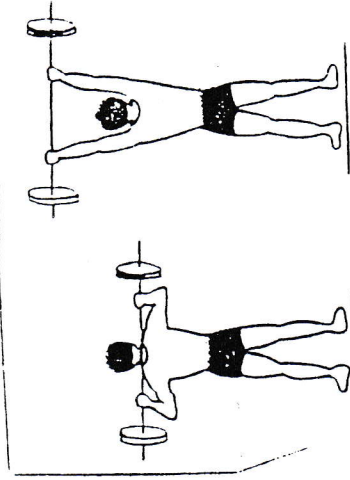
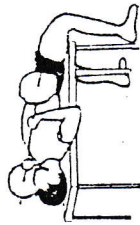
Weight Training



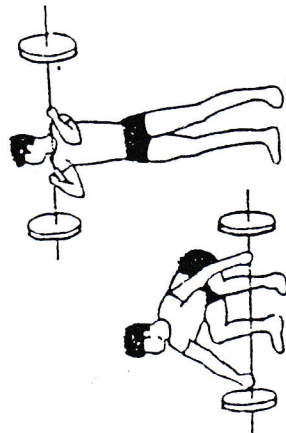
Back squat



Bench press



Press behind neck



Cleans

Plyometrics



High knee drill.



Recovery leg action.

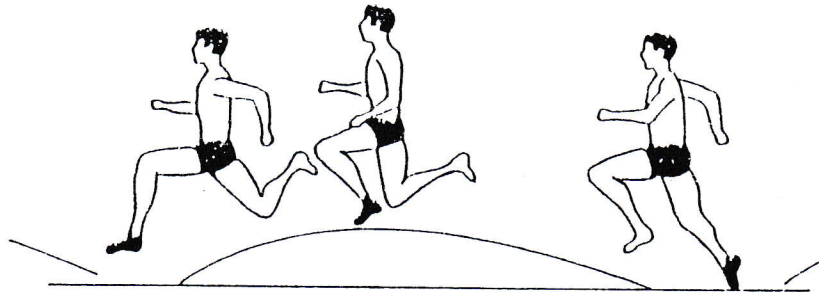


Fig 45 High knee hops

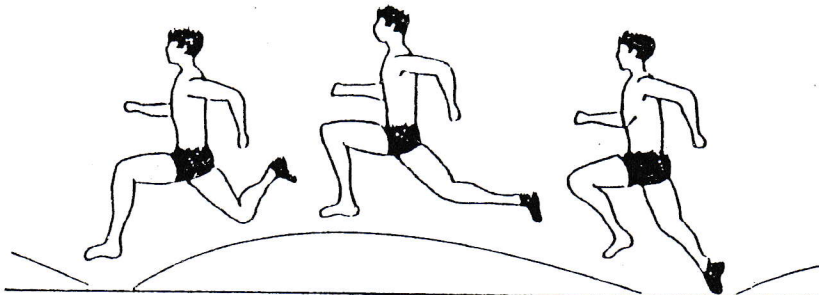
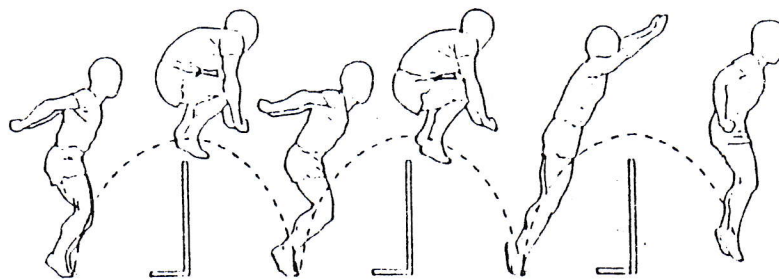


Fig 46 Bounding



Jumping exercises using hurdles

It should be emphasised that athletes should be strong enough before embarking on plyometric exercises otherwise injury could be sustained.

7. CONCLUSION

Much of what happens to our young endurance athletes will rely on the sensitivity and application of the coach. Some athletes mature quicker than others and therefore achieve earlier success which may in some cases be short lived. Other athletes, on the other hand, may take longer to achieve the same results and may even progress to higher levels. Early success therefore is never a guarantee to similar success at senior level. The challenge with the coach therefore is the assessment and application of correct training principles to the individuality of each and every one of his or her athletes.

The pressure of competition results and records have to be put in perspective. With a young athlete who gives every indication of progressing to the senior ranks, one has to weigh up 'short term sensationalism vs long term development'. However children cannot wait with no guarantee of future success. Early healthy challenges both in training and in competition in stimulating environments challenge the coach yet again.

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LONG TERM PLANNING

TRACK AND FIELD RUNNING EVENTS

		AGE																														
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26										
TRAINING PHASES		Introductory					All Round Athletic Development					Specializ.					High performance progression															
TECHNIQUE ACQUISITION		Learning basic technique of running, jumping, throwing										Schooling Stable Techniques					Sophistication from a stable Basic technical model to individual variations															
TECHNIQUE	COMPETITION	CLUB	Fun. relays					Relays. Multi events																								
		LOCAL																														
		SCOT. WALES. NI & ENGLISH AREAS																														
		NATIONAL																														
		INTER NATIONAL																														
		TRACK DISTANCE	30 M. Relays. 30 200 M					30 60 M. 100 300 1500 3000					400 3000					800-5000					800-10,000					800-Marathon				
		TACTICS						Start					Even splits					Fatigue coefficient														
ADAPTATION		Anatomical					Anatomical/Physiological					Physiological																				
MOBILITY		General					Specific hips & ankle					Maintenance																				
ENDURANCE	TYPE	General endurance: Passive/act. rest					Gen. End St. End					Ev. specif endurance					Specific endurance: maximal and sub maximal															
		Aerobic					Mixed					Accord. to Energy demands of event																				
	DISTANCE	30 M. 800 M					1000 - 3000					800 - 5000					Event specific															
SPEED	START	Start																														
	C/P/LA	Alactic										Alactic - Lactic																				
STRENGTH	GEN STR																															
	MUSC END																															
	POWER																															
	MX STR																															