



Advanced

5km Training Program

The 5km Distance

The 5km distance is one of the shorter endurance running events. The 5km distance may be used by new runners beginning the sport or an experienced runner who prefer shorter events. Training for a 5km involves slightly lower training distances at higher intensities. More aerobic intervals of 3-10 minutes are used.

The beginners program is suited to those new to running or someone with excess weight to lose. The 5km program is a perfect place to introduce yourself to running. It has been designed for those who can run for 1 minute to 10 minutes without break. The 5km beginners program is slightly easier than the beginners programs over other distances

The intermediate program is for the fit non runner, or the less fit trained runner. The intermediate program will give you confidence before the event, taking you beyond race distances in training. Experienced runners after a low mileage program may also benefit from this program

The advanced program is for the sub-elite regular runner and the naturally gifted runner. This program will help you achieve the best time possible for a program that utilizes 4-5 days of training

Choosing your running program - 5km

	Maximum running distance without stop	Estimated VO2max (mls/kg/min)	2.4km Fitness Test Result (minutes)	Goal / Expected Finish Time
Beginner	1 minute-10 minutes	27.5 - 34.5	15:35 - 20:00	32mins - 42mins
Intermediate	2km-8km	34.5 - 49	10:42 - 15:35	24mins - 32mins
Advanced	8km +	49-71	7:09 - 10:41	16mins - 24mins

Program Structure

The programs contain 4-5 exercise sessions per week. Each week contains a strength, an interval, 1-2 medium runs and a longer run. There are specific warm ups to perform before each strength and interval session. If you're experiencing tightness you can also include a stretching routine post run, designed to improve mobility around the hips and ankle joints.

About the Program



5km Training Program

The Program

Using your program

This program has been designed for every day runners. People who have commitments both work and family related. The program aims to improve performance in the most time efficient way whilst focusing on injury prevention. The weekly distance covered is shorter than many running programs. Don't be concerned by this, constant high mileage programs can result in a decreased training intensity and an increased risk of injury. This program focuses on quality of training. Each week contains 2-3 running sessions an interval session and a strength session

Training sessions

The shorter run

With the moderate training mileage you can focus more on pushing yourself during your weekly shorter runs. Research shows intensity to be one of the most important contributors to improving aerobic fitness. If you feel fresh, aim every few sessions to push for some PB's in your running speeds. Use a GPS watch or smart phone to monitor you running pace on a week to week basis

The longer run

Increased training distances help to improve running economy or efficiency and prevent fatigue. This is what is referred to when people say they need to get the miles in the legs. If you're running the half marathon and marathon distance total training volume starts to become a larger predictor of performance. For this reason the long run is introduced into your program. This increased training distance and is what contributes the most to a "runners physique". This can result in you losing a step off your sporting speed and a little bit of muscle mass. This is something new runners should consider when choosing the distances they wish to race and train over

Strength sessions

The strength session can initially produce muscle soreness. This is a normal occurrence. Don't be concerned. It will peak 24-48hours after you strength session. Usually by week 3 your muscles have adjusted and soreness will be minimal. Whilst you have leg muscle soreness your aerobic performance will drop and you will experience earlier fatigue in your muscles. For this reason if you miss a couple of strength sessions be careful not to start back into strength training within 4 days of your race or an important long training run. This could result in large decreases in your performance

Nutrition and Hydration

Read through the article on nutrition and hydration and try to incorporate some of these strategies particularly on your longer runs

Injuries

Read through the article on injuries. Keep a look out for common problems and seek a physiotherapist for problems that are worsening, otherwise you may be off running for longer than need be

Footwear

Give yourself time to adjust to new footwear by rotating new and old shoes. Don't race in new footwear. Ideally seek a podiatrist with some running experience or a trustworthy running store for advice on shoes for your training



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Strength session warm up

Strength session warm ups

The strength session warm up focuses on improving range of motion and strength in some key areas which are commonly tight or weak in distance runners. Perform the strength session warm up prior to each strength training session

Strength Session Warm-up	
3-5 minute jog	
Heel Taps - 10 forward and 10 sideways repetitions on each leg Lying Clams - 20-40 repetitions each side Lying Shoulder Press - 20-30 repetitions or Modified version Lunge Rotations - 10 repetitions (5 each side)	} Complete 2 rounds of this circuit

Interval Session Warm-up

The interval session warm up functions to both prevent immediate injury and to improve running technique and performance. Perform the interval session warm up before each interval session

	Beginner	Interm.	Advanced
Steady Jog (3 minutes)			
Jog / Backwards Run } 40-50 meter lengths Jog / A Skips } 3 Rounds Jog / Heel Flicks }			
Standing Side leg Raises 15 repetitions (each Side) - 3 Rounds			
Lunge Drives 15 (each side) - 2 Rounds			
Lunge Jumps 15 repetitions (each side) - 2 Rounds			

Assessments

Every 1-2 weeks the program contains assessments to measure peak aerobic fitness, speed and leg endurance. Perform the assessments and record your results to monitor your progress throughout the program

5km Training Program

Articles

[How to choose your running shoe](#)



The range of shoes available to the consumer is staggering. Research into footwear has led to the creation of a diverse range of shoes types, combine this with the influential pull of marketing and the consumer is faced with a difficult decision. What shoe is right for me? This answer to this question comes down to the shoes ability to effect injury and performance. Its important to know what shoe is right for one person is not necessarily right for another.

Some general rules to consider when purchasing your shoes

- Lighter shoes improve running economy and improve performance but decrease cushioning
- A higher training load will benefit from more cushioning
- Flat low heel drop shoes increase foot and lower leg muscle activity improving arch and foot function
- Pronation injuries such as patellofemoral pain, ITB syndrome, medial tibial stress syndrome and Achilles tendonitis will initially benefit from arch support and an increased heel height
- Heavier athletes will require a larger shoe with increased cushioning
- Foot structure affects injuries. Flat feet will benefit from larger heeled shoes and more support to lower foot stresses
- High arched feet will require more cushioning and benefit from flatter lower heel drop shoes
- Flat low heel shoes decrease foot contact times and improve running speeds
- Slower runners are more likely to use a heel to toe running gait and may prefer a higher heel shoe

[Running Technique](#)

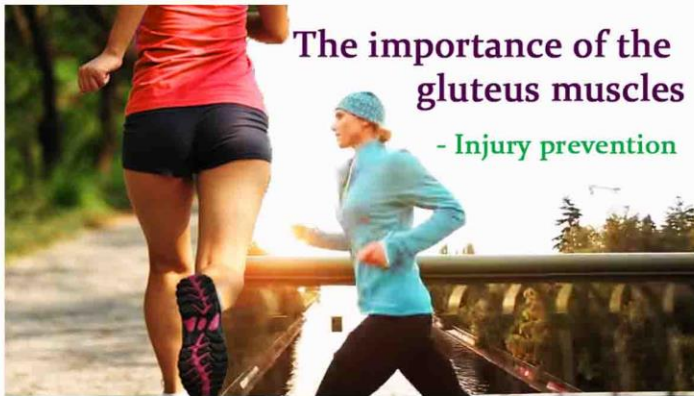
There isn't such a thing as correct running technique. Differences in body shape, mass and muscle structure will all influence running technique resulting in a different stride in each runner. Some biomechanical principles do exist that will influence injury risk and running performance

- The upper arm should be low and elbows bent a little less than 90 degrees
- Excessive heel striking increases the forces placed on the weight bearing area of the knee and the shin bone
- Forefoot striking influences forces placed on the feet, Achilles and calf muscles
- Excessive pelvis tilt or back arch can influence lower limb mechanics altering pronation
- Inward rotation at the knee influences injury risk
- Running economy and performance may be influenced by heel lift during the swing phase

5km Training Program

Articles

[The Gluteus muscles and the runner](#)



The importance of the gluteus muscles - Injury prevention

Your “Butt” is made up of three gluteus muscles and a series of deep external hip rotators. Your butt muscles are important for developing speed but they also controlling hip motion resulting in an improved running economy and a reduced injury risk.

Patellofemoral pain has been linked with increased internal hip rotation during movement. Strengthening of the external hip rotators aligns the knee such that the medial and lateral quadriceps can produce balanced forces

ITB pain has also been linked with decreased abduction and external rotation strength

Women due to anatomical structure, have a higher incidence of injuries relating to pronation and poor hip muscle control. Strengthening the gluteus muscles with an effective strength training program can help reduce your risk of injuries during your running program.

[Common running injuries](#)

Running injuries can be both acute due to sudden events and overuse due to repetitive movement patterns. In runners the knee is the most commonly affected area followed by the foot and ankle, the hips and then the lower back. The most common running injuries are listed below

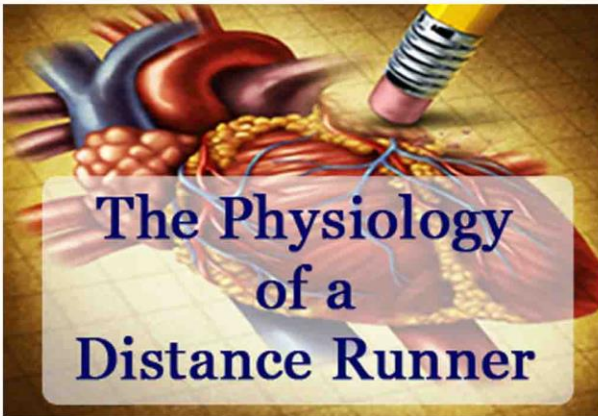
- **Patellofemoral pain** – Pain behind the knee cap, related to anatomical factors and muscle imbalances of the hips and knees
- **Illiotalband (ITB) Syndrome** – Pain on the lateral outside of the knee related to friction most likely due poor technique and imbalances of the foot and hip
- **Anterior Shin Splints** – Pain on the front of the shins related to stress fractures of the tibia due to high impact forces, increased training loads, poor running gait and footwear choices
- **Medial tibial Stress Syndrome** – pain on the medial inside shin bone, related to rotational forces and the pull of muscle fibres on the shin bone
- **Plantar Fasciitis** – Pain on the under side of the foot, thought to result from increased forces on the planta fascia. Theorized contributing factors are excess body weight and training loads, foot type, footwear and calf tightness
- **Achilles Tendonitis** – Overuse injury of the tendon attaching the calf to the rear foot, contributing factors include excess training, over pronation, running on uneven surfaces
- **Muscle Strains** – Can be acute due to footwear changes or speed work or overuse due to muscle and postural imbalances or certain running gait patterns

Identifying your injuries early can help to reduce the risk of further injury. In the full article you can find a list of symptoms for each condition along with advice on whether complete rest or reduced training loads is required

5km Training Program

Articles

[The Physiology of a distance runner](#)



With most sports there are physiological attributes that place the competitor at an advantage compared to their opposition. Running is no different, watching the finish of a running race makes it quite apparent that the characteristics that make you a great weightlifter are not the same characteristics that make you a great runner. Bulging muscles and being 6 foot tall are of no interest to the distance runner. Instead having a well-developed aerobic system, being fatigue resistant and being efficient place the runner at an advantage. Having a low percentage of body fat also advantageous as carrying extra weight costs energy and inhibits performance

Vo2 max is an indicator of a well-developed aerobic system, a high VO2 max indicates a large engine and possibly the ability to perform at a high level in aerobic events

The amount of training you perform along with your muscle fibre type and enzymes effect what is known as the aerobic threshold. Having a high anaerobic threshold means you can operate at a high percentage of your maximum aerobic capacity without fatigue

Running economy is how efficient you are. There can be a 20% variance between two identically weighted people in the amount of energy and hence the amount of effort a person takes to run a given distance Because you cannot see aerobic fitness, or running economy or fatigue resistance it would be wise not to judge your competition to early as there may be an unassuming star performer amongst you

[Predicting your race time](#)

You can predict your finish time using the running pace predictor. The running pace predictor assumes equality of performance over each distance. If you're a marathon runner whom performs no speed work the calculator may give you a faster finish time for the shorter events. Similarly if you're a short distance runner moving up to a marathon distance the calculator will assume an equal skill level and will give you a faster prediction for marathon time then you may be able to achieve

The running pace predictor can also provide you with your caloric expenditures for each running distance as well as a predicting your VO2 max

5km Training Program

Articles

[Barefoot V's Shoes](#)

The two questions driving the barefoot debate are whether barefoot running can improve performance and whether barefoot running prevents injury

Barefoot running due to a reduction in shoe mass has the potential to decrease running times by up to 50 seconds per 10km when compared to light weight running shoes. Given a padded surface with adequate traction barefoot running may be of a benefit, on a road or track in race conditions this small 50 second benefit will be quickly lost due to the modification in ones stride to reduce impact. Whether the foot could adapt to handle these impacts is unlikely. It should be noted most barefoot runners in the media circle are very much joggers rather than performance athletes

Barefoot running will definitely reduce your likelihood of developing some injuries, it will though dramatically increase your likelihood of developing others. Changes in technique that occur during barefoot running move loads from the tibial plateau of the knee and the hip to the foot and the ankle.

Running on hard surfaces dramatically increase impact forces in the feet, this can have dangerous effects for the runner. If your foot structure enables it, you're far better off moving to a minimal support, flat, light shoe which contains cushioning. This shoe will provide the majority of the benefits of barefoot running without the negative effects of the loss of cushioning

[Distance running nutrition and hydration](#)

Runners Nutrition

How much and when??

- Race week taper
- Carbo Loading
- In race Hydration



Utilizing the best nutritional and hydration strategies when performing endurance exercise can prolong the time to fatigue and increase racing performance. Higher carbohydrate diets in the range of 55-70% energy intake have been shown to improve performance in both short distance and long distance events. Some recent research has suggested possible benefits of high fat eating for 5 days followed by a high carbohydrate diet for one day leading up to ultra endurance events. This causes fat adaption in the body whilst keeping carbohydrate levels high. More research is required on this strategy

Carbohydrate loading for 1-2 days along with an adequate 2-3 day taper in training improves distance performance over middle to long distance events

The pre-race meal should be higher in carbohydrates and be lower in fat, fibre and protein

For races lasting greater than 1 hr, 30-60 grams of carbohydrates should be consumed per hour beginning at the 60 minute mark. These should be consumed in small 10-20 gram loads every 20 minutes.

Sweat rates can vary from 250mls/hour to 2.5 litres/hour. Measure your body weight pre and post training run to gain an insight into your sweat rates. Aim to finish the race weighing 1-2% lighter than your pre-race weight. This is due to the release of stored water during the breakdown of muscle glycogen. Hyponatremia is a dangerous drop in blood sodium levels resulting from over hydration. Be careful if you're a slower runner not to drink so much water as to finish the event above your pre-race weight

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[Click here for an interactive version of the program with exercise videos and in depth descriptions](#)



The Program

	Circuit / Strength	Short Run	Intervals	Long Run
Week 1	<p>Equipment: Running field / treadmill, Swiss Ball</p> <p>Strength session warm up:</p> <p>Exercises:</p> <ul style="list-style-type: none"> 3 sets { Squats - 20 repetitions Hamstring Curls - 20 Repetitions 3 sets { Swiss Ball Sit ups - 15 repetitions Single Leg Bridge (20 seconds ES) 3 sets { Walking Lunges - 20 reps (10 ES) Skipping - 150 repetitions 2 sets { Half Burpees 15 repetitions Lying Single leg hip raises - 20 reps (ES) 	<p>Assessment: 2.4km Run Test</p> <p>Time: <input type="text"/></p> <p>5km Run</p>	<p>Interval session warmup: 8 x 200 meters @ 2 minutes</p> <p>10 minute jog cool down</p>	<p>8km run</p> <p>Weekly Kilometers</p> <p>19</p>
	<p>Equipment: Skipping Rope, Swiss Ball, Field / treadmill</p> <p>Strength session warm up:</p> <p>Exercises:</p> <ul style="list-style-type: none"> 3 sets { Run 400m Squat 1 minute 3 sets { Skipping -100 Jumping lunges - 20 repetitions (10 ES) Swiss Ball Single leg Hip Raises - 10 Reps (ES) 3 sets { Swiss Ball Sit ups - 20 repetitions Standing (12 reps) or Kneeling (20 reps) Swiss Ball rollouts 3 sets { Side Bridge Leg abductions - 10 (ES) Hamstring curls- 25 	<p>5km Run</p> <p>5km Run</p>	<p>Interval Session warmup: Assessment: 8 x 400 meters @ 2:30mins</p> <p>Score: <input type="text"/></p>	<p>8 km run</p> <p>Weekly Kilometers</p> <p>23</p>
Week 3	<p>Equipment: Field, Markers</p> <p>Assessment: Leg Enduro</p> <ul style="list-style-type: none"> 3 sets { Reverse crunch - 20 repetitions Sit ups - 20 repetitions Side bridge Leg Abductions - 10 reps (ES) Single leg hip raises - 20 Repetitions (ES) <p>Score: <input type="text"/></p>	<p>Rest Day</p>	<p>Interval Session warmup: 3 X 1000 meter run (3 minutes rest in between)</p> <p>8 x 100 meter run @ 1 minute</p> <p>5 minute jog cool down</p>	<p>10km run</p> <p>Weekly Kilometers</p> <p>17</p>
Week 4	<p>Equipment: Swiss Ball, Skipping Rope</p> <p>Strength Session warmup:</p> <ul style="list-style-type: none"> 6 min AMRAP { Skipping 80 repetitions Squats 15 repetitions 3 sets { Jumping Lunges 20 Swiss Ball Sit ups - 20 repetitions 3 sets { Jacknife - 20 repetitions Single Leg Hamstring Curls - 15 reps (ES) 3 sets { Side Bridge - 30 seconds each side Reverse Crunch - 20 repetitions 3 sets { Lunge Burpees - 20 repetitions (10 ES) Swiss Ball hip raises - 15 repetitions (ES) 	<p>3km run rest 5 minutes 3km run</p>	<p>Jog 10 minutes</p> <p>5-8 X Hill sprints - 30- seconds at 80% effort rest 1:30 between</p> <p>Jog 10 minutes</p>	<p>8km run</p> <p>Weekly Kilometers</p> <p>19</p>

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The Program

Week 5	<p>Equipment: Field / Treadmill or road</p> <p>Strength session warm up: Squat - 1 minute Run 500 meters Step back lunges - 1 minute Run 500 meters Half Burpee - 1 minute Run 500 meters</p> <p>2 sets {</p> <p>Sit ups 1 minute, Bridge 1 minute Reverse Crunches - 1 minute Side Bridge - 45 seconds</p> <p>2 sets {</p>	5km run	Interval session warm up Assessment: 10 x 400m @ 2:30	12km run
	<p>2km run rest 4 minutes 2km run rest 4 minutes 2km run</p>	Score: <input type="text"/>	Weekly Kilometers 30	
Week 6	<p>Equipment: Field, Markers Assessment: Leg Enduro</p> <p>3 sets { Reverse crunch - 20 repetitions Sit ups - 20 repetitions Side bridge Leg Abductions - 15 reps (ES) Supermans - 30 repetitions (15 ES)</p> <p>Score: <input type="text"/></p>	3km run rest 5 minutes 3km run	Interval session warm up: 2 X 1000m - 3 minutes rest between repeats 5x200m @ 2:00 Jog 1km	12km Run Weekly Kilometers 24
Week 7	<p>Equipment: 20 meter flat space, step, Swiss ball</p> <p>Strength session warmup: Step ups - 10-15 repetitions (ES)</p> <p>3 sets { Jumps - 12 repetitions Backwards run - to jump start point</p> <p>2 sets { Reverse crunch - 25 repetitions Half Burpee - 15 repetitions</p> <p>3 sets { Side Bridge Leg Abductions- 15 (ES) Step back lunges - 20 (10 ES)</p> <p>6 min AMRAP { 3 sets - Skipping - 80 repetitions Squats - 15 repetitions Single leg hamstring curls - 15 reps (ES)</p>	Assessment: 2.4 Km run test Time: <input type="text"/> 5km Run	Interval session warm up 3 x 1000m rest 3 minutes between repeats 6 x 100m @ 1 minute	8km run Weekly Kilometers 19
Week 8	<p>Equipment: Swiss ball, treadmill or field</p> <p>Strength session warm up: Step lunges - 20 repetitions (10 ES) jog 500 meters Hamstring curls - 30 repetitions jog 500 meters Squats - 30 repetitions jog 500 meters</p> <p>2 sets {</p> <p>Swiss Ball Sit ups - 20 repetitions Kneeling Rollaways - 20 repetitions Swiss Ball Hip Raises - 15 repetitions (ES) or Lying Hip raises - 25 Repetitions (ES)</p> <p>3 sets {</p>	3km run rest 5 minutes 3km run	4km run	Race Weekend Time: <input type="text"/> Weekly Kilometers 18

Sets = 1 set is a group of repetitions

Repetition = 1 repetition is one lift or one completed movement.

3 sets { Squats - 10 repetitions = 10 squats followed by 10 lunges for 3 sets, equalling 30 squats and 30 lunges in total
Lunges - 10 repetitions

20 (ES) = Repetitions are to be performed on Each Side ie 20 repetitions on the rights side and 20 repetitions on the left side

@2minutes = Every 2 minutes you will start a new interval. If the run takes you 30 seconds to complete you will have 1 minute and 30 seconds rest before starting the next interval

AMRAP - As Many Rounds As Possible (AMRAP) means you complete as many sets of the exercise as possible in the given time period

5km Training Program

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Advanced Exercise Descriptions

[Click here for an interactive version of the program with exercise videos and in depth descriptions](#)



Single leg Bridge



Single Leg Hamstring Curls



Half Burpees



Lunge Burpees



Jackknives



Jumps



Jumping Lunges



Step Lunges



Reverse Crunches



Rollaways Kneeling



OPPORTUNITY FITNESS

5km Training Program

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Rollaways
Standing



Sit ups



Squats



Single
Leg Glute
Raises



Swiss Ball
Glute Raises



Swiss Ball
Sit ups



Step ups



Side
Bridge



Side Bridge
Leg
Abductions



OPPORTUNITY FITNESS