

# DART 10K TRAINING MANUAL



**OUTDOOR SWIMMING SOCIETY**

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**WRITTEN BY KATE REW & DAN BULLOCK**

# TRAINING FOR THE DART 10K

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## TAKE ON THE RIVER

Life is enriched by doing remarkable things, and if you're sign up to the Dart 10k, you are about to experience one of them.

*But we don't just want you to swim it. We want you to enjoy it.*

Which is why Dan Bullock, Director of Swimfortri, and Kate Rew, Director of the Outdoor Swimming Society, have pulled together all you need to prepare for the challenge ahead.

This training manual will give you a concise introduction to open water swimming and give you the skills and endurance you need for the challenge ahead.

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# TRAINING FOR THE DART 10K

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## This manual includes:

- Good swim technique. Pages 4-11
- Drills. Pages 12-23
- Training plan. Pages 24-34.
- Psychology of long distance swimming. Pages 35-36.

# TRAINING FOR THE DART 10K

## GOOD SWIM TECHNIQUE

### HOW TO SWIM BETTER: GOOD SWIM TECHNIQUE

Over 10km, the key to a good time is a stroke that is efficient and relaxed.

You'll have plenty of time during training to work on your swim faults and get yourself swimming faster, smoother and more efficiently.

This section works like a stroke clinic to make each part of your stroke smarter – it will help you diagnose the weak parts of your stroke, and improve them.

For many swimming is instinctive, and strokes improve just by feeling the water. This section explains the theory of good swimming (which, like many manuals, can seem quite complicated and technical). If you learn by doing faster than by thinking, you can always move straight on to drills.

#### We will cover:

- Legs
- Arms
- Bilateral breathing
- Body position
- Timing

# TRAINING FOR THE DART 10K GOOD SWIM TECHNIQUE

## LEGS

**AIM:** A gentle rhythmic leg kick that improves body position, but doesn't tire the muscles by generating propulsion.

### Common problems:

- not kicking at all
- kicking too hard

**TECHNIQUE TIPS:** easy wins for better legs. Keep the big toes tapping against each other consistently when you kick.

This stops you kicking too big, and ensures your leg kick keeps within the profile of the body.

The legs work closely together and should be relatively straight without locking the knee.

Try to keep the ankles relaxed, big toes turned inwards and kick the feet up to the surface of the water without splashing.

**Initiate the kick from the hip, not the knee, so the legs are kept straighter.**

If the kick comes from the knee larger muscle groups are engaged and the swimmer uses more oxygen and tires faster. It's a double lose as a bent leg kick also breaks out of your streamline. The ideal leg action is an alternating upward and downward motion with the ankles travelling just inches apart.

**Kick with a higher frequency and smaller range of motion to a rhythm of 123,123,123,123.**

With distance swimming, the leg kick is not really an ideal means of forward propulsion. What the swimmer is looking for is a kick that balances the stroke, and keeps the legs up in the water so they do not create drag.

On a longer swim only 5-10% of propulsion will come from legs – the smaller range of muscles in the arms creating a far more efficient paddle.

## USEFUL DRILLS

**LEGS ONLY WITH BOARD** You go backward if you don't get it right, so if you go forwards it's a sign your kick is working pretty well. Work on initiating from the hip, and keeping toes tapping at a faster rhythm.

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# TRAINING FOR THE DART 10K GOOD SWIM TECHNIQUE

## ARMS

**AIM:** A long stroke that moves a lot of water. The more distance travelled per stroke the fewer strokes over the swim.

**Over 10km, that can only be a good thing!**

### **Common problems:**

- Too short a stroke
- Low elbows on recovery
- No pull
- Pushing the water down to bottom of pool so you create lift rather than travelling forward

**TECHNIQUE TIPS:** Easy wins for a better stroke.

**EXTEND THE ARM:** Keep your hand and shoulder relaxed as your hand enters the water, with your arm extended and your stroke long (don't cut your stroke short by placing the hand in front of the head). Start rolling as your hand enters the water so your arm can reach full extension.

**ROTATE THE BODY:** which enables a longer stronger stroke that engages the bigger muscles of the back.

Stand looking forward and keeping your head in position, rotate first the right shoulder to the chin, then the left. This is the kind of rotation you are aiming for in the pool, and it allows a longer stroke.

**KEEP ELBOWS HIGH ON RECOVERY:** Allow the hand to travel up side of body, leading with the elbow, and allowing the hands to relax

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## GOOD SWIM TECHNIQUE

### ARMS

**USE YOUR PULL TO TAKE YOU FORWARDS:** A key part of your stroke is the pull: where you 'catch' the water with your hand and forearm, and move past it. With running you plant your foot and the body goes forwards over it. With swimming think of something similar: you hold the water with your hand and forearm and the body travels over it.

The hand motion you are aiming for is a subtle slither, not a big S (otherwise you'll start moving sideways, rather than forward).

Push the water towards your feet not the bottom of the pool.

**KEEP FINGERTIPS POINTED TOWARDS THE BOTTOM:** This keeps the elbow high during recovery, and keeps the palm facing the wall you are swimming away from (so you propel yourself forward, pushing the water towards you feet, rather than propelling yourself upwards, which doesn't help your progress).

**FINISH THE STROKE:** Push the hand beyond the hip on the exit for a full extension at the back of the stroke.

The hand movement is slow to fast under the water.

### USEFUL DRILLS

**CATCH UP** helps you start the stroke from full extension.

**BLACK LINE DRILL** helps push water to back of pool so you move forward

**SWIMMING WITH FISTS** engages the forearm so you 'catch' the water

**FINGER TRAIL/ SHOULDER TAP** is good for high elbows

**SHOULDER TO CHIN** aids rotation, so you engage your body and back muscles, not just your arms, on the catch

**BLACK LINE DRILL** helps push water to your feet

# TRAINING FOR THE DART 10K GOOD SWIM TECHNIQUE

## BILATERAL BREATHING

**AIM:** A good steady breathing pattern that can be sustained indefinitely, with full underwater exhalation and bilateral breathing (so whichever way the wind and chop is blowing, you can still breath comfortably.)

### Common problems:

- can't breath either side
- don't exhale underwater (so get breathless)

**TECHNIQUE TIPS:** Easy wins for a better stroke

**EXHALE UNDERWATER:** Exhale underwater in a nice long slow controlled exhalation, and inhale above. And underwater exhalation allows far more time for each breath, so you get more oxygen. A common mistake is to try to breath in and out above the surface, which leads to breathlessness.

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**ALTERNATE SIDES:** Breathing every three strokes can be quite demanding for the novice. If you find it hard, breath on one side for half a length, then the other, to keep the stroke somewhat balanced.

**CREATE A LONGER STROKE:** With a longer swim stroke you have more time to breathe. With poor technique the stroke dictates when you get to breathe, creating panic.

**ROTATE THE HEAD TO BREATHE – DON'T LIFT:** With a good body position, flat on the surface of the water, to breath you need simply to rotate your head so your cheek is the on the surface of the water and the mouth is above water. If you lift your head out the water it will tip you like a see saw, so your legs sink below you, creating drag.

**PIVOT AROUND OUTSIDE HAND:** One of the features of open water swimming is that you may need to rotate your head more to breath in order to breath above any chop. Think of pivoting on your outstretched hand, as it glides forward in the water. With a good roll, you will easily clear the surface of choppy water.

**USEFUL DRILLS**  
**BREATHING EVERY 5, 7**

**EXTENSION DRILL**

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## GOOD SWIM TECHNIQUE

### BODY POSITION

**AIM:** Streamlined in the water, with as little resistance as possible. Think of a canoe - pointed and long at both ends, and horizontal. The ideal swimmer rolls in the water, rotating through the long axis and keeping straight (no wiggle). This body position reduces resistance and leads to a more powerful pull.

#### Common errors

- snaking through the water, rather than moving forward like a dart
- not being horizontal in the water – having head high and legs low
- not rotating from side to side as you swim (you should rotate along the long axis, like meat on a skewer)

**TECHNIQUE TIPS: Easy wins for a better stroke**

**KICK THE LEGS:** Kicking the legs keeps them up in the water. Kick from the hip, not the knees. Big kicks knock you out of a neat streamlined position. For more see Legs.

**ROTATE:** Keep the body flat and horizontal to the surface of the water and rotate around the long axis of the body, like meat on a skewer.

Keeping the upper body nicely on its side (ie shoulder under the chin for as long as possible through the stroke cycle) is more energy efficient.

As soon as the shoulders are parallel to the surface there is more body mass submerged and you have to work harder.

**PULL WITH MORE OF A SLITHER THAN A BIG S UNDERWATER:** Wild hands leads to a big leg kick, and erratic body position.

**KEEP HEAD STILL WHEN NOT BREATHING:** The head is like the rudder or keel, if it's moving your body will follow it. Keep it still.

**KEEP ELBOWS HIGH ON RECOVERY:** A lot of people move along the pool in a series of left and right hooks, or like boxers making a series of haymaker punches. Keep the elbow high, so the hand traces it's way up from the hip up the side of the body and drops in forward the head,

# TRAINING FOR THE DART 10K GOOD SWIM TECHNIQUE

## BODY POSITION (contd)

### KEEP ELBOWS HIGH ON

**RECOVERY:** A lot of people move along the pool in a series of left and right hooks, or like boxers making a series of haymaker punches. Keep the elbow high, so the hand traces it's way up from the hip up the side of the body and drops in forward the head, and it will drive you forward (rather than losing momentum with sideways movement).

### LOOK FORWARD WITHOUT

**FACING FORWARD:** In open water swimmers don't look directly below them as they are 'sighting' (looking where they are going) on a regular basis – looking at the bottom is a very deep position to come up from. Neither do they have their heads up, which would sink the legs and increase resistance.

Instead, they adopt a midrange position where can look forward but aren't facing forward (which would drop the legs). From here it is easy to sight, and easy to breath above choppy water where a bit more height is needed.

**GROW TALL AND KEEP BODY LONG:** When you perform a push and glide from one of the walls in a swim pool you will travel furthest when you are arrow shaped: legs together, upper arms tight to the sides of the head, toes pointed, hands on top of each other, head tucked into hands in line with your body. If, alternatively, you push off from the wall looking like a starfish you will travel next to nowhere.

Carry these concepts carry through to your swimming stroke, every time your legs and arms splay outside of the narrow profile of your body you will be working twice as hard to move forward. Keeping your body straight, your kick neat and so on, will mean you can swim with less effort. In training drills, work to identify and reduce drag.

**WITH ARM PULL, SEND WATER DOWN TO YOUR FEET:** Pushing water down to the bottom of pool lifts the head too high. Sending it down to your feet pulls you forward. For more, see Arms.

## USEFUL DRILLS

### EXTENSION POSITION

### TORPEDO

### SHOULDER TO CHIN

### FINGER TRAIL/ SHOULDER TAP

### LEGS ONLY WITH BOARD

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# TRAINING FOR THE DART 10K GOOD SWIM TECHNIQUE

## TIMING

**AIM:** A long steady sustainable rhythm.

**Common problems:**

- Windmilling: hands fly around opposite each other
- Inefficient kick

**TECHNIQUE TIPS: Easy wins for a better stroke**

**WORK ON RYTHEM & TIMING:** With your feet, aim for a nice steady 123 123 kick. With your arms, you are aiming for a near catch-up stroke, rather than windmilling arms where one is opposite to the other.

**PRACTICE NEAR CATCH-UP:** Take a stroke, and leave an arm outstretched in front of you. Let the other hand 'catch-up' and rest on top of the outstretched hand before you start the next stroke.

Practice this until it becomes familiar, and then move on to 'near catch-up', when you start to pull with the outstretched arm only when the other hand has almost caught up. This near catch-up style is the opposite of windmilling, where the arms are performing at opposites, and is good freestyle timing.

**PULL SLOW TO FAST UNDERWATER:**

Underwater, the hand moves from the front of the stroke to the back in a slow to fast motion. This helps you hold more water.

Think of a front wheel drive car in wet conditions - too much power and the wheels slip.

Too much power at the front of the stroke and the water you are trying to hold moves with the hand as well as some slipping around the back of the hand.

## USEFUL DRILLS

**CATCH-UP** helps timing

**SCULLING** helps the pull

**LEGS ONLY WITH BOARD**

refines the 123 kick

### DRILLS

Use these drills from Dan Bullock in your training plan. They make the time pass faster, and will make you a better swimmer.

*“You can learn a lot about your stroke just from practicing these drills – they provide useful feedback that will help you figure if you are getting it right without a coach present. The presence of a good open water coach – if you feel you need one – can help you learn event faster; having a careful, trained and qualified eye watching over you and reminding you about good tech will speed your improvements dramatically,”* says Dan.

### Drills covered in this section:

- **LEGS ONLY WITH BOARD**
- **CATCH UP**
- **BLACK LINE DRILL** helps pushing water to back of pool
- **SWIMMING WITH FISTS** engages forearm so catch water
- **FINGER TRAIL/ SHOULDER TAP** – good for high elbows
- **SHOULDER TO CHIN** See also rotation drills? Shoulder to chin?
- **SCULLING**
- **BREATHING EVERY 5,7**
- **EXTENSION POSITION**
- **TORPEDO**

### DRILLS CONT.

#### USING THE DRILLS

1. When swim training and practicing technique think about quality rather than quantity. There is no point in practicing drills when you are tired/fatigued, you will gain no benefit. All drills should be practiced over short distances with plenty of rest, before you start attempting longer drill sets.
2. Practice all drills to the best of your ability; don't try to rush things. The longer you spend on trying to build your new stroke the better the end product will be. If the drills are difficult don't be afraid to mix up the drills with normal swimming, a half length of a good drill is of more benefit than a full length performed nearly right. Swim full stroke to complete a length where you swam a drill for the first half.
3. When practicing the drills always relate the key aspects of the drill to the swimming stroke when you return to full stroke.
4. Continue to practice the drills in warm-ups and cool-downs in your normal sessions, especially if you have recently completed a drills course – the idea is to make sure that your arm-pull, recovery and rotation are happening correctly and with as little mechanical intervention as possible. You want to be able to swim your new improved full stroke without too much thought.
5. When practicing the drills always concentrate on one aspect of the stroke will help reduce the feeling of being overwhelmed with too many parts focus on.

### LEGS ONLY WITH BOARD

- This drill couldn't be simpler: hold a board (or outstretch both arms, palms flat in the water) and kick.
- You will go backward if you don't get it right, so if you're going forwards you're doing it pretty well.
- Keep the big toes tapping against each other consistently when you kick. This stops you kicking too big, and ensures your leg kick keeps within the profile of the body.
- Initiate the kick from the hip, not the knee, so the legs are kept straighter. The ideal leg action is an alternating upward and downward motion with the ankles travelling just inches apart. If the legs are kicking vigorously from the knee (rather than the hip) with the ankles flexed at 90degrees then you are using a lot of strength to push the water in a direction that is not going to help you go forwards.
- Kick with a higher frequency and smaller range of motion to a rhythm of 123,123,123,123.
- The legs work closely together and should be relatively straight without locking the knee. Try to keep the ankles relaxed, big toes turned inwards and kick the feet up to the surface of the water without splashing.

#### Variations on this drill:

- **KICK ON SIDE, ARM OUT:** Lie on your side and kick a length of the pool with the bottom arm extended and the top arm at your side. Concentrate on feeling long.
- For maximum benefit, see tips on Using these drills, and make them part of your training plan

### CATCH UP

- Catch up helps you to improve timing and start the stroke from full extension.
- Take a stroke, and leave an arm outstretched in front of you. Let the other hand 'catch-up' and rest on top of the outstretched hand before you start the next stroke. Alternate for a length.

#### Variations on catch up:

- **NEAR CATCH UP:** When catch up becomes familiar, move on to 'near catch-up', when you start to pull with the outstretched arm only when the other hand has almost caught up. This near catch-up style is the opposite of windmilling, where the arms are performing at opposites, and is good freestyle timing.
- **ONE ARM CATCH-UP:** Swum like regular freestyle, except one arm is stationary, always extended forward (front arm), pointing towards the destination, while the other arm performs the stroke (working arm). When the working arm moves forward and "catches-up" with the stationary arm, they change places. You can hold the caught up position for 0,1,2 seconds for differing effects. With no pause the arms are worked more, with a longer pause the legs need to help more as you are pushing the flat (un-streamlined) body position forwards with the legs for longer.
- For maximum benefit, see tips on Using these drills, and make them part of your training plan.

### BLACK LINE DRILL

- Being able to swim in a straight line is essential in open water. Without lane ropes or black lines to guide you, you can add significant distance to a swim if you can't. Black line drill helps ensure that you are pushing water to the back of the pool and moving forward in a straight line, rather than 'snaking'.
- If you can get a lane to yourself, practice swimming in the middle of the lane keeping the black line you often find on the bottom of the pool directly beneath you.  
With your spine on top of the line, swim with your arms wide of the body but keeping the hands on top of the black line.
- Focus on a good catch, keeping your finger tips pointing down through the stroke, and sending the water backwards towards your feet.
- If your hands slither (rather than do an exaggerated S) then it will keep you moving forwards. Arms sweeping too wide or too far across the body will encourage snaking. Try a few of these strokes with your eyes closed. As your stroke improves, your drift will reduce.
- For maximum benefit, see tips on Using these drills, and make them part of your training plan.



### SWIMMING WITH FISTS

- This drill helps to promote a better feel for the water, by engaging the forearm in the catch.
- Swim front crawl as normal, but with your fingers closed into a fist.
- Vary the pattern and the number of strokes that your fists are clenched. When you unclench your hand, you should notice a difference in pressure on your hand - use this feeling to keep your hand holding water as you move through your pull pattern.
- When hands are clenched, you should also try to press on the water with the inside (palm side) of your forearm - think of the lower arm, from elbow to wrist, as an extension of your hand.

#### Variations on this drill:

- **SPLAYED FINGERS:** Swim with fingers open and splayed.
- For maximum benefit, see tips on Using these drills, and make them part of your training plan.

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### FINGER TRAIL/ SHOULDER TAP

- The aim of this drill is to promote a high elbow recovery and to make you aware of your hand position during recovery.
- Finger trail is swum like regular freestyle, except your fingertips never leave the surface of the water as your arm moves forward during the stroke recovery. Focus on good body roll and keeping your elbows pointed up. If the body is fully rotated, the elbow will be in the highest possible position for the hands to clear the surface of the water.

#### Variations on this drill:

- **HAND HEIGHTS:** Change how much of your hand stays in the water: fingertips, hand, and wrist, even your whole forearm.
- **TAP:** Tap your hand against your shoulder or ear as it passes your head
- For maximum benefit, see tips on Using these drills, and make them part of your training plan.

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### SHOULDER TO CHIN

- Lie kicking on your back with your arms by your sides.
- Keeping the head still, rotate your shoulders around to chin, and lift them to touch it when you are nicely streamlined on your side, letting the hips follow. Most people can get each shoulder close to the chin.
- Kick for 6 beats, then return to your back for 3 beats, and bring the other shoulder to your chin.
- This works on rotation.

### BREATHING EVERY 5,7

- Use this drill to promote bilateral breathing, balance the stroke and develop a smoother more efficient and effective stroke.
- Simply swim front crawl as normal, but breathing every five or seven strokes.
- This practice breathing to both sides will help balance the stroke and give you a more symmetrical swimming stroke that will better utilise the major muscle groups of the back and shoulders. You will also have a better chance of learning to swim straight.
- When swimming outdoors you may want to revert back to breathing on one side only so that you get plenty of air into your lungs, or if wind and waves makes breathing to one side impossible. If this technique is mastered the stroke will stay perfectly balanced even when you are breathing every two or four strokes.
- This method also stops you from solely relying on one arm when breathing every second stroke.
- For maximum benefit, see tips on Using these drills, and make them part of your training plan.

### SCULLING

Sculling is a hand movement a swimmer can practice to help improve their feel for the water. Swimmers for years have spoken about acquiring and losing the feel for the water. When it has been lost due to a period of illness/exams/holiday keeping the swimmer away from the pool, sculling drills are emphasized to help relearn the feel for the water.

Sculling movements help improve the feel for the water and the ability to hold onto the water. An improved feel for the water helps to make the water feel more solid, as if you had something substantial to hold onto. This will help you pull the body through and over the hand keeping your distance per stroke high.

On your stomach, with arms stretched out, place your palms together and thumbs up. Rotate hands so that thumbs are down (with hands apart) and move your palms outward while pushing water out just past shoulder width. Rotate hands to thumbs up and push water back in (almost a figure 8.) Feeling the water pressure with your hands and arms should move you forward in the pool. Keep your face in the water during the drill, raising your head to breathe while kicking.

The intricate hand movements of an efficient hand pull are not really something that can be taught; you could never calculate and implement the precise movements in degrees. Sculling will help you work them out for yourself and strengthen your hold on the water.

The more you swim, the more natural 'feel for the water' can become. What makes it so important for open water swimmers is that for large portions of a swim you may be 'catching' disturbed water from weather and waves, or sitting on people's feet drafting. If you practice to achieve a really good feel for the water then you should be able to make best use of an erratic swimming environment ie when it is unavoidable to catch disturbed water.

### SCULLING CONT.

#### Variations on this drill:

There are many ways to play around with sculling during your training sessions:

- **BASIC THREE HAND POSITION SCULL:** Head first, prone body position, arms out in front. Face down with a gentle flutter leg kick for balance, then scull with your hands in three positions:

1. hands outstretched in front, palms facing down, waving at the bottom of the pool
2. hands outstretched in front, pivot from the elbow, palms down about 20cm under the water level again waving at the bottom of the pool. The movement here is to originate from elbow with a steeper sweep of the hands.
3. hands pointing down, underneath the elbow. In this position you can make use of the steepest sweep of the hands as you get to push the most water back and forth.

- **BASIC FEET FIRST SCULL:** Lie flat in the water, facing the sky, ideally no legs. With your hands by your side and palms facing down, waving at the bottom of the pool, scull so you move forward feet first. Use a pull buoy to help keep the legs up if necessary.
- **TREADING WATER:** Practice keeping afloat in the traditional 'treading water position' but without the treading of the legs. The hands will sweep in and out creating lift and helping keep you afloat. Keep the elbows in at the side and the forearms horizontal as the hands sweep out and aback. The degree of pitch change of the hands need not be too great to create the necessary lift in this position. No bend of the wrists here, ensure the arm movement is smooth and continuous.

### SCULLING CONT.

#### Variations on this drill:

- **FORWARDS VERTICAL:** With the body upright, feet pointing to the floor (no kick) head above the water, hands out in front, fingertips down. An effective scull movement should see you move vertically forwards.
- **BACKWARDS VERTICAL:** In the vertical treading water position, hands out in front, finger tips up. An effective scull movement should see you move vertically backwards.
- **CHAIR:** A wonderful scull workout combined with an abdominal exercise. Head is above the surface of the water, hands and arms in front of the body, finger tips down. Bring the knees up into the chest. A vigorous scull motion should have you move forwards! Be careful the scull motion does not become a breaststroke arm action in an attempt to create speed. This position is also a great opportunity to check on hand positioning and finger spacing. Attempt to scull in the Chair position with your fingers wide apart. You will soon struggle and feel how inefficient this position is.
- For maximum benefit, see tips on Using these drills, and make them part of your training plan.

#### Tips to remember:

- When you return to a full stroke, remember that the idea pull moves from slow to fast. This avoids the issue of water slipping around the hand if you pull too hard too soon.
- Sculling makes use of the forearm as an extension of the hand to increase the surface area of the usable paddle. The motion comes from the elbow not the wrist.
- Movements of the hands should be symmetrical between left and right, keeping constant water pressure around the hands.
- Don't cup the hands leaving the paddle smaller than it needs to be.

# TRAINING FOR THE DART 10K

## DRILLS

### EXTENSION DRILL

Starting out the body should be rolled on one side, one arm extended from the shoulder, reaching out in front of the body. Very little space should be present between the head and extending arm and the body should be in a straight alignment from tips of fingers to toes.

Hold on one side for ten seconds, then switch arms with a single stroke while the body rotates to the opposite side, the other arm now leading in front.

Maintain a steady, relaxed kicking style for balance. Fins may be necessary to start out with.

Breathe every six to ten kicks, then roll into one full stroke to take you onto your other side. The key pointers are:

- Shoulder to chin rotation.
- Legs kicking softly, keep the scissoring to a minimum by thinking of only kicking in a vertical plane. The body rotation will take the legs slightly off but hopefully not too much.
- Aim to have the trail shoulder above the surface of the water.
- With the upper body nicely rotated, it should be easier to clear the water with the trailing shoulder. In this position you should also find it easier to breathe to your weaker side.

As with all drills feel the key body positions coming through into the full stroke. Always practice some full stroke mixed up with your drills. The nice thing about this drill is that it constantly mixes the drill with the full stroke!

Extension drill can help the body get into a better alignment that will make it easier to breathe to both sides during full stroke. An improved and symmetrical degree of rotation through the upper body will help lift the trailing shoulder clear of the water giving the neck a smoother passage way in turning the head to breathe.

### TORPEDO

This is an excellent drill as it allows swimmers to focus on their full body rotation and kick without having to worry about the timing and execution of the pull and recovery phase of the arms.

The first half of the clip shows the drill being performed with the swimmer's head in the water, eyes focused on the bottom of the pool, and no head movement other than when the swimmer rotates to breathe. Notice how the only body movement is coming from the rotation around the long axis, as if the swimmer is on a spit, rolling fully from shoulder to shoulder, hip to hip. The arms remain by the swimmer's side, staying relaxed and loose.

While watching the kick, the most important thing to focus on is the fact that as the body rotates from side to side, the width, depth and frequency of the kicking does not change. As we are ideally trying to spend the bulk of our time swimming on our side, (rotating from one side to the other with the pause coming as the body is fully extended), it is very important to be able to maintain a light steady kick as the body goes through its rotation. Any fluctuations in the kick will result in a poor body position and excess lateral movements that will create more drag and slow us down.

The second half of the clip shows the same drill being performed with the swimmer's eyes looking directly into the sky/roof. This variation of the drill benefits the same aspects of the stroke, (rotation, kick, head position), but now allows the swimmer to not have the extra burden of having to rotate the head to breathe.

This allows the focus to stay on rotating the body from side to side and keeping the head perfectly still while the kick stays smooth and steady, in line with the rest of the body.

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# TRAINING FOR THE DART 10K

## TRAINING PLAN

It is perfectly possible to do the Dart10k just by swimming a lot over summer, but if you like training plans and organisation, here are Dan's suggestions:

**Your aim is to swim 3 times a week, with a mixture of:**

- Short technical sessions (focusing on drills and technique)
- Long swims (for example a long continuous swim outside or steady-state swim in a pool)
- Fitness sessions (during which you may cover the same distance as a long swim, but with the focus on interval training)

10k is a big deal – for most people it's a similar challenge to running the marathon.

If your LONG SWIM is in a pool, try not to touch the wall and keep it continuous without the rest. You may find it more zen to calculate your swimming time (eg 2.5 hours, 3 hours, and so on) rather than count your lengths. You can drink during this session.

Take a carbohydrate sports drink such as SIS, Powerbar or Maxim – if you're swimming for over an hour then you will need to start replenishing calories spent. If you hate long swims, it is an option to swim more frequently (eg five times a week).

## 10K TRAINING PLAN

*'This blueprint 10k training plan is aimed at getting you to a state of fitness where you don't just swim the 10k, you enjoy the day,'* says coach Dan Bullock.



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## TRAINING PLAN

### 10K TRAINING PLAN

A FITNESS SESSION should be a traditional interval based session (you push hard for a few lengths, take it easy for a few lengths, and so on). You can also join tri clubs and ASA masters swimming groups, or fitness courses run by Outdoor Swimming Society for your fitness sessions.

Being in a group is a great way to motivate yourself and it takes the pressure off – all you need to do is show up, and the rest will be done for you. See further tips below on designing your fitness sessions.

For your TECHNIQUE SESSION, use the 'Good Swim Technique' section to diagnose your ills, and the drills provided to work on body position, leg kick, arm pull etcetera. For example, do four times one length of a drill, then two lengths of full stroke, building good technique in a drill. It can work to build your drills session around a weekly theme.

### *Cross-training?*

Any pilates or yoga has a good cross-over effect, as swimming is all about mobility and improving your range of motion will help your technique.

There are limited cross-over benefits from cycling and running – although they get you fit so they are better than nothing, swimming is technical and uses different muscle groups. Other cardiovascular exercise doesn't ingrain the correct pathways and movements so you could be performing incorrect movements stronger and faster when you come back to swimming.

# TRAINING FOR THE DART 10K

## TRAINING PLAN

### 10K TRAINING PLAN

WEEKS TO SWIM	LONG SWIM AVERAGE TRAINING DISTANCE TO SWIM ONCE A WEEK	90 MINUTE FITNESS SESSION	45 -60 MINUTE TECHNICAL SESSION (emphasis on drills and skills)	NOTES	TOTAL DISTANCE/ TIME A WEEK
13	2.5km				
12	3km				
11	3km				
10	3km				
9	3.5km				
8	4km				
7	4.5km				
6	5km				
5	6km				
4	6.5km				
3	8km				
2	7km				
1	5km				

### ENJOYING YOUR 'LONG SWIM'

There are a few keys to getting pleasure from your weekly long swim – swimming with someone, swimming in a beautiful place, and swimming outside. By the time you do your 8km swim three weeks before the event you'll be swimming for around two and a half hours, so it makes sense to find some way to enjoy it!

#### Tips:

- 1. GET OUTDOORS!:** Many outdoor swimmers will enjoy making at least a few of their long swims A to B swim in a river, sea or lake. See the OSS Swimming Map and OSS Facebook for suggestions.
- 2. GET SOME COMPANY:** Use the Outdoor Swimming Society network to find other swimmers with similar aims and post your own training plans on OSS facebook. <http://www.facebook.com/#!/group.php?gid=55781602829&ref=ts> to find local swimmers who want to train with you.
- 3. SWIM IN A LIDO:** A long one if possible. The less often you have to turn, the quicker the time will go – at pools like Jesus Green Lido (Cambridge) and Tooting Bec (London), you'll only be doing 25-80 lengths.
- 4. VISIT AN OPEN WATER TRAINING VENUE:** There are over 50 around the country where you can sw other open water swimmers and triathletes in marked out courses (typically 1km-1mile). To find your nearest, see the OSS swimming map. [http://www.outdoorswimmingsociety.com/index.php?p=swimming\\_map](http://www.outdoorswimmingsociety.com/index.php?p=swimming_map).

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# TRAINING FOR THE DART 10K

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### ENJOYING YOUR LONG SWIM

#### Tips Cont:

**5. SWIM FOR A LENGTH OF TIME:** Calculate how much time you are likely to take for your session rather than counting lengths – leaving your mind free to focus on your stroke and enjoying the feel of the water.

**6. SPEND SOME QUALITY TIME IN OPEN WATER:** The more time you can spend in open water that's a natural temperature, the better your acclimatisation for the day. The temperature of the Dart varies with rain and weather, but it may be colder or warmer than other open water venues you train in.

There are increased safety risks in doing a long outdoor swim, that come from factors such as cold, boats, and distance from shore. These can be moderated with common sense – for example, swimming with someone, wearing a brightly coloured hat, and swimming along the shore. See the OSS website for more common sense safety tips.

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# TRAINING FOR THE DART 10K

## TRAINING PLAN

### DESIGNING YOUR FITNESS & TECHNIQUE SESSIONS

*Advice from Dan Bullock, courtesy of 220Triathlon.  
<http://www.220triathlon.com/>. 220 Triathlon also has  
downloadable lunchtime workouts, which can be adapted  
for your longer swims.*

Many endurance swimmers struggle to construct enjoyable, testing swim sessions that help improve their technique, speed and stamina. While many know the basics – warm-up first, work hard, warm-down – few really know how to put together the sort of varied training sessions that will seem fresh and enjoyable after weeks or months of repetition.

To ensure that your sessions are giving you the best chance of physical improvement – and therefore 10k success – it's important to stick to a proven session structure.

Within this framework there are numerous elements that can be switched around and altered, such as drills, sets and exercises.

If you do this, your sessions will remain fresh and interesting while maintaining the solid structure required for physical improvement.

This is how you can design your own sessions according to 'best practice' principles taught by top swim coaches the world over. This is a mixed session – part drills, part interval training.

#### **Starting point**

Typically a 90min swim training session could be broken down as follows. Remember these are just guidelines and can be altered to suit your needs. At a basic level, this is the routine framework around which you should plan your specific sessions.

# TRAINING FOR THE DART 10K

## TRAINING PLAN

### DESIGNING YOUR FITNESS & TECHNIQUE SESSIONS

#### 1 Warm-up

This should account for the first 15% of the session, which would work out at around thirteen or fourteen minutes. The warm-up should be based around easy swimming to mobilise your muscles and encourage blood flow.

#### Tips:

The warm-up, often starts on dry land prior to getting in the pool for either a training session or race. Like a warm-up before a run, the idea is to warm and loosen the body ahead of a period of intense activity.

Usually this means an easy swim, predominantly front crawl (FC) or backstroke with some light drills thrown in. Swim aids such as paddles should be avoided due to the increased resistance they provide in the water.

Fly arms and breaststroke kick are also not usually used in the early parts of a warm-up due to the higher intensities they require. While you should be getting your heart rate going, you shouldn't be pushing it up too far at this point.

#### 2 First sub-set

Around 25% of the session should be devoted to this (23mins). It should be used as an extension of the warm-up to build heart rate (HR) levels or to introduce some skills that need to be practiced while 'fresh'.

#### 3 Main set

This is the bulk of your workout, taking up between 40 and 50% of the session (between 36 mins and three quarters of an hour). This is a sustained period where your heart rate is elevated. Think of it as the donkey work.

See more information on Main sets.

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### DESIGNING YOUR FITNESS & TECHNIQUE SESSIONS

#### 4 Second sub-set

This second sub-set is optional and should account for no more than 10% of the session (nine minutes). It's usually added to start a longer, more technical warm-down depending on the intensity of the main set. Sometimes this second sub-set will be used specifically for sprint work.

#### 5 Swim-down/cool-down

Around five to 10mins of easy swimming at the end of the session is vital to 'cool down' the muscles, keep them loose and prevent stiffness. This should take up no more than 10% of the total session time.

#### Tips:

The swim-down aids recovery from a tough training session. It usually takes the form of a sustained easy swim to help remove the lactic acid build-up in the body, and return HR and rates of breathing back to normal levels.

A training session would always finish with a 200-400m cool-down, perhaps longer if the session has been especially intense.

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### MAIN SETS

Main sets are the part of the session that concentrates on the focus of the swim training plan, whether that's endurance, speed, technique or a combination of all three. Exercises will be performed in a number of ways to promote these elements.

There are several training methods that can be used to promote and develop these aspects. While all should not be used in the same session, mixing them up will ensure that your time in the pool is well spent – and, more importantly, never dull. Some of the more popular exercises and training variants are as follows...

### Interval sessions

- When attempting a session, there are several ways the efforts can be increased to help elevate your heart rate. Four key areas are adjustable to make the session more intense, productive and meaningful...
- First, the distance of the repeats you swim. For example, if in week one you attempt 4 x 200m, by week four you should be attempting 4 x 300m. An example of an interval swim would be giving yourself 2mins to swim 100m front crawl in the first week, before attempting another repeat.
- As your fitness improves you'll get more rest as you swim each 100m faster. After several weeks the 'interval' might come down to 1:50mins.
- The number of repeats swum may also be increased, adding to the intensity of the session. In the first week you may only make 5 x 100m on your interval before reaching exhaustion. The following week you might aim for 8 x 100m on the same interval.

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### MAIN SETS

#### Interval sessions cont.

- The aim time is the final variable that can be manipulated. You might decide on 8 x 100m front crawl with an interval of 2 mins but a target of 1:45mins, meaning you get 15secs rest before starting again. After four repeats at this pace the effort might be too much and you slip to 1:50mins. These are the benchmark times and efforts you should bear in mind and record in a training diary.
- With a few weeks training hopefully you would improve and can try the 8 x 100m FC with an interval of 2mins and an aim time of 1:45mins. If you make the set, you might increase the number of repeats to 12 or bring the interval down to 1:50mins that'll encourage you toward a target of 1:40mins.
- The aim time is often worked out using your best time and the percentage of effort needed for a particular set. Your coach will ask you to swim at certain percentage efforts for different periods depending on your training cycle, how fit you are and so on.

#### Heart rate (HR)

- Instead of a time-based target, you could (with a heart rate monitor) base your fitness session intervals on heart rates. Your interval could also be HR-based leading to a set such as 8 x 100m FC with a target of 80% of your max HR and a resting period interval down to 60%.
- This means that when you finished your 100m swim, you'd check your HR to ensure it was 80% of your max. You would check it repeatedly until it fell to 60% of your maximum HR.
- This style of training is highly individualized and would potentially cause some issues if done in a lane with four swimmers taking differe

### MAIN SETS

#### Build swims

- A build swim would involve a gradual pace and effort increase throughout the duration of the assigned distance. You could either do this time based or with effort levels. For instance, 6 x 300m build front crawl. The first 100m of the 300m should be at 60%, the second at 70% and the third at 80%.
- For a time-based build swim, you could improve by approximately 5secs per 100m for the duration of the 300m. Despite differing effort levels between 100m, the 300m swim is continuous (the rest period will be taken after 300m). If there's a large wall-mounted clock to the side of your lanes, you might be able to check your split times or hopefully your coach/friend can take them.

#### Reducing/descending sets

- A reducing set would mean that repeat after repeat gets quicker than the previous set. Targets could be assigned as either time based or effort based, depending on your preference.
- For instance, if your main set is 4 x 200m front crawl, from 60% to max, the first set would be swum at 60% effort, the next at 75%, the third might be 85-90% and finally you'd finish the last at max effort.
- From a time-based point of view you should aim for specific target times. Now you'd reduce hitting 2:40mins on the first 200m, 2:30mins on the second, 2:20mins on the third and to finish with your best effort. A challenge might even be set that could be to try and break 2:15mins.

#### COLD WATER ACCLIMATISATION

It's the perfect season to go open water swimming anywhere. There is no substitute for being outdoors. Substitute the technique session every time for being outdoors.

A wetsuit takes a lot of getting used to,

- In a lido you'll get more out of not wearing it, because it's harder
- Open water – for safety and comfort not a bad idea

# TRAINING FOR THE DART 10K SWIMMING PSYCHOLOGY

## THE PSYCHOLOGY OF ENDURANCE/ LONG DISTANCE SWIMMING

### •WHILE TRAINING

- Keep a training log of kilometres swum on a weekly basis, then when you hit a low patch and look at what you've accomplished is a good psychological boost to keep you training.
- If you think back to what you've done, it will build up and you will have done a long.
- Visualise the Dart swim.
- Don't panic if you can't swim for the week – the body is quite adaptable and versatile, if you can still build to the bigger numbers you have lengths in the bank – a week of a cold is not going to evaporate all that training. You will feel rusty but getting feel for water back.
- If something starts to twinge RICE (Rest. Ice. Compression.Elevation). If something is repeating you need to get technique checked, good technique minimises stress on body – if you think of how many repetitions over the 10k you don't want to be loading joints incorrectly. Don't run the risk of long term damage – if something feels wrong, adjust stroke, take a rest, see a swim coach. In terms of distance you may well run into some things. Get technique checked with a local coach, maybe see a physio, get a massage – try and manage it and work with it, be sensible.

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# TRAINING FOR THE DART 10K SWIMMING PSYCHOLOGY

## THE PSYCHOLOGY OF ENDURANCE/ LONG DISTANCE SWIMMING

### THE SWIM ITSELF

- Compared to swimming in a pool anything outdoors is infinitely more interesting – so look forward to the swim, enjoy the scenery and the atmosphere. When you compare it to time in the pool counting tiles, the natural beauty of it is likely to make the distance fly by.
- If you need, roll on your back for a few strokes and soak up some sun, there are very few marathon people who don't stop and walk now and then.
- Relax and enjoy it! This is the key to a good long swim.
- Remember: pain is inevitable, suffering is optional. Or in the words of one endurance swimmer “pain is temporary, quitting lasts forever”. Chances are you can do the 10k without any crises, but if you do have one, try focusing on your stroke, your technique, the other swimmers, your chosen charity.. Anything but the question ‘shall I stop now?’
- Remember, you'll be part of the first lot of people who do the 10k. It's ground-breaking ,
- demanding and challenging! Feel proud. Tell yourself ‘you can do this,’.

**HAVE FUN & HAPPY SWIMMING!** *Kate Rew, Dan Bullock & the rest of the OSS team.*

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