RunThrough | SiS SCIENCE IN SPORT

HALF MARATHON

FUELLING GUIDE

HALF MARATHON - FUELLING GUIDE

FUELLING THE HALF-MARATHON TRAINING

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- and Long Runs

FUELLING THE HALF-MARATHON RACE

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FUELLING THE HALF-MARATHON TRAINING

The half-marathon represents a highly physically demanding endurance event. Following a well-structured training program is crucial for optimising performance and minimising the risk of injury. Your half-marathon training programme should balance aerobic endurance sessions with speed and strength work, leading to a solid aerobic base, whilst also improving your speed and strength.

Alongside training, nutrition plays a key role in optimising performance during half-marathon training by fueling your body for intense workouts, enhancing recovery and promoting training adaptations. Despite these well established and scientifically proven benefits of fuelling, nutrition remains one of the biggest things that runners get wrong, drastically reducing the progress made during their half-marathon training programme and, ultimately, how fast they can run on race day itself.

This guide sets out some simple steps for you to implement before, during and after the most common training sessions completed as part of half-marathon training: Easy Runs, Progression Runs, Speed Sessions and Long Runs.

FUELLING THE EASY RUNS

Easy Runs help you build aerobic base, which plays an important role in your ability to run long distances. These are usually completed twice per week, and you should run between 8-11km as part of these sessions. As the aim of these runs is to help you build your aerobic base, you should complete these sessions at a pace that allows you to easily hold a conversation with someone while you run.

To fuel these runs, you should aim to consume a meal containing 1.5g/kg body mass of slowly digestible carbohydrates around 2.5-3 hours in advance. You should also consume ~20g of protein as part of the pre-training meal. Given the reduced intensity and duration of these runs (~1h), there is no additional need for carbohydrate consumption during the run. You should focus on consuming 500-600ml of water per hour. Post-run, it is important that you start consuming a mix of carbohydrate and protein early to re-store your energy stores (glycogen) and repair your muscle.

A fuelling guide to support your Easy Runs is shown on the next page.

20g Protein
20g Carbohydrate (CHO)

FUELLING THE EASY RUNS

FUELLING STRATEGY PROVIDING:

- 120g CARBOHYDRATE (CHO) PRE-RUN
- 500ml FLUIDS AND 350mg SODIUM DURING RUN
- 20g PROTEIN AND 20g CARBOHYDRATES POST-RUN

2.5 hours before | 0 mins | 20 mins | 40 mins | 60 mins | 30 mins post

START — END

250g cooked brown rice
+ 100g grilled chicken breast
+ 200g grated beetroot
+ 250ml orange juice

+500ml water

SIP THROUGHOUT RUN

+20g CHO

1 x REGO CLEAR
RECOVERY serving

FUELLING THE PROGRESSION RUNS

Progression Runs are crucial in teaching you how to push harder once fatigue kicks in, simulating how you are going to feel in the later stages of the race. During these runs you will start off by running several kilometres at an easy pace, followed by running at your half-marathon pace, and last, running at your 10km pace. During these sessions you will run usually between 9-11km in total.

To fuel these runs, you should aim to consume a meal containing 2g/kg body mass of easily digestible carbohydrates around 3 hours in advance. You should also consume ~20g of protein as part of the pre-training meal. Given the increased intensity and duration of these runs (~1h), you should aim to consume 30-60g of carbohydrate per hour during the run. You should also focus on consuming 500-600ml of water per hour. Post-run, it is important that you start consuming a mix of carbohydrate and protein early to re-store your energy stores (glycogen) and repair your muscle.

A fuelling guide to support your Progression Runs is shown on the next page.

22g carbohydrate (CHO)

FUELLING THE PROGRESSION RUNS

FUELLING STRATEGY PROVIDING:

PRE-RUN:
150g CARBOHYDRATE (CHO)

DURING THE RUN:
60g CARBOHYDRATE (CHO)
500ml FLUIDS
75mg CAFFEINE

POST RUN:
20g PROTEIN
20g CARBOHYDRATE (CHO) POST-RUN

3 hours before	0 mins	20 mins	40 mins	70 mins	30 mins post
	START			END	
 300g cooked white rice 100g grilled sea bass 200g grated beetroot 1 x GO Energy + 500ml water	 GO Isotonic Energy Gel +150ml water	 GO Energy + Caffeine Gel +200ml water	 GO Isotonic Energy Gel +150ml water		 1 x REGO CLEAR RECOVERY serving

FUELLING THE SPEED RUNS

Speed Runs are crucial for improving a range of physiological characteristics, including your speed, power, strength and running economy. During these runs you will be running at a fast pace for brief periods of time (2-8 minutes), followed by an active recovery (walking) for a number of repetitions, otherwise known as intervals.

To fuel these runs, you should aim to consume a meal containing 2g/kg body mass of easily digestible carbohydrates around 3 hours in advance. You should also consume ~20g of protein as part of the pre-training meal. Given the high intensity of these runs, you should aim to consume 60g of carbohydrate per hour. You should also focus on consuming 500-600ml of water per hour. Post-run, it is important that you start consuming a mix of carbohydrate and protein early to re-store your energy stores (glycogen) and repair your muscle.

A fuelling guide to support your Speed Runs is shown on the next page.

47g of carbohydrate per serving

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FUELLING THE SPEED RUNS

FUELLING STRATEGY PROVIDING:

PRE-RUN:
PROVIDING 150g CARBOHYDRATE (CHO)

DURING THE RUN:
60g CARBOHYDRATE (CHO)
500ml FLUIDS
75mg CAFFEINE

POST RUN:
20g PROTEIN
20g CARBOHYDRATE (CHO) POST-RUN

2.5 hours before

300g cooked white rice
100g grilled sea bass
200g grated beetroot

1 x GO Energy
+ 500ml water

15 mins before

GO Energy
+ Caffeine Gel

START

0 mins

GO Isotonic
Energy Gel
+150ml water

20 mins

GO Energy
+ Caffeine Gel
+150ml water

40 mins

GO Isotonic
Energy Gel
+150ml water

END

30 mins post

1 x REGO CLEAR
RECOVERY serving

FUELLING THE LONG RUNS

Long Runs are crucial for building your endurance capacity and preparing you physically and mentally for the half-marathon race. You will usually run between 13-23km at a various paces during these sessions. It is important that you use these runs to practice your race-day routine. From the kit and shoes that you are planning on using during the race, to your pre-race meal and your in-race fuelling and hydration, everything should be practiced during these runs.

You should start to fuel these runs on the day before by implementing a carbohydrate loading protocol. it is recommended to consume a total daily carbohydrate intake of 6-8g/kg body mass on this day to maximise your glycogen store. A fuelling guide to support your carbohydrate loading plan is shown on the next page.

On the day of the Long Run, you should aim to consume a meal containing 2-3g/kg body mass of easily digestible carbohydrates around 3 hours in advance. Furthermore, as our liver glycogen stores are reduced by around 50% when we sleep overnight, and most Long Runs are done over the weekend in the morning, it is important to include fructose-rich foods or drinks (such as BETA Fuel) in your pre-run meal (breakfast).

You should also consume ~20g of protein as part of the pre-training meal. If this Run lasts less than 120 mins, you should aim to consume 60g of single-source carbohydrate per hour. However, for the Long Runs that last ≥120 mins, you should aim to consume between 60-90g per hour of dual-source carbohydrate. You should also focus on consuming 500-600ml of water per hour. Post-run, it is important that you consume a large serving of carbohydrate (1g/kg body weight) and protein (20-30g) early to re-store your energy stores (glycogen) and repair your muscle.

A fuelling guide to support your Long Runs is shown on the next pages.

80g Carbohydrate (CHO)
per portion

CARBOHYDRATE LOADING FOR THE LONG RUNS

CARBOHYDRATE LOADING PROTOCOL, PROVIDING:
587g CARBOHYDRATE (CHO) (~7g/kg OF BODY WEIGHT FOR A 80kg RUNNER)
SERVING SIZES NEED TO BE ADJUSTED BASED ON YOUR INDIVIDUAL BODY WEIGHT

Breakfast

250ml milk
+ 80g rice krispies
1 X BETA Fuel
Energy Drink

Mid-morning snack

BETA Fuel
chew

Lunch

One large baguette + handful spinach
30g fresh mozzarella, 30g low-fat ham
+ couple cherry tomatoes
+ 250ml orange juice

Mid-afternoon snack

250g rice pudding
+ one spoon of honey

Dinner

250g boiled rice
+ 100g grilled salmon
50g grated beetroot
1 X BETA Fuel Energy Drink

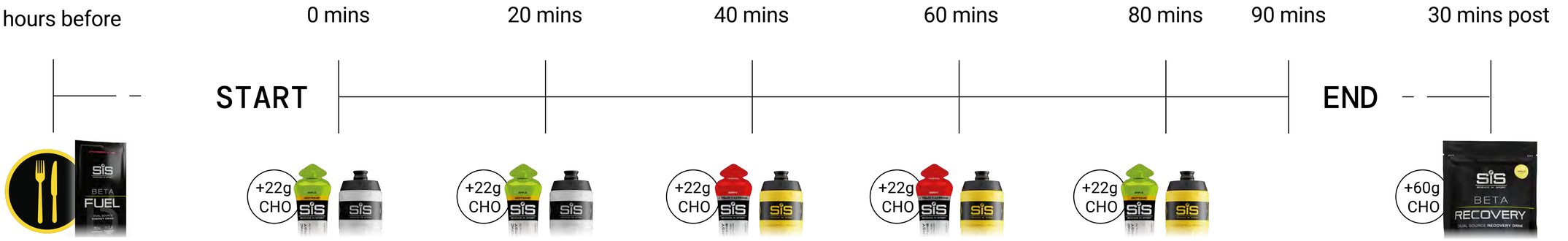
FUELLING DURING THE LONG RUNS (≥120mins)

FUELLING STRATEGY PROVIDING:

PRE-RUN:
- PROVIDING 150g CARBOHYDRATE

DURING THE RUN:
- 60g CARBOHYDRATE
- 500ml FLUIDS
- 75mg CAFFEINE

POST RUN:
- 20g PROTEIN
- 20g CARBOHYDRATE POST-RUN



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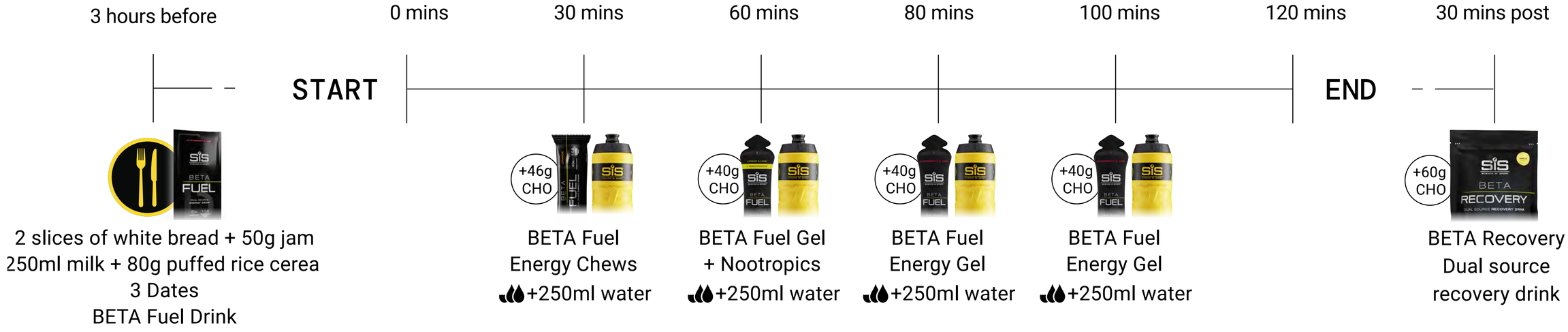
FUELLING DURING THE LONG RUNS (≥120mins)

FUELLING STRATEGY PROVIDING:

PRE-RUN:
PROVIDING 232g CARBOHYDRATE (CHO)

DURING THE RUN:
85g OF DUAL-SOURCE CARBOHYDRATE (CHO)
AND 500ml FLUIDS PER HOUR,
200mg CAFFEINE IN TOTAL

POST RUN:
60g CARBOHYDRATE (CHO)
30g PROTEIN



FUELLING THE HALF-MARATHON

The half-marathon represents a highly physically demanding endurance event. After months of training and preparation, the final week of half-marathon preparation should be focused around two goals:

1. Significantly reducing your training volume through tapering.
2. Fuelling for race day by consuming a sufficient quantity of carbohydrates.

Despite the well established and scientifically proven benefits of fuelling, nutrition remains one of the biggest things that half-marathon runners get wrong, drastically reducing how fast they can run on race day itself. Fuelling can be the difference between a good race and a great race, and worse still, the difference between a personal best and failing to finish. Simply put, fuelling can be the key to unlocking your true performance potential.

This guide sets out some simple steps for you to reach your own podium.

FUELLING THE HALF-MARATHON

For most club runners, the target finishing time is likely between 1.5 and 2 hours, equivalent to a running speed of between 10 and 14km/h respectively. To run at these speeds, carbohydrate is the predominant fuel and depending on your physical fitness levels, it is estimated that you would burn carbohydrate at an average rate of 3-4g per minute. This could result in a total carbohydrate use between 350 and 400g.

Because our body can typically only store around 500g of carbohydrate (stored as “glycogen”), it is essential that we complete one day of a carbohydrate loading diet to maximise our muscle glycogen stores before the race. Studies have consistently shown that runners do not eat enough carbohydrate in the days before the race, meaning that runners would arrive on the start line with sub-optimal glycogen stores and that glycogen stores would run out quicker during the race. As a result, your race pace would slow down, and you would begin to fatigue much quicker. However, if you carbohydrate load correctly in the day before the race, you will improve your ability to maintain your target race pace and improve your overall finish time.

To maximise glycogen stores before the race, it is recommended to consume a total daily carbohydrate intake of 8-10g/kg body mass for one day before. To consume this volume of carbohydrate, it is recommended that your daily plan is comprised of low fibre foods and that a significant portion of carbohydrate is provided in the form of carbohydrate drinks and snacks. This will increase your ability to digest and store the carbohydrate and reduce feelings of being bloated.

There are a range of SiS products that can support your carbohydrate loading targets including GO Energy, GO Bars, GO Energy Bakes and even the SiS BETA Fuel range.

A fuelling guide to support your carbohydrate loading plan is on the next 2 pages.

CARBOHYDRATE LOADING FOR THE HALF-MARATHON

CARBOHYDRATE LOADING PROTOCOL, PROVIDING:
785g CARBOHYDRATE (~10g/kg OF BODY WEIGHT FOR AN 80kg RUNNER)
SERVING SIZES NEED TO BE ADJUSTED BASED ON YOUR INDIVIDUAL BODY WEIGHT

Breakfast

250ml milk+ 80g puffed rice cereal
1 banana
1 X BETA Fuel Drink

Mid-morning snack

1 X BETA
Fuel Chew
+ 300ml orange juice

Lunch

One large baguette + handful spinach
30g fresh mozzarella
30g low-fat ham
couple cherry tomatoes
1 X BETA Fuel Drink

Mid-afternoon snack

300g rice pudding
one spoon of honey
+ 300ml orange juice

Dinner

300g boiled rice
+ 100g grilled salmon
1 X BETA Fuel Drink

Pre-bed snack

250g grapes

THE PRE-RACE MEAL

Having correctly carbohydrate loaded (i.e. optimising muscle glycogen storage) in the day before the race, the goal of your pre-race meal is to top up your “liver” glycogen stores. This is because our liver glycogen stores are actually reduced by around 50% when we sleep overnight and therefore, we need to replace this liver glycogen with our pre-race meal. Again, this meal comprises of easily digestible and low fibre solids, containing around 2g/kg body mass. This should be consumed at least 2½-3 hours before the start of the race.

Runners often make the mistake of over-eating at the pre-race meal and also consume this meal too close to the race. This can result in you starting the race feeling bloated and can cause gastrointestinal problems during the race itself. Rather, you should be aiming to commence the race feeling light in your stomach but with your muscles and liver fully fuelled and ready to go.

A fuelling guide to support your pre-race meal is shown in on the next page.

PRE-RACE MEAL

PRE-RACE MEAL PROVIDING:
PRE-RUN:
232g CARBOHYDRATE (~3g/kg OF BODY WEIGHT FOR AN 80kg RUNNER)
SERVING SIZES NEED TO BE ADJUSTED BASED ON YOUR INDIVIDUAL BODY WEIGHT.

Pre-race meal
3 hours before

2 slices of white bread + 50g jam
250ml milk + 80g puffed rice cereal
3 Dates
1 × BETA Fuel Drink

2hrs before the race

1 hour before the race

BETA Fuel
Energy Chews
+300ml water

Marathon start

FUELLING DURING THE RACE

Even when you have carbohydrate loaded correctly and consumed a carbohydrate rich pre-race meal, consuming additional carbohydrates during the race improves your performance by maintaining your blood glucose levels, delaying the use of your glycogen stores for later in the race and having a direct effect on your central nervous system, reducing the sensation of fatigue.

For this reason, it is critical to also consume carbohydrates during the race. However, the rate at which you consume carbohydrates during the race depends on your expected finish time. Runners that are expected to complete the half-marathon in less than 2hrs, should aim to consume the equivalent to 60g per hour of carbohydrates. This can be achieved through single source formulations (comprising maltodextrin) using a combination of gels and fluids. Within the SiS product range, this incorporate theSiS GO Isotonic gels.

A fuelling guide to support an in-race fuelling target of 60g per hour is shown on the next page.

However, if you are expecting to complete the half-marathon in 2 hours or more, it is recommended that you consume closer to 80-90g per hour, and from dual source formulations comprising both maltodextrin and fructose.

This is because dual source formulations increase the amount of carbohydrates that can be digested, absorbed and burned by our muscles over and above that of using single source formulations. Again, this fuelling target can be achieved from a mixture of drinks, gels and even solids, though it is recommended that your race day fuelling plan is practised during long training runs rather first trying on race day.

Within the SiS product range, this could incorporate the SiS BETA Fuel range, where drinks, gels and energy chews can all support your fuelling targets.

A fuelling guide to support in-race fuelling of 80-90g per hour is shown after the next page.

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FUELLING DURING THE RACE (60G CARBOHYDRATE PER HOUR)

FUELLING STRATEGY PROVIDING:

60g OF SINGLE-SOURCE CARBOHYDRATE (CHO) AND 600ml FLUIDS PER HOUR

150mg CAFFEINE IN TOTAL.

0 mins	20 mins	40 mins	60 mins	80 mins	90 mins	30 mins post
START					END	

GO Isotonic Energy Gel

+150ml water

GO Isotonic Energy Gel

+150ml water

GO Energy + Caffeine Gel

+200ml water

GO Energy + Caffeine Gel

+200ml water

GO Isotonic Energy Gel

+200ml water

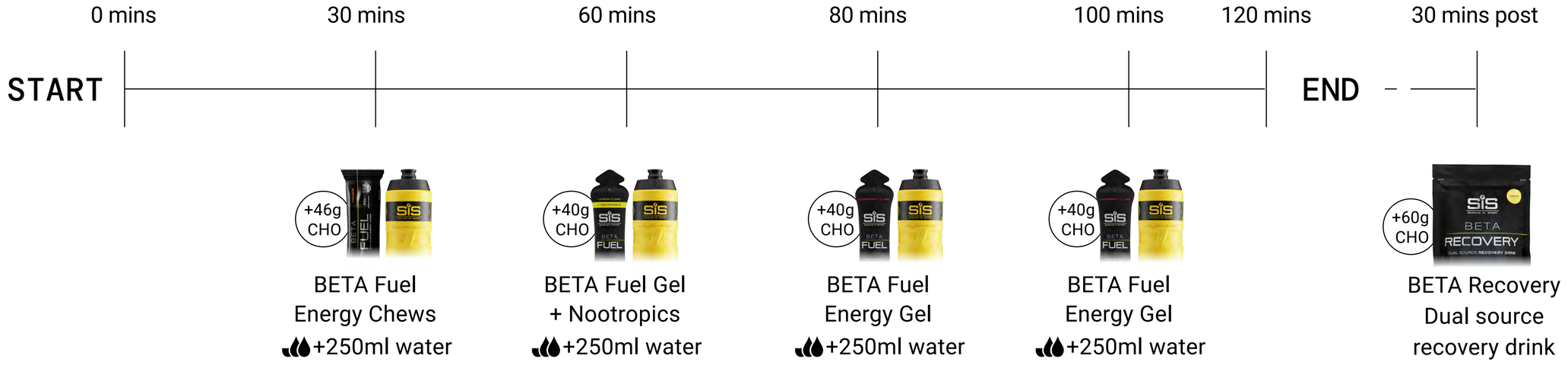
BETA Recovery Dual source recovery drink

FUELLING DURING THE RACE (85G CARBOHYDRATE PER HOUR)

FUELLING STRATEGY PROVIDING:

FUELLING STRATEGY PROVIDING 85g OF DUAL-SOURCE CARBOHYDRATE (CHO) AND 500ml FLUIDS PER HOUR

200mg CAFFEINE IN TOTAL



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