On Athlete Summit

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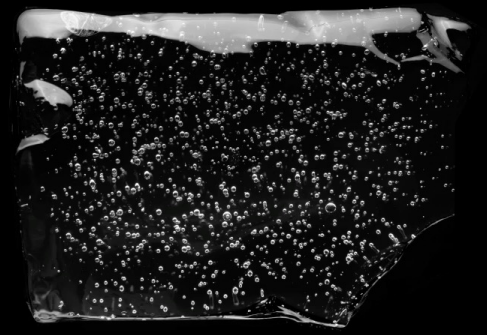
Agenda:

- Early history of Maurten.
- Why carbohydrates?
- How to use them?
- Bicarbonate.
- Questions.

How could Maurten spread so fast?

The Hydrogel concept seems to enhance carbohydrate tolerability.



Global Launch
27th of March 2017

Drink Mix 320: the worlds most concentrated sports drink ~13.7%

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How could Maurten spread so fast?

More carbohydrates.

Agenda:

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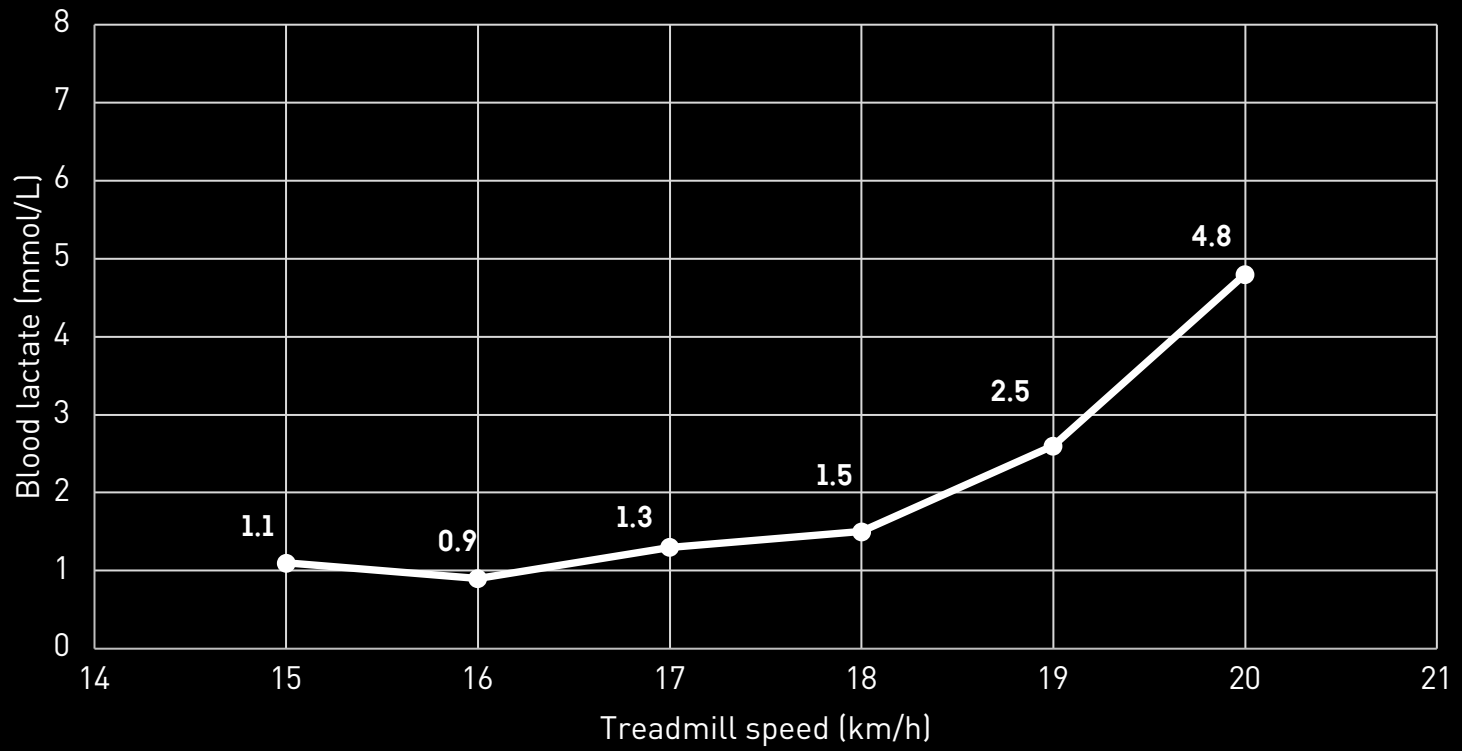
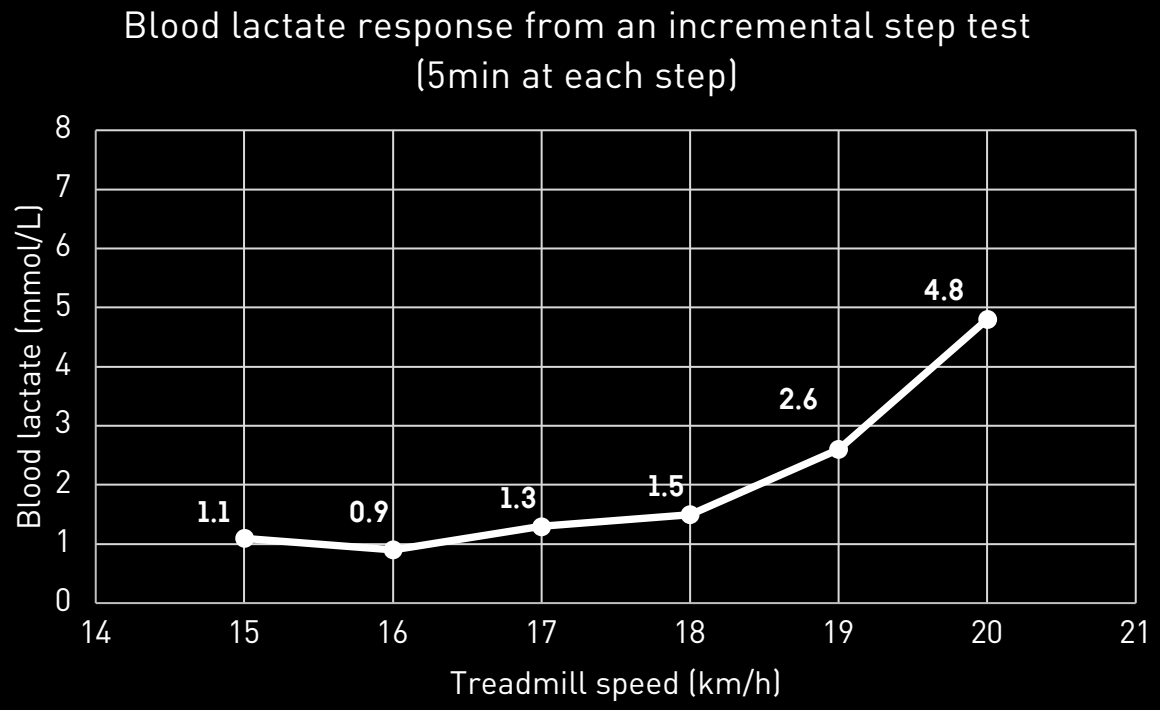
Lactate profile.

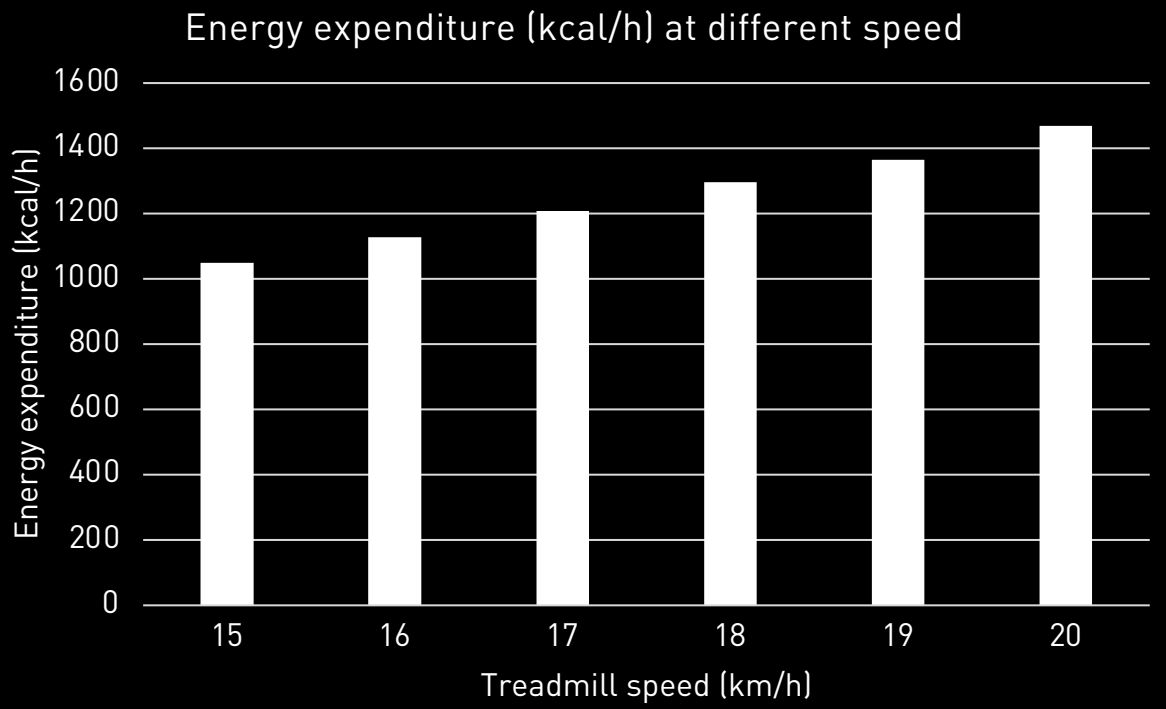
Male runner 73kg.

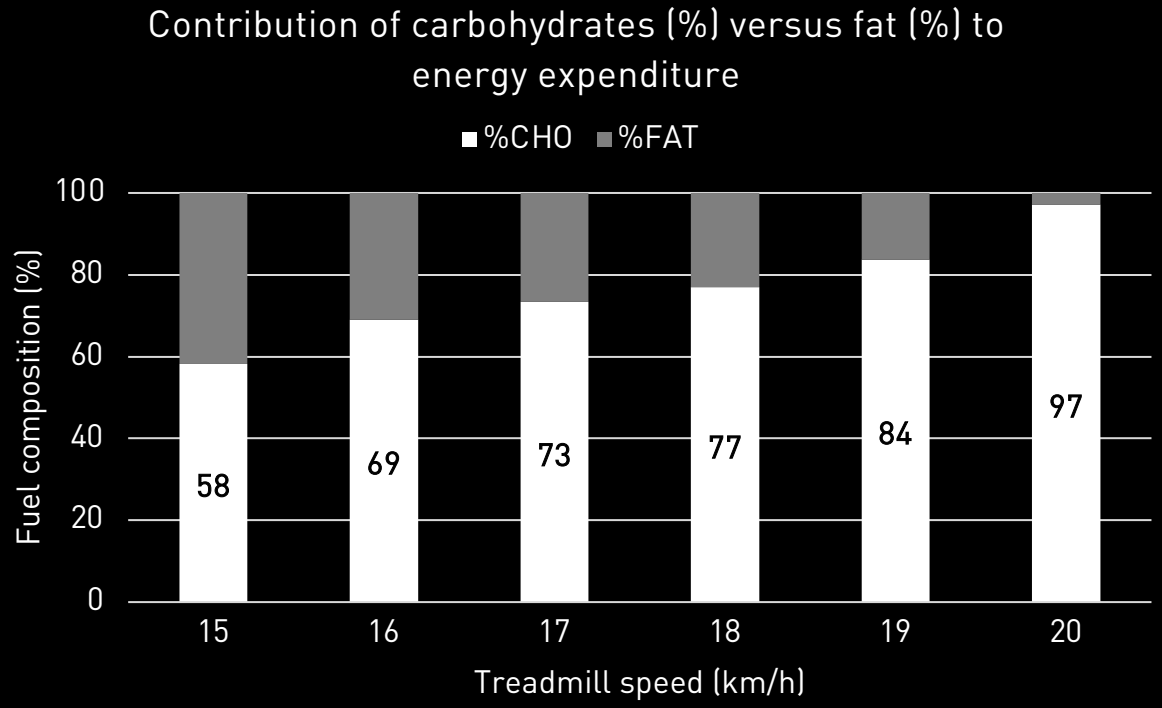
14km/h = 4:17min/km
15km/h = 4:00min/km
16km/h = 3:45min/km
17km/h = 3:32min/km
18km/h = 3:20min/km
19km/h = 3:10min/km
20km/h = 3:00min/km
21km/h = 2:52min/km

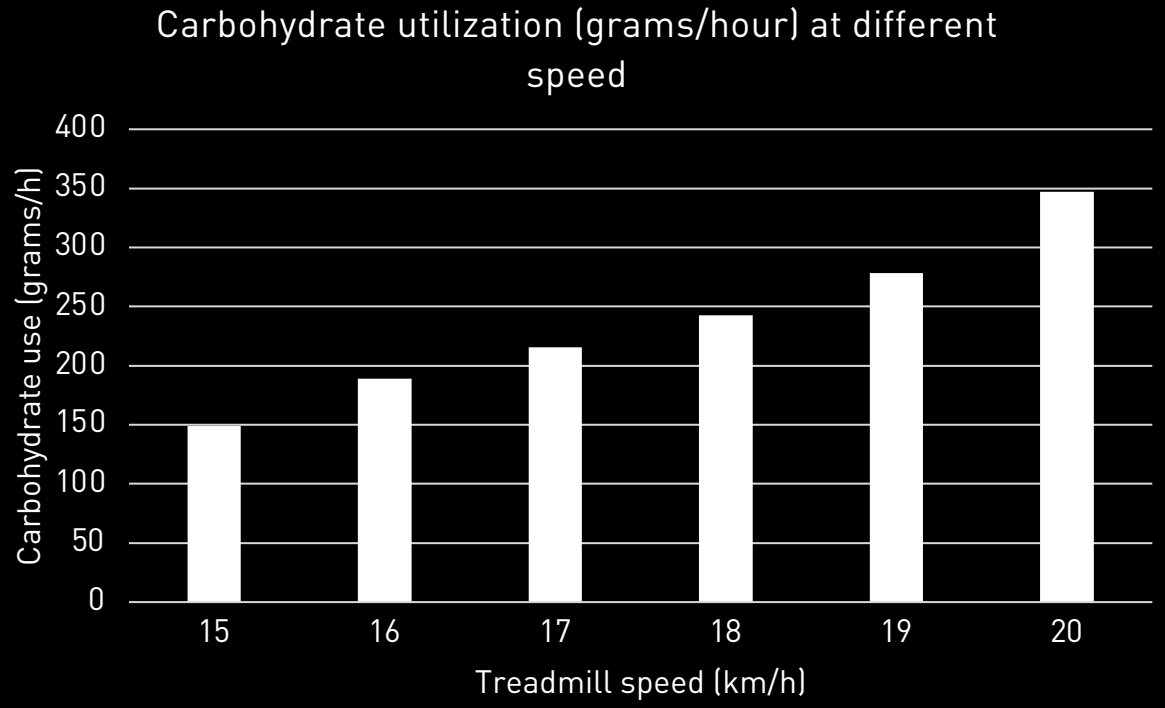
Blood lactate response from an incremental step test
(5min at each step)




Blood lactate response from an incremental step test
(5min at each step)
Blood lactate (mmol/L)
0
1
2
3
4
5
6
7
8
14
15
16
17
18
19
20
21
Treadmill speed (km/h)
1.1
0.9
1.3
1.5
2.6
4.8


Energy expenditure (kcal/h) at different speed
Energy expenditure (kcal/h)
0
200
400
600
800
1000
1200
1400
1600
15
16
17
18
19
20
Treadmill speed (km/h)


Contribution of carbohydrates (%) versus fat (%) to energy expenditure
%CHO
%FAT
Fuel composition (%)
100
80
60
40
20
0
58
69
73
77
84
97
15
16
17
18
19
20
Treadmill speed (km/h)


Carbohydrate utilization (grams/hour) at different speed
Carbohydrate use (grams/h)
400
350
300
250
200
150
100
50
0
15
16
17
18
19
20
Treadmill speed (km/h)

High-volume training is costly/demanding

Energy.
Carbohydrate.

Estimated energy and carbohydrate need for a 73kg male runner.

	Total distance	**Energy**	**Carbohydrates**
Monday	27km	4.200 kcal	400 g (5.5 g/kg)
Tuesday	34km (20km threshold)	4.700 kcal	620 g (8.4 g/kg)
Wednesday	26km	4.100 kcal	390 g (5.3 g/kg)
Thursday	34km (20km threshold)	4.700 kcal	620 g (8.4 g/kg)
Friday	15km	3.300 kcal	280 g (3.8 g/kg)
Saturday	21km (incl 20x200m uphill)	3.700 kcal	450 g (6.1 g/kg)
Sunday	21km	3.700 kcal	340 g (4.6 g/kg)
	178km	**~4.000 kcal/day**	**435 g (6.0 g/kg)**

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- ~~Early history of Maurten~~.
- ~~Why carbohydrates?~~
- How to use them?
- Bicarbonate.
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Product range.

GEL100 (+CAF100)

Carbs: 25 gram per serving.

DRINK MIX 160 and GEL160

Carbs: 40 gram per serving.

SOLID (+C)

Carbs: ~45 gram per serving.

DRINK MIX 320 (+CAF100)

Carbs: 80 gram per serving.

INFORMED
WE TEST · YOU TRUST
SPORT

Support your hard days.

1 x DRINK MIX320
1 x SOLID

Adjust to your body weight:
55 kg = 2.3 grams/kg
65 kg = 1.9 grams/kg
75 kg = 1.7 grams/kg

125 grams of carbohydrates

Use Maurten on the hard days.

	Total distance	Energy	Carbohydrates
Monday	27km	4.200 kcal	400 g (5.5 g/kg)
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	178km	**~4.000 kcal/day**	**435 g (6.0 g/kg)**

Fartlek.

30 – 60min

Periods of fast running mixed with periods of slower running.

One GEL160

Pre-exercise window
1 – 4 h before

Warm-up
10 – 30 min

Main set
30 – 60 min

Cool down
10 – 30 min

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Threshold or tempo.

20 – 70min

Example sessions:
6 – 10 x 1000m (1min rec.)
4 – 8 x 2000m (1-2min rec.)
3-5 x 3000m (1k of jog in between)

100 mg of
Caffeine

DRINK MIX320
1-2 sips now and then

Pre-exercise window
1 – 4 h before

Warm-up
10 – 30 min

Main set
20 – 70 min

Cool down
10 – 30 min

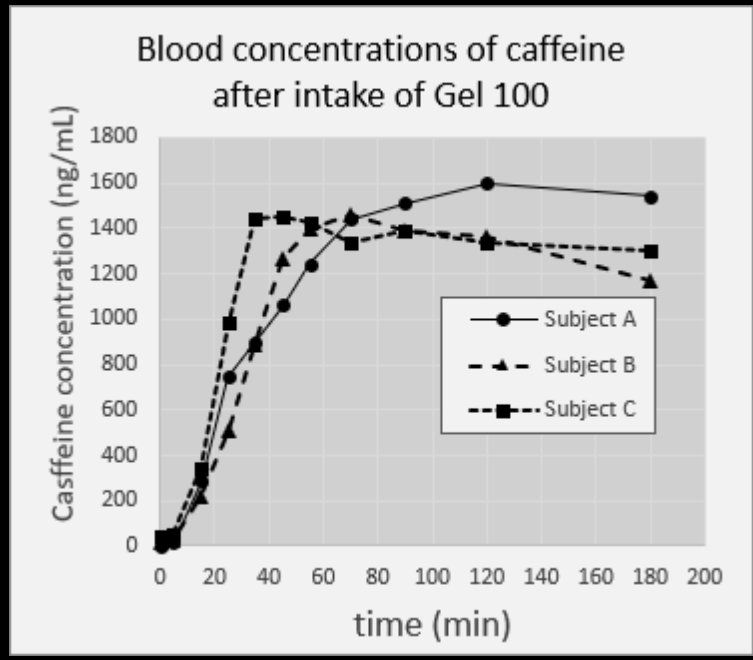
Caffeine.

One of five performance-enhancing supplements

Scientific recommendation: 3 – 6 mg/kg

Adjust to your body weight:
55 kg = 1.8 mg/kg
65 kg = 1.5 mg/kg
75 kg = 1.3 mg/kg

100 mg in each serving



Lactate production/tolerance.

Accumulated distance 1500-8000m

Example sessions during pre-competition period:
8 – 16 x 200m (1min rec.)
1-2 x (10 – 400m) (60-90 s rec.)

100 mg of Caffeine

DRINK MIX160
1-2 sips now and then

Pre-exercise window
1 – 4 h before

Warm-up
10 – 30 min

Main set
1500 – 8000m

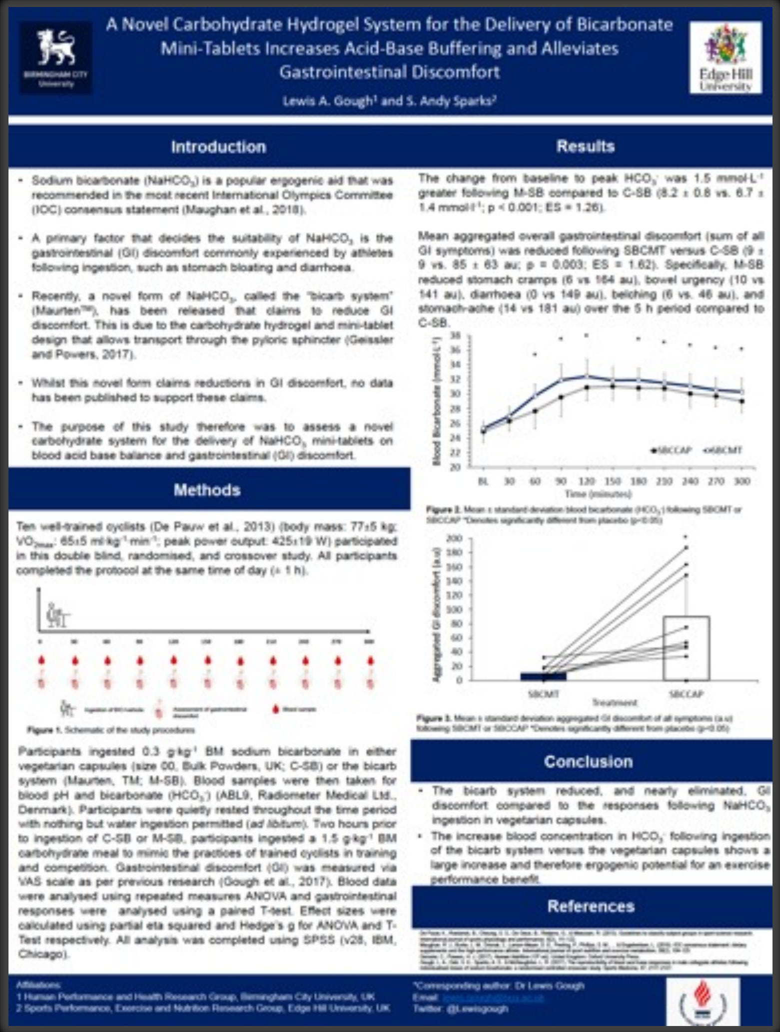
Cool down
10 – 30 min

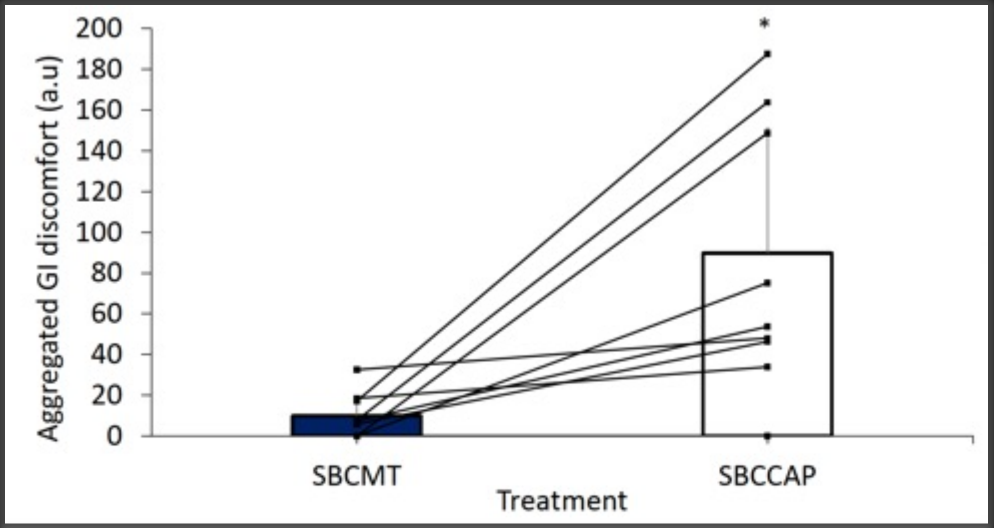
Maurten Bicarbonate system.

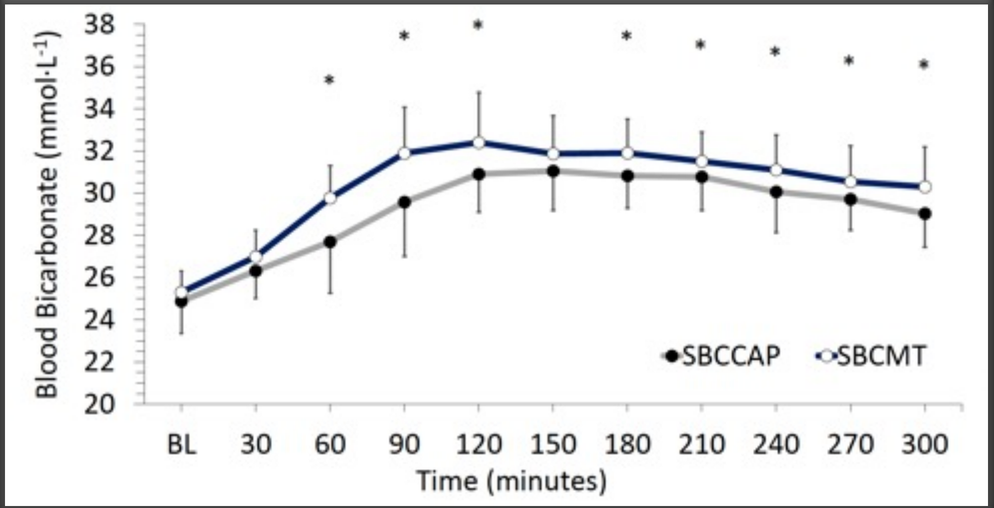
A hydrogel-based
bicarb delivery system.

Designed to:
1. Enhance tolerability
2. Make it easier to take
3. Increase buffering capacity

Up to 1% performance benefit.







Gough & Sparks (2023) Poster presentation
A novel carbohydrate hydrogel system for the delivery of bicarbonate mini-tablets increases acid-base buffering and alleviates GI discomfort

Sodium Bicarbonate.

One of five performance-enhancing supplements

World Athletics.
- Legal to use by athletes
- Demonstrated performance benefits

All Maurten products are tested via Informed Sports certificate program.

International Association of Athletics Federations Consensus Statement 2019: Nutrition for Athletics

Louise M. Burke, Australian Institute of Sport and Australian Catholic University
Linda M. Castell, University of Oxford
Douglas J. Casa, University of Connecticut
Graeme L. Close, Liverpool John Moores University
Ricardo J. S. Costa, Monash University
Ben Desbrow, Griffith University
Shona L. Halson, Australian Catholic University
Dana M. Lis, University of California Davis
Anna K. Melin, Linnaeus University
Peter Peeling, The University of Western Australia
Philo U. Saunders, Australian Institute of Sport and University of Canberra
Gary J. Slater, Australian Institute of Sport and University of the Sunshine Coast
Jennifer Sygo, Athletics Canada
Oliver C. Witard, University of Stirling
Stéphane Bermon, International Association of Athletics Federations and Université Côte d'Azur
Trent Stellingwerff, Canadian Sport Institute – Pacific, Athletics Canada, and University of Victoria

The International Association of Athletics Federations recognizes the importance of nutritional practices in optimizing an Athlete's well-being and performance. Although Athletics encompasses a diverse range of track-and-field events with different performance determinants, there are common goals around nutritional support for adaptation to training, optimal performance for key events, and reducing the risk of injury and illness. Periodized guidelines can be provided for the appropriate type, amount, and timing of intake of food and fluids to promote optimal health and performance across different scenarios of training and competition. Some Athletes are at risk of relative energy deficiency in sport arising from a mismatch between energy intake and exercise energy expenditure. Competition nutrition strategies may involve pre-event, within-event, and between-event eating to address requirements for carbohydrate and fluid replacement. Although a "food first" policy should underpin an Athlete's nutrition plan, there may be occasions for the judicious use of medical supplements to address nutrient deficiencies or sports foods that help the athlete to meet nutritional goals when it is impractical to eat food. Evidence-based supplements include caffeine, bicarbonate, beta-alanine, nitrate, and creatine; however, their value is specific to the characteristics of the event. Special considerations are needed for travel, challenging environments (e.g., heat and altitude); special populations (e.g., females, young and masters athletes); and restricted dietary choice (e.g., vegetarian). Ideally, each Athlete should develop a personalized, periodized, and practical nutrition plan via collaboration with their coach and accredited sports nutrition experts, to optimize their performance.

Keywords: performance supplements, RED-S, track and field

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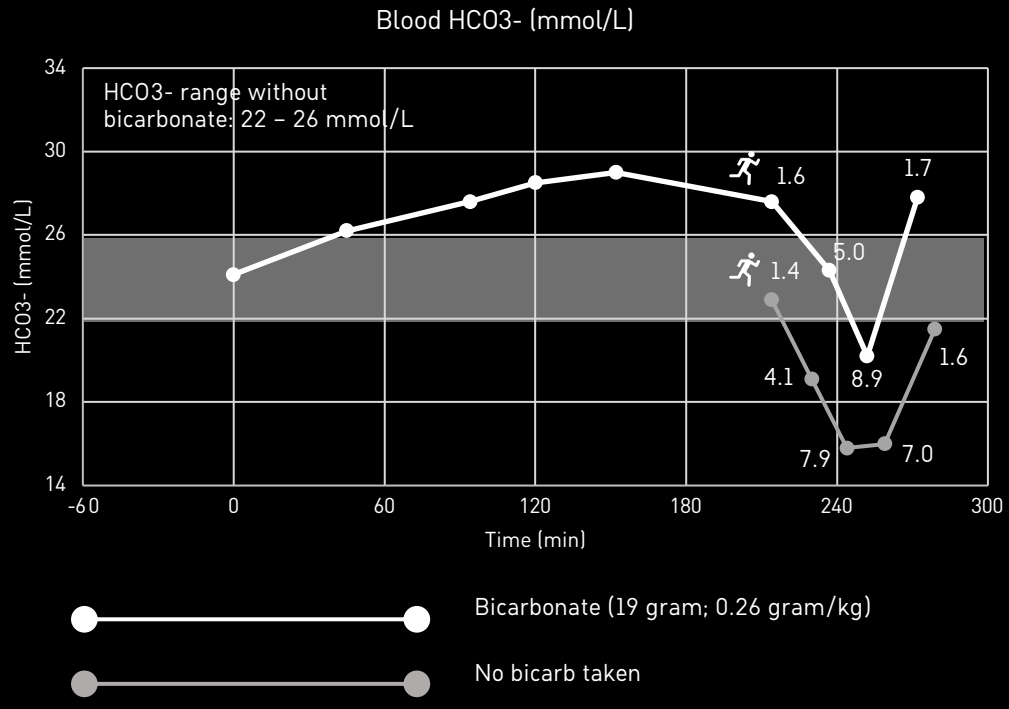
Sodium Bicarbonate.

Scientific recommendation: 0.2 – 0.3 g/kg

Adjust to your body weight:
Bicarb15 - 55 kg = 0.27 g/kg
Bicarb15/19 - 65 kg = 0.23-0.29 g/kg
Bicarb19 - 75 kg = 0.25 g/kg



Four commercial doses.

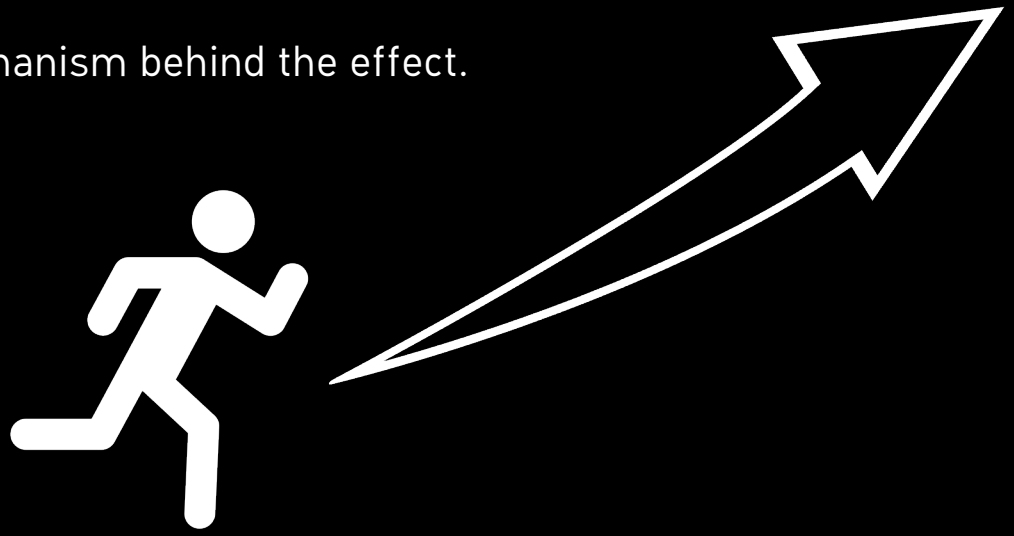
Scientific recommendation: 0.2 – 0.3 g/kg.

Bicarb15 = 15 grams
Bicarb19 = 19 grams
Bicarb22 = 22 grams
Bicarb25 = 25 grams

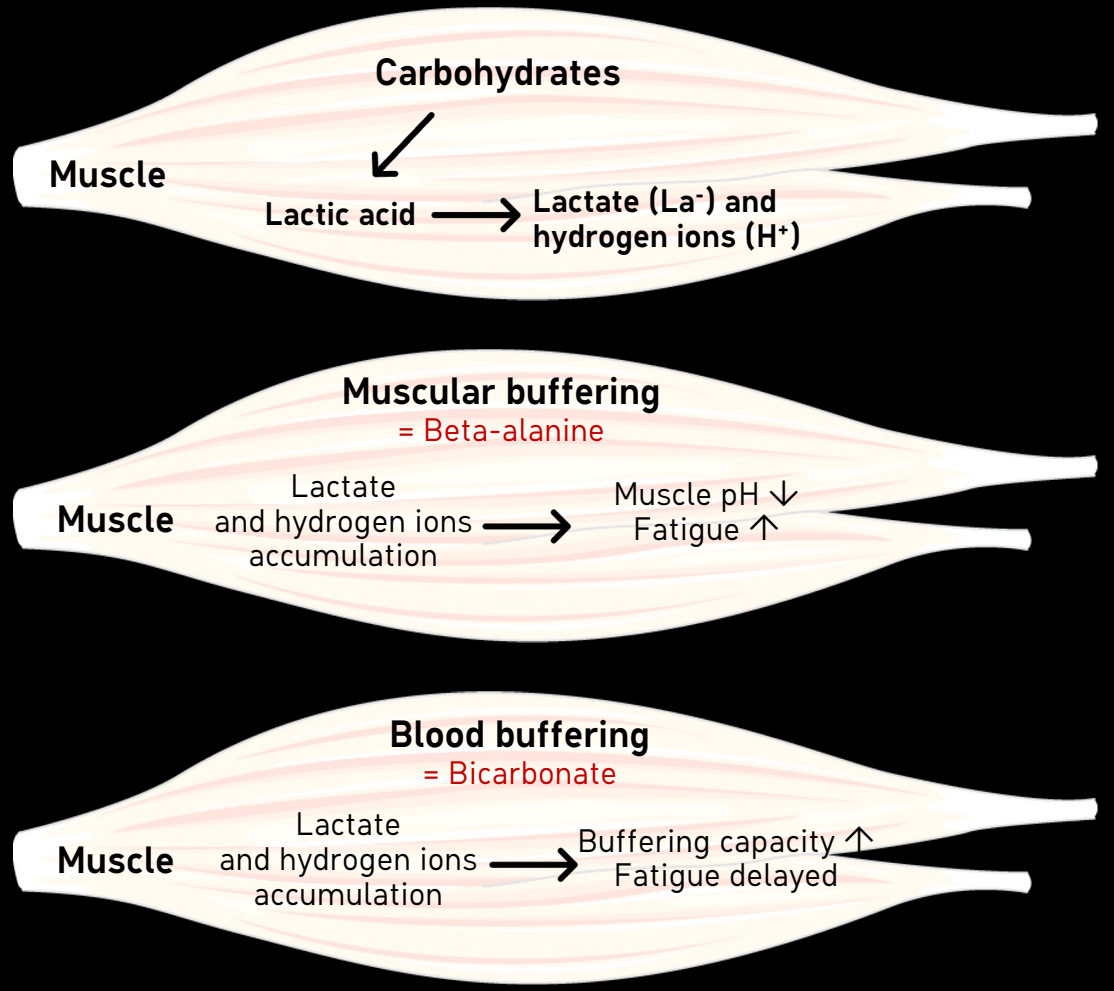
	Small	Medium	Large	X-large
Dose per sachet	15	19	22	25
Recommended for body weight				
BW	Resulting dose per kilo body weight			
46	0,33	0,41	0,48	0,54
47	0,32	0,40	0,47	0,53
48	0,31	0,40	0,46	0,52
49	0,31	0,39	0,45	0,51
50	0,30	0,38	0,44	0,50
51	0,29	0,37	0,43	0,49
52	0,29	0,37	0,42	0,48
53	0,28	0,36	0,42	0,47
54	0,28	0,35	0,41	0,46
55	0,27	0,35	0,40	0,45
56	0,27	0,34	0,39	0,45
57	0,26	0,33	0,39	0,44
58	0,26	0,33	0,38	0,43
59	0,25	0,32	0,37	0,42
60	0,25	0,32	0,37	0,42
61	0,25	0,31	0,36	0,41
62	0,24	0,31	0,35	0,40
63	0,24	0,30	0,35	0,40
64	0,23	0,30	0,34	0,39
65	0,23	0,29	0,34	0,38
66	0,23	0,29	0,33	0,38
67	0,22	0,28	0,33	0,37
68	0,22	0,28	0,32	0,37
69	0,22	0,28	0,32	0,36
70	0,21	0,27	0,31	0,36
71	0,21	0,27	0,31	0,35
72	0,21	0,26	0,31	0,35
73	0,21	0,26	0,30	0,34
74	0,20	0,26	0,30	0,34
75	0,20	0,25	0,29	0,33
76	0,20	0,25	0,29	0,33
77	0,19	0,25	0,29	0,32
78	0,19	0,24	0,28	0,32
79	0,19	0,24	0,28	0,32
80	0,19	0,24	0,28	0,31

Sodium Bicarbonate.

Mechanism behind the effect.



High intensity zone
Above anaerobic threshold



Intake instructions.