

AISS SPORTS SUPPLEMENT FRAMEWORK

SODIUM BICARBONATE GROUP A



Bicarbonate is produced by the body and plays a key role in maintaining acid-base balance. Sodium bicarbonate, also known as bicarb soda or baking soda is a white, fine, alkaline powder commonly used in baking to help foods rise. Supplementation with sodium bicarbonate can increase the body's blood bicarbonate levels safely and helps 'soak up' the build-up of acids produced during prolonged high-intensity exercise, reducing fatigue and improving performance.



Bicarb soda (baking soda)

- > Available in supermarkets
- > \$3.5 per 1kg
- > Mixed with water or cordial is often too salty & unappealing



Maurten 'Bicarb System'

- > Available online at Maurten website
- > \$25 per serve
- > Served as a gel, containing 40g carbohydrate



Sodibic

- > Most palatable delivery form
- > 840mg per tablet
- > \$12.50 for 100 capsules

BENEFITS OF SUPPLEMENTATION



BUFFERS ACIDS IN BLOOD THAT CAUSE FATIGUE
(reduces lactic acid build up)



IMPROVED METABOLIC FUNCTION OF MUSCLE



IMPROVE PERFORMANCE
(by approx. 2-3% in high intensity exercise)

WHEN TO CONSIDER ITS USE



High-intensity events (1-10mins) where lactic acid accumulation begins to cause fatigue e.g. rowing, swimming, middle distance running



High-intensity events up to an hour where a surge or sprint to the finish may be required to determine the winner



Sports involving prolonged repeated high-intensity bouts e.g. team sports, racquet and combat sports

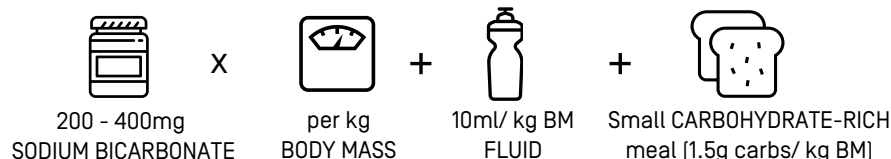


Can be used to enhance training capacity and training adaptations when training is characterised by any of the above

HOW TO USE IT

Bicarb supplementation can be difficult to get right. Work with your sports dietitian to trial in training to develop an individual protocol that works best for you. This may be best undertaken during a training block where several trials can be undertaken.

Bicarb supplementation acute loading protocol: (120-150mins prior to exercise)



E.g. Calculations for 70kg athlete
BICARBONATE: $0.3 \times 70 = 21g$ Bicarb soda or = 25 Sodibic tablets

FLUID: $10 \times 70 = 700mL$
CARBS: $1.5 \times 70 = 105g$

Maurten Bicarb system acute loading protocol: (120 min prior to exercise)

4 hours pre-event



Carbohydrate rich meal (1.5-2g carbs/ kg BM)

120 min pre-exercise - 1 of 4 different 'systems' based on body mass

System	System	System	System	System
12	15	19	22	25
45-51kg	52-69kg	70-84kg	85-102kg	103kg +



SODIUM BICARBONATE

MINIMISING SIDE EFFECTS

The primary side effect associated with sodium bicarbonate supplementation is gastrointestinal upset including: nausea, stomach pain, diarrhoea and vomiting.



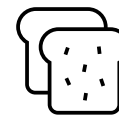
Start loading 120 - 150mins prior to exercise



Consume dose slowly over 30 - 60mins



To prevent diarrhoea, drink a considerable amount of fluid (10mL/ kg)



Consume with carbs at your pre-event meal to assist absorption

Preliminary research suggests the Maurten bicarb system appears to be associated with fewer side effects.

Chronic bicarb loading protocol:



Higher daily bicarbonate dose = 500mg/kg BM up to 5 days prior

=



100mg/kg BM

X



Split into 5 even doses /day (3 meals & 2 snacks) for several days prior & including day of event

CONCERNS & CONSIDERATIONS



Urine pH may take several hours to return to acceptable levels for anti-doping testing.



Further research required on the use of novel bicarbonate delivery mediums, including Maurten Bicarb System, plus topical bicarbonate cream.



Those new to bicarbonate loading may need to trial it multiple times prior to competition.



For repeat events across the same day (eg. heats and finals) see a sports dietitian for a personalised plan.



More evidence required to clarify benefits of co-ingestion with other supplements (e.g. caffeine, beta-alanine, creatine and ketones).



Consider potential for fluid weight gain in weight-sensitive sports.



All supplements have a doping risk of some kind. Some supplements are riskier than others. Athletes should only use batch-tested supplements. The Sport Integrity Australia app provides a list of more than 400 batch-tested products. (www.sportintegrity.gov.au/what-we-do/supplements-sport).

While batch-tested products have the lowest risk of a product containing prohibited substances, they cannot offer you a guarantee. Before engaging in supplement use, you should refer to the specific supplement policies of your sport or institute and seek professional advice from an accredited sports dietitian (www.sportsdietitians.com.au). Athletes are reminded that they are responsible for all substances that enter their body under the 'strict liability' rules of the World Anti-Doping Code.