

AIS 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



Ural effervescent powder

- > Available in supermarkets or pharmacies as a urinary alkaliniser
- > \$12 per 28 sachets (1.75g per sachet)
- > Also contains other ingredients (e.g. carbohydrate, citric acid & sodium citrate)



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

WHEN TO CONSIDER ITS USE



High-intensity events (1-7mins) 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.

Acute loading protocol: [120-150mins prior to exercise]



X



per kg
BODY MASS



10ml / kg BM
FLUID



Small CARBOHYDRATE-RICH
meal (1.5g carbs/ kg BM)

E.g. Calculations for 70kg athlete

BICARBONATE: $0.3 \times 70 = 21\text{g}$ Bicarb soda or
= 12 Ural sachets or
= 25 Sodibic tablets

FLUID: $10 \times 70 = 700\text{mL}$

CARBS: $1.5 \times 70 = 105\text{g}$

Pre-event meals ideas providing approximately 100g carbohydrate:



2 slices thick cut raisin toast + 3tsp honey



1.5 cups porridge on milk with
2 Tbsp sultanas + 2tsp honey



2 eggs on toast + banana
smoothie (250mL)



2 cups cooked pasta
+ 1 banana



SODIUM BICARBONATE

MINIMISING SIDE EFFECTS

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



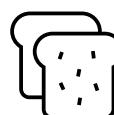
Start loading 120 - 150mins prior to exercise



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

Chronic 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 for bicarbonate cream that can be directly applied to skin.



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.