

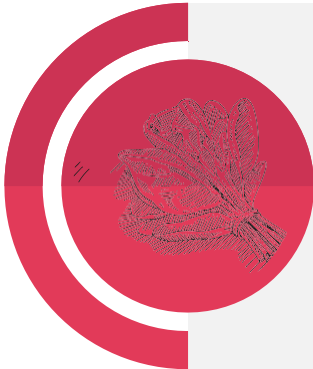


OXYSTORM®

THE POWER OF SUPERIOR PERFORMANCE

The *amaranthus* species extract to
enhance nitric oxide levels

AMARANTH LEAVES



- Amaranth valued as a leafy vegetable all over India
- Extensively used as food
- Amaranth contains naturally occurring Nitrate (NO_3) which is a source of Nitric Oxide (NO)
- Rich source of Protein and Potassium

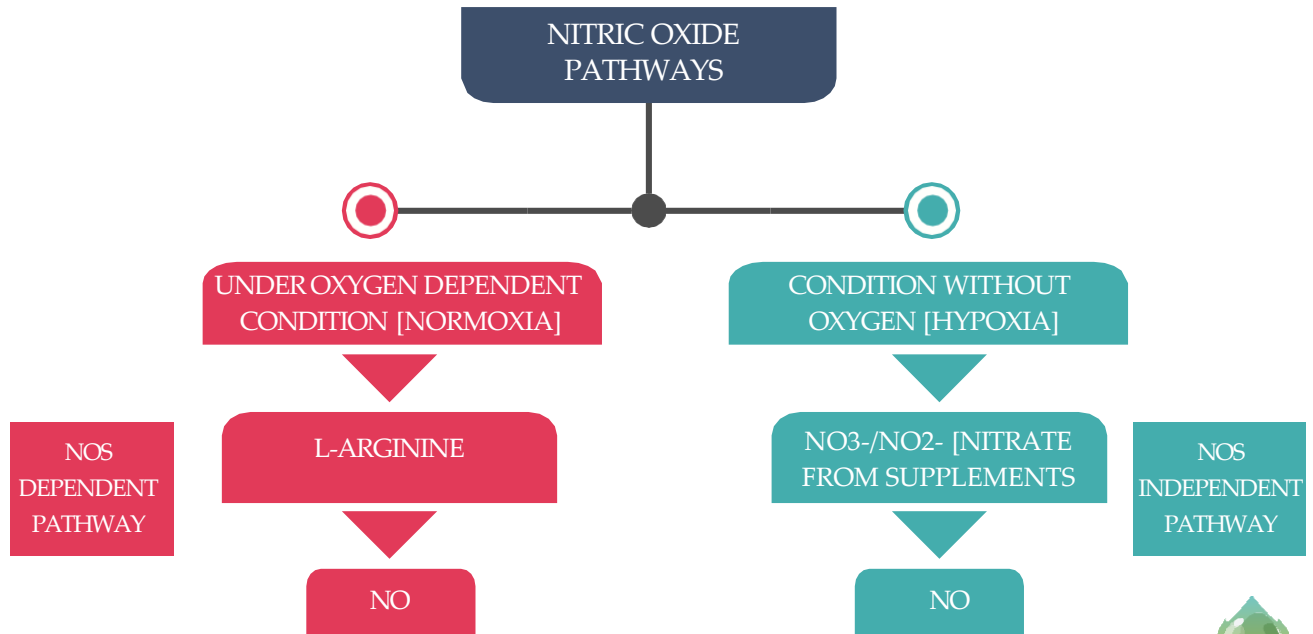


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NITRIC OXIDE – PATHWAYS

Nitric Oxide (NO) is an essential component for several body functions. It is produced in the body from L- arginine in presence of oxygen and nitric oxide synthases (NOS) enzyme



CLINICAL SIGNIFICANCE OF NITRIC OXIDE



EXERCISE /SPORTS



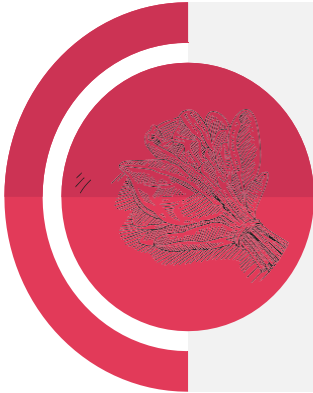
CARDIAC HEALTH

Nitric oxide is a potent vasodilator

***OXYSTORM*[®]**

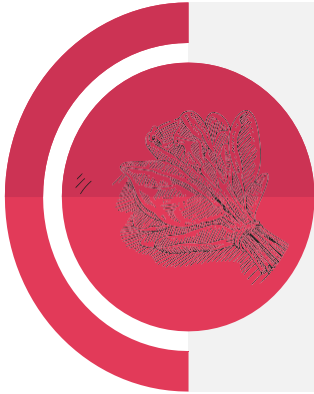

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DIETARY SUPPLEMENTS OF NITRATE



- Beetroot juice and beetroot extract are well known source of NO_3
- Very popular supplement in USA, Europe, Australia etc
- Highly recommended as a sports nutrition
- But has less NO_3 content and high levels of oxalates

WHAT IS OXYSTORM



- Oxystorm is an extract of Amaranthus, one of the richest source of nitrates discovered.
- It is standardized to contain 9 % Nitrate
- Contains 8-14% Potassium
- No oxalates
- No reducing sugar
- 100% water soluble

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OXYSTORM VS BEET ROOT EXTRACT

Parameter	Oxystorm®	Beet Root Extract
Nitrate	9 % (HPLC)	< 2% (HPLC)
Oxalate	Not detected (HPLC)	10% -15% (HPLC)
Potassium Content	8-14 %	< 2%
Reducing Sugar	Nil	15 %
pH	7	5.5

Oxystorm is the registered trademark and patent pending product of Arjuna Natural Ltd.

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HUMAN BIOAVAILABILITY STUDY

Published : Nutrition, Volume 32, Issues 7-8, Pages748–753



Randomized, open label, placebo controlled, single center, two period, two sequence, single dose, crossover bioavailability study

- 16 healthy human adult male subjects
- 2 gm of Oxystorm powder/placebo with 300ml of water, single dose



Objectives:

- Nitrate and nitrite content in blood plasma and saliva samples over 24 hrs.
- Safety and tolerability of a single dose of Oxystorm

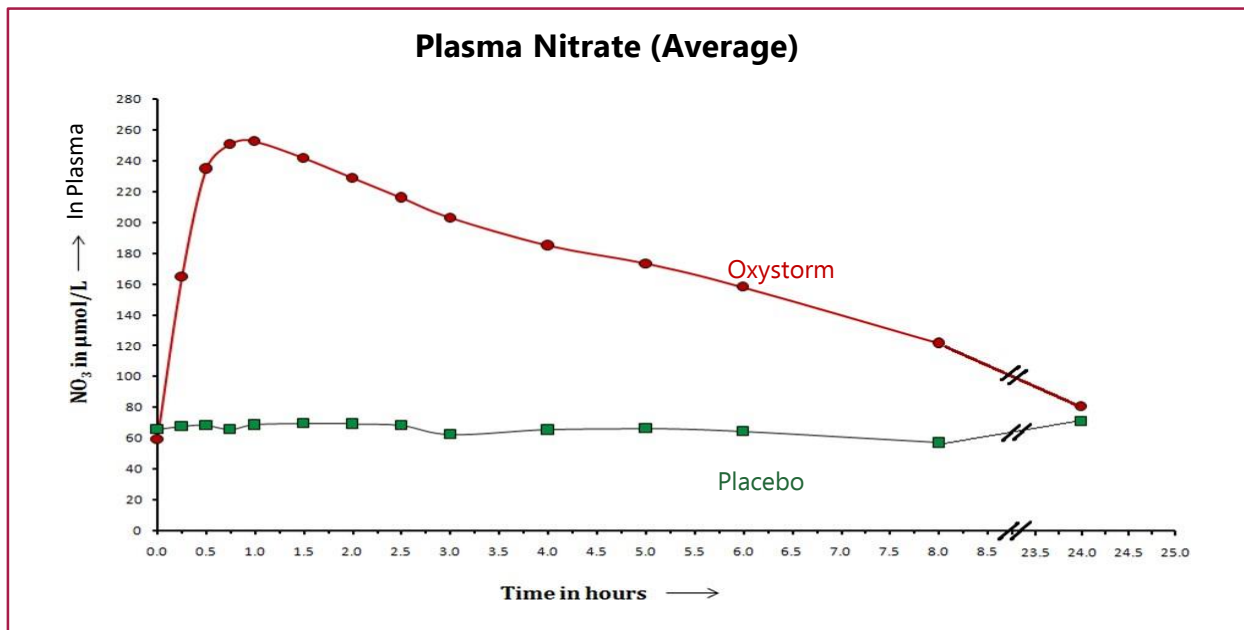
Analytical procedure for NO_3 and NO_2 : UPLC method

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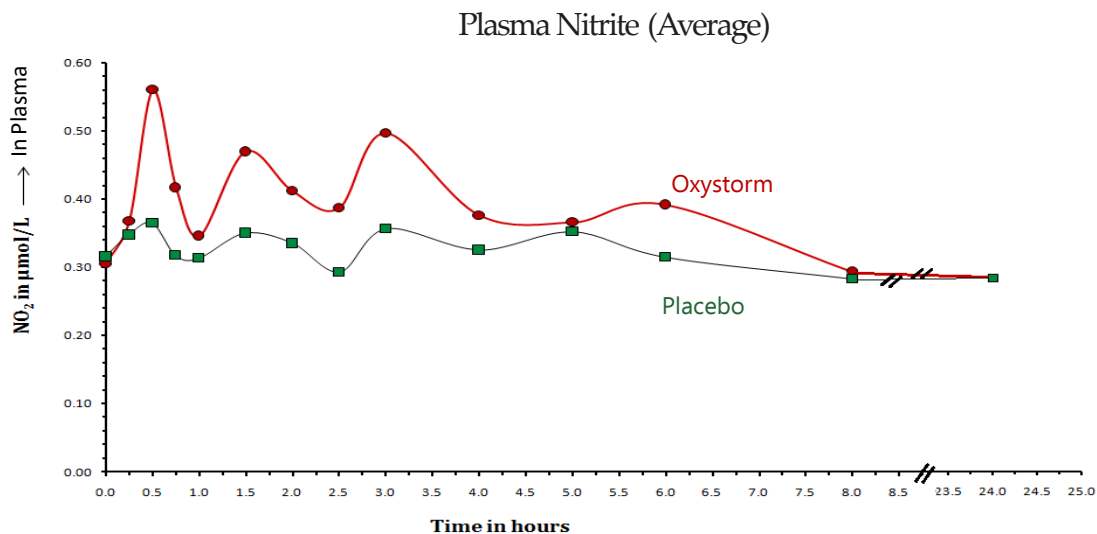
HUMAN BIOAVAILABILITY STUDY



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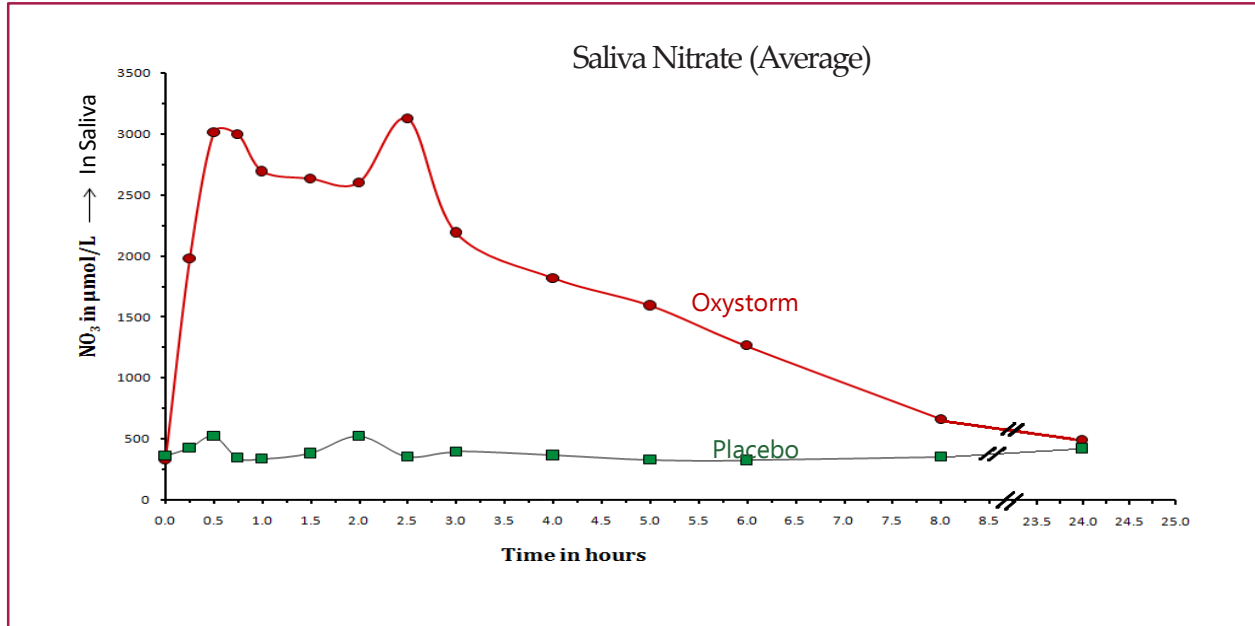
HUMAN BIOAVAILABILITY STUDY



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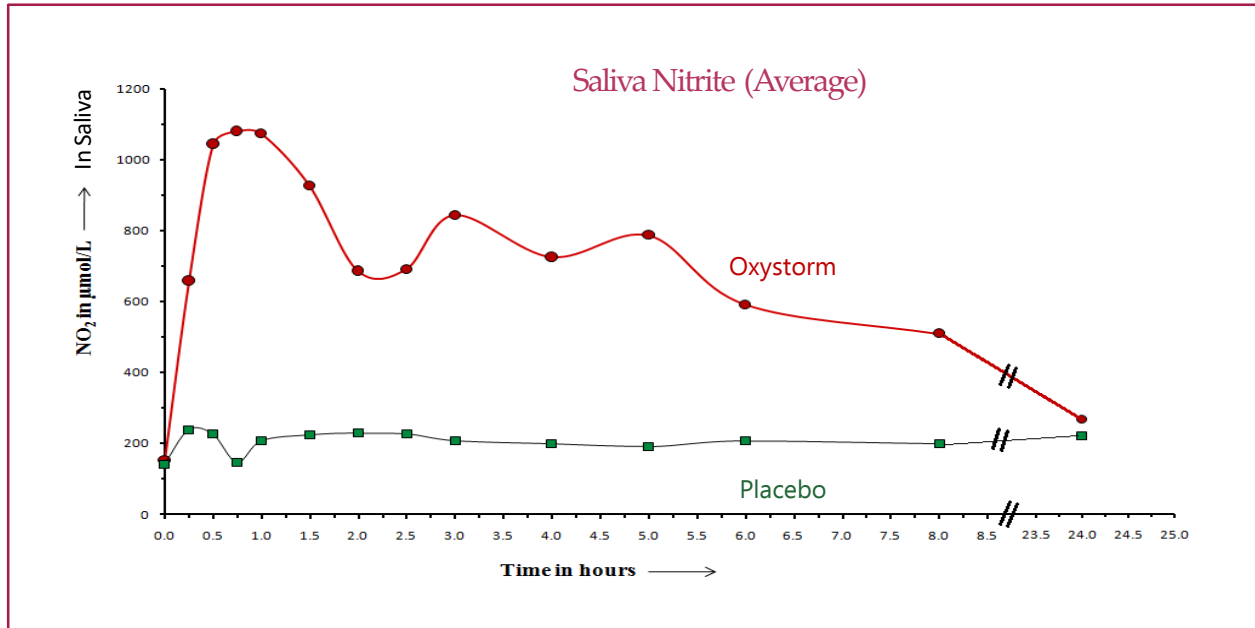
HUMAN BIOAVAILABILITY STUDY



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HUMAN BIOAVAILABILITY STUDY

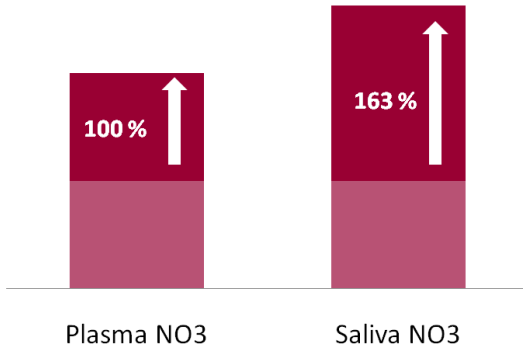


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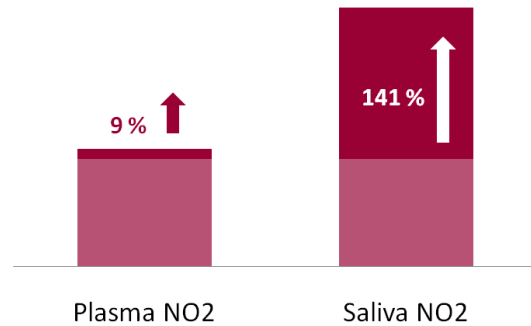


HUMAN BIOAVAILABILITY STUDY – RESULTS

Bioavailability of NO₃ from
Oxystorm v/s placebo



Bioavailability of NO₂ from
Oxystorm v/s placebo



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HUMAN CLINICAL STUDIES

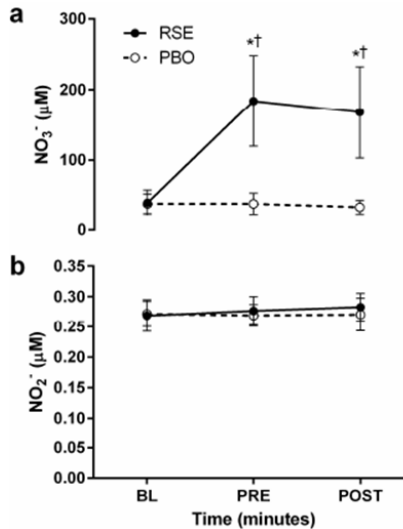
TITLE	TYPE	FINDINGS
<p>Differential vascular reactivity responses acutely following ingestion of a nitrate rich red spinach extract.</p> <p>Cody T. Haun · Wesley C. Kephart Angelia M. Holland · Christopher B. Mobley Anna E. McCloskey · Joshua J. Shake David D. Pascoe · Michael D. Roberts, Jeffrey S. Martin Eur J Appl Physiol DOI 10.1007/s00421-016-3478-8</p>	HCT	<p>RSE (Red Spinach Extract) significantly increased plasma nitrate 30-min post-ingestion, but acute microvascular (i.e., resistance vasculature) reactivity increases were isolated to the lower limb and no appreciable change in brachial artery FMD (Flow Mediated Dilation) was observed.</p> <p>Inorganic nitrate ingestion has been posited to affect arterial blood pressure and vascular function.</p>
<p>Red Spinach Extract Increases Ventilatory Threshold during Graded Exercise Testing</p>	HCT	<ul style="list-style-type: none"> • Acute ingestion of 1000 mg of a RSE substantially increases plasma Nitrate but not Nitrite • Additionally, despite the relatively low dose of Nitrate from RSE we observed a large effect on the VT compared to placebo.

HUMAN CLINICAL STUDIES

TITLE	TYPE	FINDNIGS
<p>Angelique N.Moore, Cody T. Haun , Wesley C. Kephart , Angelia M. Holland ,Christopher B. Mobley, ID , David D.Pascoe , Michael D.Roberts and Jeffrey S. Martin Sports 2017, 5, 80; doi:10.3390/sports5040080</p>		<ul style="list-style-type: none"> • No effect on circulating nitrite was observed with RSE • VO₂ at the ventilatory threshold was significantly higher with RSE compared to PBO though time-to- exhaustion and maximal aerobic power (i.e., VO₂ peak) were non-significantly lower with RSE. • RSE as a nutritional supplement may elicit an ergogenic response by delaying the ventilatory threshold.
<p>Pharmacokinetic study of amaranth extract in healthy humans:A randomized trial Nutrition 32 (2016) 748–753 Deepa Subramanian M.B.B.S. Swati Gupta M.Pharm.a</p>	HCT	<p>This study clearly indicates that a single oral dose of amaranth extract is able to increase the Nitrate and Nitrate and Nitrite levels can help to improve the overall performance of people involved in vigorous physical activities or sports</p>

HUMAN CLINICAL STUDIES

Red Spinach Extract Increases Ventilatory Threshold during Graded Exercise Testing

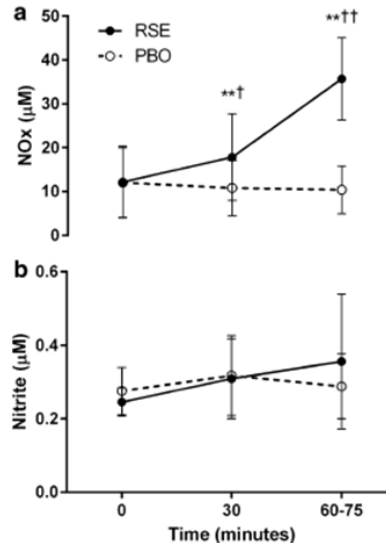


Published: Sports 2017,
5, 80; doi:10.3390/sports
5040080

Plasma concentrations of (a) nitrate (NO₃⁻) and (b) nitrite (NO₂⁻) following ingestion of a red spinach extract (RSE; ●) and placebo (PBO; ○) at baseline (BL), 65-75 min following ingestion (PRE), and immediately following graded exercise testing (POST)

HUMAN CLINICAL STUDIES

Differential vascular reactivity responses acutely following ingestion of a nitrate rich red spinach extract



Eur J ApplPhysiol DOI
10.1007/s00421-
016-3478-8

Plasma concentrations of total nitrate and nitrite (NOx; a) and nitrite only (b) at baseline and 30- and 65- to 75-min following ingestion of a red spinach extract (RSE: filled circles) and placebo (PBO; open circles).

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TOXICITY STUDIES OF OXYSTORM

Acute toxicity study (OECD 423)

- Safe at 2000 mg/kg in rats
- LD50, MTD and MLD > 2000 mg/kg

28 days repeated dose sub-acute toxicity study (OECD407)

- Safe at 1000 mg/kg daily
- No mortality
- No significant change in biochemical & hematological parameters
- No-observed-adverse-effect-level (NOAEL) in rats is 1000 mg/kg

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OXYSTORM – CONCLUSION

- Increase NO levels in the body
- Beneficial during exercise by increasing VO₂max and reduce in serum lactate levels
- NO promotes vasodilation and increase blood flow
- Beneficial as a prophylactic in cardiovascular health
- Fast and prolonged action with 1000mg as a single dose 1 hr before exercise
- Safe for long term use
- 100 % water soluble product

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THANK YOU

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What happens when you take Oxystorm



What happens when you forget to take Oxystorm

