

Article

Drinking hydrogen-rich water for 4 weeks positively affects serum antioxidant enzymes in healthy men: a pilot study

January 2017 · [Current Topics in Nutraceutical Research](#) 15(1)

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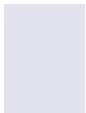
Abstract

Molecular hydrogen is an experimental therapeutic agent in biomedicine, however its effects on serum antioxidant markers are poorly described so far. Sixteen healthy men (age 24.6 ± 3.6 years, height 183.3 ± 4.4 cm; weight 83.5 ± 12.5 kg) participated in this randomized, double blind, placebo-control pilot study. The participants were assigned to receive either 300 mL per day of oral hydrogen-rich water or placebo (tap water) for 4 weeks, and were evaluated at baseline, and following 4-weeks of intervention. Hydrogen-rich water intervention significantly improved serum activities of superoxide dismutase and glutathione as compared to the placebo ($P < 0.05$), while no differences were observed between groups for changes in catalase and glutathione peroxidase at 4-week follow-up. In addition, hydrogen-rich water notably reduced serum malondialdehyde levels at post-administration, with change being significantly different comparing to placebo (-25.8% vs. 11.7% ; $P < 0.001$). In conclusion, hydrogen-rich water might be recognized as a novel agent to prevent oxidative stress or minimize its damaging effects by enhancing antioxidant enzymes capacity in healthy men. However, a mechanism of its antioxidant action remains unknown.

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... [130][131][132][133][134] ascorbyl palmitate Maintains vitamin C activity without the side effects of ascorbic acid. Is an efficient scavenger of the hydroxyl radical. ...

... Apple cider vinegar has also been shown to increase the activity of the antioxidant enzymes, superoxide dismutase, catalase and glutathione peroxidase, and it reduced lipid peroxidation [126,130]. Molecular hydrogen in the form of hydrogen rich water was shown to increase superoxide dismutase as well as glutathione levels in young healthy males [131]. ...

Role of antioxidants and a nutrient rich diet in Alzheimer's disease

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Jun 2020

[Gerald Veurink](#) · [George Perry](#) · [Sandeep Kumar Singh](#)

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... It appears to have a neuroprotective effect [52] without improving function or cognition in people with AD [142]. Astaxanthin is a powerful carotenoid that can prevent apoptosis, oxidative stress, inflammation, memory loss, and protect against Aβ's neurotoxic effects [94,142][143][144]. Quercetin is the most prominent and significant dietary antioxidant effective on health as it protects against severe diseases like lung cancer, cardiovascular disease, osteoporosis, and others [145]. ...

Antioxidants in Alzheimer's Disease: Current Therapeutic Significance and Future Prospects

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... Consequently, these negative effects may contribute to fatigue and delayed recovery in athletes [6]. Several clinical studies have indicated that H₂ acts as an alkalinizing [7], anti-apoptotic, anti-allergic, and anti-inflammatory agent [1,8][9][10]. Due to the highly flammable property of hydrogen gas (lower flammability limit of 4.0 % v/v), one of the easiest and safest methods of hydrogen delivery is via the utilization of hydrogen rich water (HRW) where H₂ is dissolved in the aqueous medium. ...

Hydrogen Rich Water Improved Ventilatory, Perceptual and Lactate Responses to Exercise

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Aug 2019

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... For example, ingestion of HRW for four weeks in 16 young healthy men resulted in a 25% increase in GSH ($p < 0.003$) and a 11% increase in SOD ($p < 0.007$) along with an accompanying decrease in MDA levels compared to placebo (-25.8% vs. 11.7%; $p < 0.001$) (Trivic et al. 2017). However, in another double-blinded, 21 placebo-controlled, cross-over study with 26 healthy subjects (13 females, 13 males; mean age, 34.4 ± 9.9), ingestion of HRW for 4 weeks did improve mood, anxiety, and decreased sympathetic nerve activation, but it did not significantly reduce levels of oxidative stress. ...

Hydrogen gas: From clinical medicine to an emerging ergogenic molecule for sports athletes

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Apr 2019

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Hydro Shot for Sports Performance and Exercise Medicine

Article

Jun 2021

● Tyler LeBaron · Jason Kharman · Michael L McCullough

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Hydrogen Gas as an Exotic Performance-Enhancing Agent: Challenges and Opportunities

Article

Sep 2020

● Sergej Ostojic

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Reno-hepatoprotective effects of *Murraya koenigii* leaves chloroform extract (MKCE) against lead-indu...

October 2017 · International Journal of Pharmaceutical Sciences and Research

● Rohan Sharadanand Phatak · ● Somnath Matule

Lead induced oxidative stress implies morphological dysfunctions and physiological deformation in the liver. The aim of present study was to establish the protective effect of chloroform extract of *Murraya koenigii* leaves against the lethal effects of lead on the antioxidant status of mice. *Murraya koenigii* Chloroform Extract (MKCE) was prepared by maceration. Male Swiss albino mice were divided ... [\[Show full abstract\]](#)

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INVESTIGATION OF BLOOD ANTIOXIDANT ENZYME LEVELS AND

November 2018 · Fluoride

● Fatmagul Yur

ABSTRACT: Reactive oxygen species have been considered to play a significant part in the development of fluorosis, a critical public health issue in many parts of the world. OBJECTIVES: The aims of this study, conducted on two groups of sheep, with and without fluorosis, was (i) to determine the effect of fluorosis on antioxidant enzymes, such as superoxide dismutase (SOD), glutathione peroxidase ... [\[Show full abstract\]](#)

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Effect of amaranth seeds in diet on oxidative status in plasma and selected tissues of high fructose...

May 2011 · Food Chemistry

● Pawel Pasko · ● Henryk J. Barton · Paweł Zagrodzki · [...] · ● Shela Gorinstein

The aim of this study was to assess the influence of amaranth seeds in different doses, under conditions of oxidative stress induced by dietary fructose, on antioxidant status of selected rat tissues, erythrocytes and plasma. Fructose administration caused oxidative stress that was manifested by the increase in plasma malondialdehyde and by the decrease in the enzymatic antioxidant activity. ... [\[Show full abstract\]](#)

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Olmesartan, an angiotensin II receptor blocker inhibits the progression of cataract formation in cad...

December 2016 · Life Sciences

● Rajesh Choudhary · Surendra H. Bodakhe

Aims: Previously we found that cadmium chloride (CdCl₂) exposure substantially elevates hypertension and potentiates cataract formation. In the present study, we investigated the protective effects of olmesartan, an angiotensin II receptor blocker against cataractogenesis in the CdCl₂-induced hypertensive animal model. Main methods: Male Sprague-Dawley albino rats (150-180g) were randomly ... [\[Show full abstract\]](#)

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[The activity of the peroxide-metabolizing system in human liver (author's transl)]

July 1979 · Journal of clinical chemistry and clinical biochemistry. Zeitschrift für klinische Chemie und klinische Biochemie

K H Konz

The activities of various peroxide-metabolizing enzymes were determined in homogenates of human liver excisions. The specific activity of selenium-dependent glutathione peroxidase was 41.1 +/- 23.7 (S.D.) mU/mg protein; non-selenium glutathione peroxidase showed a activity of 30.5 +/- 14.0 mU/mg protein. The catalase and superoxide dismutase concentrations were 4.72 +/- 0.58 and 1.87 +/- 0.68 ... [\[Show full abstract\]](#)

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Antioxidant action of propolis on mouse lungs exposed to short-term cigarette smoke

November 2013 · Bioorganic & Medicinal Chemistry

● Alan de Aguiar Lopes · Thiago Santos Ferreira · ● Renata Tiscoski Nesi · [...] · ● Luís Cristóvão Porto

Propolis is a natural product with antioxidant properties. In this study, we tested the efficacy of propolis against acute lung inflammation (ALI) caused by cigarette smoke (CS). C57BL6 male mice were exposed to CS and treated with propolis (200mg/kg orally, CS+P) or only with propolis (P). A Control group treated with propolis was sham-smoked (Control+P). We collected the lungs for histological ... [\[Show full abstract\]](#)

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Trace metal concentrations and antioxidant activity in ovarian tissue of blue crab *Callinectes amnic...*

July 2014 · Zoology and Ecology

Fisayo Christie Olakolu · ● Azubuike Victor Chukwuka

Trace metal residues (Zn, Pb, Cd and Cu) and antioxidant enzyme activity (superoxide dismutase (SOD), glutathione peroxidase (GPx), catalase, reduced glutathione and malondialdehyde and total protein) were measured across seasons in the ovarian tissue of blue crabs *Callinectes amnicola* from the Lagos lagoon areas receiving industrial discharges and from the unpolluted mid-lagoon (reference site). ... [\[Show full abstract\]](#)

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Transferability of oxytetracycline (OTC) from feed to carp muscle and evaluation of the antibiotic e...

January 2014 · Fish Physiology and Biochemistry

● Antonia Concetta Elia · ● Valentina Ciccotelli · Nicole Pacini · [...] · ● Maria Cesarina Abete

Oxytetracycline (OTC) is employed in fish farms to contest or prevent bacterial infections. We simulated an OTC treatment at therapeutic level (75 mg kg⁻¹) and at higher doses (150, 300 mg kg⁻¹) for 10 days. A withdrawal period of 10 days was considered for treated carp, carrying out the same chemical and biochemical analyses (total glutathione, superoxide dismutase, catalase, glutathione ... [\[Show full abstract\]](#)

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Effect of Repeated Oral Administration of Bifenthrin on Lipid Peroxidation and Anti-oxidant Paramete...

June 2013 · Bulletin of Environmental Contamination and Toxicology

● Muneer Ahmad Dar · ● Adil MEHRAJ Khan · ● Rajinder Raina · [...] · Mudasir Sultana

The oxidative stress-inducing potential of the pyrethroid insecticide, bifenthrin, was evaluated in rats at 5.8 mg/kg body weight once daily for 20 or 30 days. Bifenthrin treated animals showed significantly increased lipid peroxidation, evidenced by increased blood malondialdehyde levels. Blood glutathione levels and activities of catalase and glutathione peroxidase decreased significantly in ... [\[Show full abstract\]](#)

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Melatonin is more effective than ascorbic acid and β -carotene in improvement of gastric mucosal dama...

November 2015 · Archives of Medical Science

Ayşin Akıncı ·  Mukaddes Esrefoglu ·  Asli Cetin ·  Burhan Ates

Introduction: Oxidative stress has been considered to play a primary role in the pathogenesis of stress-induced gastric damage. The aim of this study was to investigate the effects of melatonin, ascorbic acid and β -carotene on stress-induced gastric mucosal damage. Material and methods: Fifty-six male Wistar albino rats were divided into control, stress, stress + standard diet, stress + ... [\[Show full abstract\]](#)

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Blood reflects tissue oxidative stress: A systematic review

January 2015 · Biomarkers

 Nikos Margaritelis ·  Aristidis S Veskoukis ·  Vassilis Paschalis · [...] ·  Michalis Nikolaidis


Abstract We examined whether the levels of oxidative stress biomarkers measured in blood reflect the tissue redox status. Data from studies that measured redox biomarkers in blood, heart, liver, kidney and skeletal muscle were analyzed. In seven out of nine investigated redox biomarkers (malondialdehyde, reduced glutathione, superoxide dismutase, catalase, glutathione peroxidase, vitamin C and E) ... [\[Show full abstract\]](#)

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Association between the NF-E2 Related Factor 2 Gene Polymorphism and Oxidative Stress, Anti-Oxidativ...

July 2015 · International Journal of Molecular Sciences

Xia Wang ·  Hong-Xia Chen · Jun Liu · [...] · Liegang Liu

Oxidative stress is a major risk factor in the onset and progression of type 2 diabetes mellitus (T2DM). NF-E2 related factor 2 (NRF2) is a pivotal transcription factor in oxidative stress related illnesses. This study included 2174 subjects with 879 cases of newly-diagnosed T2DM and 1295 healthy controls. Compared to individuals with the CC genotype, those with the AA genotype had lower total ... [\[Show full abstract\]](#)

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