“Juice Plus+ und Sport: Die Wissenschaft dahinter”

Priv.-Doz. Mag. DDr. Manfred LAMPRECHT
Executive Director JPSI

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Science Institute
Advancing plant-based nutrition

Baden-Baden, 5. April 2025

ERNÄHRUNG FÜR SPORTLERINNEN

Problemstellung:

In welchen Bereichen gibt es Herausforderungen?

- Flüssigkeitsversorgung
- Mikronährstoffquellen: Gemüse u Obst
- Fettsäurenverteilung
- Kohlenhydrate; v.a. Ballaststoffe
- ……

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HERAUSFORDERUNG DER RICHTIGEN ERNÄHRUNG FÜR SPORTLERINNEN

Online Supporting Material

Supplemental Table 2 Food intakes by trained men in the JPC and placebo groups[1]

Food Group Servings/d	JPC (n=21)	Placebo (n=20)
Fruit and non-starchy vegetables[2]	3.2 ± 1.3	3.2 ± 1.1
Meat, sausages, eggs	2.7 ± 1.7	2.9 ± 1.5
Milk, cheese, yogurt	1.9 ± 1.2	1.7 ± 1
Bread, pasta, rice, starchy vegetables, bananas, müsli	3 ± 1.3	3.3 ± 1.4
Chocolates, cake, pastry	1.2 ± 0.6	1 ± 0.5
Fish [3]	1.1 ± 0.3	1 ± 0.4

[1] Values are means ± SD, calculated from multiple 7-d food records. Means did not differ between the groups, P>0.05 (t-test).
[2] Includes fruit juices
[3] Servings/wk

Lamprecht et al, Journal of Nutrition 2007

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Average diet/day from 7-day diet record:	Reference values	FBV concentrate	Placebo
Energy, kJ/day	7927	7745 ± 454	7923 ± 392
Fat, %	< 30% of kJ/day	38.5 ± 7.2%	38.9 ± 8.1%
Protein, %	10 - 15% of kJ/day	15.7 ± 2.1%	16.3 ± 3.2%
Carbohydrates, %	> 50% of kJ/day	43.9 ± 9.1%	43.2 ± 10.3%
Alcohol, %	< 3.5%	1.9 ± 1.2%	1.5 ± 0.9%
Water, mL	2600	2162 ± 95	2022 ± 95
Fiber, g	30	21 ± 7	19 ± 6
Fruit & vegetable portions/day	5	1 - 2	1 - 2

Lamprecht et al, British Journal of Nutrition 2013

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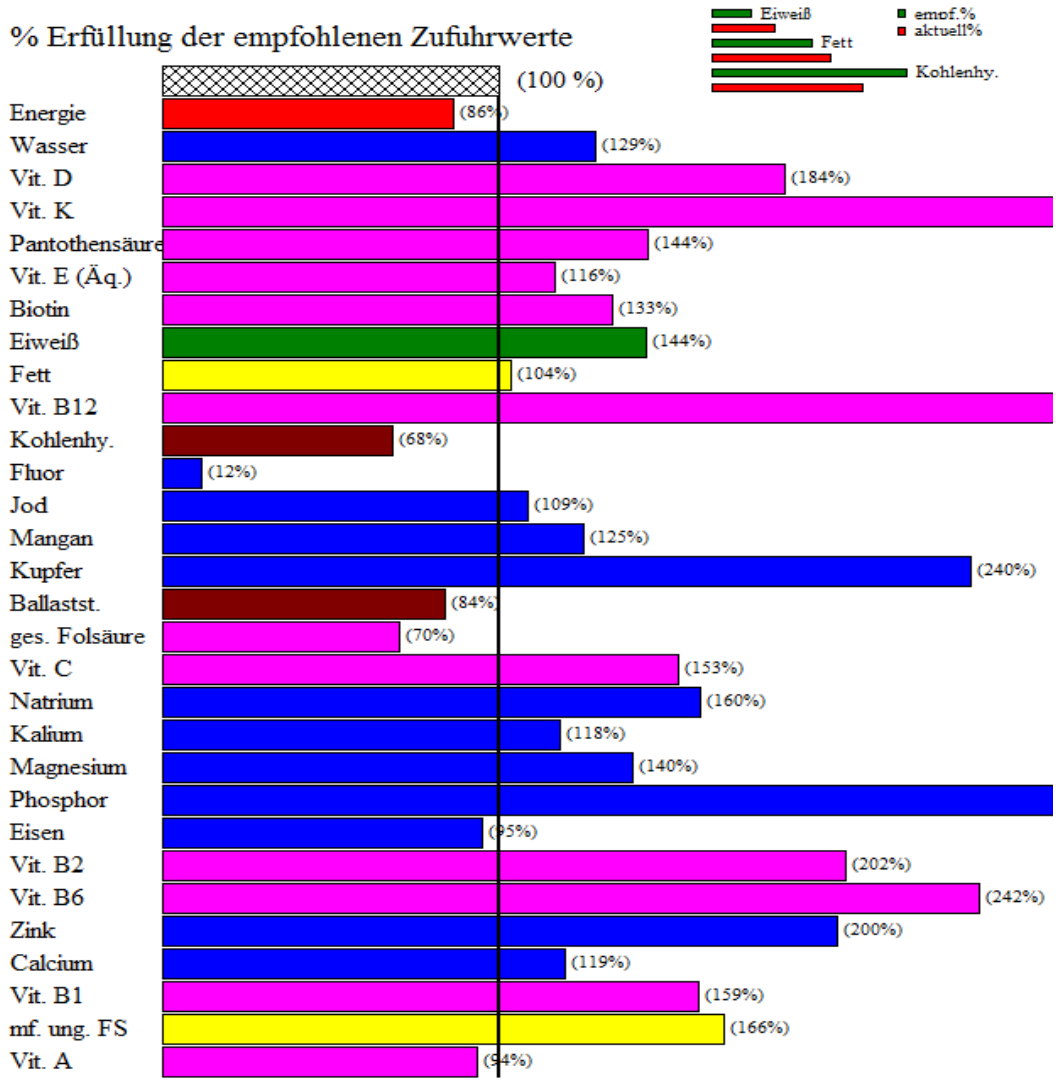
HERAUSFORDERUNG DER RICHTIGEN ERNÄHRUNG FÜR SPORTLERINNEN

Tennis
WTA



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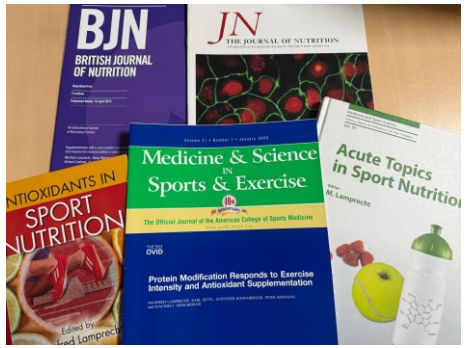
ERNÄHRUNG FÜR SPORTLERINNEN

Problemstellung:

In welchen Bereichen gibt es Herausforderungen?

Lösung:

„evidenzbasiert“ + *„praxisrelevant“*



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“THE MOST SCIENTIFICALLY PROVEN NUTRITIONAL PRODUCT OF ITS CATEGORY”

Clinically Proven

Evidence Based

Practice Oriented

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“JUICE PLUS+ UND SPORT: DIE WISSENSCHAFT DAHINTER”

EVIDENZ

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ERNÄHRUNG FÜR SPORTLERINNEN

Problemstellung:

In welchen Bereichen gibt es Herausforderungen?

- Flüssigkeitsversorgung
- Mikronährstoffe: Vitamine, sekundäre Pflanzenstoffe (SPS)
- Fettsäurenverteilung
- Kohlenhydrate; v.a. Ballaststoffe
- .....

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SEKUNDÄRE PFLANZENSTOFFE (SPS)

- SPS = organische Moleküle
- Gruppen: Carotinoide, (Poly-)Phenole, Phytosterine, Saponine, Glucosinolate, Terpene, Sulfide, Alkaloide u.a.
- Funktionen in Pflanzen: Abwehr von Pathogenen und Herbivoren, Schutz vor UV-Strahlung und Verdunstung, Lockstoffe, mechanische Festigung
- Funktionen/Wirkungen beim Menschen: antikanzerogen, antioxidativ, antithrombotisch, antimikrobiell, Effekte auf Lipid- und Zuckerstoffwechsel sowie RR, immunmodulierend...

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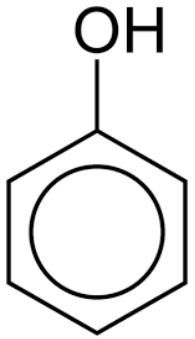
HERAUSFORDERUNG DER RICHTIGEN ERNÄHRUNG FÜR SPORTLERINNEN

Sekundäre Pflanzenstoffe (SPS) = Phytonährstoffe

- Phenolische Verbindungen: Phenolsäuren, Flavonoide, Phytoöstrogene
- Glucosinolate
- Monoterpene
- Phytosterine
- Sulfide..



WO enthalten? In Gemüse und Obst und in Juice Plus+ !

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HERAUSFORDERUNG DER RICHTIGEN ERNÄHRUNG FÜR SPORTLERINNEN

Sind Phytonährstoffe (SPS) in Juice Plus+® enthalten?

PharmaNutrition 3 (2015) 11–19

Contents lists available at ScienceDirect

PharmaNutrition

journal homepage: www.elsevier.com/locate/phanu

(Poly)phenolic characterization of three food supplements containing 36 different fruits, vegetables and berries

Letizia Bresciani [a], Luca Calani [a], Marta Cossu [a], Pedro Mena [a], Marietta Sayegh [b], Sumantra Ray [b,**], Daniele Del Rio [a,b,*]

[a] LS9 Interlab Group, The Laboratory of Phytochemicals in Physiology, Department of Food Science, University of Parma, Parma, Italy
[b] Nutrition and Vascular Studies (NVS) Platform and the Need for Nutrition Education/Innovation Programme (NNEdPro) Group – c/o Medical Research Council (MRC) Human Nutrition Research (HNR) Unit,
Elsie Widdowson Laboratory, Cambridge, UK

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HERAUSFORDERUNG DER RICHTIGEN ERNÄHRUNG FÜR SPORTLERINNEN

Wie wirkt Juice Plus+® bei SportlerInnen?

- Immunsystemmodulierend
- Antioxidativ
- Antiinflammatorisch

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PEER-REVIEWED JUICE PLUS+® SPORT-PUBLIKATIONEN

(v. klinischen Studien)

- Bloomer et al, MSSE 2006
- Lamprecht et al, Journal of Nutrition 2007 („Cobra Studie“)
- Goldfarb et al, Appl Physiol Nutr Metab 2007
- Lamprecht et al, MSSE 2009 („Cobra Studie“)
- Goldfarb et al, MSSE 2011
- Lamprecht et al, British Journal of Nutr 2013 („Starke Frauen Studie“)

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Dosage of supplementation	Subjects´ characteristics	Time points of sample collection	Design Methodology	Results Outcome	Author Year
Fruit, vegetable and berry juice powder conc.: 2 x 3 capsules a day for 2 wk; 400 IU vit E + 1000 mg vit C for 2 wk	Trained men and women: 25 men, 23 women; 18-30 years; Non-smokers	Blood collection at baseline, after 2 wk of FVB suppl, after 1 wk washout; also before exercise & immediately post exercise	Double blind, randomized, placebo-controlled, 3 parallel groups: 2 supplemented groups and one placebo group; controlled diet before exercise tests; 30 min running exercise at 80% VO_{2max} before and after 2 wk supplementation/placebo and after 1 wk wash-out	Reduced exercise-induced increase of plasma PC in FVB supplemented groups; no differences in PC between supplemented groups; no impact of supplementation on MDA and 8-OHdG	Bloomer et al. 2006
Fruit, vegetable and berry juice powder conc.: 2 x 3 capsules a day for 28 wk	41 trained men; 30-40 years; Non-smokers	Blood collection at baseline, 4, 16, and 28 wk of suppl or placebo; resting values	Double blind, randomized, placebo-controlled, 2 parallel groups: supplemented and placebo group; standardized nutrition	Plasma CP lower in supplemented group; differences between groups more distinct with increased stress profile; tendency to fewer duty days lost due to illness (p=0.068) in supplemented group	Lamprecht et al. 2007
Fruit, vegetable and berry juice powder conc.: 2 x 3 capsules a day for 2 wk; 400 IU vit E + 1000 mg vit C for 2 wk	Trained men and women: 25 men, 23 women; 18-30 years; Non-smokers	Blood collection at baseline, after 2 wk of FVB suppl, after 1 wk washout; also before exercise & immediately post exercise	Double blind, randomized, placebo-controlled, 3 parallel groups: 2 supplemented groups and one placebo group; controlled diet before exercise tests; 30 min running exercise at 80% VO_{2max} before and after 2 wk suppl/placebo and after 1 wk wash-out; gender comparison of exercise-induced oxidative stress	Women have higher resting antioxidant levels than men; markers of oxidative stress increased similarly in both genders in response to exercise of similar intensity and duration; 2 wk of antioxidant suppl can attenuate exercise-induced oxidative stress equally in both genders	Goldfarb et al. 2007
Fruit, vegetable and berry juice powder conc.: 2 x 3 capsules a day for 28 wk	41 trained men; 30-40 years; Non-smokers	Blood collection at baseline, 4, 16 and 28 wk of suppl or placebo; also before exercise and immediately, 30min and 30h post exercise	Double blind, randomized, placebo-controlled, 2 parallel groups: supplemented and placebo group; standardized nutrition; 40 min cycle ergometer exercise at 70% and 80% of VO_{2max} at baseline, 4 wk, 16 wk and 28 wk	Increase in CP in placebo group after 80% VO_{2max} exercise; post exercise CP differences more distinct with increased stress profile; no influence of supplementation on antioxidant enzyme activities and redox state of albumin	Lamprecht et al. 2009
Fruit, vegetable and berry juice powder conc.: 2 x 3 capsules a day for 28 d + 4 d post exercise	44 non-resistance trained subjects; No gender specification; 18-35 years; non-smokers	Blood collections and muscle function tests before exercise and immediately, 2, 6, 24, 48 and 72 h post exercise	Double blind, randomized, placebo-controlled, 2 parallel groups: supplemented and placebo group; documented diet before exercise tests; 4 sets of eccentric elbow flexion with non-dominant arm	Muscle soreness, range of motion and maximal isometric force not influenced by treatment; PC, MDA and glutathione ratio increased post exercise in placebo group whereas no changes in supplemented group; no influence of treatment on lipid peroxides	Goldfarb et al. 2011
Fruit, vegetable and berry juice powder conc.: 2 x 3 capsules a day for 8 wk	42 obese, pre-menopausal, un-trained women, 36-46years, non-smokers	Blood collection at baseline and 8 wk of suppl or placebo; also before and immediately post exercise	Double blind, randomized, placebo-controlled, 2 parallel groups: supplemented and placebo group; standardized nutrition; 30min walking exercise at 70% of VO_{2max} at baseline and 8 wk	Reduction in CP, oxLDL, TOS and TNF-alpha; FVB supplementation decreased markers of oxidation and inflammation; improved skin microcirculation due to FVB supplementation and the model of exercise	Lamprecht et al. 2013

Klinische JUICE PLUS+® SPORT-Studien und -Publikationen

TABLE 2 Comparison of illness data in physically active men consuming JPC or placebo for 28 wk

	JPC	Placebo	*P*-value
n	21	20	
Overall episodes of illness, *n/28 wk*	17	22	>0.1
Overall duty days lost due to illness, *d/28 wk*	108	134	0.089
Days lost due to illness baseline–wk 8, *d/0–8wk*	67	73	>0.1
Days lost due to illness wk 8–wk 28, *d/8–28wk*	41	61	0.068

Effects of juice powder concentrate in fit men 2739

The Journal of Nutrition
Nutrient Requirements and Optimal Nutrition

Several Indicators of Oxidative Stress, Immunity, and Illness Improved in Trained Men Consuming an Encapsulated Juice Powder Concentrate for 28 Weeks[1–3]

Manfred Lamprecht,[4,5]* Karl Oettl,[5] Guenther Schwaberger,[6] Peter Hofmann,[7,8] and Joachim F. Greilberger[5]

[4]Styrian Health Association, 8010 Graz, Austria; [5]Institute of Physiological Chemistry, and [6]Institute of Physiology, Medical University of Graz, 8010 Graz, Austria; [7]Institute of Sports Science, Karl Franzens University of Graz, 8010 Graz, Austria; and [8]Human Performance Research[Graz], Karl Franzens University and Medical University of Graz, 8010 Graz, Austria

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Klinische JUICE PLUS+® SPORT-Studien und -Publikationen

British Journal of Nutrition (2010), page 1 of 5

doi:10.1017/S000711451000317X

Reduction of common cold symptoms by encapsulated juice powder concentrate of fruits and vegetables: a randomised, double-blind, placebo-controlled trial

Stephanie Roll*, Marc Nocon and Stefan N. Willich

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(Received 16 March 2010 – Revised 23 June 2010 – Accepted 19 July 2010)

by diary self-reports. We determined means and 95 % CI, and differences between the two groups were analysed by ANOVA. A total of 529 subjects were included into the primary analysis (Juice Plus+®: 263, placebo: 266). The mean age of the participants was 39·9 (SD 10·3) years, and 80 % of the participants were female. The mean number of days with moderate or severe common cold symptoms was 7·6 (95 % CI 6·5, 8·8) in the Juice Plus+® group and 9·5 (8·4, 10·6) in the placebo group (P=0·023). The mean number of total days with any common

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HERAUSFORDERUNG DER RICHTIGEN ERNÄHRUNG FÜR SPORTLERINNEN

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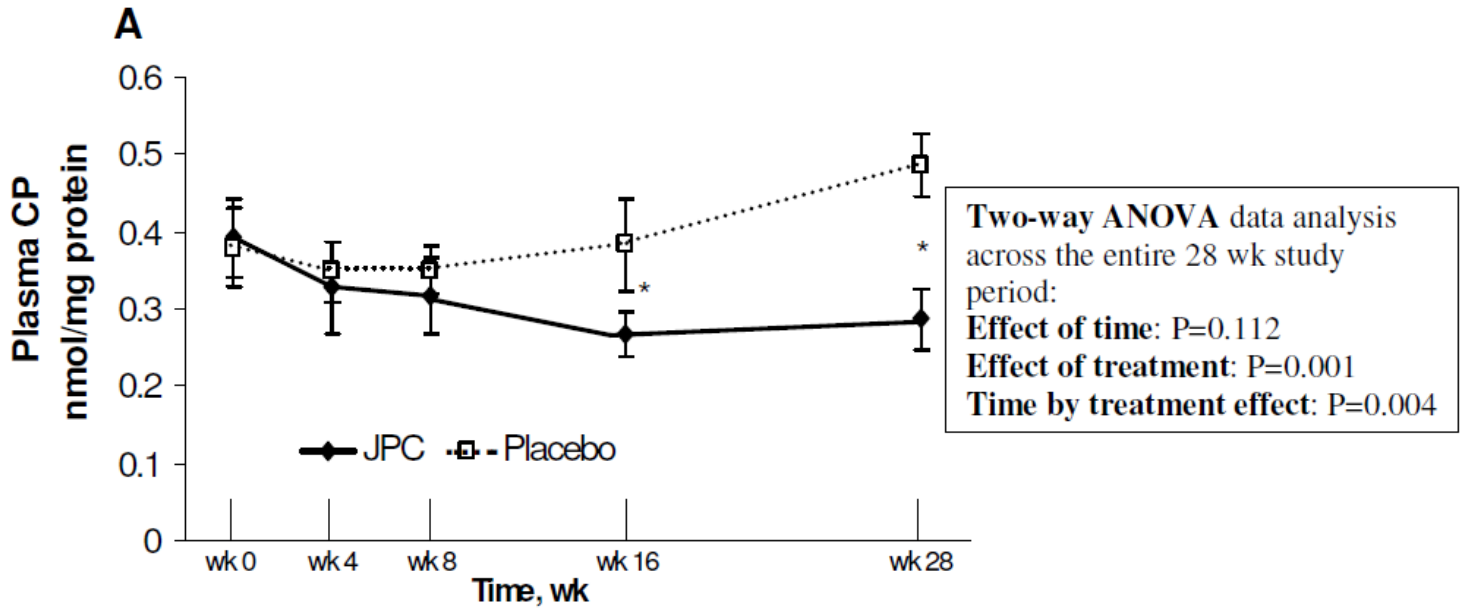
Supplemental Figure 1



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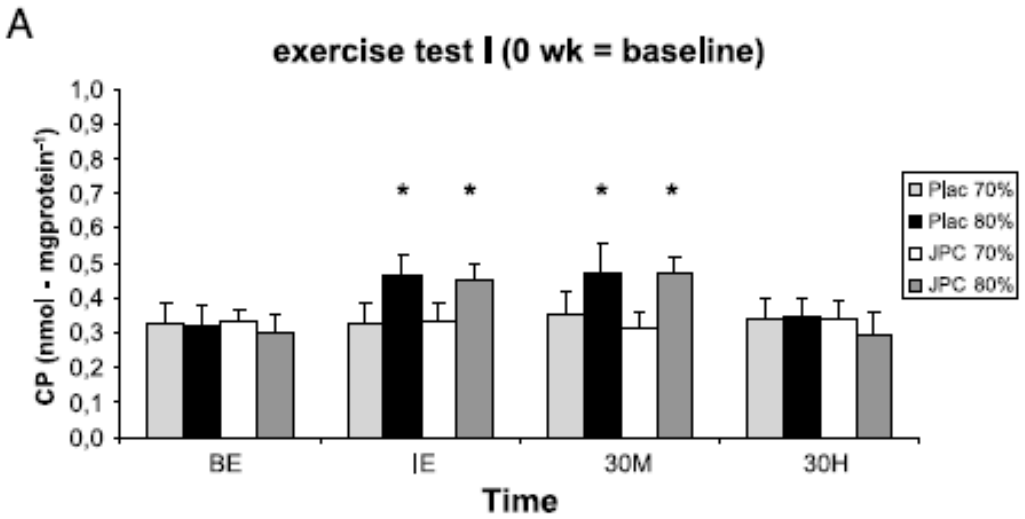

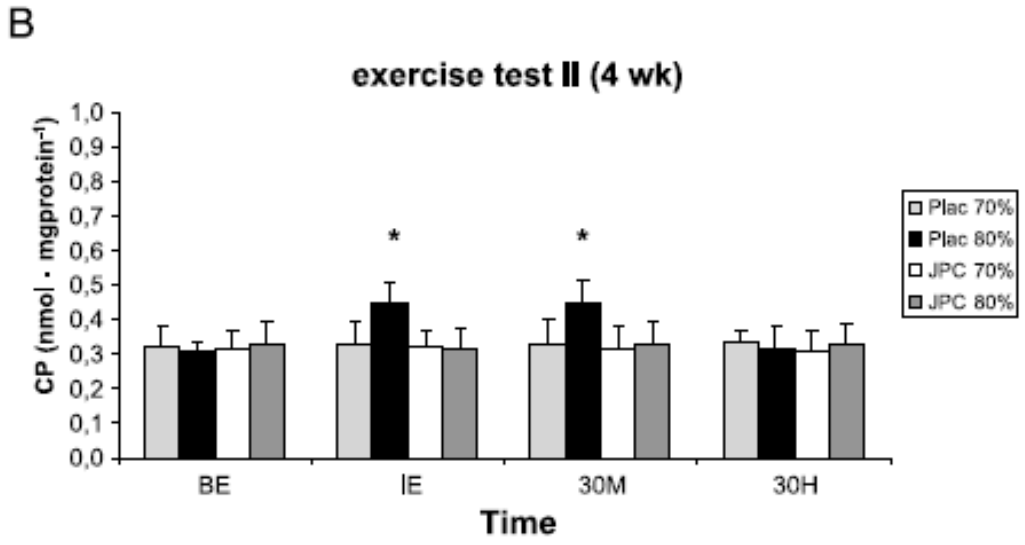

Protein Modification Responds to Exercise Intensity and Antioxidant Supplementation

MANFRED LAMPRECHT[1,2], KARL OETTL[1], GUENTHER SCHWABERGER[3], PETER HOFMANN[4,5], and JOACHIM F. GREILBERGER[1]

[1]Institute of Physiological Chemistry, Medical University of Graz, Graz, AUSTRIA; [2]Styrian Health Association, Graz, AUSTRIA; [3]Institute of Physiology, Medical University of Graz, Graz, AUSTRIA; [4]Institute of Sports Science, Karl Franzens University of Graz, Graz, AUSTRIA; and [5]Human Performance Research Graz, Karl Franzens University and Medical University of Graz, Graz, AUSTRIA

ABSTRACT

LAMPRECHT, M., K. OETTL, G. SCHWABERGER, P. HOFMANN, and J. F. GREILBERGER. Protein Modification Responds to Exercise Intensity and Antioxidant Supplementation. *Med. Sci. Sports Exerc.*, Vol. 41, No. 1, pp. 155–163, 2009. **Purpose:** To assess

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Klinische JUICE PLUS+® SPORT-Studien und -Publikationen

British Journal of Nutrition (2013), **110**, 1685–1695 doi:10.1017/S0007114513001001

Supplementation with a juice powder concentrate and exercise decrease oxidation and inflammation, and improve the microcirculation in obese women: randomised controlled trial data

Manfred Lamprecht[1,2*], Georg Obermayer[1,2], Kurt Steinbauer[3], Gerhard Cvirn[1], Lidija Hofmann[4], Gerhard Ledinski[1], Joachim F. Greilberger[1,5] and Seth Hallstroem[1]

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[2]*Institute of Nutrient Research and Sport Nutrition, Petersbergenstrasse 95b, 8042 Graz, Austria*
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[4]*FH JOANNEUM, University of Applied Sciences, Eggenberger Allee 11, 8020 Graz, Austria*
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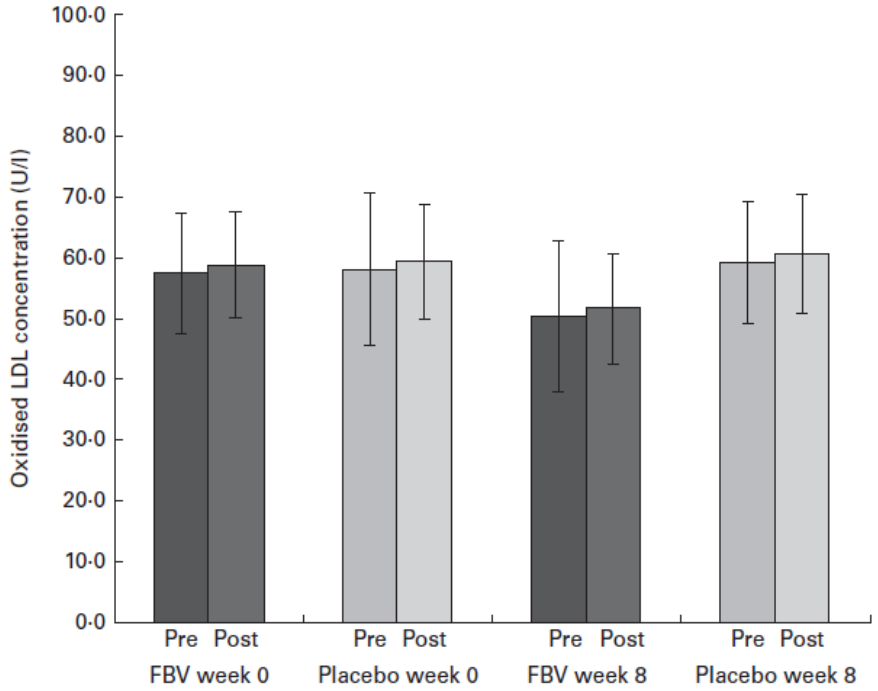

Fig. 3. Plasma oxidised LDL concentrations in overweight and obese women (*n* 42) before and after 8 weeks of supplementation, and pre- and post-30 min of walking exercise. Values are means (*n* 21 per group), with standard deviations represented by vertical bars. There was a significant effect of treatment after 8 weeks, with no influence of exercise (P=0·015; ANOVA). FBV, fruit, berry and vegetable concentrate group.

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Klinische JUICE PLUS+® SPORT-Studien und -Publikationen

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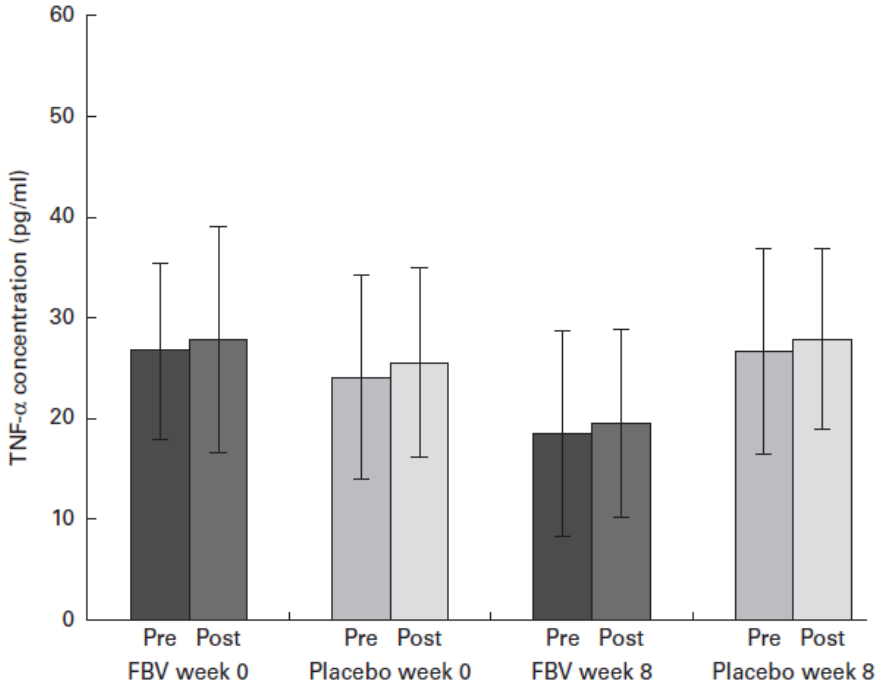

Fig. 5. Plasma TNF-α concentrations in overweight and obese women (*n* 42) before and after 8 weeks of treatment, and pre- and post-30 min of walking exercise. Values are means (*n* 21 per group), with standard deviations represented by vertical bars. There was a significant effect of treatment after 8 weeks, with no influence of exercise ($P = 0{\cdot}011$; ANOVA). FBV, fruit, berry and vegetable concentrate group.

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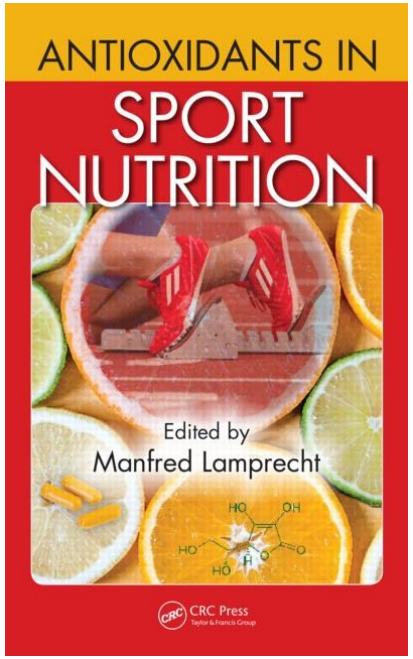
ERNÄHRUNG FÜR SPORTLERINNEN

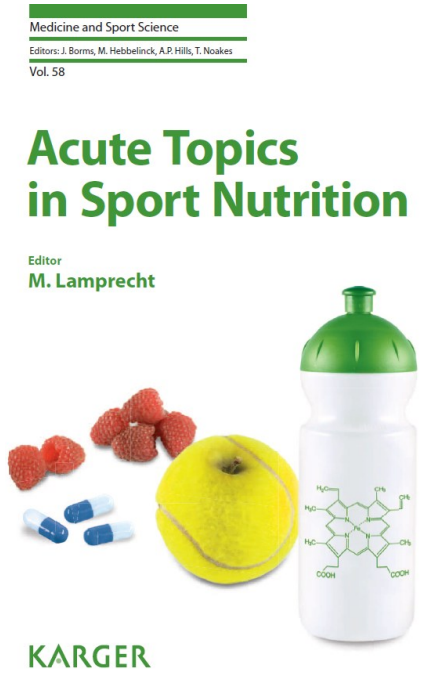
EVIDENZ

12 Influence of Mixed Fruit and Vegetable Concentrates on Redox Homeostasis and Immune System of Exercising People

Manfred Lamprecht, Georg Obermayer and Werner Seebauer



http://www.ncbi.nlm.nih.gov/pubmed/26065090



Nutritional Interventions and Athlete's Health

Lamprecht M (ed): Acute Topics in Sport Nutrition.
Med Sport Sci. Basel, Karger, 2013, vol 59, pp 70–85

Supplementation with Mixed Fruit and Vegetable Concentrates in Relation to Athlete's Health and Performance: Scientific Insight and Practical Relevance

Manfred Lamprecht

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https://pubmed.ncbi.nlm.nih.gov/23075557/

JPSI Webseite: https://www.jpsi.info/published-researches-ungated/juice-plus-research

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“JUICE PLUS+ UND SPORT: DIE WISSENSCHAFT DAHINTER”

Zusammenfassung:

1. Es gibt viele Herausforderungen um eine optimale Ernährung für SportlerInnen umsetzen zu können. Fokus dieses Vortrages: Sekundäre Pflanzenstoffe (pflanzliche Mikronährstoffe)
2. Eine adäquate Mikronährstoffversorgung ist für SportlerInnen wichtig aber oft schwierig in die Praxis umzusetzen, v.a. wenn es um die Zufuhr von sekundären Pflanzenstoffen (SPS) geht;
3. Sekundäre Pflanzenstoffe wirken (u.a.) immunmodulierend, antioxidativ und antiinflammatorisch
4. Juice Plus+® enthält relevante Konzentrationen an SPS: ca. 600mg phenolische Verbindungen in tägl. Dosis (= 6 Kapseln)
5. Juice Plus+® - Effekte im Sport sind durch 4 klinische Studien, 6 dazugehörige peer-reviewed Publikationen + 2 Reviews evidenzbasiert abgedeckt

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ERNÄHRUNG FÜR SPORTLERINNEN

Amazon
https://www.amazon.de/Lehrbuch-Sporternährung-wissenschaftlich-fundierte-Kompendium/dp/3950439501

Österreichische Gesellschaft für Sporternährung, ÖGSE
http://lehrbuch-der-sporternaehrung.de

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KONTAKTE

www.jpsi.info

Webseite mit allen (Sport-) Studien zu J+, Studien zu pflanzlich basierter Ernährung, Videos, pp-Präsentationen…

research@jpsi.info

Für Forschungskooperationen und Studien, Stipendien

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Vielen herzlichen Dank!

“Juice Plus+ und Sport: Die Wissenschaft dahinter”

Priv.-Doz. Mag. DDr. Manfred LAMPRECHT
Executive Director JPSI

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Baden-Baden, 5. April 2025