- **The Science of EquiGesic Plus-in a league of its own!** copyright 2018

Breaking News!! Clinical Veterinary Trials begin in 2018, to establish the pain relief and healing properties in lame horses of EquiGesic Plus and ProflamAid Plus

Ingredients, References, and General Data

EquiGesic Plus has the most amazing pain relief properties allowing osteoarthritic cases to remain in work, Osteoarthritis is a very common condition and if managed the life of the performance horse or happy hacker can be extended. Activity is the number 1 key to managing this condition, so it makes absolute sense to use a safe well researched formula. The EquiGesic Plus also has many other amazing attributes such as it's very strong antioxidant effect and exceptionally high absorption and utilisation rate, making this not only highly effective but also fast acting.

The EquiGesic Plus contains the following ingredients:
Curcumin X3 Complex patented extract exclusive to Hi Form Australia Pty Ltd
BioPerine Patented extract (piper nigrum) exclusive to Hi Form Australia Pty Ltd
Boswellia Serrata extract
Palatinose plus Essential Fatty acids
This new and exciting formula is available now. ***Please note that many herbs contain caffeic acid this can convert to caffeine and theobromine whilst the levels are only very low, 0.0005g/5gram dose ,in racing it has not yet been tested***

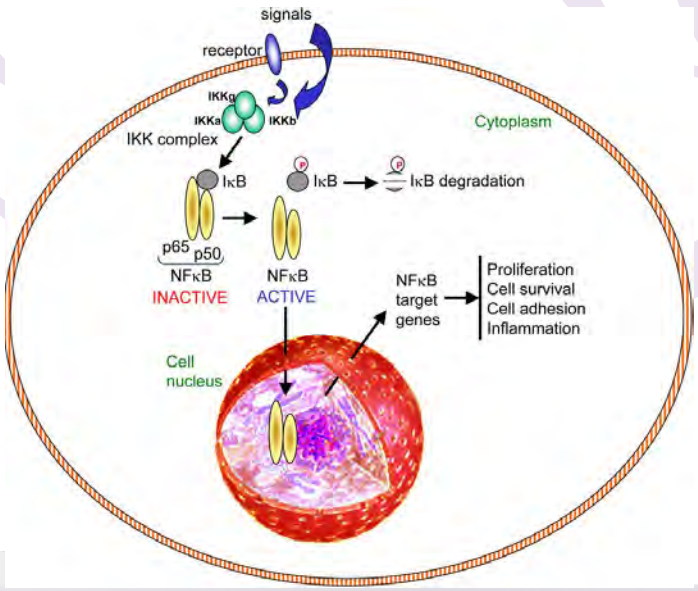
Curcumin X3 Complex® enjoys a special place among curcumin extracts. The name X3 Complex has reference to its three main chemical compounds – Curcumin, Demethoxycurcumin and Bisdemethoxycurcumin – collectively known as Curcuminoids. Patented for its unique composition ratio, Curcuminoids is described as a bioprotectant. Perhaps better understood as a "super anti-oxidant," X3 Complex provides optimal protection and integrity to biological systems.

Saga of Inflammation

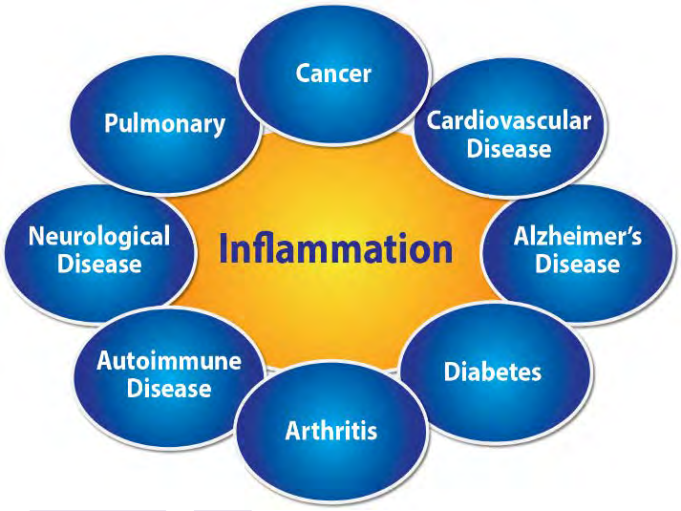
Most degenerative diseases are driven by chronic, sub-clinical inflammation. The old view of the inflammation is that it represents the healing process. This is true to a certain extent; however, when the inflammation becomes chronic, it becomes a disease.
Today the study of inflammation has gone from the tissue levels deeper into the nuclear level. Cell-signalling molecules have been identified which stimulate the gene that induce the expression of the COX enzyme, which in turn induce inflammation.

Nuclear Factor-κB: The Master Regulator of Inflammation

Nuclear Factor-Kappa B (NF-κB), as the 'master switch', is the primary means by which inflammation is 'adjusted'.

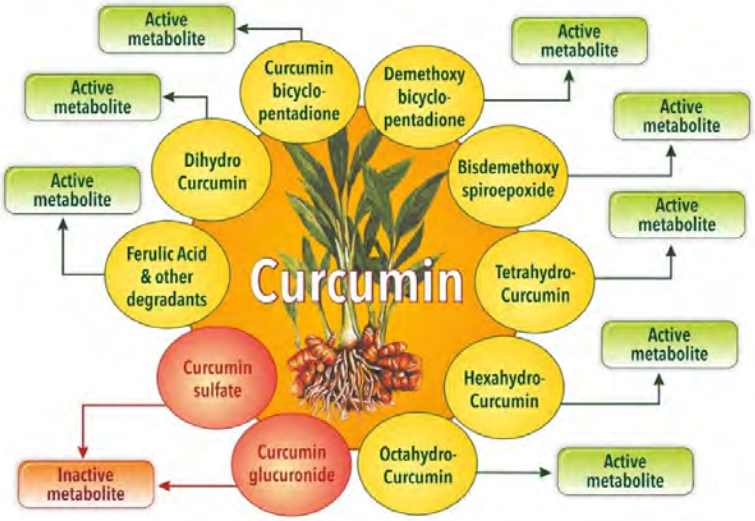


In the normal state NF-κB resides in the cytoplasm of the cell and is bound to its inhibitor—IkB (Inhibitor of κB)
Injuries and inflammatory stimuli, such as free radicals trigger the release NF- κB from IkB
The free NF-κB, now moves into the nucleus and activates the genes responsible for expressing cyclooxygenase-2 (COX-2) This leads to inflammation
NF-κB activation is a major mediator of inflammation in most diseases and inhibition of NF-κB can help prevent/delay the onset of the disease. Curcuminoids—natural compounds derived from turmeric roots, inhibit NF-κB.



Inflammation plays a key role in development of most diseases

Pharmacokinetics
Curcumin possesses tremendous potential to benefit human health; however, its rapid biotransformation has often been cited as a reason for its limited bioavailability. Initial studies carried out to understand its pharmacokinetic properties indicated that following oral administration, Curcumin showed poor absorption resulting in lower blood concentration (traces) and most of it getting excreted in the faeces.
Since Curcumin undergoes rapid biotransformation in the gut and liver, it leads to speculations regarding the bioavailability and metabolic fate of Curcumin. As the research on Curcumin progressed with time, today we have a better insight of Curcumin's metabolism in the body. Curcumin is metabolized by both conjugation and reduction pathways in the body resulting in formation of several metabolites.



Reference: Aggarwal BB, Nagabhushanam K, Pande A, Vaidyanathan P, Nayak M, Bani S, et al. Modulation of Immune System by Curcumin. In: Majeed M and Majeed A (Eds.), Curry Powder to Clinical Significance, 1st edition, New Jersey, NutriScience Publishers, LLC. 2015; pp.159.

Potentiating Therapeutic Utility of Curcumin C3 Complex® with BioPerine®

Conjugates like glucuronides and sulphates were found to be pharmacologically inactive

Recent studies on tetrahydrocurcuminoids (THCs)—reduced metabolites provided interesting comparison with Curcuminoids in biological activity (antioxidant, anti–inflammatory, antidiabetic, antihyperlipidemic, antiglycation, neuroprotective and hepatoprotective activities)

In 2011, Proceeding of National Academy of Sciences (PNAS) published a report that Curcumin could generate THCs by undergoing enzymatic reduction through an enzyme-CurA, present in commensal gut microbes E. coli—a path breaking observation (Reference: PNAS. 2011;108(16):6615–20)

Scientists at Sabinsa discovered the natural solution to improve biological activity of Curcumin in the form of BioPerine®

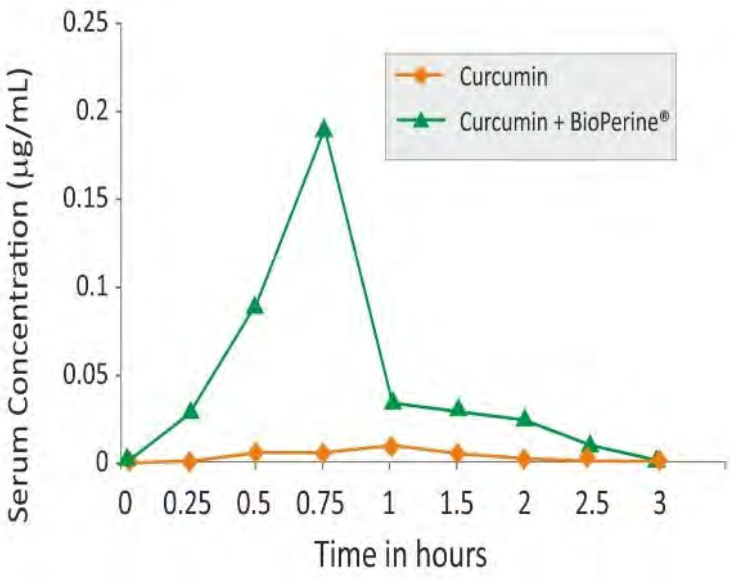
BioPerine® is the extract standardized to 95% piperine, obtained from black pepper fruits (Piper nigrum) — well known for its thermogenic activity and is an inhibitor of hepatic and intestinal glucuronidation

Sabinsa evaluated the bioavailability of Curcumin C3 Complex® in presence of BioPerine® (a patented product of Sabinsa) both preclinical and clinical

Influence of Piperine on the Pharmacokinetics of Curcumin

Preclinical Study Findings:

For the study, albino wistar rats (n=96) of both sexes were selected .Animals were divided into two groups: one group received Curcumin (2 g/kg) alone, whereas second group was given Curcumin (2 g/kg) followed by BioPerine® (20 mg/kg). Pharmacokinetic profile was determined for both groups at different intervals: 0, 0.25, 0.50, 0.75, 1, 2, 3, 4, 5 & 6 h. Results clearly showed the presence of Curcuminoids in higher concentration in the serum at 1 h and 2 h of administration of the combination of Curcumin and BioPerine®. These encouraging results led to carry out the clinical trial for this combination



Clinical Study Findings:
Shobha et al. carried out a randomized, cross-over clinical study at St. John's Medical College, Bangalore, India to assess the potential of BioPerine® for increasing the bioavailability of Curcuminoids
Ten healthy volunteers aged between 20–26 years were enrolled in this study
The subjects were administered 2 g Curcumin followed by two weeks of washout period and crossed-over to receive 2 g of Curcumin and BioPerine® (20 mg) combination
Blood samples were taken at 0.25, 0.5, 0.75, 1, 2, 3, 4, 5 and 6 h post administration on each occasion
The outcome results were in accordance with earlier performed preclinical study
Results demonstrated that BioPerine® enhanced the oral bioavailability of Curcumin with Curcumin serum concentration peaking at 1 h and relative bioavailability of Curcumin was found to be increased by 2000% or 20 folds by BioPerine®
Both Curcumin and Curcumin-BioPerine® combination were well tolerated by the subjects with no adverse events
This study was path-breaking and first of its kind to demonstrate bio-enhancing potential of piperine in BioPerine®. The evidence showed that piperine is a potent inhibitor for metabolism of certain nutrients/dietary ingredients, which can alter the rate of glucuronidation in gut and liver, thus slowing down the transformation and increasing bioavailability of the nutrients.
Reference: Shoba et al. Influence of Piperine on the Pharmacokinetics of Curcumin in Animals and Human Volunteers. Planta Med.1998;64(4):353–56.

To assess the efficacy and safety of NILIN™ SR tablets in the management of osteoarthritis of knee
Int J Pharm Life Sci. 2012; 3(2):1413-23.
Osteoarthritis (OA) or degenerative joint disease is one of the oldest and most common types of arthritis, which leads to breakdown of the joint's cartilage. This results in rubbing of bones against each other, causing pain and loss of movement. OA can range from mild to severe and it can affect hands, weight-bearing joints such as knees, hips, feet and the back.
Formulation of NILINTM SR contains Boswellin® (anti-inflammatory), Curcumin C3 Complex® (antioxidant) and Gingerol (anti-inflammatory, anti-oxidant, antiseptic and carminative).
Objective:
To assess the efficacy and safety of NILINTM SR tablets in the management of osteoarthritis of knee.
Study Design:
A single centered, open-labelled clinical trial with 30 subjects from the age group 40-65 years having OA of knee, with no other rheumatologic condition was assessed. The total study duration was 90 days ± 14 days, of which patients study duration participation was for 56±7 days. Each subject received two tablets of NILINTM SR tablet for oral ingestion, twice a day for 56 days. Each tablet contains Curcuminoids -250 mg, Boswellia serrata extract (40 % AKBBA)-272 mg, Ginger extract (35 % Gingerol)-100mg.
The efficacy of NILINTM SR in the management of OA was tested on following parameters:
Reduction of severity of pain. Improvement of joint function in patients with OA. Primary outcome measures were:
Self-reported pain. Stiffness sub scores of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC).
6 min walk distance. VAS scale measured at 0 h and 1, 2 and 4 h, respectively.
Secondary outcome measures included laboratory investigations and serological biomarker i.e. hs-CRP.
Results and Discussion:
A significant improvement in the clinical and biochemical endpoints along with excellent tolerability indicates that NILINTM SR can be used for long term management of OA.
WOMAC score of Wilcoxon paired sample was significantly decreased from day 3 onwards of the treatment for three parameters: Pain ($P<0.002$), Stiffness ($P = 0.0017$) and Physical disability ($P=0.003$). This difference got progressively more significant as the trial progressed till 56th day. This concluded that clinical efficacy of NILINTM SR led to symptomatic relief for the patients on the long-term basis and benefits are accumulative.
A significant reduction in the Visual Analogue Scale (VAS) was seen directly from the first hour intake of the active tablet, and it continued till 4 hours of the tablet ingestion. This clearly demonstrates the early onset action of the tablet on pain in knee OA.
A significant improvement in the 6-minute walk distance ($P<0.05$) and decrease in hs-CRP levels was observed.

Conclusion:
No adverse events were reported in the trial. The immediate onset pain relief which progressively improved in the trial was apparent. Therefore, NILINTM SR can be considered as newline treatment of OA, which is both effective and safe.

Curcumin C3 Complex Plus BioPerine Benefits Patients with Metabolic Syndrome
11.05.14
Results of a randomized, controlled trial by researchers at University of Medical Sciences, Mashhad, Iran, found that a combination of Curcumin C3 Complex and BioPerine benefited patients with metabolic syndrome. The study was published in Complementary Therapies in Medicine 2014; 22(5): 851-857.

A randomized, double-blind, placebo-controlled, parallel group clinical trial was conducted with 117 patients for 8 weeks. Patients received either Curcumin C3 Complex plus BioPerine combination or matched placebo capsules twice daily for 8 weeks. Complete lipid profile including LDL-C, non-HDL-C, Total Cholesterol, Triglyceride and Lp(a) were determined at the baseline and at end of the trial.

The study results showed significantly greater effect of curcuminoids in reducing the serum concentrations of LDL-C, non-HDL-C, total cholesterol, triglycerides and Lp(a) in comparison to the placebo group. Serum HDL-C concentration was elevated significantly in the Curcuminoids group. Serum sdLDL levels were comparable in both groups at baseline and at the end of the trial. Overall effects of Curcuminoids on triglycerides, non-HDL-C, total cholesterol and Lp(a) remained significant after adjustment for baseline BMI. Curcumin C3 Complex plus BioPerine combination was well-tolerated in patients with metabolic syndrome.

This study is the first trial investigating the efficacy and safety of adjunctive therapy with curcuminoids-piperine combination in patients with metabolic syndrome receiving standard treatment. The results of the trial supported the effectiveness of the adjunctive therapy with significant decrease in serum concentration LDL-C, non-HDL-C, total cholesterol, triglyceride, Lp(a) and elevation in serum concentration of HDL-C in patients in comparison to the standard therapy alone. The present study also encouraged the efficacy of use of co-administering BioPerine as a bioavailability enhancer.

“This research indicates additional benefits of Curcumin beyond inflammation, giving increased value to C3 Complex as the body of science grows”. “And once again the C3 Complex and BioPerine combination has been shown to be a safe and effective supplement blend that can help keep people healthy.”

Curcumin C3 Complex Plus BioPerine Benefits Patients with Metabolic Syndrome Related Supplier Research Beta-glucan drink Carotenoids: Stroke risk Curcumin C3 Complex & BioPerine Offers Support for Osteoarthritis Results of arandomized, controlled trial by researchers at University of Medical Sciences, Mashhad, Iran, found that a combination of Curcumin C3 Complex and BioPerine benefited patients with metabolic syndrome. The study was published in Complementary Therapies in Medicine 2014; 22(5): 851-857. A randomized, double-blind, placebo-controlled, parallel group clinical trial was conducted with 117 patients for 8 weeks. Patients received either Curcumin C3 Complex plus BioPerine combination or matched placebo capsules twice daily for 8 weeks. Complete lipid profile including LDL-C, non-HDL-C, Total Cholesterol, Triglyceride and Lp(a) were determined at the baseline and at end of the trial. The study results showed significantly greater effect of curcuminoids in reducing the serum concentrations of LDL-C, non-HDL-C, total cholesterol, triglycerides and Lp(a) in comparison to the placebo group. Serum HDL-C concentration was elevated significantly in the Curcuminoids group. Serum sdLDL levels were comparable in both groups at baseline and at the end of the trial. Overall effects of Curcuminoids on triglycerides, non-HDL-C, total cholesterol and Lp(a) remained significant after adjustment for baseline BMI. Curcumin C3 Complex plus BioPerine combination was well-tolerated in patients with metabolic syndrome. This study is the first trial investigating the efficacy and safety of adjunctive therapy with curcuminoids-piperine combination in patients with metabolic syndrome receiving standard treatment. The results of the trial supported the effectiveness of the adjunctive therapy with significant decrease in serum concentration LDL-C, non-HDL-C, total cholesterol, triglyceride, Lp(a) and elevation in serum concentration of HDL-C in patients in comparison to the standard therapy alone. The present study also encouraged the efficacy of use of co-administering BioPerine as a bioavailability enhancer. “This research indicates additional benefits of Curcumin beyond inflammation, giving increased value to C3 Complex as the body of science grows” said Shaheen Majeed, Sabinsa marketing director. “And once again the C3 Complex and BioPerine combination has been shown to be a safe and effective supplement blend that can help keep people healthy.”

Biological actions of curcumin on articular chondrocytes.

Henrotin Y1, Clutterbuck AL, Allaway D, Lodwig EM, Harris P, Mathy-Hartert M, Shakibaei M, Mobasheri A.
Author information

Abstract
OBJECTIVES:
Curcumin (diferuloylmethane) is the principal biochemical component of the spice turmeric and has been shown to possess potent anti-catabolic, anti-inflammatory and antioxidant, properties. This article aims to provide a summary of the actions of curcumin on articular chondrocytes from the available literature with the use of a text-mining tool. We highlight both the potential benefits and drawbacks of using this chemopreventive agent for treating osteoarthritis (OA). We also explore the recent literature on the molecular mechanisms of curcumin mediated alterations in gene expression mediated via activator protein 1 (AP-1)/nuclear factor-kappa B (NF-kappaB) signalling in chondrocytes, osteoblasts and synovial fibroblasts.
METHODS:
A computer-aided search of the PubMed/Medline database aided by a text-mining tool to interrogate the ResNet Mammalian database 6.0.
RESULTS:
Recent work has shown that curcumin protects human chondrocytes from the catabolic actions of interleukin-1 beta (IL-1beta) including matrix metalloproteinase (MMP)-3 up-regulation, inhibition of collagen type II and down-regulation of beta1-integrin expression. Curcumin blocks IL-1beta-induced proteoglycan degradation, AP-1/NF-kappaB signalling, chondrocyte apoptosis and activation of caspase-3.
CONCLUSIONS:
The available data from published in vitro and in vivo studies suggest that curcumin may be a beneficial complementary treatment for OA in humans and companion animals. Nevertheless, before initiating extensive clinical trials, more basic research is required to improve its solubility, absorption and bioavailability and gain additional information about its safety and efficacy in different species. Once these obstacles have been overcome, curcumin and structurally related biochemicals may become safer and more suitable nutraceutical alternatives to the non-steroidal anti-inflammatory drugs that are currently used for the treatment of OA.

Curcumin inhibits pro-inflammatory mediators and metalloproteinase-3 production by chondrocytes.

Mathy-Hartert M1, Jacquemond-Collet I, Priem F, Sanchez C, Lambert C, Henrotin Y.
Author information

Abstract
OBJECTIVE AND DESIGN:
This study aims to investigate the effects of curcumin (Cur) on the extracellular matrix protein metabolism of articular chondrocytes and on their production of inflammatory mediators.
METHODS:
Human chondrocytes in alginate beads and human cartilage explants were cultured in the absence or in the presence of interleukin (IL)-1beta (10(-11) M) and with or without Cur (5-20 microM). Nitric oxide (NO) synthesis was measured by the Griess spectrophotometric method; prostaglandin (PG) E(2) by a specific radioimmunoassay; and IL-6, IL-8, aggrecan (Agg), matrix metalloproteinase (MMP)-3, and tissue inhibitor of metalloproteinase (TIMP)-1 by specific enzyme-amplified immunoassays. Proteoglycan degradation was evaluated by the release of (35)S-glycosaminoglycans (GAG) from human cartilage explants.
RESULTS:
In alginate beads and cartilage explant models, Cur inhibited the basal and the IL-1beta-stimulated NO, PGE(2), IL-6, IL-8, and MMP-3 production by human chondrocytes in a concentration-dependent manner. The TIMP-1 and the Agg productions were not modified. In the basal condition, (35)S-GAG release from cartilage explants was decreased by Cur.
CONCLUSIONS:
Curcumin was a potent inhibitor of the production of inflammatory and catabolic mediators by chondrocytes, suggesting that this natural compound could be efficient in the treatment of osteoarthritis.

Palatinose: a new type of sugar

Palatino... what? The name of this new type of sugar may be a tongue twister, but its benefits are certainly worth remembering.

Substrate Utilization and Cycling Performance Following Palatinose™ Ingestion: A Randomized, Double-Blind, Controlled Trial.

König D1, Zdzieblik D2, Holz A3, Theis S4, Gollhofer A5.

Author information

Abstract

(1) OBJECTIVE: To compare the effects of isomaltulose (Palatinose™, PSE) vs. maltodextrin (MDX) ingestion on substrate utilization during endurance exercise and subsequent time trial performance; (2) METHODS: 20 male athletes performed two experimental trials with ingestion of either 75 g PSE or MDX 45 min before the start of exercise. The exercise protocol consisted of 90 min cycling (60% VO_2max) followed by a time trial; (3) RESULTS: Time trial finishing time (-2.7%, 90% CI: ±3.0%, 89% likely beneficial; p = 0.147) and power output during the final 5 min (+4.6%, 90% CI: ±4.0%, 93% likely beneficial; p = 0.053) were improved with PSE compared with MDX. The blood glucose profile differed between trials (p = 0.013) with PSE resulting in lower glycemia during rest (95%-99% likelihood) and higher blood glucose concentrations during exercise (63%-86% likelihood). In comparison to MDX, fat oxidation was higher (88%-99% likelihood; p = 0.005) and carbohydrate oxidation was lower following PSE intake (85%-96% likelihood; p = 0.002). (4) CONCLUSION: PSE maintained a more stable blood glucose profile and higher fat oxidation during exercise which resulted in improved cycling performance compared with MDX. These results could be explained by the slower availability and the low-glycemic properties of Palatinose™ allowing a greater reliance on fat oxidation and sparing of glycogen during the initial endurance exercise.

Postprandial substrate use in overweight subjects with the metabolic syndrome after isomaltulose (Palatinose™) ingestion.

König D1, Theis S, Kozianowski G, Berg A.

Author information

Abstract

OBJECTIVE:

Dietary interventions with a low glycemic index have shown to be successful for the prevention and therapy of the metabolic syndrome. In the present study, we investigated the postprandial metabolic response at rest and during physical activity the low glycemic carbohydrate isomaltulose (Palatinose™) intake compared with a conventional carbohydrate (glucose syrup/sucrose [glc/suc]) with a higher glycemic index.

METHODS:

Twenty overweight or obese men (32-64 y old) with the metabolic syndrome and insulin resistance were enrolled in this double-blinded, randomized, cross-over study. In the morning, a breakfast consisting of a 250-mL drink and 140 g of cookies containing in a total of 50 g of Palatinose™ or glc/suc was consumed. Two hours after breakfast, subjects exercised at moderate intensity on a treadmill for 30 min. Thereafter, subjects ingested a standardized lunch consisting of a 250-mL drink with 10% Palatinose™ or glc/suc, mini pizzas, and an apple.

RESULTS:

Blood levels of glucose and insulin were measured and the postprandial substrate metabolism was determined. The glycemic and insulinemic responses were considerably lower after the ingestion of Palatinose™ (incremental area under the curve, $P < 0.05$). The total fat oxidation was significantly higher with Palatinose™ from breakfast to the beginning of lunch including the exercise and postexercise periods ($P < 0.05$). Fat oxidation with Palatinose™ was numerically higher throughout the entire examination period ($P = 0.09$).

CONCLUSION:

In obese subjects with insulin resistance and the metabolic syndrome, the partial substitution of carbohydrates with a higher glycemic index in foods and drinks by Palatinose™ resulted in greater postprandial fat oxidation at rest and during physical activity. It is hypothesized that this increased fat oxidation may confer further benefits for long-term weight management and for an improvement in metabolic risk factors.