



# More than Just Blood Glucose Management

**CROMINEX® 3+** is a unique chromium supplement, prepared by complexing USP grade trivalent chromium chloride with two natural products, *Phyllanthus emblica* and Shilajit, in order to minimize the conversion of Chromium III to Chromium VI and to increase bioavailability. This complex produces significant synergistic activity. In addition to supporting healthy blood glucose levels, **CROMINEX® 3+** also supports a healthy lipid profile and inflammatory response. **CROMINEX® 3+** has been clinically proven to be the most efficacious of all the branded Chromium supplements in the market, and yet the most economical.

## THE HEALTH ADVANTAGE:

- **Supports Healthy** fasting and postprandial blood glucose levels
- **Clinically Proven to be the Most Efficacious** of all the branded chromium supplements in maintaining healthy endothelial function and a healthy lipid profile
- **Decreases HbA1c** more significantly than other chromium products
- **Supports a Healthy Lipid Profile** by decreasing both LDL and triglycerides significantly
- **Decreases hsCRP**, a biomarker for inflammation

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



SAFE



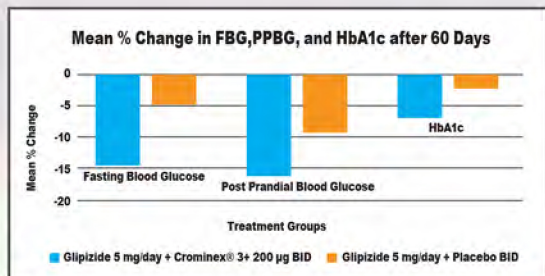
WATER SOLUBLE



NON GMO

**Crominex® 3+**  
Chromium: Safety & Efficacy

# Clinically Proven for Glucose Control and Heart Health



## GLUCOSE CONTROL

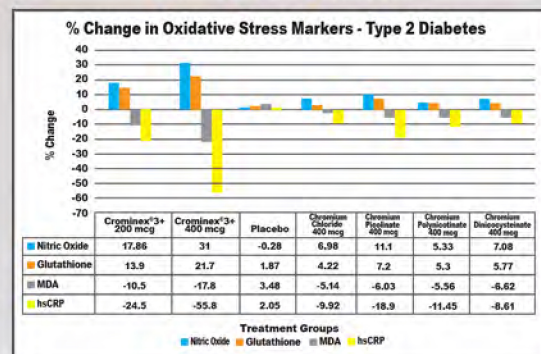
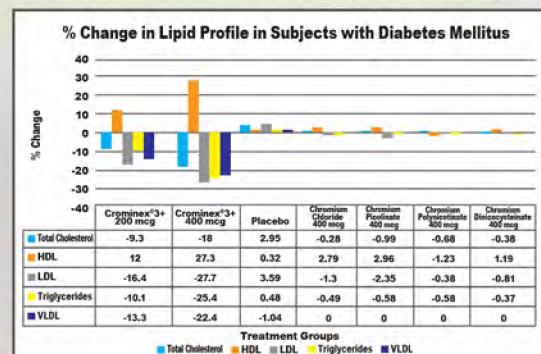
Effects of adjunct therapy of a proprietary herbochromium supplement (HCrS) in type 2 diabetes: a randomized clinical trial. *Biswas K Tuhin, MD, PhD1, Polley Gobinda, MD1, Pandit Srikanta, MD1, Debnath K Pratip MD, PhD1, Mondal Somomesh, MD1, Auddy Biswajit, PhD2 and Ghosal Shibnath2\* Int J Diab Dev Ctries | July-September 2010 | Volume 30 | Issue 3, pp.153-161: (Figures 4 & 5)*

## HEART HEALTH

A randomized, double-blind, placebo-controlled clinical study to evaluate the effect of a Chromium supplement (**CROMINEX® 3+**) on endothelial function and cardiovascular risk factors in type 2 diabetics. *Usharani P, Nishat F, Muralidhar N. Nizam's Institute of Medical Sciences, Hyderabad, India. (Pending Publication)*

A randomized, double-blind, placebo-controlled clinical study to evaluate the effect of a Chromium supplement (**CROMINEX® 3+**) on endothelial function and cardiovascular risk factors in premetabolic syndrome subjects. *Usharani P, Nishat F, Muralidhar N. Nizam's Institute of Medical Sciences, Hyderabad, India. (Pending Publication)*

A randomized, double-blind, placebo-controlled clinical study to compare the efficacy of a Chromium supplement (**CROMINEX® 3+**) to Chromium picolinate, Chromium polynicotinate and Chromium dinicocysteinate in improving endothelial function and cardiovascular risk factors in pre-metabolic syndrome subjects. *Usharani Pingali, Uday Kumar, Kiran Kishore. Nizam's Institute of Medical Sciences, Hyderabad, India. (Pending Publication)*





# CLINICAL STUDY OVERVIEW

Name of Study	Effects of adjunct therapy of a proprietary herb-chromium supplement (HCs) in type 2 diabetes: A randomized trial	Evaluation of the effect of Crominex 400 mcg, chromium picolinate 400 mcg, chromium polynicotinate 400 mcg, and chromium dinicocysteinate 400 mcg on endothelial dysfunction in subjects with Metabolic Syndrome	Effect of proprietary chromium complex and its individual components versus chromium picolinate, chromium polynicotinate and chromium dinicocysteinate on endothelial function, biomarkers and lipid profile in type 2 diabetics - a randomized, double-blind, placebo-controlled study	Evaluation of the effect of omega-3 fatty acids alone and in combination with a proprietary chromium complex on endothelial dysfunction, systemic inflammation and lipid profile in type 2 diabetes mellitus – A randomized, double-blind, positive-controlled study.	Evaluation of the effect of omega-3 fatty acids alone and in combination with a proprietary chromium complex on endothelial dysfunction and lipid profile in metabolic syndrome – A randomized, double-blind, positive-controlled study	A Randomized, double-blind, placebo-controlled clinical study to evaluate the effect of a Chromium supplement (Crominex®3+) on endothelial function and cardiovascular risk factors in type 2 diabetics.  Study Report: Study of Crominex 200mcg, 400mcg and Placebo in modifying cardiovascular risk with special reference to Endothelial dysfunction in patients with Type2 Diabetes Mellitus	Anti-Arthritic Efficacy and Safety of Crominex®3+ In Moderately Arthritic Dogs	Therapeutic Efficacy and Safety Evaluation of a Novel Chromium Supplement (Crominex®3+) in Moderately Arthritic Horses
Type of Study	Randomized, double blind, placebo-controlled prospective study	Randomized, double blind, placebo-controlled	Randomized, double blind, placebo-controlled	Randomized, double-blind, parallel group	Randomized, double-blind, parallel group	Randomized, double-blind, parallel group	Randomized, double blind, placebo-controlled	Randomized, double blind, placebo controlled
Publication Status	Tuhin, B. et al. Int J Diabetes Dev Countries.	Pending publication	Usharani, P. et al. Int J Pharma Sci Res. 2017. 8(5):2267-2276.	Pingali, U. et al. Manuscript submitted.	Pingali, U. et al. Manuscript submitted.	Usharani P, Nishat F, Muralidhar N. Pending publication	Published Journal of Veterinary Science & Animal Husbandry	Published Jacobs Journal of Veterinary Science and Research
Location of Study	J.B. Roy State Ayurvedic Medical College Kolkata, India	Hyderabad, India Nizam's Institute of Medical Sciences	Hyderabad, India Nizam's Institute of Medical Sciences	Hyderabad, India Nizam's Institute of Medical Sciences	Hyderabad, India Nizam's Institute of Medical Sciences	Hyderabad, India Nizam's Institute of Medical Sciences	Hopkinsville, KY Murray State University	Hopkinsville, KY Murray State University
Population Studied	Type 2 Diabetic subjects, 36-65 y	Subjects with metabolic syndrome aged 30-68 years with metabolic syndrome	Subjects aged 30-65 with Type 2 Diabetes taking a stable dose of anti-diabetic medications (metformin)	Male & females, type 2 diabetics, 30-65 y	Male & females with metabolic syndrome, 30-65 y	Male & females, 30-65 yr with T2D	Moderately arthritic dogs	Moderately arthritic horses
# of Subjects	180 IT, 150 PP	130 IT, 117 PP	Part I of the study - 60 subjects PP (72 IT) Part II of the study - 96 subjects PP (110 IT)	60	60	72 IT, 60 PP	11	11
Duration of Study	60 days	12 weeks	Part I: 12 weeks Part II: 12 weeks	12 weeks	12 weeks	12 weeks	150 days	150 days
Treatment Groups	Group 1: Glipizide 5 mg/day + Crominex®3+ 200 mcg BID Group 2: Metformin 1 g/day + Crominex®3+ 200 mcg BID Group 3: Pioglitazone 30 mg/day + Crominex®3+ 200 mcg BID Group 4: Glipizide 5 mg/day + Placebo Group 5: Metformin 1 g/day + Placebo Group 6: Pioglitazone 30 mg/day + Placebo	Group 1: Crominex®3+ 400 mcg once daily Group 2: Chromium chloride 400 mcg once daily Group 3: Phyllanthus emblica 6 mg + Shilajit 6 mg once daily Group 4: Chromium picolinate 400 mcg once daily Group 5: Chromium polynicotinate 400 mcg once daily Group 6: Chromium dinicocysteinate 400 mcg once daily	Part 1: Group 1 - Crominex®3+ 200 mcg once daily Group 2 - Crominex®3+ 400 mcg once daily Group 3: Placebo Part 2: Group 1: Chromium chloride 400 mcg once daily Group 2: Phyllanthus emblica 6 mg + Shilajit 6 mg Group 3: Chromium picolinate 400 mcg once daily Group 4: Chromium polynicotinate 400 mcg daily Group 5: Chromium dinicocysteinate 400 mcg daily	Group 1: 1000 mg of a refined fish oil concentrate having 300 mg of EPA (TG) and 200 mg of DHA (TG), to provide a total dose of 2000 mg of fish oil concentrate per day Group 2: 2000 mg of fish oil concentrate and 20mg of Crominex® (400 mcg of trivalent chromium) per day Group 3: 2000 mg of fish oil concentrate and 10mg of Crominex® (200 mcg of trivalent chromium) per day	Group 1: 1000 mg of a refined fish oil concentrate having 300 mg of EPA (TG) and 200 mg of DHA (TG), to provide a total dose of 2000 mg of fish oil concentrate per day Group 2: 2000 mg of fish oil concentrate and 20mg of Crominex® (400 mcg of trivalent chromium) per day Group 3: 2000 mg of fish oil concentrate and 10mg of Crominex® (200 mcg of trivalent chromium) per day	Placebo Crominex 200 mcg Crominex 400 mcg	Group 1: Placebo Group 2: Crominex®3+ 25 mg (500 mcg chromium) BID	Group 1: Placebo Group 2: Crominex®3+ 500 mg twice daily
Primary Outcomes	• Improvement in diabetic symptoms - polyurea, polydipsia, burning sensation, weakness, vertigo, arthralgia • Improvement in biochemical parameters - FBS, PPBS, HbA1c, hsCRP, LDL, microalbumin levels	• Change in endothelial function as assessed by more than 6% change in reflection index at 12 weeks in all treatment groups	• Change in endothelial function as assessed by more than 6% change in reflection index at 12 weeks in all treatment groups	• Change in endothelial function as assessed by > 6% change in reflection index	• Change in endothelial function as assessed by > 6% change in reflection index	• Change in endothelial function as assessed by > 6% change in reflection index	• Improvement in overall pain, pain upon limb manipulation, and pain after physical exertion	• Improvement in overall pain, pain upon limb manipulation, and pain after physical exertion
Secondary Outcomes	N/A	• Change in oxidative stress markers, hsCRP, lipid profile, HbA1c • Safety and tolerability assessments	• Change in oxidative stress markers, hsCRP, lipid profile, HbA1c • Safety and tolerability assessments	Change in endothelial function biomarkers, NO, GSH, MDA, hsCRP, endothelin-1, Intra-Cellular Adhesion Molecule-1 (ICAM), and Human Vascular Cell Adhesion Molecule-1 (VCAM)	Change in endothelial function biomarkers, NO, GSH, MDA, hsCRP, endothelin-1, Intra-Cellular Adhesion Molecule-1 (ICAM), and Human Vascular Cell Adhesion Molecule-1 (VCAM)	• Change in blood biomarkers: NO, MDA, glutathione, hsCRP	• Safety and tolerability of Crominex®3+	• Safety and tolerability of Crominex®3+
Results	Groups with Crominex®3+ had statistically significant improvements in both subjective diabetic symptoms and objective biochemical parameters vs. groups with placebo	• Crominex®3+ 400 mcg group showed statistically significant improvements in endothelial function • Crominex®3+ 400 mcg group showed statistically significant improvements in oxidative stress markers, hsCRP, lipid profile, and HbA1c compared to the other chromium products (see Crominex®3+ presentation for more detailed results)	• Crominex®3+ 200 and 400 mcg significantly improved endothelial function and increased the levels of nitric oxide, glutathione • Crominex®3+ 200 and 400 mcg significantly decreased levels of MDA and hsCRP (results more significant with 400 mcg dose) • Crominex®3+ 400 mcg significantly improved the lipid profile - especially the decrease in LDL and increase in HDL • Crominex®3+ 400 mcg significantly improved HbA1c • Crominex®3+ was the most efficacious compared to the other branded chromium products	Crominex®3+ 10 and 20 mg significantly improved endothelial function Increased nitric oxide Decreased ICAM-1, VCAM-1 and Endothelin-1, markers of endothelial function Crominex®3+ 10 and 20 mg supports a healthy immune response Increased levels of glutathione (GSH), an endogenous antioxidant Decreased levels of high-sensitivity C-reactive protein (hsCRP), marker of a healthy immune response Crominex®3+ 20 mg significantly improved lipid profile Decreased LDL Decreased HDL Decreased triglycerides Crominex®3+ 20 mg significantly improved HbA1c Crominex®3+ with Fish Oil was the most efficacious at improving T2D outcome measures than Fish Oil alone	Crominex®3+ 10 and 20 mg significantly improved endothelial function Increased nitric oxide Decreased ICAM-1, VCAM-1 and Endothelin-1, markers of endothelial function Crominex®3+ 10 and 20 mg supports a healthy immune response Increased levels of glutathione (GSH), an endogenous antioxidant Decreased levels of high-sensitivity C-reactive protein (hsCRP), marker of a healthy immune response Crominex®3+ 20 mg significantly improved lipid profile Decreased LDL Increased HDL Decreased triglycerides Crominex®3+ 20 mg significantly improved HbA1c Crominex®3+ with Fish Oil was the most efficacious at improving MS outcome measures than Fish Oil alone	• Crominex 200 mcg & 400 mcg significantly improved reflection index vs Placebo • Crominex 200 mcg & 400 mcg significantly improved NO, GSH, MDA, hsCRP & HbA1c compared to Placebo • Crominex 200 mcg & 400 mcg significantly improved blood lipid profile: total cholesterol, HDL, LDL, TG and VLDL	• Dogs in the Crominex®3+ group exhibited a significant reduction in arthritic pain (p < 0.05) as early as 90 days with a maximum reduction after 150 days • Pain level remained the same or slightly increased in the placebo group • Crominex®3+ was well tolerated with no abnormalities in biomarkers of liver, kidney, heart or skeletal muscle functions	• Horses in the Crominex®3+ group exhibited significant reductions in pain (p < 0.01) associated with arthritis (overall pain 32%, pain upon limb manipulation 31%, and pain after physical exertion 33%) • Significant reduction in pain occurred only after 30 days • Crominex®3+ was well tolerated with no abnormalities in biomarkers of liver, kidney, heart or skeletal muscle functions
Claims	Crominex®3+ supports healthy blood glucose levels <sup>a</sup>	Crominex®3+ supports a healthy lipid profile <sup>a</sup> Crominex®3+ supports healthy endothelial function <sup>a</sup> Crominex®3+ supports a healthy inflammatory response <sup>a</sup> Crominex®3+ supports healthy blood glucose levels <sup>a</sup>	Crominex®3+ supports a healthy lipid profile <sup>a</sup> Crominex®3+ supports healthy endothelial function <sup>a</sup> Crominex®3+ supports a healthy inflammatory response <sup>a</sup> Crominex®3+ supports healthy blood glucose levels <sup>a</sup>	In subjects with Type 2 Diabetes in synergy with Fish Oil: 1. Blood Sugar Management • Supports glucose metabolism • Supports normal glucose utilization • Supports carbohydrate metabolism 2. Heart Health • Supports endothelial function o Increases nitric oxide levels, a marker of healthy endothelial function o Improved endothelial function via: 1. Decreased ICAM-1, VCAM-1 and Endothelin-1 • Supports a blood lipid profile already within the normal range 3. Immune Health • Supports a healthy immune response • Supports a healthy immune system • Supports CRP, a marker of a healthy immune response	In subjects with Metabolic Syndrome in synergy with Fish Oil: 1. Blood Sugar Management • Supports glucose metabolism • Supports normal glucose utilization • Supports carbohydrate metabolism 2. Heart Health • Supports endothelial function o Increases nitric oxide levels, a marker of healthy endothelial function o Improved endothelial function via: 1. Decreased ICAM-1, VCAM-1 and Endothelin-1 • Supports a blood lipid profile already within the normal range 3. Immune Health • Supports a healthy immune response • Supports a healthy immune system • Supports CRP, a marker of a healthy immune response	N/A	Crominex®3+ supports healthy joints in dogs	Crominex®3+ supports healthy joints in horses

<sup>a</sup>claim not approved by legal  
BID = twice daily  
FBS = fasting blood sugar  
PPBS = post prandial blood sugar  
hsCRP = high sensitivity C-Reactive Protein  
HbA1c = glycosylated hemoglobin  
LDL = low density lipoprotein