



SAFETY AND HEALTH BENEFITS OF
BEYOND TANGY TANGERINE® 2.0 – CITRUS PEACH FUSION
AND THE COMBINATION OF BEYOND TANGY TANGERINE® 2.0,
BEYOND OSTEO-FX™, AND ULTIMATE™ EFA PLUS™
(YOUNGEVITY® HEALTHY BODY START PAK™ 2.0)



RESEARCH PERFORMED AT THE RICHARDSON CENTRE
FOR FUNCTIONAL FOODS AND NUTRACEUTICALS
- UNIVERSITY OF MANITOBA

Youngevity®

90 FOR LIFE™

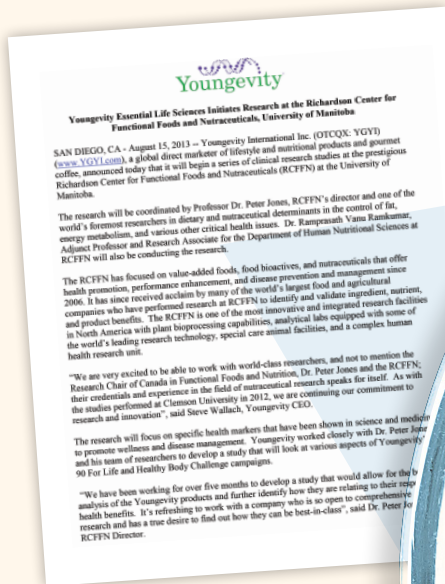
Since 1997, **Youngevity®** has continued a tradition of excellence and innovation with its Nutraceutical products by committing itself to research and science. Its core message of **90 For Life™**, developed by world-renowned scientist and researcher, Dr. Joel Wallach, has resonated and enhanced the lives of millions through its clinically-supported philosophy of the correlation of specific nutrients to overall health and wellness.

Working closely with the field's most notable biochemists, medical professionals, nutritionists and governmental organizations such as the Food and Drug Administration (FDA), **Youngevity®** has pioneered the use of nutrition and supplementation to aid in the support of health and defense of the body's most debilitating health concerns.



RICHARDSON CENTRE FOR FUNCTIONAL FOODS AND NUTRACEUTICALS (RCFFN) - UNIVERSITY OF MANITOBA

The Richardson Centre for Functional Foods and Nutraceuticals (RCFFN) is an unparalleled research facility that focuses its attention on the research, discovery, and development of innovative functional foods and nutraceuticals. As one of the top research laboratories devoted to food and natural health product research in North America, the RCFFN was a natural choice for **Youngevity® International** to conduct its extensive study in the value and benefit of their products. RCFFN's continued excellence in research and world-wide credibility assures **Youngevity®** and its distributors/customers an unbiased view of the **Youngevity®** products.



Youngevity® International Initiates Clinical Studies at Richardson Centre for Functional Foods and Nutraceuticals (RCFFN) - University of Manitoba

Youngevity® has contracted the RCFFN to identify the potential benefits of two of their most popular products and nutritional systems. Beyond Tangy Tangerine® 2.0 Citrus Peach Fusion and the Healthy Body Start Pak™ 2.0, which consists of BTT 2.0, Beyond Osteo-fx™ Powder, and Ultimate™ EFA Plus™, were evaluated by the RCFFN research team. The animal study demonstrated the safety and health benefits of the products compared to the typical Western diet without supplementation.

A series of studies were developed with Dr. Peter Jones, Director of the RCFFN, and Dr. Ramprasath Vanu Ramkumar, Adjunct Professor at the Department of Human Nutritional Sciences.

Dr. Peter Jones is one of the foremost nutritional researchers in the world. He has held a postdoctoral fellowship at the University of Chicago, University of British Columbia, McGill University, and University of Manitoba. Dr. Jones received the Young Scientist Award in 1997 and the McHenry Award for distinguished service in 2011 from the Canadian Society for Nutritional Sciences. He is the Past-President of the Canadian Society for Nutritional Sciences and has published over 350 peer-reviewed papers.

Dr. Ramprasath Vanu Ramkumar is an Adjunct Professor and Research Associate at the University of Manitoba. For over 12 years, he has worked with several human and animal trials dealing with research on how to reduce the risk of chronic diseases and improve overall health. He has published about 30 peer reviewed articles and reviews in international journals including Journal of American Medical Association.



Dr. Peter Jones

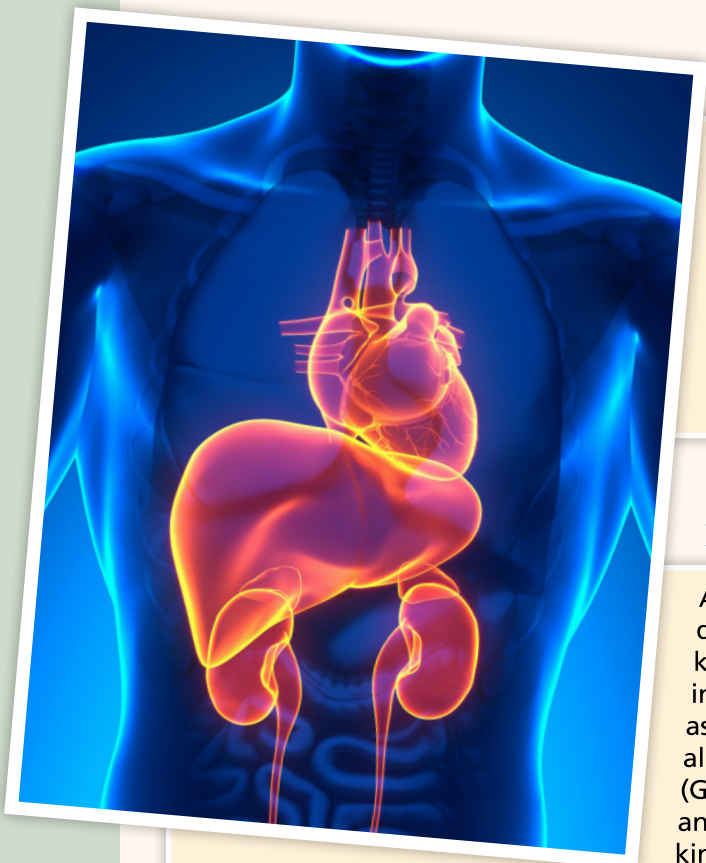


Dr. Ramprasath Vanu Ramkumar



SAFETY

Since 1997, Youngevity® has been committed to providing the highest-quality nutrients, dietary supplements, and wellness products to our distributors and customers. Through our multiple certifications, governmental approvals and licenses, quality assurance testing, and the 18 year absence of complaints, warnings, or harm by the FDA, Youngevity® stands securely behind the safety of their products. However, in order to provide further support regarding the safety of the Youngevity® products, we tested various levels of organ function and metabolism to demonstrate the extreme safety of our products.



LIVER, KIDNEYS AND HEART STUDY

Life promoting organs such as the liver, kidneys, and heart can be highly vulnerable to damage and trauma. The damage can significantly interfere with function and create a cascading effect of health issues that can be difficult to reverse. An argument has been made that supplementation could cause harm to these vital organs. Therefore, it was paramount that Youngevity® research the effect **Beyond Tangy Tangerine® 2.0 Citrus Peach Fusion (BTT 2.0)** and the **Healthy Body Start Pak™ 2.0** products had on these organs.

HEPATIC MARKERS AND BIOCHEMICAL PARAMETERS STUDY

A group of clinical biochemistry laboratory blood assays were designed to give information about the state of the liver, kidneys, and heart. The parameters measured included variances in markers, specifically for liver function and metabolism, such as alanine transaminase (ALT), aspartate transaminase (AST), alkaline phosphatase (ALKP), and gamma glutamyl transferase (GGT); markers for kidneys such as creatinine, urea, and uric acid; and for heart such as lactate dehydrogenase (LDH) and creatine kinase (CK).

Result: There were no significant differences in the weights of the liver, kidneys, and heart with supplementation compared to the group without supplementation; demonstrating zero abnormal growth or morphology. No significant changes were observed in the plasma concentrations of, and/or the important ratios between, the biochemical and hepatic markers examined.

Researchers' Conclusion: The biochemical indicators and measurement indicated normal functioning and metabolism of the liver, kidneys, and heart after supplementation with BTT 2.0 Citrus Peach Fusion and the Healthy Body Start Pak™ 2.0, demonstrating no adverse reactions to these organs.



THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THESE PRODUCTS ARE NOT INTENDED TO DIAGNOSE, TREAT, CURE, OR PREVENT ANY DISEASE.



SUPPORT FOR NORMAL INFLAMMATORY RESPONSE

Research has begun to grow that clearly demonstrates a connection between normal inflammatory response and health. Inflammation is a cornerstone of our body's healing processes. However, episodes in which we consume a poor diet, expose ourselves to various toxic or polluted environments, or overly stress the body can trigger damaging mechanisms within the inflammatory process.

INTERLEUKIN-6

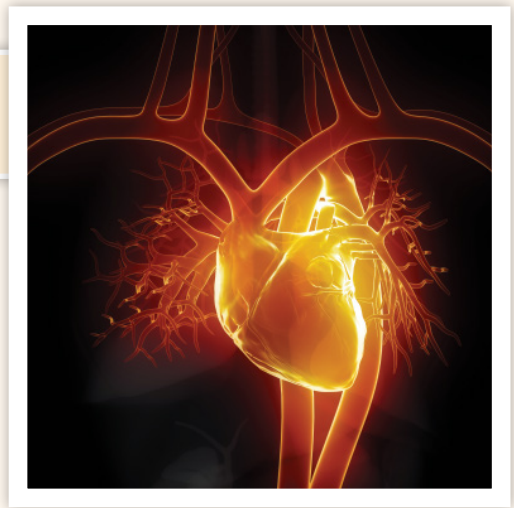
It appears that modulating cytokines, such as Interleukin-6, can help support our normal inflammatory response. Furthermore, IL-6 is an important prognostic marker for heart health due to its regulation of cardiac metabolism.

INFLAMMATORY MARKER STUDY

Normal inflammatory responses were assessed using commercially available kits with appropriate standards. All measures were conducted in duplicate.

Result: Interleukin-6 concentration was found to be reduced significantly in both the BTT 2.0 Citrus Peach Fusion and the Healthy Body Start Pak™ 2.0 groups compared to the control group.

Researchers' Conclusion: The Western diet that was fed to the animals would specifically induce the Interleukin-6 inflammatory marker. The fact that both supplement programs significantly reduced the Interleukin-6 concentrations demonstrates they can help support normal inflammatory response.



BONE HEALTH

Our bones play a vital role in supporting the entire weight, muscle, and movements of our body. Therefore, it is important to keep them strong and healthy. Our bones are living organisms that continuing to break down and rebuild in tiny amounts every day. We typically reach peak bone mass, where the body is creating new bone faster than it's breaking down, around the age of 30 years. After that, a delicate balance needs to happen of breakdown and growth. Before age 30 (varies from person to person), you're focused on building as much bone mass as possible, after the age of 30, you want to narrow the gap between loss and growth.

CALCIUM, PHOSPHORUS, AND ALKALINE PHOSPHATASE

The acquisition and maintenance of bone mass and strength are influenced by physical activity and nutrition. Calcium and Phosphorus are two of the main components of hydroxyapatite, a bone mineral that reinforces the bone and acts to strengthen its matrix. Without these two minerals bones become extremely weak and brittle. Alkaline phosphatase, ALKP, is an enzyme that is prevalent when there is greater loss of bone than growth. Disorders in the skeletal system and greater degradation of bone are indicated by higher levels of ALKP.





WEIGHT LOSS

It is well documented that weight loss has a positive effect on all weight-related metabolic complications; blood pressure, lipids, insulin sensitivity, glucose intolerance, inflammation, etc. However, because intra-abdominal fat is the fat with the strongest ties to the metabolic abnormalities of being overweight, it is important to study the effects of weight loss and body fat distribution on the amount of intra-abdominal fat in particular.

ADIPOSE (FAT) TISSUE

Your body has two main types of areas, or deposits of fat; white and brown. The white adipose tissue is the under skin layer, subcutaneous fat and its main function is to store excess energy, mainly fatty acids in the form of triglycerides. The brown adipose tissue is responsible for thermogenic, or heat protection purposes and is vital for the body. Therefore, our study focused on the specific changes of the white adipose tissue that is the key determinant of health concerns relating to being overweight.

BODY COMPOSITION STUDY

Body weight changes, percentage body weight gain and feed intakes of animals during the intervention were measured. Body composition including total fat and lean mass of the body was measured using Dual Energy X-ray Absorptiometry (DEXA) scanning. White adipose tissue (WAT) and brown adipose tissue (BAT) weights were measured and recorded.

Result: Consumption of the BTT 2.0 Citrus Peach Fusion as well as the Healthy Body Start Pak™ 2.0, significantly reduced the absolute weights of WAT as well as WAT expressed as a percentage of whole body weight. No significant reduction was seen with BAT when correcting for body weight.

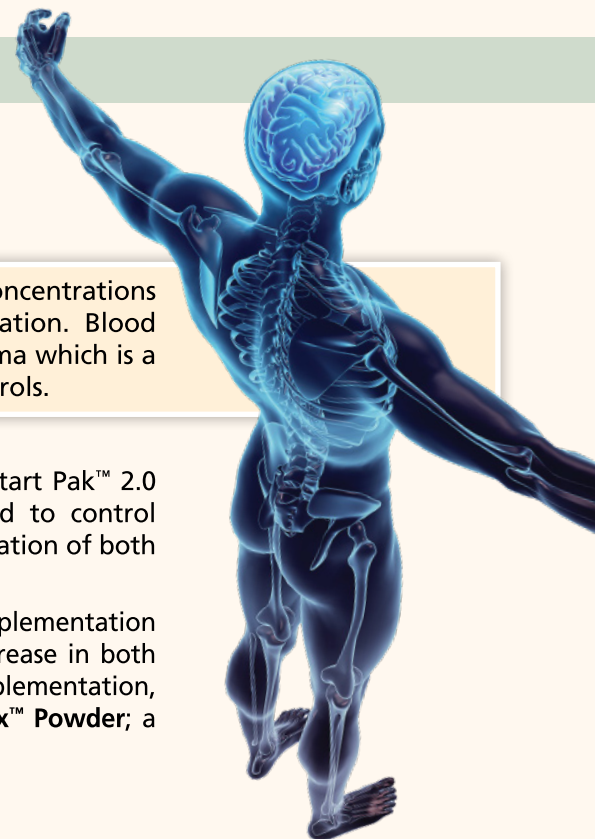
Researchers' Conclusion: The current study shows significant reductions in adipose tissue weight and body fat mass determined with DEXA after supplementation with BTT 2.0 Citrus Peach Fusion and the Healthy Body Start Pak™ 2.0. Reduction in body fat mass could be an important mechanism in reducing obesity and thereby preventing overweight and obesity related health concerns.

BONE HEALTH PLASMA STUDY

Automated methods using an AutoAnalyzer were used to check blood plasma concentrations after supplementation with Youngevity® products compared to no supplementation. Blood samples were centrifuged for 20 minutes at 3,000 RPM and the top layer, plasma which is a component of the blood, was separated and used for analysis with quality controls.

Result: Supplementation of BTT 2.0 Citrus Peach Fusion and the Healthy Body Start Pak™ 2.0 significantly elevated plasma calcium and phosphorus concentrations compared to control group. Plasma concentrations of ALKP were significantly reduced with supplementation of both Youngevity® product sets.

Researchers' Conclusion: Reductions in plasma ALKP concentration found with supplementation of either product indicate bone health promoting effects of supplements. An increase in both calcium and phosphorus concentrations in plasma, after the combination supplementation, demonstrates the potential bone health promoting effects of the **Beyond Osteo-fx™ Powder**; a component of the combination.



UNDERSTANDING THE HUMAN BODY

Youngevity® is excited about the recent findings, but we also caution individuals not to overextend the findings to feel the Youngevity® products are able to **prevent, treat, or cure** any type of disease or illness. The Youngevity® products, although incredibly powerful and health giving, are dietary supplements that are designed to work with nutrition, exercise, and a positive mental state to aid in the support of overall health and wellness. The studies that were undertaken were done on animal models. Although animal models have been used as the clinical standard when observing effects that closely mimic human studies, there can be instances of variation. Blood panel assays, organ testing, and animal physiological biomarkers were assessed during the Youngevity® studies that relate closely with human conditions. The scientific term used for these studies is "in vivo". In vivo is defined as, studies in experimental biology that are conducted or made to occur within a living organism in a natural setting. These are limited clinical studies; more research is needed. Youngevity® is committed to enhancing their studies by designing more comprehensive clinical research to further validate its products.



WHAT THIS MEANS FOR YOU

These studies offer a first attempt at understanding why so many individuals have such confidence in our products, scientists, formulators, and manufacturing process. This offers our valued customers and distributors another layer of support and understanding when they hear the variety of testimonials and benefits of the Youngevity® products. The studies help us to understand some of the pathways the Youngevity® products may be working through in order to provide these benefits. They also remind us that the very root of the Youngevity® products, safety, can be assured and that no level of hazard will ever be tolerated in the Youngevity® products.

FDA APPROVED HEALTH CLAIMS:

Some evidence suggests that **Calcium** supplements may reduce the risk of colon/rectal cancer.*

Some scientific evidence suggests that consumption of **Selenium** may reduce the risk of certain forms of cancer.*

Some scientific evidence suggests that consumption of **Selenium** may produce anticarcinogenic effects in the body.*

Vitamin E may reduce the risk of bladder cancer.**

Vitamin C may reduce the risk of gastric cancer.**

Supportive but not conclusive research shows that consumption of **EPA and DHA omega-3 fatty acids** may reduce the risk of coronary heart disease.

As part of a well-balanced diet that is low in saturated fat and cholesterol, **Folic Acid, Vitamin B6 and Vitamin B12** may reduce the risk of vascular disease.

One small study suggests that **Chromium Picolinate** may reduce the risk of insulin resistance, and therefore may reduce the risk of type 2 diabetes.

Some scientific evidence suggests that **Calcium** supplements may reduce the risk of hypertension.***

0.8 mg **Folic Acid** in a dietary supplement is more effective in reducing the risk of neural tube defects than a lower amount in foods in common form.

* The Food and Drug Administration has determined that this evidence is limited and not conclusive.

** The Food and Drug Administration has concluded that there is very little scientific evidence for this claim.

*** The Food and Drug Administration has determined that the evidence is inconsistent and not conclusive.

University of Manitoba only supports the statistical data and analysis provided here. University of Manitoba does not support, endorse, or sponsor Youngevity® or any of its products. University of Manitoba and its researchers are not affiliated in any way with Youngevity®.

Youngevity®

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