

# Effect of Virgin coconut oil on diabetic patients

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Virgin coconut oil (VCO), a source of medium chain fatty acid, has been postulated to improve blood glucose and lipid profile of type 2 diabetics, due to its readiness to provide energy to body cells. A study was conducted to investigate the effects of VCO, integrated in type 2 diabetic dietary regimen, on fasting serum glucose, insulin, triglyceride and ketone concentrations.

A randomized cross-over design study was conducted among 21 out-patient diabetics.

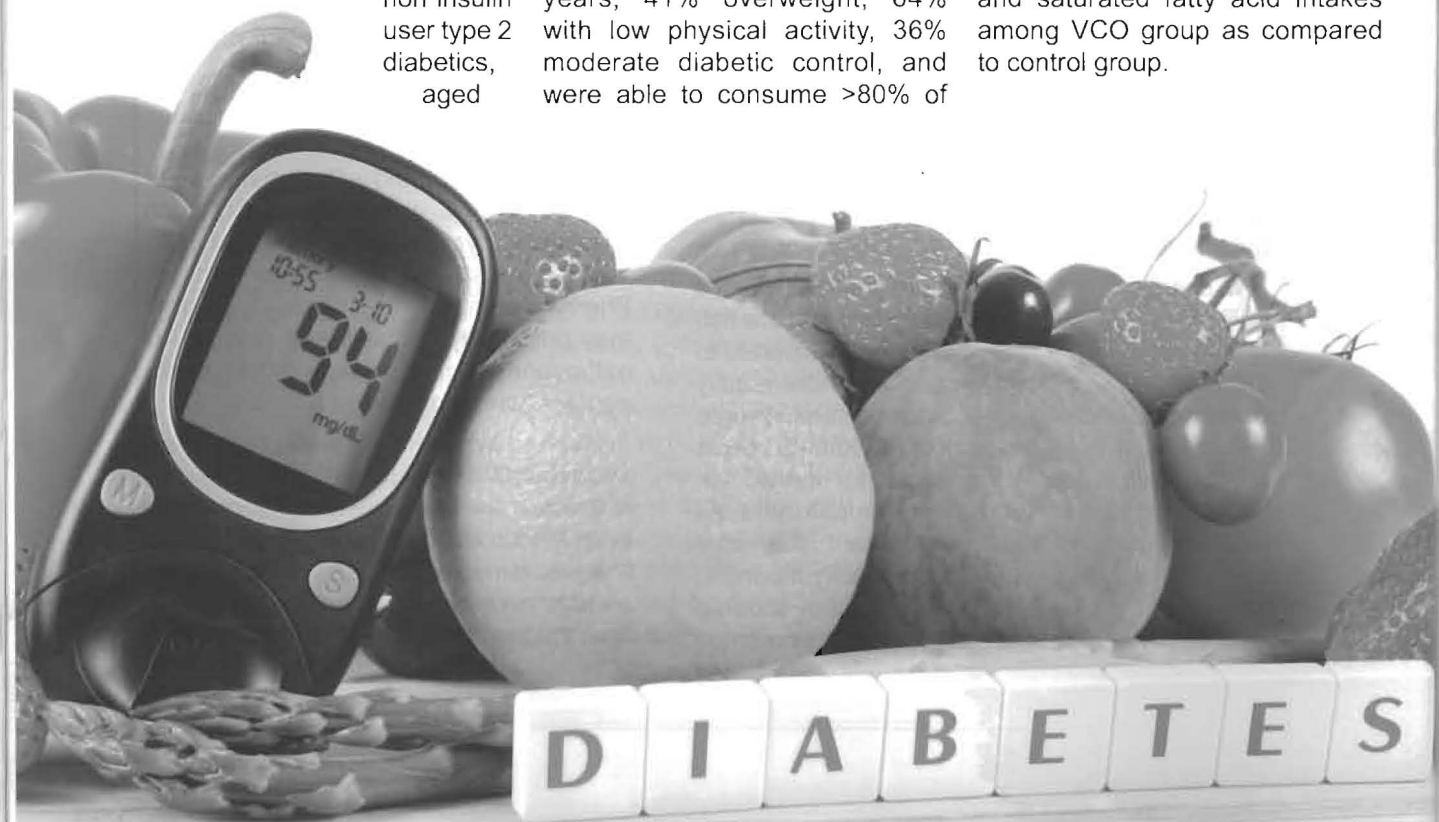
Non-obese non insulin user type 2 diabetics, aged

<65 years old, with normal liver and renal functions, and good to moderate diabetic control were recruited. Every subject underwent two treatments for three weeks with one week wash out: control group received only diabetic regimen, while treatment group received 3x10mL/day VCO integrated in their diabetic regimen. Data included age, physical activity, body mass index (BMI), food intake using estimated food record method, fasting serum glucose, insulin, triglyceride and ketones concentrations before and after treatment, were assessed.

Subjects' age ranged 40–64 years, 41% overweight, 64% with low physical activity, 36% moderate diabetic control, and were able to consume >80% of

VCO regimen. Gastro-intestinal symptoms, especially soft stool and nausea, were experienced by 64% subjects. Majority of subjects consumed less energy, fiber and sucrose compared to dietary recommendation. Treatment group consumed higher energy, fat and saturated fatty acid as compared to control group. No difference of BMI, fasting serum glucose, insulin, triglyceride and ketone concentrations after integration of VCO in diabetic dietary regimen.

VCO did not change BMI, fasting serum glucose, insulin, triglyceride and ketone concentrations in type 2 diabetics, despite higher energy and saturated fatty acid intakes among VCO group as compared to control group.



Diabetes mellitus is a condition characterised by high blood glucose due to insulin resistance. Dietary regimen is one important component of diabetic management. Virgin coconut oil, a source of medium chain fatty acid, has been postulated to improve blood glucose and lipid profile of non-insulin dependent diabetics, due to its readiness to provide energy to body cells. The study investigated the effects of integrated VCO in diabetic regimen diet, on fasting serum glucose, insulin, ketone and triglyceride concentrations. Majority of subjects consumed less energy,

fibre and sucrose compared to dietary recommendation. Treatment group consumed higher energy, fat and saturated fatty acids as compared to control group. No difference was observed in BMI, fasting serum glucose, insulin, ketone and triglyceride concentrations after integration of VCO in dietary regimen.<sup>1</sup>

Results of a study of Anti-diabetic effects of cold and hot extracted virgin coconut oil revealed that "the beneficial effects may be attributed to increased polyphenolic and other antioxidants content present in hot extracted VCO".<sup>2</sup>

<sup>1</sup>*Excerpt from the invited paper : "The Effects of Virgin Coconut Oil on Fasting Serum Glucose, Insulin, Ketone and Tri-glyceride concentrations among Indonesian non-insulin dependent diabetics" presented by Dr. Drupadi H.S. Dhillon, Department of Nutrition, Faculty of Medicine, University of Indonesia at the 47th APCC COCOTECH Conference 2016 at Bali, Indonesia during 26-30 September 2016 .*

<sup>2</sup>*Anti-diabetic effects of cold and hot extracted virgin coconut oil by Mahadevappa Siddalingaswamy, Arunchand Rayaorth and Farhath Khanum – Journal of Diabetes Mellitus 2011; Vol 1(4) 118-123.*