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## GINKGO BILOBA EXTRACT AND THE PCOS PATIENT: PERSPECTIVES FROM THE SAN ANTONIO CLINICAL TRIALS

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**G***inkgo biloba* extract is one of the most common dietary supplements ingested by a wide cross section of the United States population and therefore most likely to be used by women suffering from polycystic ovarian syndrome (PCOS). PCOS is an ovarian disorder associated with excess androgen in women, the cause of which includes hyperinsulinemia secondary to insulin resistance. The major objective of our study was to determine who might benefit from the use of *Ginkgo biloba* extract. This presentation will discuss the results of a decade of studies in healthy, non-diabetic and type 2 diabetic subjects, showing that ingestions of 120 mg of *Ginkgo biloba* extract (as a single dose) daily for three months, had the following significant effects ( $p < 0.05$ ) (a) decreased collagen-mediated platelet aggregation accompanied by reduction in urinary 11-dehydro-TXB<sub>2</sub> and prostacyclin metabolites, (b) decreased platelet *in vitro* arachidonic acid-mediated TXB<sub>2</sub> production, (c) reduced platelet malondialdehyde, an index of lipid peroxidation, and (d) increased pancreatic beta cell insulin and C-peptide production, most significantly in type 2 diabetic subjects with pancreatic exhaustion. In a randomized double-blind placebo-controlled crossover study, and using a 2-step euglycemic insulin clamp technique, it was found that ingestion of *Ginkgo biloba* extract did not affect glucose metabolic rates at low (10 mU/m2/

min) or high (40 mU/m2/min) insulin infusion rates in healthy, non-diabetics, those with impaired glucose tolerance or overt type 2 diabetic subjects. Co-ingestion of *Ginkgo* with 500 (500 mg), a diabetes treatment which may also be prescribed for PCOS patients, did not significantly affect the pharmacokinetic properties of metformin. In conclusion, while all persons might benefit from the ingestion of *Ginkgo biloba* extract, physicians might want to caution PCOS patients about the possibility of an increase in ovarian theca cell androgen production, even though *Ginkgo biloba* extract ingestion is unlikely to increase whole body insulin resistance or affect metformin pharmacological activity.

### Biography

George B Kudolo primarily teaches Clinical Chemistry in the Undergraduate Clinical Laboratory Sciences Program, and Forensic Toxicology in the Graduate Toxicology Program. His university is UT Health San Antonio, USA. His research interests are in Reproduction, Nutrition, Diabetes, Complementary and Alternative Medicine (CAM). He has conducted clinical trials with the herbal supplement. His other interests are the effect of herbal remedies in general on interpretation of diagnostic laboratory tests and forensic drug tests, and conventional drug-herb interactions.

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