

Meal timing can significantly improve fertility in women with polycystic ovaries

August 13 2013



Polycystic Ovarian Syndrome (PCOS), a common disorder that impairs fertility by impacting menstruation, ovulation, hormones, and more, is closely related to insulin levels. Women with the disorder are typically "insulin resistant"—their bodies produce an overabundance of insulin to deliver glucose from the blood into the muscles. The excess makes its way to the ovaries, where it stimulates the production of testosterone, thereby impairing fertility.

Now Prof. Daniela Jakubowicz of Tel Aviv University's Sackler Faculty of Medicine and the Diabetes Unit at Wolfson Medical Center has found a natural way to help women of normal weight who suffer from PCOS

manage their glucose and [insulin levels](#) to improve overall fertility. And she says it's all in the timing.

The goal of her maintenance meal plan, based on the body's 24 hour metabolic cycle, is not weight loss but insulin management. Women with PCOS who increased their [calorie intake](#) at breakfast, including high protein and carbohydrate content, and reduced their calorie intake through the rest of the day, saw a reduction in insulin resistance. This led to lower levels of testosterone and dramatic increase in the ovulation frequency – measures that have a direct impact on fertility, notes Prof. Jakubowicz.

The research has been published in *Clinical Science* and was recently presented at the Endocrine Society's annual meeting in June. It was in collaboration with Dr. Julio Wainstein of TAU and Wolfson Medical Center and Dr. Maayan Barnea and Prof. Oren Froy of the Hebrew University of Jerusalem.

Managing insulin to increase ovulation

Many of the treatment options for PCOS are exclusively for obese women, Prof. Jakubowicz explains. Doctors often suggest weight loss to manage insulin levels, or prescribe medications that are used to improve the insulin levels of [overweight patients](#). But many women who suffer from PCOS maintain a normal weight – and they are looking for ways to improve their chances of conceiving and giving birth to a healthy baby.

In a recent study, Prof. Jakubowicz and her fellow researchers confirmed that a low-calorie weight-loss plan focusing on larger breakfasts and smaller dinners also lowers insulin, glucose, and triglycerides levels. This finding inspired them to test whether a similar meal plan could be an effective therapeutic option for women with PCOS.

60 women suffering from PCOS with a normal body mass index (BMI) were randomly assigned to one of two 1,800 calorie maintenance diets with identical foods. The first group ate a 983 calorie breakfast, a 645 calorie lunch, and a 190 calorie dinner. The second group had a 190 calorie breakfast, a 645 calorie lunch, and 983 calorie dinner. After 90 days, the researchers tested participants in each group for insulin, glucose, and testosterone levels as well as ovulation and menstruation.

As expected, neither group experienced a change in BMI, but other measures differed dramatically. While participants in the "big dinner" group maintained consistently high levels of insulin and testosterone throughout the study, those in the "big breakfast" group experienced a 56 percent decrease in [insulin resistance](#) and a 50 percent decrease in testosterone. This reduction of [insulin](#) and testosterone levels led to a 50 percent rise in ovulation rate, indicated by a rise in progesterone, by the end of the study.

A natural therapy

According to Prof. Jakubowicz, these results suggest that meal timing – specifically a meal plan that calls for the majority of daily calories to be consumed at breakfast and a reduction of calories throughout the day – could help [women](#) with PCOS manage their condition naturally, providing new hope for those who have found no solutions to their fertility issues, she says. PCOS not only inhibits natural fertilization, but impacts the effectiveness of in vitro fertilization treatments and increases the rate of miscarriage.

And beyond matters of fertility, this method could mitigate other symptoms associated with the disorder, including unwanted body hair, oily hair, hair loss, and acne. Moreover, it could protect against developing type-2 diabetes.

Provided by Tel Aviv University

Citation: Meal timing can significantly improve fertility in women with polycystic ovaries (2013, August 13) retrieved 26 April 2024 from <https://medicalxpress.com/news/2013-08-meal-significantly-fertility-women-polycystic.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.