

# Trial Finds Infertile Couples Low in Antioxidants

*Most did not meet the standard recommendation of five servings per day of fruit and vegetables.*

BY JANE SALODOF MACNEIL  
Southwest Bureau

LOS ANGELES — More than a third of the women trying to become pregnant and about half the would-be fathers consumed low levels of vitamin C or vitamin E when they entered a large, randomized clinical trial comparing infertility regimens.

Based on pooled data for both partners, 79% of couples trying to conceive in the Fast Track and Standard Treatment Trial (FASTT) consumed less than the estimated average requirement (EAR) for at least one of these antioxidant vitamins from the food they ate.

The EAR is defined as the daily intake estimated to meet the requirement in half of healthy individuals in each age and gender category.

For example, for pregnant women ages 19-30, the EARs would be 70 mg/day of vitamin C and 12 mg/day of vitamin E.

Even after the researchers factored in dietary supplements, 22% of couples who participated in the study still fell below recommended levels at baseline.

"These are people who wanted to do everything possible to get pregnant, and, even if they were taking supplements, there were couples with both [partners]

low in C or E," study investigator Marlene B. Goldman, Sc.D., said during the annual meeting of the Society for Gynecologic Investigation.

The couples' self-reported baseline intake levels probably are an overestimate of actual intake.

She added: "If anything, we would expect them to overreport."

Dr. Goldman of Beth Israel Deaconess Medical Center and Harvard Medical School, both in Boston, presented

the nutritional analysis in the first report of data from the study, which was funded by the National Institute of Child Health and Human Development.

Between September 2001 and May 2003, the trial enrolled 250 couples with unexplained infertility, mild male factor, or mild endometriosis.

All of the women who participated in the study had been unable to conceive for at least 12 months; none of the women had undergone prior infertility treatment.

The women were aged 21-39 years with normal ovarian reserve.

No results have been reported yet for the main outcome measures comparing an accelerated regimen of clomiphene and intrauterine insemination followed by in vitro fertilization to a standard regimen of clomiphene and intrauterine insemination followed by gonadotropin and intrauterine insemination followed by in vitro fertilization.

The investigators said recent animal research suggests antioxidants play a role in ovulation and fertilization, but human data in this area were limited. "Our hypothesis is that oxidative stress might negatively impact the ability to establish pregnancy," Dr. Goldman said of the decision to compare the study population's nutritional intake with national recommendations.

Patients completed the 1998 Block food questionnaire from Block Dietary Data Systems in Berkeley, Calif., upon enrollment. The validated survey included 110 food items, with analysis for 36 macro- and micronutrients.

Data were available for a total of 241 women (mean age 33) and 229 men (mean age 34).

Less than 7% of women and 12% of men were smokers. Most women, 83%, but less than half the men, 41%, used

supplements.

Most couples, 52%, did not meet the standard recommendation of five servings per day of fruit and vegetables. A total of 68% of women and 74% of men consumed fewer than five servings per day: The average was 4.1 servings for women and 4 servings for men.

For the antioxidant analysis, the investigators matched reported intake to recommended daily intake values for each person's age and gender.

When diet alone was analyzed, 15% of couples consumed too little vitamin C, and 78% of couples were low on vitamin E intake. Among those who took a dietary supplement, the percentage fell to 4% consuming too little vitamin C, but 21% still were not getting enough vitamin E.

Based on diet alone, 94% of women were low on vitamin C or E. Even with a supplement, 34% did not meet the recommendation for at least one of the antioxidants.

Among the men, 85% did not get enough vitamins C or E from their diets. More than half of the men who were taking a supplement, 53%, still did not meet the daily recommendations for vitamins C or E.

The investigators announced plans to evaluate the relationship of antioxidant status and other nutritional factors to time to pregnancy and pregnancy outcomes in the trial population. ■

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## Accuracy of Genetic Diagnoses Made Using FISH Varies

BY TIMOTHY F. KIRN  
Sacramento Bureau

INDIAN WELLS, CALIF. — Preimplantation genetic diagnosis using fluorescent in situ hybridization has a positive predictive value of 83% and a negative predictive value of 81% when a panel of probes for five chromosomes is used, Catherine M. De Ugarte, M.D., said at the annual meeting of the Pacific Coast Reproductive Society.

In a study that involved 241 IVF embryos, 34 of 198 embryos that were initially found to be abnormal with fluorescent in situ hybridization (FISH) were later shown to be normal with subsequent FISH analyses. Of 43 embryos initially called normal with FISH, 8 were later shown to have an abnormality, said Dr. De Ugarte of the division of reproductive endocrinology and infertility at the University of California, Los Angeles, Medical Center.

Certain chromosomal abnormalities were more likely to be missed, including monosomies. Turner's syndrome, in particular, was highly likely to be falsely identified. Only 17% of embryos initially identified as affected with Turner's syndrome were confirmed as having the disorder.

Dr. De Ugarte said 45% of the time the initial FISH analysis indicated that an embryo was abnormal, confirmation revealed a different abnormality than initially diagnosed. There were various reasons for these misdiagnoses, including failure of

the probes to hybridize when they should have and situations in which two chromosomes overlapped, preventing visualization of a probe.

One significant limitation is that the study used embryos that were initially

found to be abnormal or unsuitable for freezing and preserving, said L. Michael Kettel, M.D., who commented on the study at the meeting.

Nevertheless, the study results, while perhaps disheartening, are "probably not

surprising," said Dr. Kettel, a reproductive endocrinologist in San Diego.

"As this technology is applied more and more often, it is important to understand the potential and significant limitations that this technology presents," he said. ■



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