

## Meta-Analysis: Oral Contraceptives and Pre-menopausal Breast Cancer

(October 3, 2006)

The journal of the Mayo Clinic (*Mayo Clinic Proceedings*) has published a key article in its October 2006 issue entitled "Oral Contraceptive Use as a Risk Factor for Pre-menopausal Breast Cancer: A Meta-analysis", authored by Chris Kahlenborn, M.D., (Internal Medicine, Altoona Hospital, PA), Francesmary Modugno, Ph.D., (Epidemiology), Douglas M. Potter, Ph.D. (Biostatistics) both from the University of Pittsburgh, and Walter B. Severs, Ph.D., Professor Emeritus of Pharmacology at the Penn State College of Medicine.

The major findings from this careful analysis of the world literature were that oral contraceptives (OCs) were linked with a measurable and statistically significant association with pre-menopausal breast cancer. The risk association was 44% over baseline in parous women (having been pregnant) who took OCs prior to their first pregnancy. (See graph below to note risk of individual studies). The study re-enforces the recent classification of OCs as Type 1 carcinogens by the International Agency for Cancer Research\*.

According to Dr. Kahlenborn, extraction of reliable data from the world literature is an extremely difficult task because no two studies are exactly alike. However, meta-analysis is a valid statistical tool that has the ability to identify associations and potential risk. He said the present research team was very careful to clearly present how the data were collected and processed, and welcomes opportunities for open and critical debate on this important subject by professionals as well as the lay public.

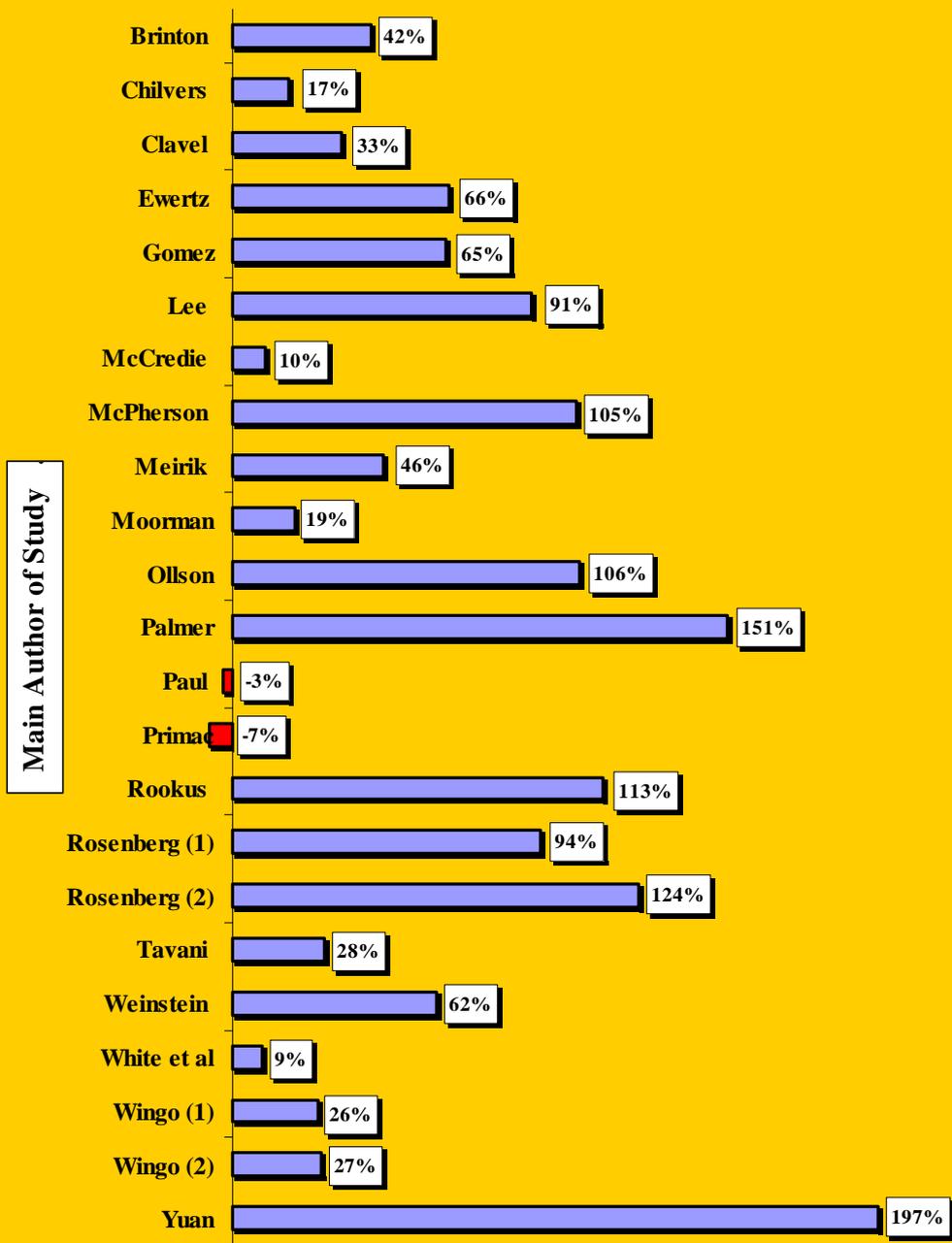
Dr. Kahlenborn\*\* stated that he and the entire team believes that in accordance with the standards informed consent, women must be apprised of the potential risk of premenopausal breast cancer prior to commencing drug use.

(For access to abstract of article go to [www.mayoclinicproceedings.com](http://www.mayoclinicproceedings.com))

This World Health Organization information can be accessed at:  
<http://monographs.iarc.fr/ENG/Meetings/91-contraceptives.pdf>

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**Increased Risk of Breast Cancer in Studies of Pre-menopausal Women Who Took Oral Contraceptives Prior to Their First-Term Pregnancy\***



\*Data taken from *Mayo Clinic Proceedings* (Kahlenborn et al. 10/06)  
 Included studies were published between 1980-2002. The individual studies show the change from parous non-oral contraceptive users.

Explanation of Graph:

The graph above is based upon data taken from the journal article of the *Mayo Clinic Proceedings* (10/06).\* It demonstrates the increased risk of developing breast cancer for pre-menopausal women who took (or are taking) oral contraceptives prior to first-term pregnancy. Twenty one out of twenty-three of these retrospective studies demonstrated an increased risk. The odds ratio of combining these studies for this meta-analysis noted a 44% increased risk, which was significant at the 99% confidence interval (OR, 1.44; 99% CI 1.24-1.68).

\*Kahlenborn C, Modugno FM, Potter DM, Severs WB. Oral contraceptive use as a risk factor for premenopausal breast cancer: a meta-analysis. *Mayo Clin Proc* 2006; 81(10):1290-1302.

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