



## News Release

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ATS Press Room: 504-670-6926 (May 15 to 20)

**Press conference time: May 16, 11:15 a.m. in the ATS Press Room (E-1)**

Poster session time: 1:30-4:00 p.m. May 18

Location: CC-Room 353-355 (Third Level), Morial Convention Center

### **Long-Term Use of Vitamin E May Decrease COPD Risk**

ATS 2010, NEW ORLEANS— Long-term, regular use of vitamin E in women 45 years of age and older may help decrease the risk of chronic obstructive pulmonary disease (COPD) by about 10 percent in both smokers and non-smokers, according to a study conducted by researchers at Cornell University and Brigham and Women's Hospital.

“As lung disease develops, damage occurs to sensitive tissues through several proposed processes, including inflammation and damage from free radicals,” said Anne Hermetet Agler, doctoral candidate with Cornell University's Division of Nutritional Sciences. “Vitamin E may protect the lung against such damage.”

The results of the study will be presented at the ATS 2010 International Conference in New Orleans.

“The findings from our study suggest that increasing vitamin E prevents COPD,” said Ms. Agler. “Previous research found that higher intake of vitamin E was associated with a lower risk of COPD, but the studies were not designed to answer the question of

whether increasing vitamin E intake would prevent COPD. Using a large, randomized controlled trial to answer this question provided stronger evidence than previous studies.”

Ms. Agler and colleagues reviewed data compiled by the Women’s Health Study, a multi-year, long-term effort ending in 2004 that focused on the effects of aspirin and vitamin E in the prevention of cardiovascular disease and cancer in nearly 40,000 women aged 45 years and older. Study participants were randomized to receive either 600 mg of vitamin E or a placebo every other day during the course of the research.

Although fewer women taking vitamin E developed COPD, Ms. Agler noted the supplements appeared to have no effect on asthma, and women taking vitamin E supplements were diagnosed with asthma at about the same rate as women taking placebo pills. Importantly, Ms. Agler noted the decreased risk of COPD in women who were given vitamin E was the same for smokers as for non-smokers.

Ms. Agler said further research will explore the way vitamin E affects the lung tissue and function, and will assess the effects of vitamin E supplements on lung diseases in men.

“If results of this study are borne out by further research, clinicians may recommend that women take vitamin E supplements to prevent COPD,” Ms. Agler noted. “Remember that vitamin E supplements are known to have detrimental effects in some people; for example vitamin E supplementation increased risk of congestive heart failure in cardiovascular disease patients. Broader recommendations would need to balance both benefits and risks. ”

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“Randomized Vitamin E Supplementation and Risk of Chronic Lung Disease (CLD) in the Women’s Health Study” (Session C103, Tuesday, May 18, 1:30- 4:00 p.m., CC-Room 353-355 (Third Level), Morial Convention Center; Abstract 3727)

*\*Please note that numbers in this release may differ slightly from those in the abstract. Many of these investigations are ongoing; the release represents the most up-to-date data available at press time.*

# Randomized Vitamin E Supplementation and Risk of Chronic Lung Disease (CLD) in the Women's Health Study

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The oxidant/antioxidant balance in lung tissue is hypothesized to contribute to chronic obstructive pulmonary disease (COPD) risk, and observational studies consistently report high antioxidant status associated with lower risk of COPD and asthma. The Heart Protection Study (randomized trial of combined vitamins E, C and betacarotene for 5 years), reported no difference by treatment in hospitalization rates for COPD or asthma in 20,500 adults. We tested the effect of vitamin E supplementation on risk of *incident* self-reported MD diagnosis of chronic lung disease (CLD), defined as emphysema, chronic bronchitis, or bronchiectasis (single question asked of all women on all follow-up questionnaires), and *incident* self-reported MD diagnosis of asthma in the Women's Health Study, a double-blind, placebo-controlled, two-by-two factorial trial of vitamin E (600 IU every other day) and aspirin (100 mg every other day) in 39,876 female health professionals aged  $\geq 45$  years followed for 10 years. Among 38,270 women without self-reported history of CLD at randomization, there were 760 new reports of CLD diagnosis in the Vitamin E group and 846 in the placebo group (HR, 0.90; 95% CI, 0.81-0.99;  $p=0.03$ ) during 373,710 person-years. We found no significant effect modification of this 10% risk reduction by cigarette smoking, study aspirin assignment, randomization age, multivitamin use, body mass index, pre-existing asthma, diabetes, hypercholesterolemia, hypertension, inflammatory disease, or dietary intake of vitamin C or non-study vitamin E. Whilst the outcome was assessed by self-report on questionnaires, the data have face validity in that smoking was a strong predictor of risk of CLD (current smokers vs. never smokers HR 4.17; 95% CI: 3.70-4.70;  $p<0.001$ ). Although the vitamin E effect is not modified by smoking, the attributable risk (AR) is greater in smokers (AR=12.1/1000) compared to never smokers (AR=3.1/1000). There was little or no association of Vitamin E supplementation with new diagnosis of asthma in 362,120 person-years of follow-up (hazard ratio, HR, 0.99; 95% CI, 0.90-1.08;  $p=0.83$ ). Strengths of the study include: the randomized design, large trial size, and face validity for the outcome assessment. In this large, randomized trial supplementation with vitamin E reduced the risk of new diagnosis of chronic lung disease, indicating a possible preventive strategy. Funding: NIH HL043851 and CA47988 (Women's Health Study); NIH HL071022 (PAC and AHA).