Centers for Disease Control and Prevention's **DES UPDATE**

What's New...

Cancer Risk in Women Exposed to Diethylstilbestrol In Utero

Hatch EE, Palmer JR, Titus-Ernstoff L, Noller KL, Kaufman RH, Mittendorf R, Robboy SJ, Hyer M, Cowan CM, Adam E, Colton T, Hartge P, Hoover RN. Cancer risk in women exposed to diethylstilbestrol in utero. JAMA. 1998; 280(7):630-634.

<u>Summary</u>: This study found no overall increase in cancer incidence for women exposed to DES in utero except for clear cell adenocarcinoma (CCA) (standardized incidence ratio=40.7; 95% confidence interval [CI]=13.1-126.2) compared to population-based cancer incidence rates (standardized incidence ratio is 0.96; 95% CI = 0.58-1.56). Method was medical record review and questionnaire of 3,650 DES Daughters and 1,202 unexposed daughters. Continued surveillance during menopausal years recommended because average of cohort was 38.

Continued Follow-Up of Pregnancy Outcomes in DES-Exposed Offspring

Kaufman RH, Adam E, Hatch EE, Noller KA, Herbst, AL, Palmer JR, Hoover RN. Continued follow-up of pregnancy outcomes in diethylstilbestrol-exposed offspring. Obstet Gynecol 2000; 96(4):483-489.

<u>Summary</u>: This study reported on the increased incidence of failed or complicated pregnancies for women exposed to DES in utero. DES Daughters were more likely to have had premature births than unexposed women (11.5% vs. 4.1%), spontaneous abortions (19.2% vs. 10.3%), and ectopic pregnancies (4.2% vs. 0.77%). Second trimester spontaneous abortions were more common (6.3% vs. 1.6%) and rate of full-term delivery during first pregnancy was lower (53%-64% vs. 85%). Method was 4,409 self-report questionnaires (3,373 from DES Daughters and 1036 from unexposed women).

Cancer Risk in Men Exposed In Utero to Diethylstilbestrol

Strohsnitter WC, Noller KL, Hoover RN, Robboy SJ, Palmer JR, Titus-Ernstoff L, Kaufman RH, Adam E, Herbst AL, Hatch EE. Cancer risk in men exposed in utero to diethylstilbestrol. J Natl Cancer Inst 2001; 93(7);545-551.

<u>Summary</u>: This study concluded that men exposed to DES in utero do not appear to have an increased risk of most cancers, but association between DES exposure and testicular cancer is uncertain. Elevated, but not statistically significant, levels of testicular cancer among DES Sons were found when compared to the control group (RR=3.05; 95% CI=0.65-22.0) and when compared to males in population-based rates (RR=2.04; 95% CI=.82 to 4.20). Method was prospective follow-up study of 3,613 men.

Long-term Cancer Risk in Women Given Diethylstilbestrol During Pregnancy

Titus-Ernstoff L, Hatch EE, Hoover RN, Palmer J, Greenberg ER, Ricker W, et al. Long-term cancer risk in women given diethylstilbestrol (DES) during pregnancy. Br J Cancer 2001; 84(1):126-133.

<u>Summary</u>: In this study, a "modest association" between documented exposure to DES while pregnant and breast cancer risk was found (RR=1.27; 95% Cl=1.7-1.52). Neither family history of breast cancer nor use of oral contraceptives or hormone replacement therapy exacerbated the risk. No association between DES exposure while pregnant and any other cancer risk was found. Method was a combined analysis including medical record review of 3,844 exposed and 3,716 unexposed women.



Infertility Among Women Exposed Prenatally to Diethylstilbestrol

Palmer JR, Hatch EE, Rao S, Kaufman RH, Herbst AL, Noller KL, Titus-Ernstoff L, Hoover, RN. Infertility among women exposed prenatally to diethylstilbestrol. Am J Epidemiol 2001; 154(4):316-321.

<u>Summary</u>: The findings of this study indicated that women exposed to DES in utero have an increased risk of infertility due primarily to uterine (RR=7.7; 95% CI=2.3-25) or tubal problems (RR=2.4 95% CI=1.2-4.6) when compared to unexposed women. Method was an examination of 1994 data provided by 1,753 women exposed to DES in utero and 1,050 unexposed women.

Incidence of Squamous Neoplasia of the Cervix and Vagina in Women Exposed Prenatally to Diethylstilbestrol (United States)

Hatch EE, Herbst AL, Hoover RN, Noller KL, Adam E, Kaufman RH, Palmer JR, Titus-Ernstoff L, Hyer M, Hartge P, Robboy SJ. Incidence of squamous neoplasia of the cervix and vagina in women exposed prenatally to diethylstilbestrol (United States). Cancer Causes and Control 2001; 12:837-845.

<u>Summary:</u> This study supported an association between exposure to DES in utero and high-grade squamous intraepithelial neoplasia (HSIL) of the genital tract (RR=2.1; 95% CI=1.19-3.77). Method was cohort study of 3,899 DES Daughters and 1,374 unexposed women.

Findings in Female Offspring of Women Exposed In Utero to Diethylstilbestrol

Kaufman RH, Adam E. Findings in female offspring of women exposed in utero to diethylstilbestrol. Obstet Gynecol 2002; 99:197-200.

<u>Summary:</u> The findings of this study suggested that third-generation effects of exposure to DES in utero are unlikely. Even though abnormalities were present in more than 60% of mothers exposed to DES in utero, no abnormalities in the lower genital tract were noted in their daughters. Method was a comparison of findings on pelvic examination of 28 daughters of 26 mothers exposed to DES in utero.

Hypospadias in Sons of Women Exposed to Diethylstilbestrol In Utero: A Cohort Study

Klip H, Verloop J, van Gool JD, Koster META, Burger CW, van Leeuwen FE. Hypospadias in sons of women exposed to diethylstilbestrol in utero: a cohort study. Lancet 2002; 359:1102-1107.

<u>Summary</u>: This study concluded that there is an increased risk of hypospadias in the male offspring of DES Daughters. Confirmed cases of hypospadias occurred in 4 sons of 205 DES Daughters compared to 8 cases reported in the 8,729 sons of unexposed women (prevalence ratio 21:3). The method was a self-report questionnaire of a Dutch cohort of 16,284 women with fertility problems. Risk of hypospadias was not affected by maternal age, fertility treatment, or use of assisted reproductive techniques. Conclusions suggested that the trans-generation effects of DES exposure warrant additional studies, although absolute risk was small.