

## Spotlight on Science and Law: The Case of DES

Our spotlight for this chapter falls on a case that began over 60 years ago and is still continuing today. It involves **diethylstilbestrol (DES)**, a synthetic estrogen, and the companies that manufactured, marketed, and advertised it to physicians (Figure 6.20) for use with pregnant patients and those who were trying to get pregnant.

From the 1950s through the 1970s, DES was prescribed in increasing doses to women in the belief that it would prevent miscarriages. Scientifically, it seemed plausible; if a woman had more estrogen in her body, the lining of the uterus was less likely to become detached, saving a pregnancy. In the beginning this proved to be true, and many women gave birth to seemingly healthy babies. However, in the long term, there were many problems.

Research has identified three generations affected by treatment with this drug. They include the woman given the drug (generation 1), their daughters and sons (generation 2, called DES daughters and DES sons) and the third generation (called DES granddaughters and DES grandsons). A fourth generation has not been yet been studied.

When DES daughters showed up in physicians' offices with a rare form of vaginal cancer, studies on the effects of DES treatment began. It was not until years later that the reproductive problems of DES sons were studied. Table 6.5 shows some of the results of these studies.

**diethylstilbestrol (DES)** a synthetic estrogen used as a drug and as a food additive

Figure 6.20 Ad Promoting Use of Diethylstilbestrol (DES)



Publicité américaine de 1957 © DES France

Table 6.5 Generational Effects of DES

	First Generation	Second-Generation Females	Second-Generation Males	Third-Generation Females	Third-Generation Males
Physical	None	Uterine shape abnormalities	Increased risk of and urogenital abnormalities at birth	More likely to have irregular periods	Hypospadia
Behavioral	None	Increased likelihood of a woman being lesbian or bisexual <sup>1</sup>	Increased likelihood of a man being homosexual, transgendered, or feminized. <sup>2</sup> Increased risk of undescended testicles, infertility, and epididymal cysts	Not known	Not known
Medical	Increased risk of breast cancer	Vaginal cancer (40x risk), increased risk of breast cancer, infertility, ectopic pregnancy, and fibroid tumors	Not known	Increase in risk of infertility and ovarian cancer	Not known
Suspected symptoms		Autoimmune conditions	Increase in testicular cancer	Not known	Not known

1. Ehrhardt, A. A., H. F. L. Meyer-Bahlburg, L. R. Rosen, J. F. Feldman, N. P. Veridiano, I. Zimmerman, and B. S. McEwen (1985). "Sexual orientation after prenatal exposure to exogenous estrogen," *Archives of Sexual Behavior* 14 (1): 57–77. doi:10.1007/BF0154135.

2. Kerlin, S. P. (2006–08). "Prenatal exposure to diethylstilbestrol (DES) in males and gender-related disorders: Results from a 5-year study," *International Behavioral Development Symposium* 2005.