

# DES *Action* VOICE

A Focus On Diethylstilbestrol

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## Researchers Seek DES Biomarker

### *Can a Blood Test Confirm Prenatal DES Exposure?*

By Fran Howell

You cannot look at individuals and know they are DES Daughters or DES Sons, as no outward signs exist. It has long been the hope that someday tests could identify a biomarker to prove prenatal DES exposure. Now scientists are going after it.

Robert N. Hoover, M.D., ScD, is the Director of the National Cancer Institute Epidemiology and Biostatistics Program, which houses the DES Follow-up Study. Under the auspices of that study, 60 participants will be recruited to provide blood samples. Thirty will be known DES-exposed with a matched set of 30 unexposed participants.

According to Hoover, researchers will look for biological differences between the two groups. "This is something we couldn't do without recent advances in science," he says.

Animal research has identified per-

sistent epigenetic changes that could be responsible for adverse health impacts. Epigenetic changes are not DNA mutations but rather alterations in how genes turn on and off in the body to accomplish tasks they were designed to do. For example, if genes that protect against breast cancer don't operate properly, then risks for the disease may increase.

**"We hope to find a DES signature of epigenetic changes in humans, while also ascertaining if there are differences in hormone concentrations between exposed and unexposed individuals," says Hoover.**

He adds that these blood samples may help scientists look for distinguishing differences that could be explained by dose and timing of prenatal DES exposure. "This could be the beginning of unraveling mysteries as to why adverse health impacts vary with-

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### **Biomarkers**

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in the DES-exposed population."

Individuals asked to give blood for testing will be recruited *only* from participants in the DES Follow-up Study whose health has been monitored for years and who have medical record proof of DES exposure, or the lack of it for the control group. Hoover hopes to have initial data early next year.

Anticipation is high among environmental scientists that a DES biomarker can be identified, because DES is considered the ultimate model for studying the impact of human prenatal exposure to endocrine disruptors.

"We are starting small but with the promise that if something looks interesting, we'll have the possibility of getting resources to do additional work in the future with a larger study," Hoover says.