

# PBB exposure can result in adverse health effects



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**by Greg Nelson**  
**Herald Editor**

Further PBB testing on Gratiot County residents and others in the state will likely be delayed due to the lack of funding.

However, work is still taking place.

Dr. Michele Marcus has been involved in researching health risks posed by exposure PBB and other environmental contaminants for 18 years.

She heads the team from the Rollins School of Public Health at Emory University in Atlanta, Ga. that conducted blood tests on several hundred Gratiot County residents in 2013 and 2014.

Not only has she studied what effect that hazardous chemicals can have on those directly exposed, but their offspring.

Their daughters may reach puberty at an earlier age but be shorter than average, while their sons might have a slower grow rate and experience more genital and urinary problems than normal.

PBB exposure can affect the endocrine, immune and reproductive systems, and adversely impact liver function.

It can also cause skin rashes, hair loss, memory loss and joint problems.

“Children are more at risk than adults because they are growing and developing at a very fast rate,” Marcus said.

However, researchers must also look at potential reasons for any of those health-related issues including genetic makeup, lifestyle, diet, exercise and other exposures, she added.

Many doctors don’t know what effects exposure to PBB and other toxic chemicals can cause, Marcus said.

That’s why researchers have developed information sheets that are available for physicians.

Among the other potential health effects related to PBB contamination in Michigan are:

- \*Men with high PBB exposure were more likely to report thyroid disease compared to those with low PBB exposure.

- \*Women with high PBB exposure and recent weight loss had shorter menstrual cycle lengths and longer bleed lengths than women with low exposure. Notably, the recent weight loss is likely to have released more PBB from adipose tissue into the circulation.

- \*Among women with high exposure to PBB there were a few more cases of breast cancer than expected (nine versus four expected in a population this size), with an odds ratio of 3-to-1 compared to women with low PBB exposure levels.

- \*PBB can cross the placenta and has been detected in the breast milk of highly exposed mothers. Children born to highly exposed mothers were more likely to have PBB detected in their blood than children of mothers with lower exposure. Those who were breastfed for more than five months were six times more likely to have PBB detected in their blood than children who were not breastfed.

- \*Breastfed daughters exposed to high levels of PBB in utero had an average

age of menarche of 11.6 years, approximately one year earlier than breastfed daughters exposed to low levels of PBB in utero or daughters who were not breastfed.

\*Daughters now of reproductive age exposed to mid and high levels of PBB in utero were more likely to experience miscarriages when compared to women with the lowest exposed to PBB in utero. Exposure during infancy to PBB contaminated breast milk further increased the risk.

\*Sons of women highly exposed to PBB were more likely to report a genitourinary condition, such as hernia, hydrocele, cryptorchidism, hypospadias or varicocele, than sons of the least exposed women. Most of the findings are based on studies that compared PBB Registry members with high blood levels of PBB to those with low or non-detectable levels.

According to researchers, other risk factors were also considered in the analysis and adjusted for when possible.