

# EXHIBIT 53

Archive d: Friday, January 06, 2017 10:44:24 AM  
From: Andy Kawczak  
To: Andy Kawczak (andyk@4taconic.com)  
Subject: FW: vaccines  
Importance: Normal

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From: Andy Kawczak [mailto:andyk@4taconic.com]  
Sent: Wednesday, January 25, 2012 12:37 PM  
To: 'Timothy Kosto'; 'larryc@4taconic.com'  
Subject: vaccines

Tim/Larry: (Please read the story below) -Taconic will want to be especially careful the new FILM we will be making does not include C8/etc. since the film will likely be used on vaccine bottles.

andyk

January 24, 2012  
C8 may make vaccines less effective, study says  
By Ken Ward Jr.

The Charleston Gazette  
Advertiser



CHARLESTON, W.Va. — Researchers have found that children exposed to the toxic chemical C8 may experience reduced effectiveness of childhood vaccinations, according to a significant new study being published Wednesday in the Journal of the American Medical Association.

The study discovered lower levels of antibodies that vaccines provide to fight infections among children with elevated exposures to C8 and similar chemicals that have been widely used in nonstick food packaging, stain-resistant textiles, nonstick cookware and water-resistant clothing.

Harvard University researchers warned that the results, if replicated in future studies, could indicate that perfluorinated compounds, or PFCs, are related to much broader immune system problems beyond the two vaccines they studied.

"These findings suggest a decreased effect of childhood vaccines and may reflect a more general immune system deficit," wrote Dr. Philippe Grandjean, lead author and an adjunct professor of environmental health at the Harvard School of Public Health.

Scientists who are following C8 research cautioned that this is the first human study to examine the issue, and that it's too soon to say if PFC exposure is actually causing the decreased vaccine levels.

"If this ends up being confirmed, if these chemicals really do reduce the ability to fight off certain infections, then the concern is that the human immune response is affected," said Dr. Alan Ducatman, dean of West Virginia University's School of Public Health and co-author of several previous C8 papers.

Grandjean and his colleagues compared vaccine levels and C8 blood concentrations among 656 children born in the Faeroe Islands from 1999 to 2001, with follow-up investigations performed in 2008. The Faeroe Islands is a fishing community in the Norwegian Sea. The area's marine food diet is associated with PFC intake, and the government-run health-care system there provides a wealth of detailed data making such studies easier to conduct.

The study focused on vaccines routinely given to children to prevent tetanus and diphtheria.

Researchers found that prenatal exposures to PFCs, measured by chemical concentrations in the mothers' blood, were associated with lower levels of the tetanus and diphtheria vaccines. They found similar associations when comparing postnatal PFC exposures and vaccine levels.

For example, at a doubled postnatal exposure, the overall vaccine concentration at age 7 was approximately halved.

Children with twice as much C8 in their blood were more than four times more likely to have vaccine concentrations that were "below a clinically protective level," according to the study.

"If the associations are causal, the clinical importance of our findings is that PFC exposure may increase a child's risk for not being protected against diphtheria and tetanus, despite a full schedule of vaccinations," the study authors wrote.

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For example, at a doubled postnatal exposure, the overall vaccine concentration at age 7 was approximately halved.

Children with twice as much CB in their blood were more than four times more likely to have vaccine concentrations that were "below a clinically protective level," according to the study.

"If the associations are causal, the clinical importance of our findings is that PFC exposure may increase a child's risk for not being protected against diphtheria and tetanus, despite a full schedule of vaccinations," the study authors wrote.

The authors explained that vaccine effectiveness relies on the proper functioning of the body's immune system, and that a link between PFC exposure and vaccine levels could also reflect a more general problem with immune system function.

"For this reason, the PFC-associated decreases in antibody concentrations may indicate the potential existence of immune system deficits beyond the protection against the two specific bacteria examined in this study," they wrote.

The new paper comes after December's release by an unrelated three-person team of scientists of a "probable link" finding between CB and high blood pressure among pregnant women -- the first major conclusion of the CB Science Panel's six-year study of the DuPont Co. chemical.

Panel members had also said they viewed evidence as "insufficient" to conclude chemical exposure was related to birth defects, pre-term births, low birth weight, miscarriages and stillbirths.

The panel's work is part of a class-action lawsuit settlement between DuPont and Mid-Ohio Valley residents whose water was contaminated with CB by DuPont's nearby Washington Works plant.

CB is another name for perfluorooctanoate acid, or PFOA. In West Virginia, DuPont has used CB since the 1950s as a processing agent to make Teflon and other nonstick products, oil-resistant paper packaging and stain-resistant textiles.

DuPont and other companies have reduced their emissions and agreed on a voluntary phase-out of the chemical, but researchers are still concerned about a growing list of possible health effects and about the chemical's presence in consumer products, as well as continued pollution from waste disposal practices.

David Savitz, a Brown University scientist and panel member, said that the new Harvard study found "bigger effects than we're seeing at much higher exposure levels" than his group has so far pinpointed.

The CB Science Panel has focused on potential health effects among Mid-Ohio Valley residents who, because of drinking water exposure to CB and living near the DuPont plant, have far more CB in their bodies than the average American.

Faeroe Islands children who were part of the Harvard study appear to have lower levels of PFCs in their blood than U.S. children, meaning the study results could be even more important for Americans, Savitz said.

"The biggest concern is not for these potential diseases, but whether this suggests a broader immune response," Savitz said. "That would suggest a greater and broader risk of infection and have a broader array of health consequences."

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