

**Butow, Mary**

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add

**From:** Pillsbury, Sarah  
**Sent:** Thursday, November 8, 2018 3:39 PM  
**To:** Butow, Mary  
**Subject:** FW: MCL/Health studies

Sarah Pillsbury, Administrator  
Drinking Water & Groundwater Bureau, NHDES  
29 Hazen Drive, PO Box 95, Concord, NH 03302  
Tel: (603) 271-1168 | Fax: (603) 271-5171

NHDES Be Well Informed Private Well App - An interactive web application for private well owners to interpret water quality test results and identify appropriate water treatment options

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**From:** [REDACTED]  
**Sent:** Thursday, November 08, 2018 12:02 PM  
**To:** Pillsbury, Sarah  
**Subject:** RE: MCL/Health studies

Dear Ms. Pillsbury,

In addition to the studies I sent to you in an earlier email, I would like to add the following:

## **Accumulation of perfluoroalkyl substances in human tissues.**

<https://www.ncbi.nlm.nih.gov/pubmed/23892228?dopt=Abstract>

"...In this study, the concentrations of 21 PFASs were analyzed in 99 samples of autopsy tissues (brain, liver, lung, bone, and kidney) from subjects who had been living in Tarragona (Catalonia, Spain). The samples were analyzed by solvent extraction and online purification by turbulent flow and liquid chromatography coupled to tandem mass spectrometry. The occurrence of PFASs was confirmed in all human tissues. Although PFASs accumulation followed particular trends depending on the specific tissue, some similarities were found. In kidney and lung, perfluorobutanoic acid was the most frequent compound, and at highest concentrations (median values: 263 and 807 ng/g in kidney and lung, respectively). In liver and brain, perfluorohexanoic acid showed the maximum levels (median: 68.3 and 141 ng/g, respectively), while perfluorooctanoic acid was the most contributively in bone (median: 20.9 ng/g). Lung tissues accumulated the highest concentration of PFASs. However, perfluorooctane sulfonic acid and perfluorooctanoic acid were more prevalent in liver and bone, respectively ..." [Perez F et al; Environ Int 59: 354-62 (2013)] **\*\*PEER REVIEWED\*\*** PubMed Abstract

Thank you for reviewing these scientific studies.

Sincerely,

Gail M. Shaw

Sent from Samsung Galaxy smartphone.

----- Original message -----

From: "Pillsbury, Sarah" <Sarah.Pillsbury@des.nh.gov>  
Date: 10/29/18 11:42 AM (GMT-05:00)  
To: 'Gail Shaw' <[REDACTED]>  
Subject: RE: MCL/Health studies

Thank you.

Sarah Pillsbury, Administrator

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**From:** Gail Shaw [mailto:[REDACTED]]  
**Sent:** Monday, October 29, 2018 10:04 AM  
**To:** Pillsbury, Sarah  
**Subject:** MCL/Health studies

**BREAST TISSUE / BREAST CANCER:**

"...PFOA is able to stimulate cell migration and invasion, demonstrating its potential to induce neoplastic transformation of human breast epithelial cells"

Ref: <https://link.springer.com/article/10.1007/s00204-018-2181-4>

**BONES**

"The results show that PFOA accumulates in bone and is present in bones until the old age. PFOA has the potential to influence bone turnover over a long period of time. Therefore bone is a target tissue for PFOA, and altered bone geometry and mineral density seem to persist throughout the life ..."

Ref: <https://www.sciencedirect.com/science/article/pii/S0041008X16300710>

## **PANCREAS**

"We demonstrated for the first time that these two pollutants significantly affect the early stages of human pancreatic progenitor cell specification, even at very low environmentally and human-relevant doses. Thus, our findings further emphasize the substantial health risks associated with prenatal exposure to PFOA and PFOS."

Ref: <https://pubs.acs.org/doi/abs/10.1021/acs.estlett.8b00193>

## **BRAIN / CEREBRAL CORTEX**

"...we extrapolate that circulating PFOA may affect organogenesis in offspring, such as the brain."

<https://link.springer.com/article/10.1007/s11356-018-2117-9>

## **MAST CELL**

"This study demonstrated that PFOS more intensifies the mast cell-mediated allergic inflammation."



Comment

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