

## Veille Internet BPA du 14/11/2011 au 27/11/2011

### Bisphénol A (BPA) sur Internet : Faits marquants

#### ARTICLES EN FRANÇAIS

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#### ARTICLES EN ANGLAIS

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| • Environmentalhealthnews | <p><b>- BPA exposure can alter memory in adults, rodent study suggests.</b></p> <p><i>Des rats adultes mâles exposés une seule fois à une faible dose de bisphénol A (&lt; à la DJA) développent des troubles de la mémoire et montrent une altération de leur structure cérébrale.</i></p>   | p4-5 |
| • News.harvard.edu        | <p><b>- Canned soup linked to higher BPA levels</b> (voir article de France soir)</p> <p><i>Des chercheurs de l'Ecole de Santé Publique de Harvard ont trouvé que des volontaires qui avaient consommé un bol de soupe en boîte quotidiennement pendant 5 jours avaient des concentrations urinaires de BPA supérieures de plus de 1000 % à celles des individus qui avaient consommé de la soupe fraîche. Cette étude, publiée dans le Journal of the American Medical Association (JAMA), est une des premières à quantifier les niveaux de BPA chez l'humain après l'ingestion d'aliments en conserve.</i></p> | p6-7 |
| • Foodsafetynews.com      | <p><b>- 'Concerning' BPA Levels in Thanksgiving Canned Foods</b></p> <p><i>Le "Breast Cancer Fund" a fait analyser par un laboratoire indépendant des aliments en conserve destinés au repas de Thanksgiving. Les résultats montrent une imprégnation des aliments par le BPA dans la très grande majorité des cas.</i></p>   | p8   |

## Bisphénol A : Attention aux soupes en boîte

Une étude américaine vient de mettre en évidence la concentration importante de Bisphénol A dans des produits en conserve.



**Le bisphénol A se trouve notamment dans les boîtes de conserve** SIPA/CLOSON/SOPIX

Les chercheurs de l'université d'Harvard ont découvert des taux impressionnants de Bisphénol A chez des personnes qui avaient consommé pendant cinq jours d'affilée de la soupe en boîte. Ces derniers avaient en effet un taux du composant chimique supérieur de plus de 1.200% comparé à un groupe témoin qui buvait de la soupe fraîche. Cette étude, présentée comme « *l'une des premières à quantifier le taux de bisphénol A dans le corps humain après ingestion de nourriture en conserve* », a été publiée par des chercheurs de l'université de Harvard dans le Journal of the American Medical Association.

### **Intégralement éliminé dans les urines ?**

« Nous savons depuis un moment que consommer des boissons qui sont restées longtemps dans certains récipients en plastique dur accroissait la présence de bisphénol A dans votre corps explique Jenny Carwile, l'un des co-auteurs de l'étude. Mais notre étude suggère que la nourriture en conserve pourrait être un sujet d'inquiétude plus important encore, surtout en raison de son usage très répandu ». Analysé dans les urines des participants à l'étude, le Bisphénol A a été éliminé par ces derniers mais les chercheurs ignorent si une partie reste ou non dans l'organisme.

En juin 2010, [la France a interdit la fabrication et la commercialisation des biberons](#) qui contiennent du Bisphénol A, substance classée « *préoccupante pour la fertilité humaine* ». Sur proposition du PS, les députés veulent aujourd'hui aller plus loin et complètement interdire le BPA que l'on retrouve dans des bonbonnes d'eau, les canettes ou encore les boîtes de conserve. Cette mesure devrait intervenir d'ici 2014, le temps que les industriels trouvent un composé chimique de substitution.

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# Les biberons contenant du bisphénol A interdits

Publié le mercredi 23 novembre 2011 à 03H00

A l'issue de sa réunion hebdomadaire, les élus du gouvernement ont décidé d'interdire l'importation de biberons contenant du bisphénol A.

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## **BPA exposure can alter memory in adults, rodent study suggests.**

Nov 17, 2011

Eilam-Stock, T, P Serrano, M Frankfurt and V Luine, 2011. **Bisphenol-A impairs memory and reduces dendritic spine density in adult male rats.** *Behavioral Neuroscience* <http://dx.doi.org/10.1037/a0025959>.

Synopsis by [Steven Neese](#)

Bisphenol-A at a level below the U.S. safe daily dose impairs memory and alters brain structure in adult male rats exposed to the chemical just once.

Adult male rats exposed to a single dose of the contaminant bisphenol A (BPA) had trouble remembering an object's look or location after only a couple of hours, according to a study published in *Behavioral Neuroscience*.

Researchers also found changes in brain proteins and cells involved in learning and memory. The part of the brain cell – called dendritic spines – that allow cells to talk to each other were less dense in the memory regions of the brain after exposure to BPA.

The study specifically measured memory consolidation – the first process of remembering where an experience is converted into a memory.

This is one of the first studies to measure the effects of a one-time, low dose BPA exposure on memory processes and brain cell formation in adult males. The results echo prior studies that also find BPA impairs memory. Although an animal study, these results suggest that exposures to the chemical have the potential to disrupt memory processes and interfere with brain processes associated with learning.

BPA is a high production chemical used in the manufacture of a variety of plastic products, in epoxy resin linings of cans and in some thermal receipt paper. The chemical can escape from these products. Common routes of exposure include eating contaminated food and drink, absorption through the skin and breathing it in.

BPA has hormonal properties. The chemical can mimic estrogens – the female sex hormones. On the opposite end, it can also disrupt the actions of estrogens and androgens – the male sex hormone. Both estrogens and androgens can play a role in memory.

Most research has studied the effects of developmental BPA exposures, while few have addressed potential health effects in adults.

Researchers test sight and spatial memory in rats by measuring their ability to recognize objects and their locations. In this study, adult male rats explored two identical objects for three minutes. Immediately after, the rats were injected with 40 micrograms per kilograms ( $\mu\text{g}/\text{kg}$ ) body weight of BPA. The current U.S. Environmental Protection Agency reference dose the exposure dose that is considered safe is 50  $\mu\text{g}/\text{kg}$  body weight per day.

Two hours later, one of the objects was either moved to a new location or replaced with a different object. Researchers measured the time the rats explored the original objects as well as the moved and new objects. More

time with an original object that was already known indicates the rat did not remember. They also analyzed dendritic spine density and certain brain proteins associated with processing memories.

The BPA-exposed rats explored the new and original objects and their placement for the same amount of time before and after treatment. Unexposed rats, on the other hand, spent less time with the original objects, indicating they "remembered" them.

Exposure to BPA also reduced the density of dendritic spines in the hippocampus and prefrontal cortex two brain regions important for memory. A dendritic spine is part of a cell that is important for communication between cells.

BPA also altered two brain proteins important to learning PSD-95 and pCREB. The changes in expression of these brain markers in the brain may be related to the memory impairment seen after chemical exposure.

Since human exposure to BPA is ubiquitous, future studies will need to confirm if these findings apply to people, too.

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# HARVARDgazette

## Canned soup linked to higher BPA levels

Found in the can's lining, BPA is associated with adverse health effects



*Justin Ide/Harvard Staff Photographer*

The Harvard School of Public Health researchers set out to quantify whether canned-soup consumption would increase urinary BPA concentrations relative to eating fresh soup. Fresh soup proved to be the healthier choice.

A new study from researchers at the [Harvard School of Public Health](#) (HSPH) has found that a group of volunteers who consumed a serving of canned soup each day for five consecutive days had a more than 1,000 percent increase in [urinary bisphenol A](#) (BPA) concentrations compared with the same individuals who then consumed fresh soup daily for five days. The study is one of the first to quantify BPA levels in humans after ingestion of canned foods.

The findings were published online Nov. 22 in the [Journal of the American Medical Association](#) (JAMA) and will appear in the Nov. 23-30 print issue.

“Previous studies have linked elevated BPA levels with adverse health effects,” said [Jenny Carwile](#), a doctoral student in the [Department of Epidemiology](#) at HSPH and lead author of the study. “The next step was to figure out how people are getting exposed to BPA. We’ve known for a while that drinking beverages that have been stored in certain hard plastics can increase the amount of BPA in your body. This study suggests that canned foods may be an even greater concern, especially given their wide use.”

Exposure to the endocrine-disrupting chemical BPA, used in the lining of metal food and beverage cans, has been shown to interfere with reproductive development in animals and has been linked with cardiovascular disease, diabetes, and obesity in humans. In addition to the lining of food and beverage cans, BPA is also found in polycarbonate bottles (identified by the recycling number 7) and dentistry composites and sealants.

The researchers, led by Carwile and [Karin Michels](#), associate professor in the Department of Epidemiology, set out to quantify whether canned-soup consumption would increase urinary BPA concentrations relative to eating fresh soup.

They recruited student and staff volunteers from HSPH. One group consumed a 12-ounce serving of vegetarian canned soup each day for five days; another group consumed 12 ounces of vegetarian fresh soup (prepared without canned ingredients) daily for five days. After a two-day “washout” period, the groups reversed their assignments.

Urine samples of the 75 volunteers taken during the testing showed that consumption of a serving of canned soup daily was associated with a 1,221 percent increase in BPA compared with levels in urine collected after consumption of fresh soup.

The researchers note that the elevation in urinary BPA concentrations may be temporary and that further research is needed to quantify its duration.

“The magnitude of the rise in urinary BPA we observed after just one serving of soup was unexpected and may be of concern among individuals who regularly consume foods from cans or drink several canned beverages daily. It may be advisable for manufacturers to consider eliminating BPA from can linings,” said Michels, senior author of the study.

Support for this study was provided by an [Allen Foundation](#) grant and a Training Grant in Environmental Epidemiology from the [National Institute of Environmental Health Sciences](#).

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# 'Concerning' BPA Levels in Thanksgiving Canned Foods

by [Helena Bottemiller](#) | Nov 17, 2011

The Breast Cancer Fund, an advocacy group aimed at reducing environmental factors that contribute to the disease, calculated how much bisphenol-A (BPA) might be in a canned food-heavy Thanksgiving meal, and the results are not good for those concerned about exposure to the controversial chemical.

The group tested canned turkey gravy, sweet corn, green beans, pumpkin, and cranberry sauce and found the products contain a "concerning level" of BPA, an industrial chemical used in the epoxy-resin linings of cans, receipts, and hard plastic bottles. The ubiquitous chemical has been in the spotlight after being linked to breast and other cancers, diabetes, and behavioral disorders in studies.

The report, "BPA in Thanksgiving Canned Food," looked at: Campbell's Cream of Mushroom Soup, Campbell's Turkey Gravy, Carnation Evaporated Milk (by Nestle), Del Monte Fresh Cut Sweet Corn (Cream Style), Green Giant Cut Green Beans (by General Mills), Libby's Pumpkin (by Nestle), and Ocean Spray Jellied Cranberry Sauce. Servings of almost half of the products tested had levels of BPA comparable concentrations linked to adverse health outcomes in lab studies, according to the group.

The levels of BPA found in the products, which were tested by an independent lab in San Francisco, varied greatly, according to the report. In Del Monte creamed corn, for example, BPA levels ranged from non-detectable to 221 parts per billion, and levels in Campbell's Turkey Gravy ranged from 5 to 125 parts per billion (ppb).

"We know from recent research that a BPA meal creates a spike of this estrogenic chemical in the blood," said William Goodson, M.D., a breast cancer surgeon and Senior Clinical Research Scientist at California Pacific Medical Center Research Institute, who recently published on BPA and cancer. "Natural hormones work by spikes, so this is exactly what you don't want, especially in young kids, who shouldn't have any estrogenic spikes at all."

For Libby's Pumpkin, used widely in pumpkin pies, tests found between 3 to 54 ppb. Green Giant Green Beans, another Thanksgiving staple, was found to contain between 3 and 18 ppb.

The Breast Cancer Fund cited studies that showed adverse health outcomes at concentrations at or above 11 ppb. "Twelve of the food cans we tested would lead to exposures at these levels in a woman of average weight (65.4 kg, or 144 lbs.)."

The study found no BPA in all four cans of Ocean Spray Cranberry Sauce tested. Breast Cancer Fund said Ocean Spray uses BPA in cans but tests show the chemical is not leaching into the sauce.

The results of the study can be found [here](#).