

BPA-Free, Here We Go Again!

BY STEVE HENTGES | MARCH 28TH 2017 02:32 PM

The headline almost jumps out at you – “*BPA Substitute Could Cause Adverse Pregnancy Outcomes.*” That alarming headline appears in an [industry publication](#), but the same story was widely reported in the popular media, which tends to cover science only when they can create scare stories.

The article reports the results of a new [study](#) from a group of Chinese researchers on health effects associated with a substance named fluorene-9-bisphenol (BHFP), which the authors claim is now a common alternative to bisphenol A (BPA). According to the researchers, and amplified by the media, BHFP is now used in a wide variety of plastic consumer products including baby bottles and water bottles that are labelled as BPA-Free.

But if you see the media articles, you really need to read beyond the scary headlines. What you read may be closer to fake news than real “news that you can use.” The reason was touched upon by [Popular Science](#), which noted that “*none of this matters if we’re not coming into contact with BHFP (sic) – it’s only a potential problem if humans are exposed to it.*”

As it turns out, the evidence that BHFP is used in consumer products is surprisingly thin. But in spite of the shortcomings of the research, and the media coverage that lacked much fact-checking, the theme of the study nevertheless reveals two underlying truths.

First, as suggested by the study, replacing BPA may be counter-productive if the replacement is not well-tested and found to be safe for its use. Second and more importantly, BPA is one of the best tested substances in commerce. Based on the extensive scientific data available for BPA, the U.S. Food and Drug Administration (FDA) answers the question “[Is BPA safe?](#)” with an unambiguous answer – “Yes.” If we listen to the science, there’s no need to replace BPA at all, especially with something of uncertain safety.

So, should you be concerned about BHFP? In a word, no. You’ll probably never even come into contact with it.

A better question is whether you should be worried about products that contain BPA or are labelled as BPA-Free? The choice is yours, but keep in mind that BPA is well tested and confirmed to be safe. The replacements, maybe not so much.

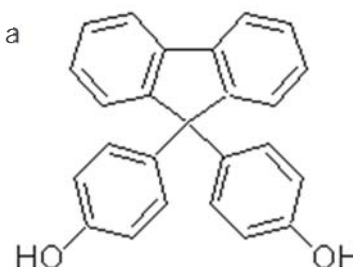
The Story Behind the Story

As a result of recent attention to BPA, many consumer products are now labelled as BPA-Free, implying they are better or safer than a product made with BPA. Scientifically speaking, that implication might best be described as a hypothesis that requires scientific data to know if it is true or not.

The scientific process is designed to test hypotheses and that's exactly what many scientists are now doing with various BPA replacements. New studies are regularly published in the scientific literature on chemicals that are said to be substitutes for BPA.

The recent [study](#) from these Chinese researchers examined the potential for BHPF to cause reproductive effects. The substance was reported to exhibit anti-estrogenic characteristics and the researchers noted that "[s]erious developmental and reproductive effects of BHPF ... were observed in this study."

The results are certainly novel. A search of [PubMed](#), which is a comprehensive biomedical literature database, revealed no other health effect studies on BHPF. And, as reported by the researchers and the media, the results of this particular study are also alarming.



But are the results important for consumers? As noted by Popular Science, the results only matter if people are actually exposed to BHPF. If not, the results are only of academic interest.

Are You Actually Exposed to BHPF?

According to the researchers, BHPF is used to make a variety of plastics and resins that are used in a wide range of products. The [San Francisco Chronicle](#) bluntly stated that the plastics industry is "manufacturing so-called 'BPA-free' water bottles made with an alternative compound called flueorene-9-bisphenol (BHPF)."

Suspiciously though, the researcher's claim of widespread use is not supported by any reliable references. Of the four citations provided in the study, none verify any commercial use of BHPF and one doesn't even relate to BHPF at all.

The researchers also report the presence of BHPF in water held in various plastic water bottles and baby bottles, which may seem to offer proof that BHPF is used in these common consumer products. But these results are questionable at best as the actual bottles were never tested for the presence of BHPF.

The analytical method for BHPF in water is reported to have an extraordinarily low limit of detection of 0.1 ng/L (0.1 parts per trillion!), but data to validate the method are suspiciously sparse. Making it even more dubious, that limit is 2 to 3 orders of magnitude lower than the limit of detection for BPA, which has been the subject of well over a hundred studies by analytical chemists worldwide. Are these researchers really good, just lucky, or perhaps mistaken about BHPF?

Claims that BHPF is commonly found in human blood suffer from the same problems with the analytical method. A more plausible explanation for the reported findings of BHPF in water and blood was reported in the Popular Science article: *"It's more likely that the detected substances were contamination from their lab equipment ... or the substances were misidentified."*

So What Can We Learn From the Study?

The claims that BHPF is in widespread use and that people are commonly exposed to BHPF are simply not credible. In spite of the alarming headlines about serious health effects from BHPF, there is no sound, scientific basis for alarm.

Nevertheless, the new study can be instructive. Although BHPF is not a concern, the researchers, as highlighted in [Popular Science](#), have identified an important underlying issue:

"We think," wrote Hu to PopSci, "that toxicity of substitutes should be assessed comprehensively, and regulations for substitution of chemicals should be developed in the future."

More eloquently, Professor Richard Sharpe, Group Leader of the Male Reproductive Health Research Team at the University of Edinburgh [highlighted](#) the two underlying truths behind this new study:

“As far as regulatory bodies such as EFSA and FDA are concerned there is no convincing evidence for replacing use of bisphenol A by substitute chemicals, though environmental pressure groups continue to press for a ban on use of bisphenol A and its replacement. This study highlights that such replacement may be jumping ‘out of the frying pan and into the fire’, by showing that one of the suggested replacement chemicals may itself have potential to cause adverse endocrine effects, although it is unclear from the studies if humans would be exposed sufficiently for this to cause harm.

“A huge amount is known about bisphenol A in terms of its activity, human exposure, metabolism etc, and it is this level of understanding that has enabled regulatory bodies to determine the risks that our exposure poses to our health. In contrast, we have very little understanding about the suggested replacement chemicals. Therefore this study, which appears generally well-designed and executed, reminds us that replacing use of one chemical by another needs to be an evidence-led process, otherwise we may do more harm than good.”

Perhaps the most important lesson to learn from this recent study and the alarming media coverage that ensued is to not take scary headlines at face value. The story behind the story may be far more important than the story itself.