

## **BfR assesses research results of samples of mineral water with hormone-like effects**

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Recently media reports on research results by scientists at Frankfurt University concerning samples of mineral water with hormone-like effects have disconcerted consumers. In the study, such effects were determined in 12 out of 20 mineral waters tested. The scientists assume that this oestrogen-like effect originates from substances in plastic bottles that contain the mineral water. The position of the Federal Institute of Risk Assessment (BfR) is that mineral water essentially should have no hormone-like effects. Substances such as the plasticiser DEHP, bisphenol A or nonylphenol are known to exhibit hormone-like characteristics that may have negative effects on offspring. The BfR's assessment of the study, however, has led to the conclusion that the results do not allow any assumption on the origin of such hormonally acting substances from plastic bottles.

In the study in question, two test systems were used to examine the presence of substances with hormonal effects in mineral water. In the first test system, mineral water of the same brand out of glass and plastic bottles was compared using an approved cell culture system. Samples showed no significant difference in the presence of hormonal effects in glass or plastic bottles, yet a definite difference was apparent between different brands of mineral water. The BfR concludes that this test neither substantiates that the hormone-like activities originate from the plastic bottles, nor is it possible to determine which substances are possibly relevant. The second test was carried out on a snail model. In the second test system freshwater snails were kept in glass and plastic bottles, and their reproductive behaviour was observed. The snails kept in the plastic bottles produced more embryos than those kept in glass bottles. However, whether this is caused by a contamination of hormone-like substances from plastic bottles or is a result of different living conditions in plastic and glass bottles cannot be decided based on the published data. From the BfR's point of view the data do not allow a scientific conclusion concerning consumer health risk.

Both tests allow no conclusion concerning the substances that cause a hormone-like effect in water. The BfR does not advise consumers to avoid the consumption of mineral water from plastic bottles as a result of Frankfurt University's study results. The BfR has no information on substances used in plastic bottle production with such hormonal effects that could migrate into the mineral water. The results especially raise questions concerning the substances and their origin.

The full version of the BfR Opinion in German is available on [http://www.bfr.bund.de/cm/208/bfr\\_bewertet\\_untersuchungsergebnisse\\_zu\\_mineralwasserpr oben\\_mit\\_hormonaehnlicher\\_wirkung.pdf](http://www.bfr.bund.de/cm/208/bfr_bewertet_untersuchungsergebnisse_zu_mineralwasserpr oben_mit_hormonaehnlicher_wirkung.pdf)