

Hong Kong research warns of sunscreen health risks

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New research in Hong Kong has found that UV filters commonly used in sunscreen are polluting surrounding waters and could endanger human health, one of the city's leading universities said Thursday.

An "extensive amount" of seven common UV filter chemicals was found in Hong Kong seawater as well as in fish, shrimps and mussels on aqua-

farms, scientists from Hong Kong Baptist University told reporters.

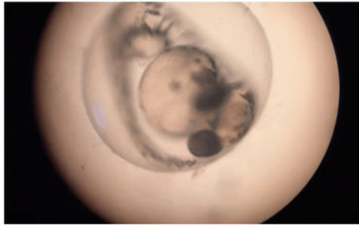
"The effect of these contaminants passing along the [food chain](#) to humans and the long-term impact on human fertility cannot be neglected," said Dr. Kelvin Leung, who led the research.

Tests performed on zebrafish, which share a similar genetic structure to humans, showed the polluted water caused abnormalities and a higher mortality rate in the fish's embryos as the chemicals entered the food chain.

The university described the study as a world-first in identifying the harm caused by a combination of polluting chemicals in [sunscreen](#).

Researchers said they would conduct further tests to learn more about the effects of UV filters on the human body.

畸形/發育異常魚卵



Normal zebrafish embryos
正常斑馬魚魚卵

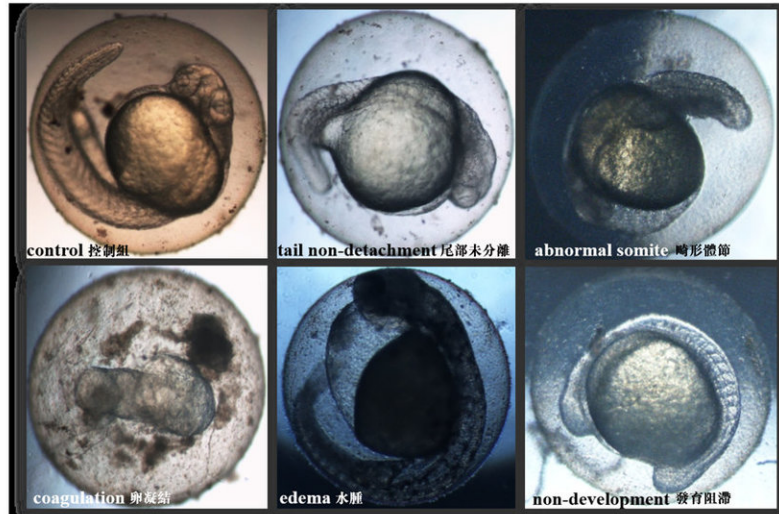


Fig. S2. Images of toxicity outcome of UV filters to zebrafish embryo under an inverted microscope.

The HKBU study finds the **synergistic effect** of UV filters in sunscreens harms the development of fish embryos. The images show the various abnormalities and malformations in zebrafish embryos. Credit: HKBU

The chemicals tested on the zebrafish study included octocrylene (known as OC), benzophenone-3 (known as BP-3) and ethylhexyl methoxycinnamate (known as EHMC), which were found to be the most abundant types of [chemical](#) UV filters in Hong Kong waters.

The European Union's International Chemical Secretariat has already established BP-3 as a threat to [human health](#) and called for it to be replaced with another, safer ingredient.

Dr. Leung added that these chemicals can accumulate in the human body and cannot be dissolved or diluted simply by drinking water.

There is growing international concern over the polluting effects of sunscreen.

Hawaii signed a bill in July to ban sunscreens containing chemicals harmful to coral reefs, which will take effect from 2021.

But the ban raised concerns that it may deter consumers from using sunscreen to protect their skin from cancer.

Leung called for more regulations on the use of chemicals in personal care products and recommended consumers use mineral-based sunscreens such as titanium dioxide and zinc oxide, or wear sun-protection clothing.

More information: Adela Jing Li et al. Joint Effects of Multiple UV Filters on Zebrafish Embryo Development, *Environmental Science & Technology* (2018). [dx.doi.org/10.1021/acs.est.8b02418](https://doi.org/10.1021/acs.est.8b02418)

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