Fact bite #38

Bioassays and toxicity testing

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Bioassays (short for biological assays) are a type of scientific experiment used to measure the effects of a substance including food contact chemicals (FCCs) on parts of a living organism or a biological system.

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The toxicological testing of food contact materials (FCMs) has largely focused on single substances and for only a few of the many potential toxicological endpoints, most prominently carcinogenicity and genotoxicity.

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In reality, people are exposed to complex mixtures of many substances migrating from FCMs into food, and upon chronic exposure to these chemical mixtures, a variety of toxic effects can occur.

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Current regulatory requirements (including in the EU and US) therefore do not sufficiently protect public health from hazardous FCCs because only individual substances used to make FCMs are tested and only for a limited set of toxic effects. The potential for endocrine disruption and other harmful effects is largely being overlooked.

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The safety of FCMs could be improved by developing bioassays to test the overall migrate, including (unknown) non-intentionally added substances, of finished food contact articles for multiple additional endpoints associated with non-communicable diseases including endocrine disruption.

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