



What are the environmental and health impacts of FCMs?

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Food
Packaging
Forum





<https://oceanconservancy.org/trash-free-seas/international-coastal-cleanup/annual-data-release/>

Top 10

ITEMS COLLECTED

- 1 Food Wrappers (candy, chips, etc.) 4,771,602 
- 2 Cigarette Butts 4,211,962 
- 3 Plastic Beverage Bottles 1,885,833 
- 4 Plastic Bottle Caps 1,500,523 
- 5 Straws, Stirrers 942,992 
- 6 Plastic Cups, Plates 754,969 
- 7 Plastic Grocery Bags 740,290 
- 8 Plastic Take Out/Away Containers 678,312 
- 9 Other Plastic Bags 611,100 
- 10 Plastic Lids 605,778 



- **CO₂ emissions production, use**
→ climate change, impacts of fossil fuel extraction
- **Intensive agriculture for feedstock**
→ biodiversity loss, soil fertility loss, disrupted nutrient cycles
- **Waste generation**
→ plastic pollution, land use for landfill, chemical pollution, CO₂
- **Water use**
→ declining water resources
- and more...



...what about food waste?

Enable
"experience"

Keep oxygen out:
preserve flavor

Enable
long term
storage

Convey
information to
consumer

Keep CO₂ = "fizz" in

Food packaging functions

Enable high-
throughput
production

Keep pests out

Enable retail
selling

Keep moisture out

Advertise the
product

Enable
traceability

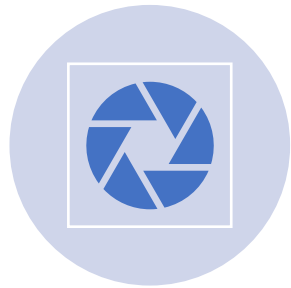
Prevent spoilage

Keep light out:
preserve vitamins
and taste

Enable logistics
of complex
global supply
chains

Enable
convenience

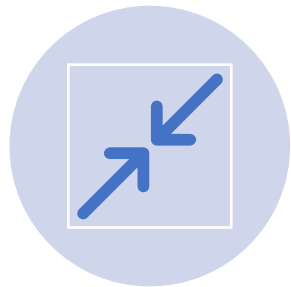
General conclusions on *environmental* impacts of FCMs



**Integrative assessment,
no single-issue focus**



Align with local situation



**Less is... less:
REDUCE & REUSE main focus**



**FCM strategy as part of all
environmental and human
health considerations:**

food production, procurement,
processing, food packaging and service
ware

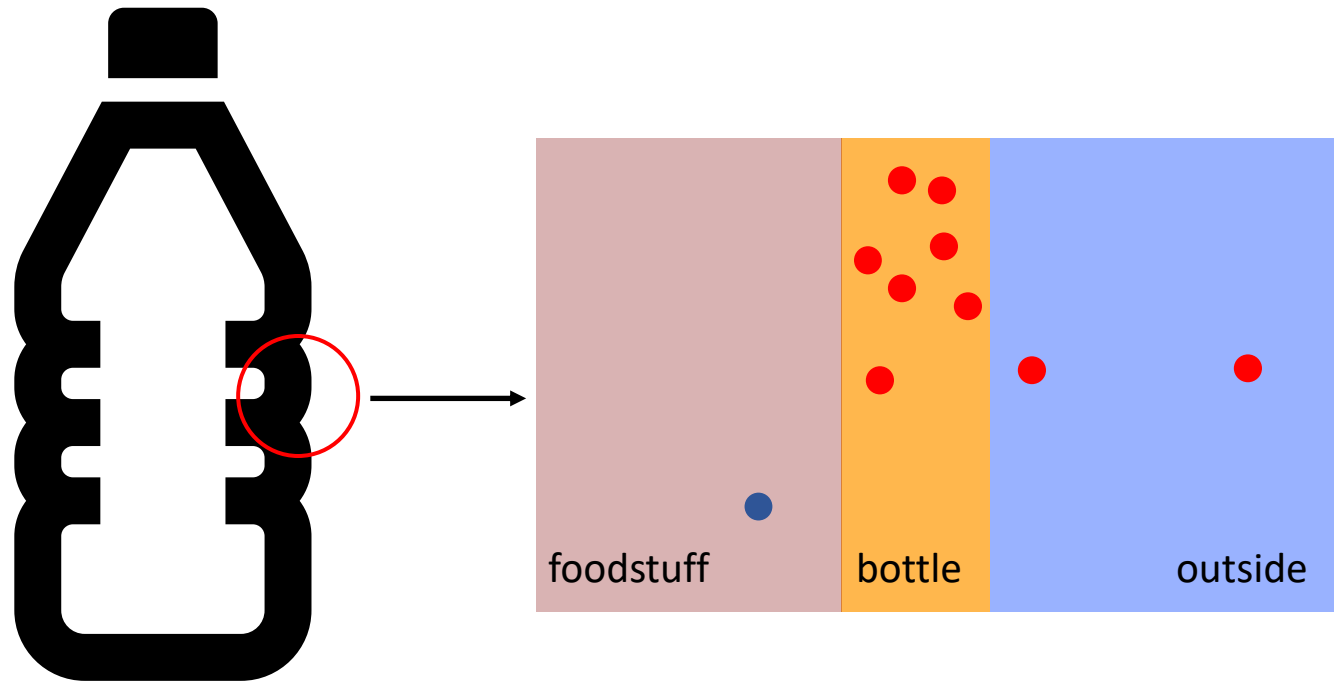
WHAT IS FOOD PACKAGING MADE OF?

- ◆ Food packaging can be made of many different materials in many different combinations.
- ◆ Thousands of different chemicals are used to produce food packaging.
- ◆ Some of these chemicals migrate from the packaging into the food.



Find out more: bit.ly/fpf-factsheet

Migration: chemicals transfer into food



- small molecule food contact chemical
- small molecule food ingredient

WHAT INFLUENCES MIGRATION OF CHEMICALS INTO FOOD?



...at high temperature



...when using small portion sizes



...after long contact times



...of fat-soluble chemicals into fatty foods



Find out more: bit.ly/fpf-factsheet



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low levels \neq safe levels

Learn more:

[Unwrapping](#)

[Food](#)

[Packaging](#)

[Video Blog](#)

What *types* of chemicals are in food contact materials?

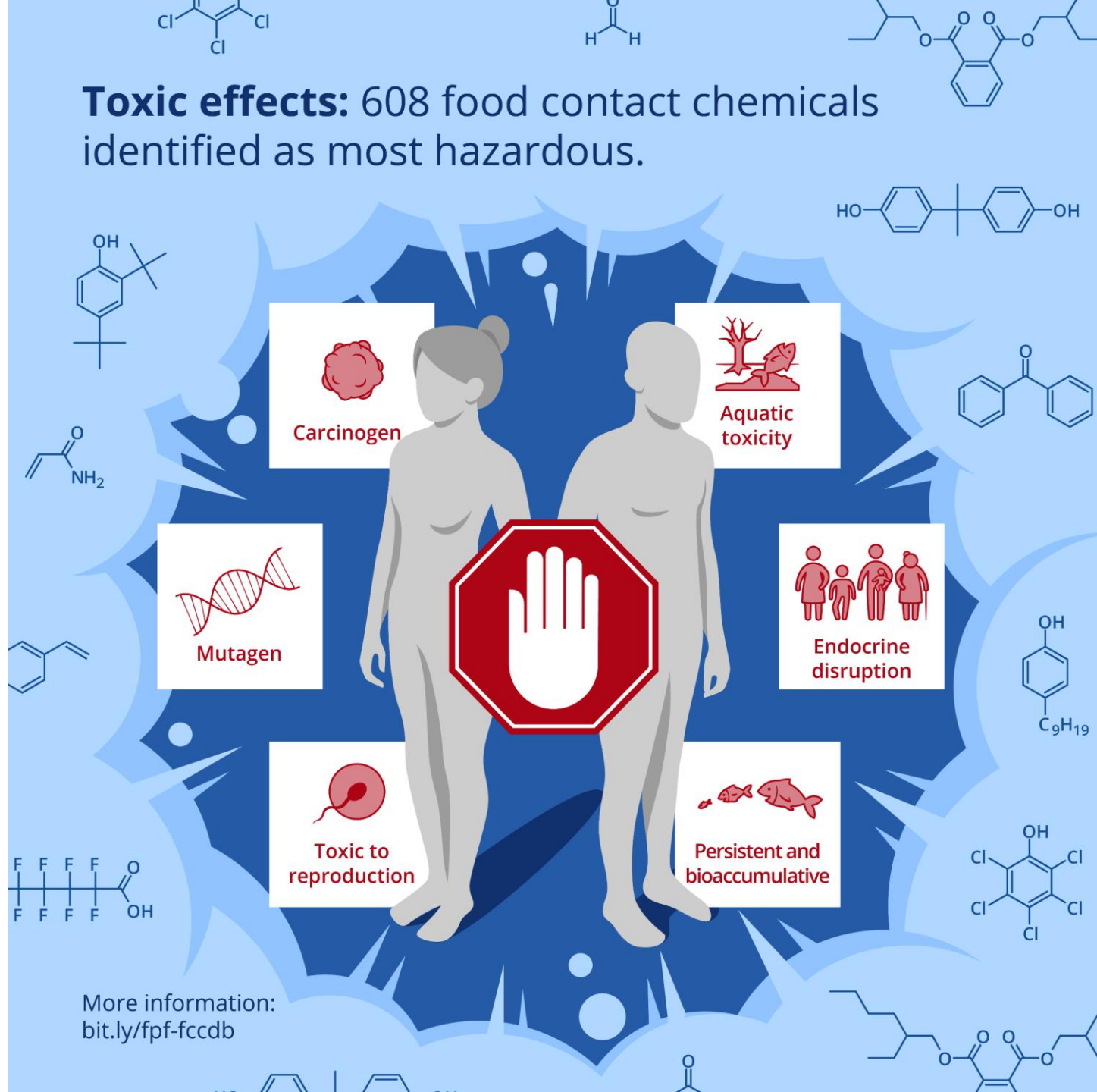
How do they affect health?

Global database: Over 12 200 chemicals used to produce food contact materials.



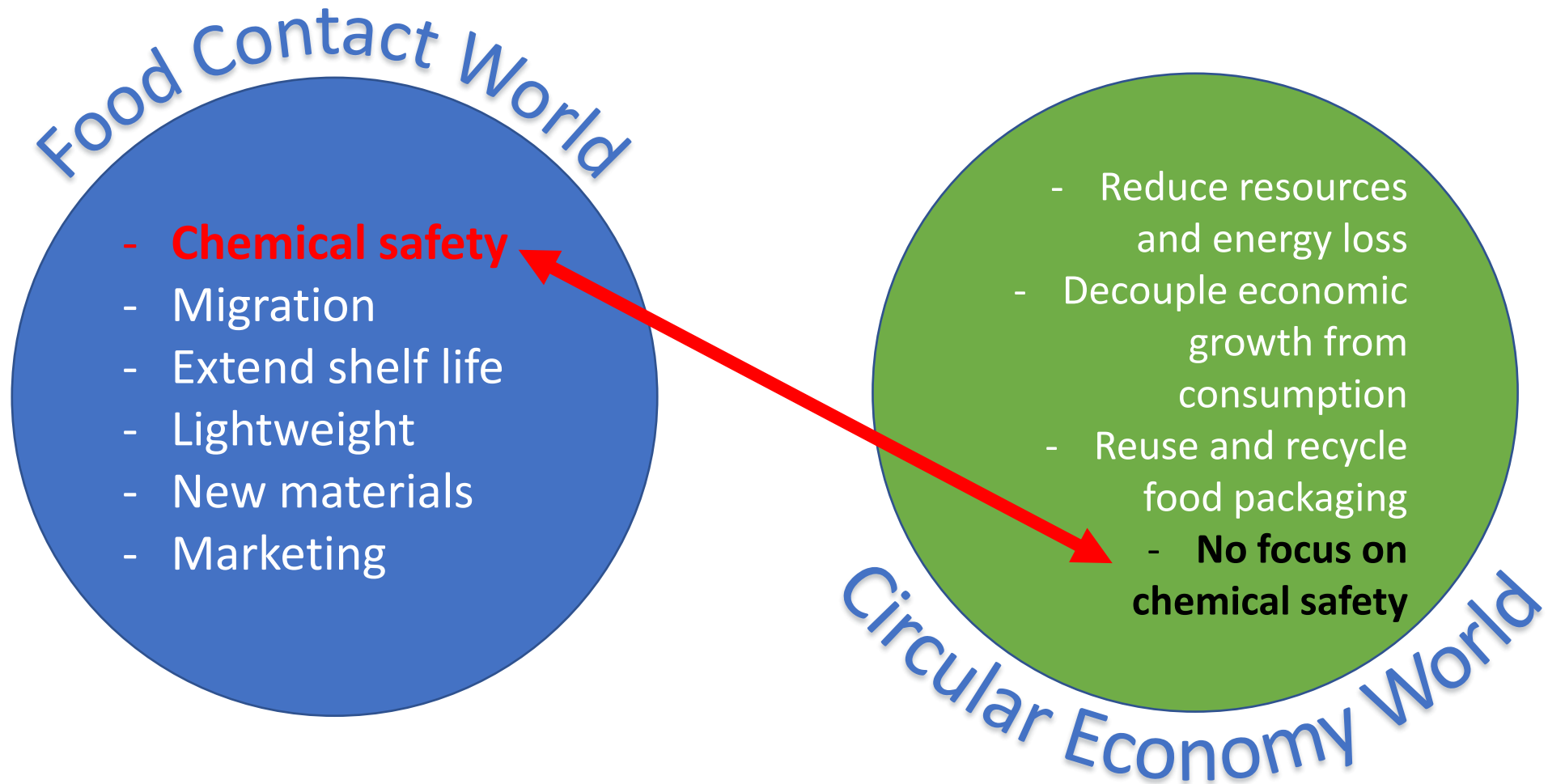
More information:
bit.ly/fpf-fccdb

Toxic effects: 608 food contact chemicals identified as most hazardous.



More information:
bit.ly/fpf-fccdb

Two disconnected worlds...



HAPPY BIRTHDAY TO OUR SCIENTIFIC CONSENSUS STATEMENT!



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Environmental Health

COMMENTARY

Open Access



Impacts of food contact chemicals on human health: a consensus statement

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Abstract

Food packaging is of high societal value because it conserves and protects food, makes food transportable and conveys information to consumers. It is also relevant for marketing, which is of economic significance. Other types of food contact articles, such as storage containers, processing equipment and filling lines, are also important for food production and food supply. Food contact articles are made up of one or multiple different food contact materials and consist of food contact chemicals. However, food contact chemicals transfer from all types of food contact materials and articles into food and, consequently, are taken up by humans. Here we highlight topics of concern based on scientific evidence showing that food contact materials and articles are a relevant exposure pathway for known and potential endocrine-disrupting chemicals, as well as for a large number of uncharacterized chemicals.

Find out why it matters: bit.ly/fcc-statement



Conclusions

1. Chemicals migrate from packaging into food, mostly at low levels.
2. Low levels of hazardous chemicals are not automatically safe they can matter, and mixtures of chemicals, and timing of exposure also matter.
3. **Not all materials are suitable for recycling into food packaging!**
Sustainable packaging must not lead to harming human health because of hazardous chemicals migrating from packaging into food.
4. Environmental assessment of food packaging should integrate different aspects and focus on local conditions.
5. Reducing overall consumption, simplifying materials, using inert FCMs reduces environmental and human health impacts.



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