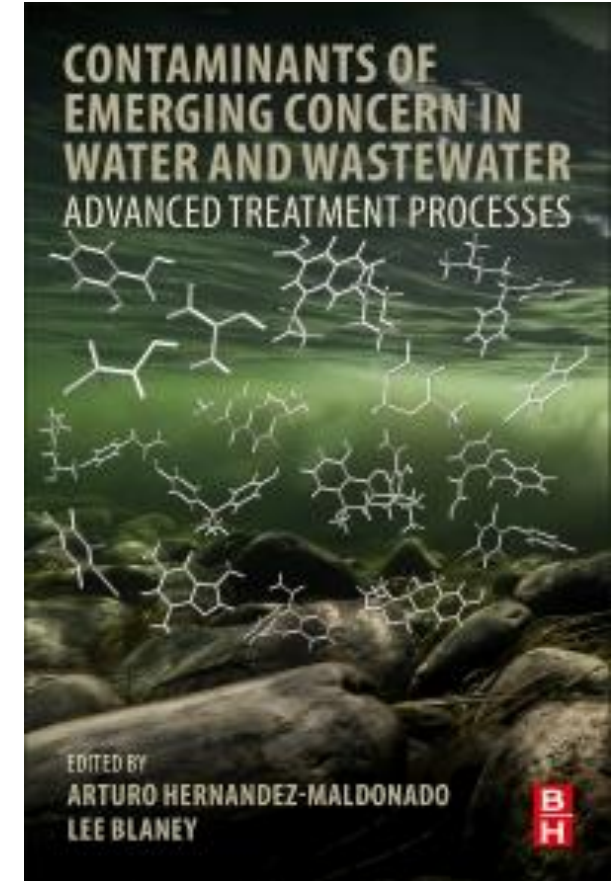


# Zaskrbljujoče nove snovi („Emerging chemicals“)

Bojana Bažec  
Doc. dr. Agnes Šömen Joksić

# Namen predstavitve (vsebina)

- Izraz „zaskrbljujoče nove snovi“ (angl. CECs)
  - Slovenska različica izraza (razprava?)
- Pomen in razlika z izrazom SVHC
- Okoliščine in razlogi za uveljavitev
  - Kratak zgodovinski „prelet“ od „starih“ kemikalij do „novih“ skrbi
- Katere snovi so „CECs“, izpostavljenost, učinki
- Preventivne aktivnosti na EU in nacionalni ravni



# O izrazu....(SLO prevod/pomen)

zaskrbljujoče...nastajajoče ...pojavljajoče...nove...snovi/kemikalije/onesnaževala ??



EMERGE verb [I] (APPEAR)

to appear by coming out of something or out from behind something

PONS Online Dictionary

EMERGE (COME OUT)

- Pojavljati se, pojaviti se
- Izhajati
- Nastajati
- Prihajati

Emerging substances /contaminants /pollutants  
Contaminants (chemicals) of **emerging concern**  
(CECs)

Emerging chemicals

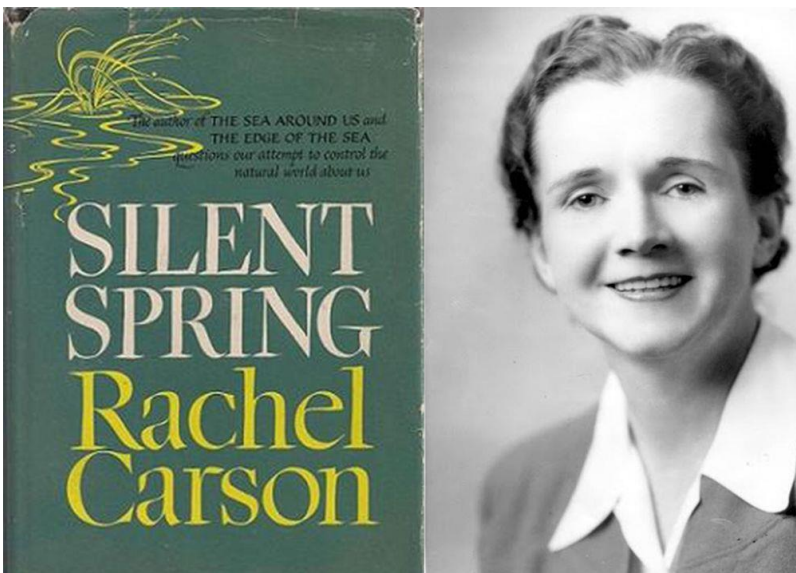


Povzetek:

„onesnaževala, ki so bila odkrita v okoljskih vzorcih (zlasti vode) in ki lahko škodljivo vplivajo na okolje ali zdravje ljudi ter jih običajno veljavna okoljska zakonodaja (še) ne ureja, zaradi česar vzbuja / povzročajo (?) **zaskrbljenost**“

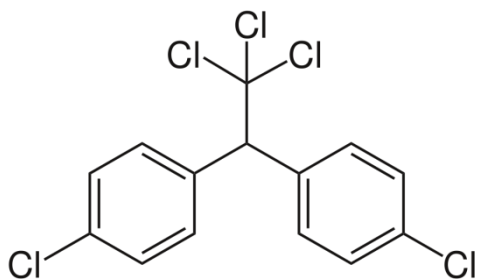
<https://www.norman-network.com/nds/susdat/>

# Zaskrbljujoče „nove“ snovi



*„Prihodnje generacije nam verjetno ne bodo oprostile našega pomanjkanja **preudarne skrbi** za celovitost naravnega sveta, ki podpira vse življenje“.*

*Rachel Carson, 1962*



Diklorodifeniltrikloroetan, DDT

<https://en.wikipedia.org/wiki/DDT>

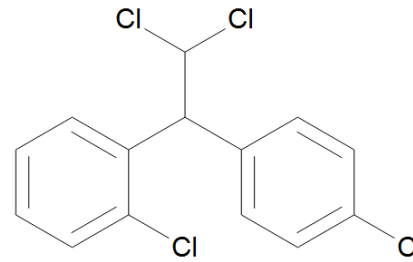
Kritike in obtožbe

Čas potrdil navedbe

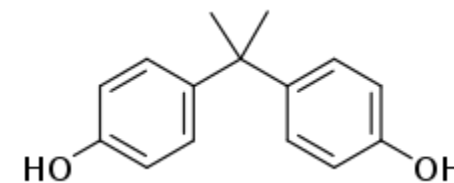
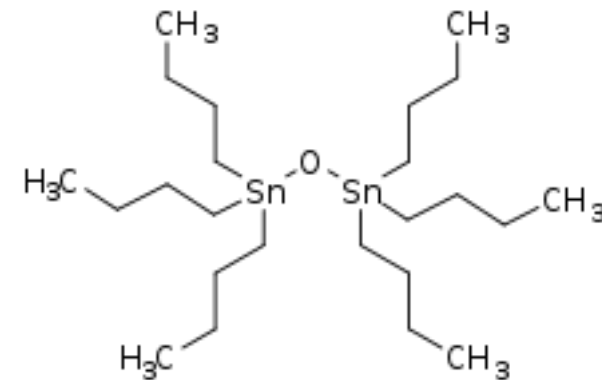
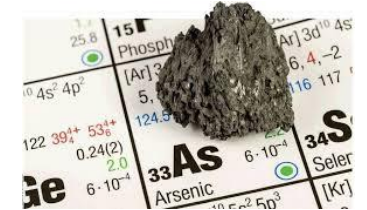
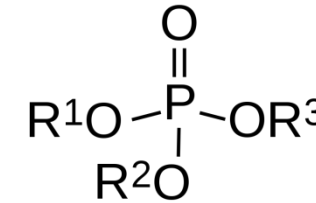
DDT kasneje prepovedan, proizvodnja opuščena

(\*DDT sintetiziran 100 let pred izidom knjige v letu 1962)

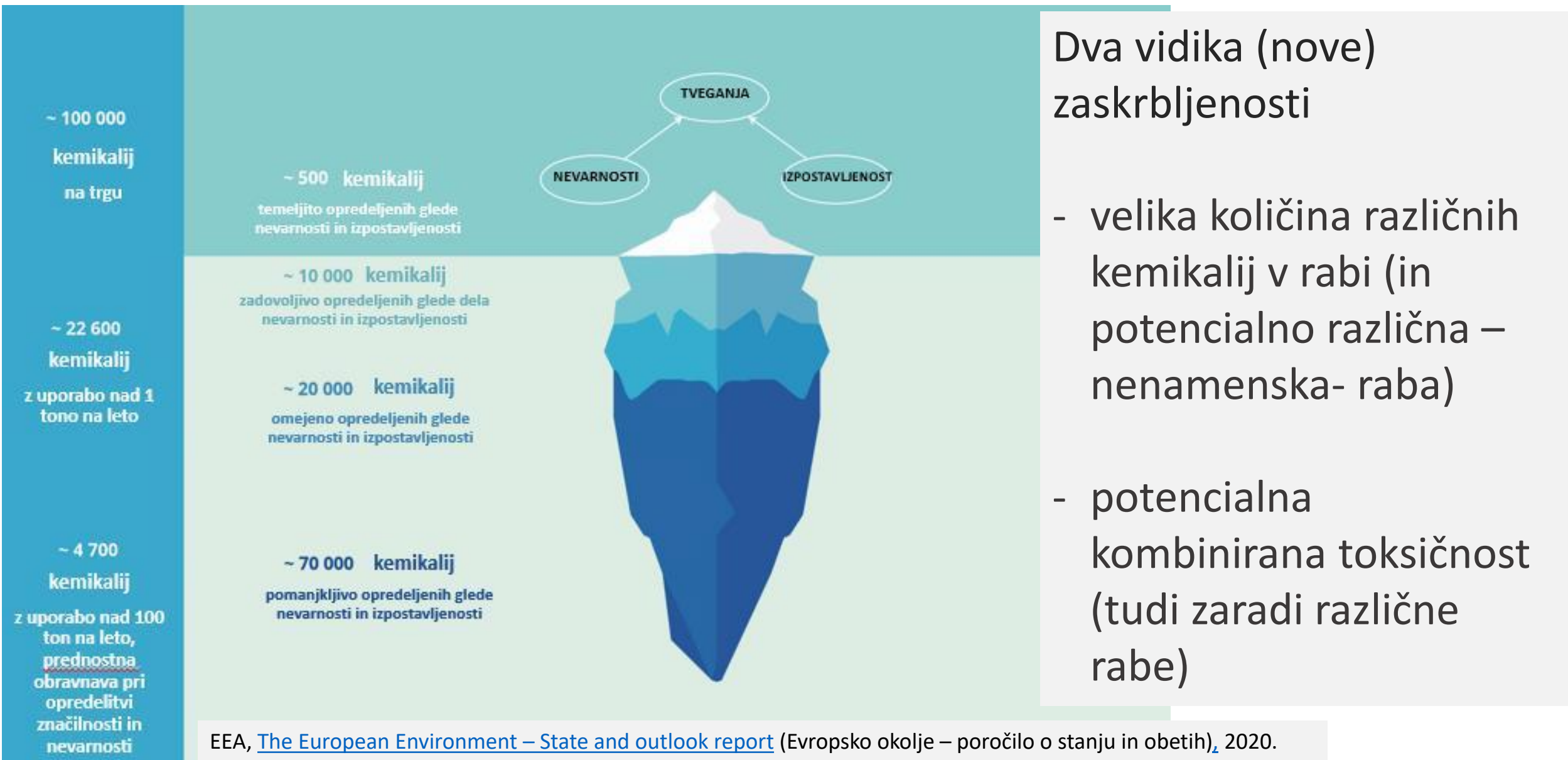
# Zaskrbljujoče „nove“ snovi



- „Stare snovi“ – nove informacije in podatki raziskav terjajo spremembo našega razumevanja glede učinkov na okolje in zdravje
  - **Pb**; od 60 µg v dL krvi otrok (60-70 leta) do 10 µg/dL; trenutni kriterij <5 µg/dL
- „Znane“ snovi – ne poznamo/razumemo vseh odgovorov glede učinkov na okolje in zdravje
  - (delno) regulirane (ECHA, REACH), na „kandidatni“ listi, itd.
- „Nove“ snovi (nove molekule) – nedavno so se začele pojavljati v znanstveni literaturi
  - ni podatkov / premalo podatkov



# (Ne)znano področje kemičnih tveganj



# Razlika CECs in SVHC („Snovi, ki vzbujajo veliko zaskrbljenost“)

(angl. Substances of Very High Concern)

<https://echa.europa.eu/substances-of-potential-concern>

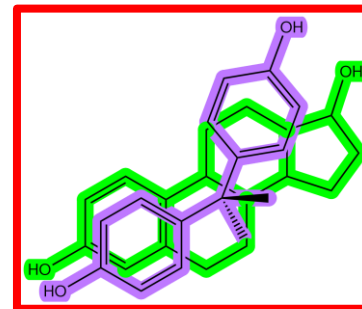


## Regulatorni vidik – uradna opredelitev

- *Nekatere snovi, ki lahko imajo resne in pogosto trajne posledice za zdravje ljudi in okolje, je mogoče opredeliti kot **snovi, ki vzbujajo veliko zaskrbljenost (SVHC)**.*
- *To so v glavnem snovi, ki so rakotvorne, mutagene ali strupene za razmnoževanje, in snovi, ki so po svojih lastnostih obstojne in se kopičijo v organizmih.*
- *Druge snovi, ki vzbujajo enakovredno zaskrbljenost, vključujejo, na primer, endokrine motilce*
- *Seznam kandidatnih snovi je uradni seznam EU (nadaljnja avtorizacija in regulacija)*



PBT, vPvB



# Katere snovi so zaskrbljujoče „nove“ snovi ?

PFAS (PFOA, PFOS) = VEČNE KEMIKALIJE  
UV filtri (benzofenoni, salicilati, triazini, ...  
TiO<sub>2</sub>, ZnO)  
Zaviralci gorenja (PBDE,...)  
Plastifikatorji (ftalati - DINCH, bisfenoli)  
Sredstva za osebno nego in gospodinjstvo  
Humana in veterinarska zdravila  
Stranski produkti razkuževanja vode  
Pesticidi (glifosat, neokotinoidi, piretrini,...)  
Dodatki v bencinu (MTBE, Mn spojine,...)

.....

**The PROBLEMS with PFAS**

**HOW DOES IT GET INTO OUR BODIES?**

- Cooking with nonstick pans
- Products containing PFAS
- PFAS-contaminated food and water
- PFAS in air and dust

**HEALTH PROBLEMS LINKED TO PFAS**

- Kidney and testicular cancer
- High blood pressure and pre-eclampsia
- Higher cholesterol
- Lower infant birth weights
- Decreased vaccine response in children

**PFAS**

- Short for **per- and polyfluoroalkyl substances**, chemicals used in products such as non-stick cookware, food packaging, water-resistant clothing, and stain-resistant carpeting
- Also called **'forever chemicals,'** they can take up to 1,000 years to break down in nature

**WHAT CAN WE DO?**

- INDIVIDUALS** – **avoid products with PFAS** and ask policymakers to limit or ban its use
- HEALTH PROFESSIONALS** – **advise patients on how to avoid PFAS** and support limits on its use
- BUSINESSES** – **phase out use of PFAS** and avoid non-essential uses
- POLICYMAKERS** – **limit or ban PFAS**



# Vplivi\* na zdravje/okolje



„Vsepovsodna“ izpostavljenost

„Coctail“ učinek

\*Vplivi na zdravje – nanašajo se na določeno posamezno substanco ali skupino snovi (znotraj poimenovanja „CECs“)

# „Na poti v okolje brez strupov...“

Strategija EC na področju kemikalij za trajnostnost (Chemicals Strategy for Sustainability), COM(2020) 667



# Odzivanje na nacionalni ravni

Ustrezna krovna okoljska in okolje-zdravstvena politika  
Implementacija EU in ostalih mednarodnih strategij  
Upravljanje s potencialnimi tveganji

- Spremljanje stanja okolja
- Spremljanje varnosti pitne vode
- Spremljanje varnosti hrane
- Nacionalni program HBM
- **Izobraževanje, informiranje, promocija**
- Institucionalno sodelovanje (tudi z regulatornimi organi)
- Financiranje
- Ukrepanje
- .....



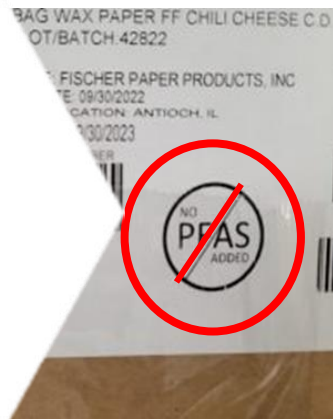
## 14. POSVET KEMIJSKA VARNOST ZA VSE:

### SNОВI, KI VZBUJAJO ZASKRBLJENOST

1. 12. 2022, Gimnazija Franceta Prešerna Kranj, Kidričeva cesta 65, Kranj, pred. P51

URA	VSEBINA	IZVAJALKA/-EC
8.30 – 9.00	Prihod in prijava udeleženk/-cev posveta	
		Moderacija: Andreja Bačnik
9.00 – 9.10	Uvodni pozdrav ter predstavitev ciljev posveta	Predstavnice/-ki soorganizatorjev
9.10 – 9.40	Ali bi morali biti zaskrbljeni? (EU upravljanje kemijskih tveganj)	Tatjana Humar Jurič, URSK
9.40 – 10.10	Zaskrblijujoče nove snovi ( <i>emerging chemicals</i> )	Bojana Bažec in Agnes Šömen Joksić, NIJZ
10.10 – 10.40	O čem in kako govorimo, ko izobražujemo o nevarnih snoveh	Andreja Bačnik in Simona Slavič Kumer, ZRSŠ
10.40 – 11.00	Odmor	
11.00 – 11.40	Spremljanje zaskrblijujočih novih kemikalij v okolju	Boštjan Križanec, NLZOH
11.40 – 12.20	Zaskrblijujoče nove kemikalije v kontekstu nacionalnega in evropskega programa humanega biomonitoringa	Milena Horvat in Janja Tratnik, IJS
12.20 – 13.00	(Ne)vidno notranje bivalno okolje	Sabina Jordan, ZAG
13.00 – 14.00	Odmor za kosilo	
14.00 – 14.40	Zaskrblijujoče nove kemikalije in hrana	Urška Blaznik, NIJZ in Ester Heath, IJS
14.40 – 15.20	Nevrotoksičnost snovi	Nataša Petrovič, NIJZ
15.20 – 16.00	Zaključna diskusija in evalvacija posveta	Udeleženci/-ke in izvajalci/-ke

# Ozaveščanje; primer PFAS



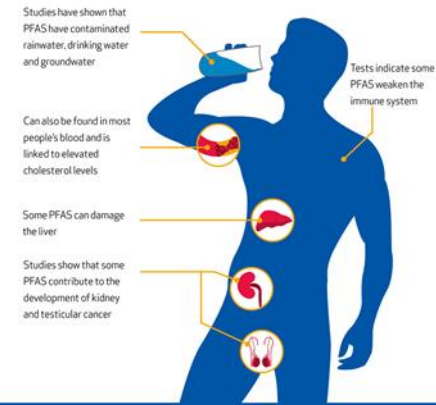
## PFAS or Forever Chemicals

Poly- and perfluoroalkyl substances (PFAS) are manufactured chemicals that are widely used throughout society and found in the environment. PFAS resist degradation, persist in the environment and some stay in our bodies. For several of them, there are serious health concerns.

### Where can they be found?

- Rain clothes, textiles and surface treatments
- Non-stick coatings for frying pans and pots, and food packaging
- Fire-fighting foams and fire protective clothing
- Chrome plating, paints and construction materials

### How do some PFAS affect your health?



### What are ECHA and the EU doing?

- RESTRICTIONS:** The production and use of some PFAS are already restricted as part of the EU's chemicals legislation.
- STUDIES:** ECHA and the European Commission are carrying out studies related to PFAS used in fire-fighting foams and textiles.
- SAFER ALTERNATIVES:** Placing them on the REACH Candidate List of substances of very high concern drives their substitution.
- ASSESSMENT:** Since 2014, ECHA has assessed PFAS in groups rather than one by one to speed up the process. ECHA's database contains more than 2 000 PFAS.

Check our database <https://echa.europa.eu/information-on-chemicals/registered-substances>

**ECHA** EUROPEAN CHEMICALS AGENCY

**DARK WATERS**  
RELEASED IN THEATERS 26 FEBRUARY

Dark Waters tells the shocking story of how a heroic attorney fought to uncover a dark secret hidden by one of the world's largest corporations, who poisoned a town for decades with a PFAS chemical. Rob Bott (played by Mark Ruffalo) risked everything to hold Dupont to account and bring justice to the 70,000 victims of one of the biggest cover-ups in American history.

This briefing highlights how forever chemicals affect Europe and outlines actions that the European Union and National Governments can take in response.

**THE PROBLEM OF PFAS IN EUROPE**  
Per- and Polyfluoroalkyl Substances, more commonly known as PFAS, are a particularly harmful chemical group. They are virtually impossible to clean up or get rid of. Around 100,000 sites in Europe are potentially emitting PFAS. PFAS accumulate and persist in our environment. It can take up to 1,000 years for PFAS to be broken down by nature.

**FOREVER CHEMICALS ARE EVERYWHERE**  
IMPACTING OUR HEALTH, CONTRIBUTING TO ILLNESS AND CANCER

Many PFAS are highly mobile. They are in soil, plants and animals across Europe and have been detected in water, including drinking water, in Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands and Sweden.

This contamination is a potentially serious public health problem. Forever chemicals that didn't exist several decades ago are found today in our blood. Scientists have identified a probable link between PFAS exposure and diagnosed high cholesterol, thyroid disease, testicular and kidney cancer, and pregnancy-induced hypertension.

**PFAS CONTAMINATE EVERYDAY ITEMS**  
IMPACTING OUR HEALTH, CONTRIBUTING TO ILLNESS AND CANCER

Forever chemicals are in all sorts of everyday household products. There are also several hotspots in Europe around industrial sites. The widespread use of PFAS in industrial processes and products and their high contamination levels means that they are in everything and everywhere.

**FOREVER CHEMICALS ARE A GENERATIONAL CATASTROPHE**  
IMPACTING OUR HEALTH, CONTRIBUTING TO ILLNESS AND CANCER

CONTAMINATING AIR, WATER AND FOOD ALL OVER THE WORLD. IN ALMOST EVERYONE'S BLOOD. CHILDREN AND FUTURE GENERATIONS ARE MORE AT RISK.

Alarmingly, babies are now born with PFAS already in their bodies. These levels are often higher than their mother's. Children are far more sensitive than adults to toxic chemicals in the environment.

<https://www.imdb.com/title/tt9071322/>

**THE DEVIL WE KNOW**  
THE CHEMISTRY OF A COVER-UP

THE DEVIL WE KNOW IS A DOCUMENTARY FILM BY JONATHAN HARRIS. IT EXPLORES THE HISTORY OF PFAS AND THE RISK THEY POSER TO OUR HEALTH AND THE ENVIRONMENT.

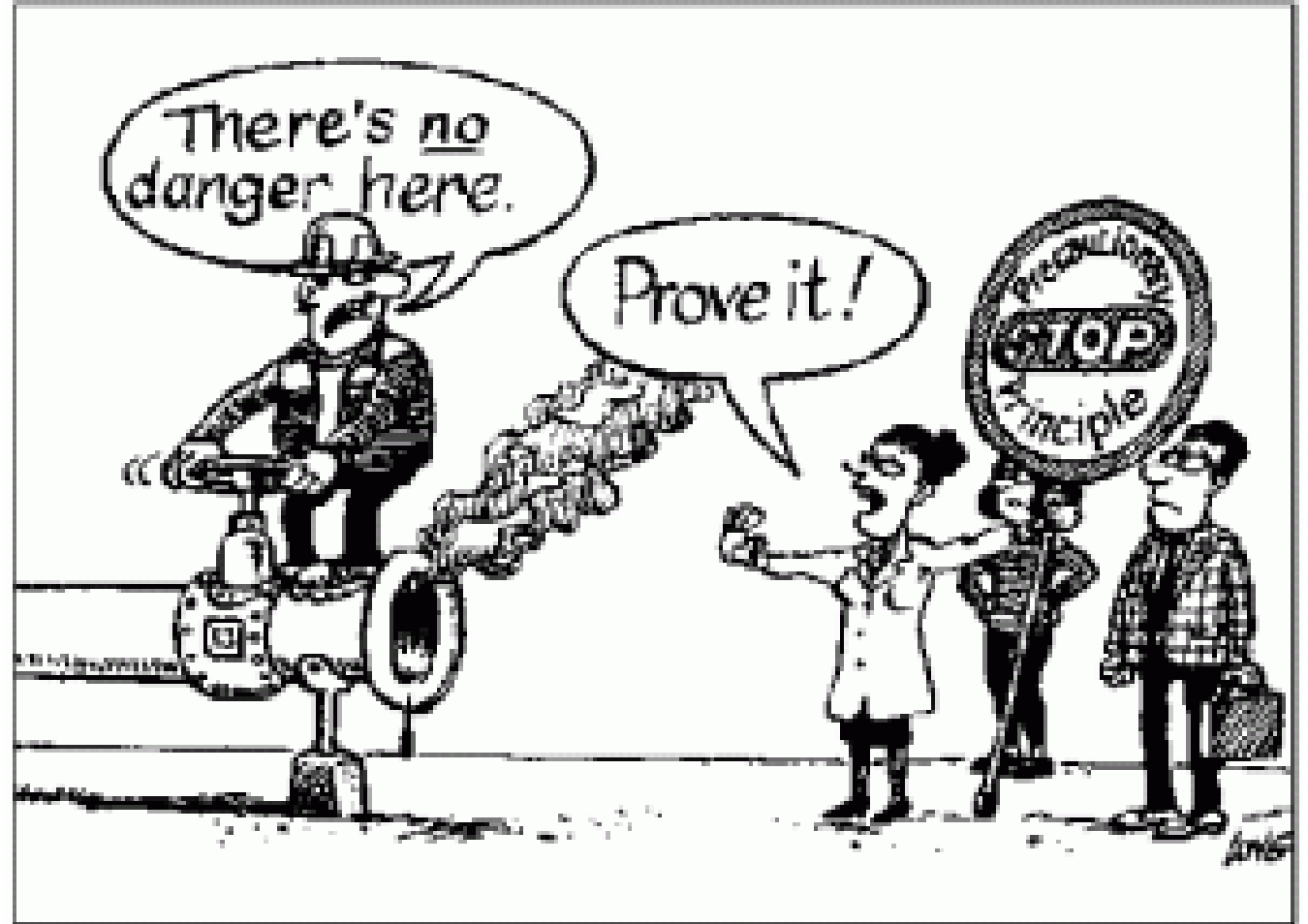
<https://www.imdb.com/title/tt7689910/>

# Sklepne misli

- Pozne lekcije iz zgodnjih svaril (*Late lessons from early warnings*)
  - predvidevanje in odzivanje, ki temelji na preteklih izkušnjah, predvsem upoštevanje svaril - SKRBI
- Previdnostno načelo (*Precautionary principle*)
  - previdnost pri odločitvah, zlasti če podatki niso zadostni oziroma jih ni
  - na dokazih temelječe odločitve



Hvala za pozornost!



[https://commons.wikimedia.org/wiki/File:Precautionary\\_Principle.png](https://commons.wikimedia.org/wiki/File:Precautionary_Principle.png)