

PARC — Európai partnerség a kémiai kockázatok értékelésére

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vezető szakértő, NNGYK

Biztonságtechnika 2026

Mátraszentimre, 2026.05.29.

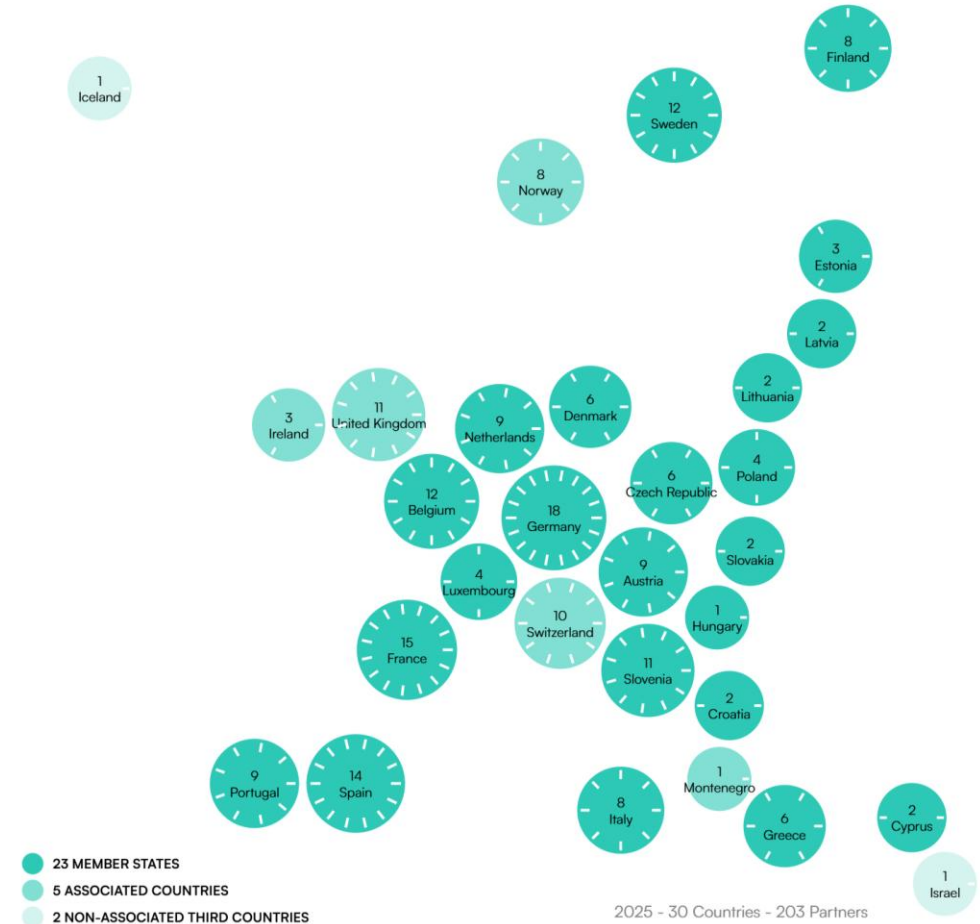
PARC



Partnership for the Assessment of Risks from Chemicals (PARC)

<https://www.eu-parc.eu/>

- A kémiai anyagok által okozott kockázatok értékelését célzó partnerség egy európai konzorcium.
- A projekt 2022-ben indult, és hét évig tart (2029-ig).
- 30 ország 203 partnerét fogja össze, köztük nemzeti hatóságokat, egyetemeket, közegészségügyi intézeteket és uniós ügynökségeket (ECHA, EEA, EFSA).
- Innovatív megközelítéseket, eszközöket és módszereket fejleszt és alkalmaz, új adatokat gyűjt a kémiai kockázatértékelés javítása érdekében.
- Munkája olyan kulcsfontosságú európai politikákat támogat, mint az Európai Zöld Megállapodás és a vegyi anyagokra vonatkozó fenntarthatósági stratégia.



Hogyan támogatja a PARC az EU szennyezőanyag-mentességi törekvéseit?

— KIHÍVÁSOK —>

A partnerséget a következő kihívások miatt hozták létre:



A kémiai anyagok nagy száma és sokfélesége



Hiányosságok a toxikológiai ismeretekben, az egységes kockázatértékelési módszerekben és más területeken



Hiányos adatok a kémiai anyagoknak való kitettségéről és az általuk okozott egészségkockázatokról

— KUTATÁS —>

A PARC kutatásokat végez és párbeszédet folytat a különböző érdekelt felekkel arról, hogyan lehet:



Értékelni a kémiai anyagoknak való kitettséget, beleértve a munkahelyeket is



Nyomon követni a kémiai anyagokat és értékelni az emberi egészségre és a környezetre kifejtett hatásukat



Új adatokat nyerni, illetve új toxikológiai megközelítéseket és módszereket alkalmazni

— INTÉZKEDÉSEK —> — HATÁS —|

A PARC a következő intézkedésekhez fog vezetni:



A kémiai anyagoknak való kitettség korszerű felmérése, valamint az anyagok veszélyességének jobb értékelése



Szabad hozzáférés az adatokhoz az uniós ügynökségek, kutatók és más szereplők számára



Kockázatértékeléssel kapcsolatos képzések, illetve új módszerek és eszköztárak a kutatók, a jogalkotók és más szereplők számára

A PARC az európai lakosság életminőségét fogja javítani az alábbiak támogatásával:



A lakosság szerepvállalásának növelése a kémiai anyagok használatával és biztonságával kapcsolatos ismeretek bővítése révén



A kémiai kockázatértékelés európai szintű kutatási és fejlesztési platformjának létrehozása



Európai szintű együttműködés és teljesítmény a kockázatértékelés terén

Hogyan támogatja a PARC az EU szennyezőanyag-mentességi törekvéseit?

— KIHÍVÁSOK —>



A nyilvánosság korlátozott hozzáférése a kutatási eredményekhez



A különálló szakpolitikai keretrendszerek miatt nem egységes a szabályozás és annak egészséghozadéka



A kockázatértékelési ismeretek hiánya az egészségügyben vagy a környezetvédelemben dolgozó szakembereknél

— KUTATÁS —>



Új ismereteket szerezni a kémiai anyagok veszélyeiről és javítani a párbeszédet a kémiai anyagok megfelelő rangsorolása érdekében



Olyan kutatásokat folytatni, melyek a szabályozás javításához szükséges információkat biztosítanak



Hiteles adatokat és jobb keretrendszereket létrehozni a kockázatértékeléshez

— INTÉZKEDÉSEK —> — HATÁS —|



Az európai országok közös tudománypolitikai programjának kidolgozása és a szabályozás javítása



A lakosság kémiai anyagokról való bővítése, beleértve azok helyes használatát, a kitétség csökkentésének módját, valamint, hogy milyen jogszabályokkal érvényesíthető egészségünk védelme



A körforgásos gazdaság fejlesztése és a jobb hulladékgazdálkodás kialakítása



Az EU zöld megállapodásban meghatározott szennyezőanyag-mentességi törekvésének és a vegyianyag-stratégiájának sikere a fenntarthatóság érdekében



Az emberi egészség és a környezet fokozottabb védelme

A vegyi anyagokra vonatkozó fenntarthatósági stratégia röviden

THE CHEMICAL STRATEGY FOR SUSTAINABILITY WILL

Ensure better protection of human health and the environment from hazardous chemicals

Boost innovation for safe and sustainable chemicals

Enable the transition to chemicals that are safe and sustainable by design

KEY ACTIONS

PFAS PHASE-OUT

Phase out per- and polyfluoroalkyl substances (PFAS) in the EU, unless their use is essential.

ASSESSMENT SIMPLIFICATION

Establish a simpler “One Substance One Assessment” process for the risk and hazard assessment of chemicals.

INNOVATION & INVESTMENT

Boost the investment and innovative capacity for production and use of chemicals that are safe and sustainable by design throughout their life cycle.

GLOBAL LEADERSHIP

Play a leading role globally by championing and promoting high standards and not exporting chemicals banned in the EU.

CONSUMER PROTECTION

Ban the most harmful chemicals in consumer products—allowing their use only where essential.

COCKTAIL EFFECT

Account for the cocktail effect of chemicals when assessing risks from chemicals.

RESILIENCE & SUSTAINABILITY

Promote the EU’s resilience of supply and sustainability of critical chemicals.

Versenyképesség, az új politikai kulcsszó

EU 2024—2029: STRATEGY FOR A MORE COMPETITIVE EUROPEAN UNION

Fostering an environment in which businesses can grow and compete

Sustaining our quality of life:
Food security, water and nature

Boosting the digital and green transition for a “digital by innovation, green by design” competitiveness

PARC

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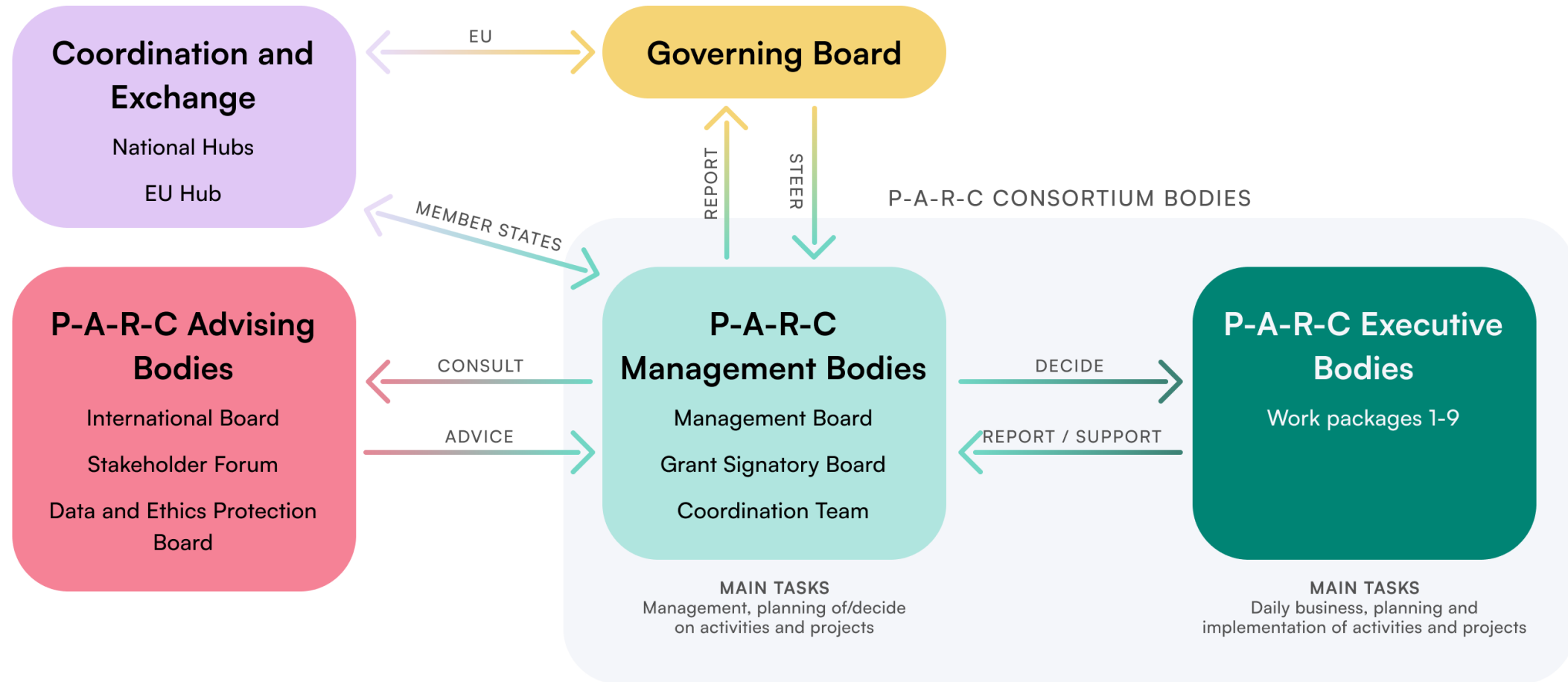
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STRATEGIC
RESEARCH &
INNOVATION
AGENDA

A STRIA egy olyan dokumentum, amely meghatározza a partnerség fő célkitűzéseit, kihívásait és várható hatásait. Emellett részletesen bemutatja azokat a kutatási prioritásokat és tevékenységeket, amelyeket a PARC a teljes időtartama alatt (2022—2029) megvalósít.

<https://www.eu-parc.eu/what-we-do/sria>

Irányítási struktúra



Munkacsoportok

- WP1 — Partnership Management and Coordination / Partnerségszervezés és koordináció
- WP2 — A Common Science-Policy Agenda / Közös tudományos és szakpolitikai agenda
- WP3 — Synergies, Collaborations and Awareness / Szinergiák, együttműködések és tudatosságnövelés
- WP4 — Monitoring and Exposure / Monitorozás és expozíció
- WP5 — Hazard Assessment / Veszélyazonosítás és veszélyértékelés
- WP6 — Innovation in Regulatory Risk Assessment / Innováció a szabályozási kockázatértékelésben
- WP7 — FAIR Data, Infrastructure and Tools / FAIR adatok, infrastruktúra és eszközök
- WP8 — Concepts and Toolboxes / Konceptciók és eszköztárak
- WP9 — Building infrastructural and human capacities / Infrastrukturális és humán kapacitások fejlesztése

Magyarország részvétele a projektben

- Egyedüli hazai partner a Nemzeti Népegészségügyi és Gyógyszerészeti Központ.
- A projektben vállalt feladatok:
 - Humán biomonitoring vizsgálatok
 - Toxikológiai vizsgálatok
 - Beltéri légszennyezőkre vonatkozó, egészségalapú irányértékek meghatározása
 - Kommunikációval kapcsolatos tevékenység koordinálása
 - Fókuszcsoporthoz kutatás, lakossági attitűd vizsgálata
 - Fenntarthatósággal kapcsolatos tevékenység koordinálása

NATIONAL
SUCCESS
STORIES

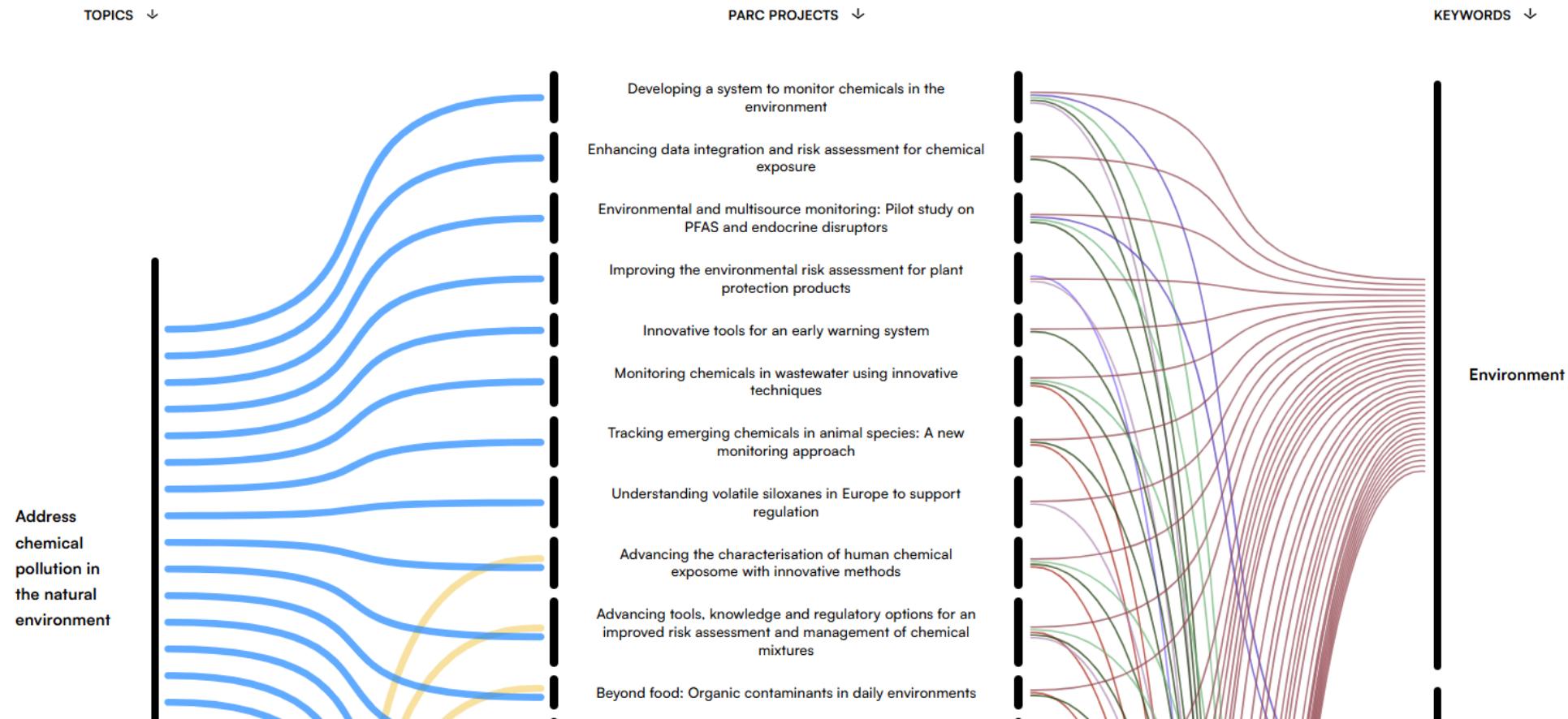


**Journey towards sustainable national human
biomonitoring programmes: Hungary and Latvia**

PARC projektek

Összesen 107 projekt kezdődött el a PARC első öt évében.

<https://www.eu-parc.eu/projects>



Provide protection against most harmful chemicals

Shift away from animal testing



New tools for enforcing chemical safety in everyday items

Human health

NGRA

TIME SPAN

01.05.2024 - 30.04.2028

POTENTIAL IMPACTS

- Strengthen enforcement activities on chemicals in consumer products for increased compliance with existing legislations
- Support implementation of the proposed class-wide restriction on PFAS
- Better tools for identification of plastic additives to support exposure assessment and safe use of recycled materials.

PARTNERS INVOLVED

[MU](#) (CZ), [KEMI](#) (SE), [RISE](#) (SE), [Tukes](#) (FI), [VUA](#) (NL), [SU](#) (SE), [ORU](#) (SE)

CONTACTS

Robin Vestergren (KEMI)
Robin.vestergren@kemi.se

Lisa Melymuk (MU)
lisa.melymuk@recetox.muni.cz

Key messages

- Regulation on the content and amounts of chemicals in consumer products is a key part of ensuring chemical safety.
- Enforcement of such regulations requires appropriate analytical tools for products on the market, as well as support producers and consumers to ensure they are safe.
- This project will contribute to the development of new analytical tools to meet the needs of current and upcoming chemical safety regulations, from analytical development to implementation.

Overview

Effective enforcement of EU chemicals safety legislation is vital to the [Green Deal](#) and the [Chemicals Strategy for Sustainability](#) which protects public health and the environment but also promotes innovation and importers.

This project explores how innovative chemical identification tools can support enforcement actions. While recent advances in analytical information systems offer powerful tools for identifying a wide range of those of emerging concern, these capabilities remain underutilised. This project aims to bridge this gap by evaluating the practical application of these tools.

A core objective is the development and testing of rapid screening tools for identifying restricted or priority substances across various sample types to identify non-compliant products and materials more systematically. This will support the enforcement of existing EU legislation such as [REACH](#), [RoHS](#), [EU Toy Safety](#), and regulations on toys and food contact materials.

"The outcomes of this work will directly support national and EU efforts in improving access to reliable, broad-coverage analytical tools. This project contributes to safer consumer products, a cleaner environment, and a more level playing field within the internal market."

Address chemical pollution in the natural environment

Innovative tools for an early warning system

Environment

Monitoring methods

TIME SPAN

01.05.2022 - 30.04.2027

POTENTIAL IMPACTS

- Formulating criteria for categorising annotated data to be integrated in the EWS format.
- Generation of proofs-of-concepts and tools of relevance to risk assessors and policy makers at national and EU level. Innovative (self-)sampling combined with innovative approaches are of utmost importance for identification of new and existing potentially hazardous substances at an early stage.
- Conceptualisation and illustration of cutting-edge tools for establishment of an EWS. End-users include ECHA, EFSA, EEA, national environmental and chemical agencies, national food safety authorities, NORMAN, researchers, industry, NGOs, national consumer protection organizations and the general public.

PARTNERS INVOLVED

[SLU](#) (SE), [ANSES](#) (FR), [AUTH](#) (GR), [BRGM](#) (FR), [EAWAG](#) (CH), [INRAE](#) (FR), [ISS](#) (IT), [JSI](#) (SI), [MUI](#) (AT), [NILU](#) (NO), [ORU](#) (SE), [UAntwerpen](#) (BE), [UBA](#) (DE), [UCPH](#) (DK), [UFZ](#) (DE), [UniLU](#) (LU), [VUA](#) (NL)

Key messages

- The project will illustrate the usefulness of early warning monitoring tools both for environmental and biomonitoring;
- Criteria for acceptance and prioritization of early warning signals will be defined.

Overview

This project is supporting the establishment of an Early Warning System (EWS) to identify and prioritise new and existing potentially hazardous substances, addressing key needs in [EU regulatory policies](#) and [chemical risk management](#). It is ensuring that data generated by innovative methods — including non-targeted screening combined with effect based methods — are used to detect substances that may pose risks to human health and the environment.

By demonstrating the usefulness of EWS tools in various types of samples — environmental samples (e.g. soil, sediment, dust), animals (e.g. fish), human samples (e.g. blood), food (including drinking water) and consumer products (such as waste streams and recycled materials) - the project is highlighting their broad applicability.

Chemicals and toxicological data are created and shared in databases. Computational tools can be used to evaluate their exposure and hazard characteristics to allow substances to be prioritised based on their potential risks.

"By improving detection and prioritisation, the project is strengthening the EU's capacity to respond to emerging chemical threats. It is supporting evidence-based decision-making, guiding regulatory action and ultimately improving chemical safety to better protect people and the environment."

Achievements & Results

- The project will illustrate the usefulness of early warning monitoring tools both for

Keresés — fogyasztási termékek (consumer products)

eu-parc.eu/search?text=consumer+products

PARC

What we do Thematic areas News & events Results Synergies About Us

SEARCH RESULTS

News 8 RESULTS

- Rapid Response Mechanism in action** Since its implementation, PARC's Rapid Response Mechanism (RRM) has been activated twice and demonstrated its agility by addressing two critical challenges: emerging needs of PFAS restrictions and an alarming rise in urinary concentrations o...
- Building the road for assessing aggregate human exposure to chemicals, covering different sources, routes and environments** Thirty-six European institutes from sixteen countries joined forces, under PARC, to propose a more integrative risk assessment and risk management of the...
- Meet the Chemical Leaders - Lutz Ahrens** Lutz Ahrens, professor at the Swedish University of Agricultural Sciences, has spent over two decades at the forefront of environmental chemistry, developing cutting-edge methods to detect and understand emerging pollutants like per- and...
- An inventory of physiologically based kinetic models for assessing lifetime internal exposure is now available** A new inventory from PARC provides an overview of the physiologically based kinetic (PBK) models assessing the internal exposure in humans during life concerning five group...

All results in News >

Events 1 RESULT

- Health and Environment Alliance webinar: Impacts of early life PFAS exposure** The Health and Environment Alliance (HEAL) hosted a webinar on Impacts of Early-Life PFAS Exposure on 14 November 2024. The event focused on the long-term health effects of exposure to per- and...

Thematic areas 1 RESULT

- Risk assessments: Hazard assessment** Learn new approaches and methods of health assessment and provide data to fill gaps in knowledge on poorly characterised contaminants or new emerging hazards while promoting the use of innovative methods.

< Back to full results

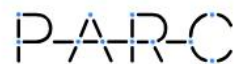
Projects 7 RESULTS

- Testing assessment tools for hazardous substances in consumer products and articles** Key messages The existing databases containing information on chemicals in products and articles are heterogeneous in structure and coverage, which can hinder product safety and circularity....
- New tools for enforcing chemical safety in everyday items** Key messages Regulation on the content and amounts of chemicals in consumer products and materials is a key part of ensuring chemical safety. Enforcement of such regulations requires appropriate analytical tools to monitor....
- Innovative tools for an early warning system** Key messages The project will illustrate the usefulness of early warning monitoring tools both for environmental and biomonitoring; Criteria for acceptance and prioritization of early warning signals will be defined. Overview This project is...
- Assessing chemicals exposure of waste management workers** Key messages The project will provide valuable EU-specific data on chemical exposures and risks faced by workers in e-waste and plastics waste streams. It will generate evidence to support policies aimed at worker protectio...
- Towards a harmonised approach in chemical risk assessment** Key messages This project aims to assist Member State regulatory authorities, EU agencies, scientific committees, expert groups, relevant Commission departments and the industry in adopting harmonised risk assessment...
- Skin sensitisation and mixtures effects** Overview Skin sensitisation, an allergic response to chemicals following repeated skin contact, affects over 25% of the European adult population. Despite its prevalence, the European Union lacks a standardised risk assessment model for regulatory use...
- Establishment of advanced data processing methodologies and bioinformatic tools for a non-targeted screening repository** Overview Across Europe, thousands of chemicals are currently present in consumer products, the environment, and food chains. Yet, for many of these substances,...

A keresési találatok különböző kategóriákba vannak csoportosítva.

Ezek a kategóriák folyamatosan bővülnek, ahogy új menüpontok kerülnek hozzáadásra.

PARC laboratóriumi hálózatok



SELECT LABORATORY NETWORK

- Air and indoor environment 35
- (Eco)toxicology 73
- Human biomonitoring 101
- Water 42

Human biomonitoring 101

FILTER

Type of laboratory ▾

- PARC member 56
- External laboratory 45

Substance group ▾

- Acrylamide 14
- Aprotic solvents 12
- Aromatic amines 15
- Bisphenols 37
- Cotinine 32
- Diisocyanates 14
- Flame retardants 26
- Furans 6
- Metals and trace elements 61
- Musks 1
- Mycotoxins 12
- Parabens 19
- Per- and polyfluoroalkyl substances (PFAS) 33
- Pesticides-glyphosate 20
- Pesticides-neonicotinoids 17
- Pesticides-organophosphates 40

Show 99 results ▾

EXTERNAL LABORATORY

Department of Toxicology
Medical University of Gdańsk
Poland
[Details](#)

EXTERNAL LABORATORY

Department of Materialization of Living Conditions Factors
Regional Authority of Public Health
Slovakia
[Details](#)

PARC MEMBER

Department of Toxic Organic Pollutants
Slovak Medical University
Slovakia
[Details](#)

PARC MEMBER

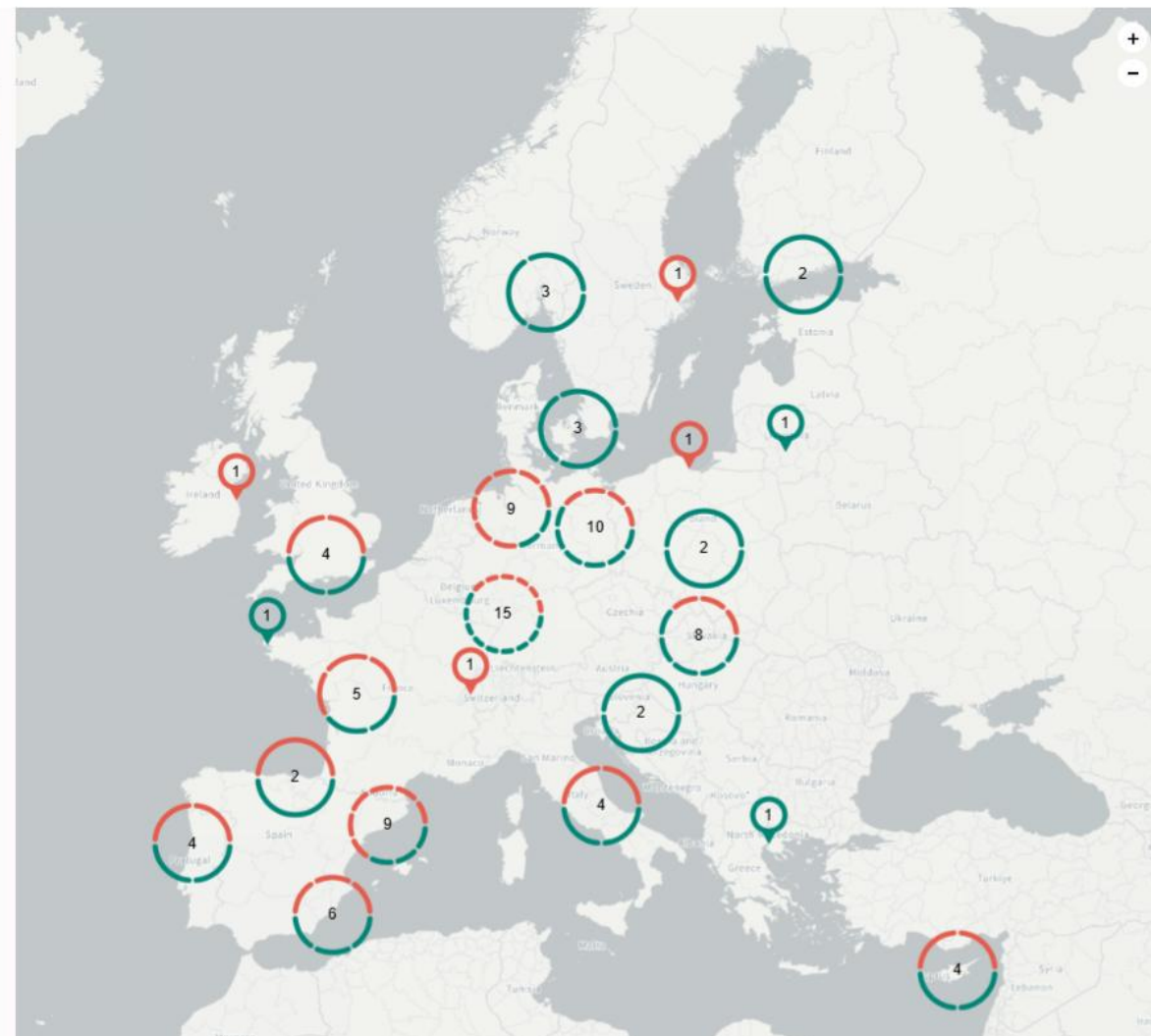
Zero Pollution & Labor: Team Organic Analysis; Team Inorganic Analysis, Spectroscopy & GMO; Team Pollutants
Federal Environment Agency
Austria
[Details](#)

EXTERNAL LABORATORY

Physiological Analytical Laboratory
Constantine the Philosopher University in Nitra
Slovakia
[Details](#)

PARC MEMBER

Department of Public Health Laboratory and Methods



Oktatási és képzési anyagok gyűjteménye

eu-parc.eu/learning-materials

PARC

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Repository of learning and educational materials

FILTER

Domain of interest ▾







- Policy and regulation 7
- Exposure assessment 9
- Hazard and risk 23
- FAIR data and data management 4
- Safe and Sustainable by Design 24
- Statistics 1

Scope ▾

- Advanced (nano)materials 9
- Biotechnology 1
- Chemical mixtures 2
- Chemicals 19
- Metals and trace elements 1
- Pesticides 1

Target stakeholder ▾

- Academia (PhD and MSc student, professor, researcher) 49
- Consultants 28

FAIR data and data management 20.06.2025 Dashboards as showcases for FAIR collections  Presentation / slides By Plazi FREE	Exposure assessment 16.06.2025 Salivary leucocytes as non-invasive samples for DNA damage & repair in human biomonitoring  Video By PARC FREE	Hazard and risk 16.06.2025 Use and interpretation of in silico models and read-across  Course By PARC FREE
Exposure assessment 23.05.2025 Non-targeted screening: a PARC training resource  Presentation / slides By PARC FREE	Hazard and risk 04.04.2025 In silico models: assessment of the results of the VEGA models within an exercise of the PARC project  Video By PARC FREE	Policy and regulation 13.03.2025 PLANETS 1st SSbD Training on Scoping  Course By PARC FREE

Explore the

SSbD KNOWLEDGE SHARING PORTAL

Learn more about the

SSbD TOOLBOX

Visit the

M*DEL NETW*RK

JOIN







PARCopedic

Gyorsreagálás

- A projekt létrehozta a Gyorsreagálási Mechanizmust (Rapid Response Mechanism — RRM), amely lehetővé teszi a sürgős igények gyors és hatékony kezelését.
- A mechanizmus célja, hogy a projektrugalmasan reagálhasson az emberi egészséget és a környezetet érintő újonnan felmerülő kihívásokra, még akkor is, ha azok nem szerepelnek a partnerség előre meghatározott prioritásai között.
- Ki kezdeményezheti a mechanizmus aktiválását?
Governing Board, Stakeholder Forum, EU Hub
- Aktiválások:
 1. A PFAS-vegyületek korlátozása a fogyasztási cikkekben (módszerek)
 2. A vizeletben mért MnHexP-koncentrációk emelkedése
 3. Az Alternaria-toxinokkal kapcsolatos adathiányok kezelése



SSBD KNOWLEDGE SHARING PORTAL

-  Introduction to SSbD
-  Tools for SSbD
-  Case studies & practical application
-  Data & databases
-  Test methods
-  SSbD and the link to EU legislation

Introduction to Safe and Sustainably by Design (SSbD)

Welcome to the PARC Knowledge Sharing Portal on Safe and Sustainable by Design (SSbD)! ▼

What is SSbD? ▼

The SSbD background and motivation ▼

The European Commission's SSbD framework ▼

What is needed to operationalise SSbD? ▼

SSbD in PARC ▼

European hubs on SSbD ▼

EU funded projects on S(S)bD ▼



PARCopedia Groups

🔍 Search Groups...

All Groups 25 My Groups 1 Create a Group

ORDER BY: Last Active ▾

Cosmetics

Public Group

With this group we would like to

Friends Groups

SSbD user community

Public Group

Safe-and-Sustainable-by-Design user community as part of the SSb...

Training

Public Group

This group is dedicated to sharing up-to-date information on existing..

WP5 Hazard Assessment Annual Meeting - Rome 2026

Public Group

This group is dedicated to the WP5 Hazard Assessment Annual...

Laboratory Network

Public Group

Laboratory Network is a collaborative group connecting

Hírlevelek

PARC SAMPLER

- Legfontosabb aktualitások, eredmények, események, interjúk, stb.
- Évente kétszer

<https://www.eu-parc.eu/newsletters>

PARC SAMPLER

SCIENCE IMPACT

Be among the first to explore the SSbD toolbox



PARC invites you to join the workshop announcing the alpha version of its Safe and Sustainable by Design (SSbD) toolbox - a practical step-by-step resource to enhance safer chemical development. The event will take place on 3 July 2025.

Don't miss your chance - register now!

[Read more](#)

SCIENCE IMPACT

Knowledge sharing portal on Safe and Sustainable by Design (SSbD) launched



PARC has launched a central hub to support the Safe and Sustainable by Design (SSbD) community - offering practical tools, expert insights, and collaborative opportunities.

Explore the portal to discover how it can support your work.

[Read more](#)

SCIENCE IMPACT

Progress on Early Warning System discussed in Copenhagen



PARC experts convened in Copenhagen on 16-19 June 2025 to review advancements in the Early Warning System (EWS) for hazardous chemicals. The meeting focused on sharing case study results and refining the roadmap for the system's future development.

[Read more about the event](#)

SCIENCE DIGEST

- Legfrissebb tudományos közlemények
- Minden hónap utolsó hetén

PARC SCIENCE DIGEST



A tiered next-generation risk assessment framework integrating toxicokinetics and NAM-based toxicodynamics: "proof of concept" case study using pyrethroids

Journal
Archives of Toxicology, Vol. 99 (2025), 2750-2761.

Author
[Ana Fernandez-Agudo](#), Jose V. Tarazona

Work package
6

[Read by package](#)



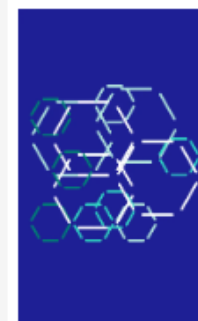
Unveiling landscape-level drivers of freshwater biodiversity dynamics

Journal
Environmental DNA, Vol. 7 (2025), Issue 1, e10058.

Author
[Naomi Easwood](#), Aron Wilson, Jiarui Zhou, Lixia Ouyang

Work package
6

[Read by package](#)



Evaluating the performance of multi-omics integration: a thyroid toxicity case study

Journal
Archives of Toxicology, Vol. 99 (2024), 309-322.

Author
[Sebastian Carsten](#), Kristin Schrubert, Ulrike E. Hübner-Kampczyk, Zhipeng Wang, Stephan Schreiber, Harvika Saha, Sophie Mackay, Harriette Kamp, Volker Haake, Malte Hübner, Martin von Bergen, Holand Duxen, Jörg Mackenmüller

Work package
5

[Read by package](#)

Szakpolitikai javaslatok

POLICY BRIEF

NON-TARGET SCREENING: A NEW TOOL TO IMPROVE OUR UNDERSTANDING OF CHEMICAL POLLUTION

PARC
Partnership
for
Action
and
Research
in
Chemicals

Co-funded by
the European Union

<https://www.eu-parc.eu/policy-briefs>

As chemicals circulate in products, waste streams, food chains and human populations, chemical exposure has become a cross-cutting challenge for environmental protection, human health, and food safety. The EU and Member State authorities are missing enough chemicals' data in these sectors as ongoing monitoring captures only a small fraction of these.

Given the large number of existing chemicals, it is not realistic to develop analytical methods to monitor all of them, and current targeted methods can only support Early Warning Systems under the Zero Pollution Action Plan to a limited extent. PARC aims to address the challenges posed by chemical exposure and its impact on human health and the environment.

Moreover, the health impacts of chemical exposure are often the result of aggregated exposure to multiple contaminants from various sources. This type of exposure cannot be captured using only traditional targeted monitoring methods focused on a limited number of contaminants.¹

NTS is an advanced analytical approach used to detect and identify a wide range of chemicals, including known and unknown pollutants, and their metabolites (excretion products) and is now sufficiently developed for policy uptake.

The development of NTS was historically more developed in the environmental field. The NORMAN network, a network that enhances the exchange of information on emerging environmental substances, uses NTS to detect a wide range of potentially harmful substances in water bodies, including those often missed by traditional methods. This supports the prioritisation of possible hazardous compounds for the WFD's Watch List and for the development of a groundwater Watch List.²

The EFSA's work on the SCREENER project³ focusses on NTS to detect halogenated compounds in various food items. From these results, some chemicals were prioritised and quantified using targeted techniques. The European Human Biomonitoring Initiative (HBM4EU) and PARC show the potential application of NTS to human samples. It allowed for instance the identification of real-life pesticide exposure patterns across the EU⁴ and new tentative biomarkers of exposure in the population.⁵ This will support both human and environment health-relevant early warning system.

To unlock policy value, the EU together with the Member States would benefit from coordinated laboratory network, standardised interpretation frameworks, and capacity building.

PARC

MAIN FINDINGS

PARC's activities have made significant progress to make NTS operational and harmonised across environmental, food and human biomonitoring matrices, in support of next-generation risk assessment, early warning systems and prioritisation.

HARMONISATION AND QUALITY ASSURANCE

- Organisation of inter-laboratory comparison assays for both environmental, food and human matrices.
- Development and testing of a common mixture of QA/QC markers for individual method performance assessment to be made available commercially in the future.
- A common template to report results for transparent and comparable data sharing.
- A common template to report results for transparent and comparable data sharing.

DEMONSTRATION IN MONITORING

- Several hundreds of real sample analyses have been performed across different contexts:
- Environment: Wastewater-based epidemiology, sentinel animals.
 - Food: Honey, baby food.
 - Humans: General population biomonitoring within the PARC aligned studies human biomonitoring (HBM survey analysis) or specific occupational or perinatal sub-populations.

These methodologies integrate analytical instruments with sound data processing tools. These approaches have been applied in various research and real case studies, demonstrating their suitability to achieve a more comprehensive and integrated assessment of chemical exposure. The resulting data on chemicals that are not (yet) included in regular monitoring are of relevance to regulatory authorities, as well as environmental and public health institutions supporting an early warning system and faster regulatory uptake.

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KEY MESSAGES

- 1 Non-Targeted Screening (NTS) can be used to identify chemicals in the environment, food, drinking water and in human bodies that we typically would not find with the monitoring methods that are used today. Thus providing a more complete picture of chemical exposure and its impacts.¹
- 2 Implementing NTS methods complements targeted analysis and strengthens EU and national ambitions under chemical-related policy ambitions such as the Zero-Pollution Action Plan and the "One Substance, One Assessment" (OSOA) with the Early-Warning Systems (EWS) by identifying emerging substances before risks escalate.²
- 3 Policymakers can use NTS outputs to support prioritisation such as the Water Framework Directive (WFD) Watch List updates, the European Food Safety Authority (EFSA) early warning, and European Chemicals Agency (ECHA) substance evaluation.
- 4 The Partnership for the Assessment of Risks in Chemicals (PARC) has demonstrated that NTS methods, associated to fit for purpose harmonisation, generate a new type of useful information to be integrated into EU and national assessment and exposure workflows.³
- 5 To best support policy impact, the EU and Member States will benefit from reference laboratories as follow-up of the laboratory network established in PARC. This will ensure harmonised quality assurance and quality control as well as capacity building.

NON-TARGET SCREENING: A NEW TOOL TO IMPROVE OUR UNDERSTANDING OF CHEMICAL POLLUTION

CONTRIBUTION TO POLICY AND REGULATORY PROCESSES

CONTRIBUTION TO POLICY AND REGULATORY PROCESSES

The timeframe within which the PARC main results will benefit the policy process is appropriate for immediate implementation.¹ Results can be used in ongoing revisions of chemical legislation, procedures for assessing substances by regulatory agencies, and decisions on substances to be investigated in new national and EU-wide studies.¹ For example, it could be used in the EU-wide HBM study under OSOA, to complement targeted analysis.

NTS OUTPUTS CAN DIRECTLY CONTRIBUTE TO:

- Prioritisation of chemicals e.g. WFD Watch List updates.
- EWS under the OSOA.
- Summarising, NTS is a valuable new tool to be used in comprehensive environmental surveillance, food safety assessment and for improved monitoring of occupational health and safety.
- EU-wide HBM survey under OSOA and national HBM programmes.
- Rapid identification of substances needing targeted risk assessment.

REFERENCES

1. Concept note, Non-target screening to enable a better understanding of current and non-target screening (NTS) approaches.
2. PARC (2024) Concept note on the development of a common mixture of QA/QC markers for individual method performance assessment to be made available commercially in the future.
3. Partnership for the Assessment of Risks in Chemicals (PARC) (2024) Concept note on the development of a common mixture of QA/QC markers for individual method performance assessment to be made available commercially in the future.
4. Report on the results of the inter-laboratory comparison of NTS methods for the assessment of pesticide exposure in food.
5. Report on the results of the inter-laboratory comparison of NTS methods for the assessment of pesticide exposure in food.

1. Report on the results of the inter-laboratory comparison of NTS methods for the assessment of pesticide exposure in food.

PARC

CONCLUSIONS AND RECOMMENDATIONS

PARC has successfully tested and contributed to enhance the applicability of innovative methodologies for characterising chemical exposure.² It is crucial to implement NTS approaches for achieving a more comprehensive understanding of chemical exposure, supporting science-based policy decisions and strengthening an EU wide early warning system.

- 1 Establish a coordinated EU-wide NTS lab network, to facilitate the collection, curation and evaluation of comprehensive datasets generated by NTS approaches across environmental, food and human matrices.¹
- 2 Environmental, food and public health institutions should integrate NTS methodologies into their monitoring programs to support a coordinated EU approach for better regulatory uptake and complement targeted monitoring e.g. WFD Watch List updates, EFSA early warning, New-Generation Risk Assessment, chemicals' Early-Warning System.¹
- 3 For the advancement of NTS, chemical industry should contribute to its wider use by providing reference substances and mass spectra.
- 4 Support harmonised QA/QC and reporting templates ensuring comparability across Member States.
- 5 Trainings for non-analytical experts in the interpretation of NTS output should be developed to invest in capacity building.

NON-TARGET SCREENING: A NEW TOOL TO IMPROVE OUR UNDERSTANDING OF CHEMICAL POLLUTION

2

Humán biomonitoring

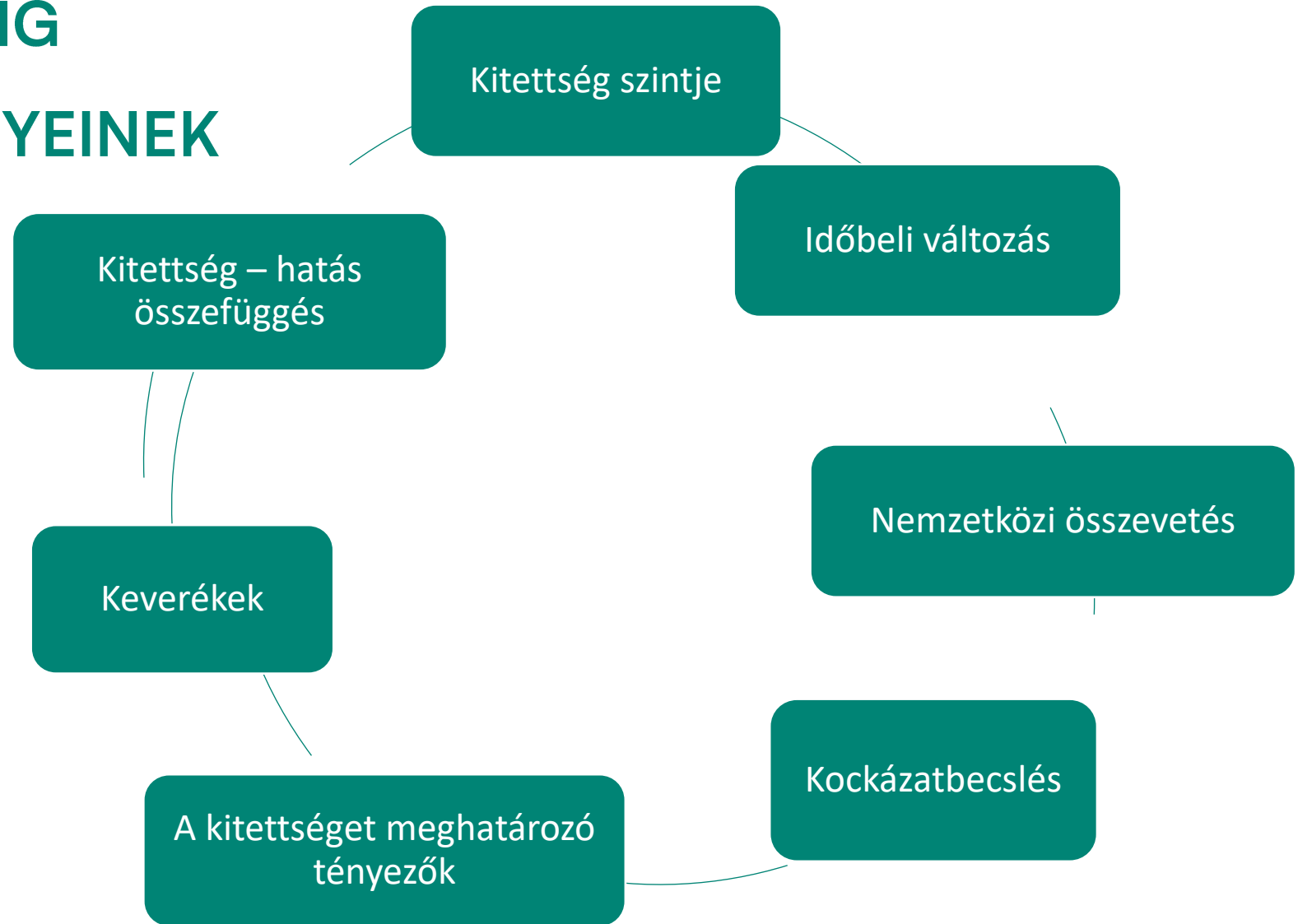
Módszer a kémiai anyagok okozta humán expozíció és hatás becslésére, azáltal, hogy mérjük ezeknek a kémiai anyagoknak, anyagcseretermékeinek, vagy reakciótermékeik koncentrációját a különböző humán biológiai mintákban.



INTEGRÁLT MEGKÖZELÍTÉS A KOCKÁZATÉRTÉKELÉSBEN

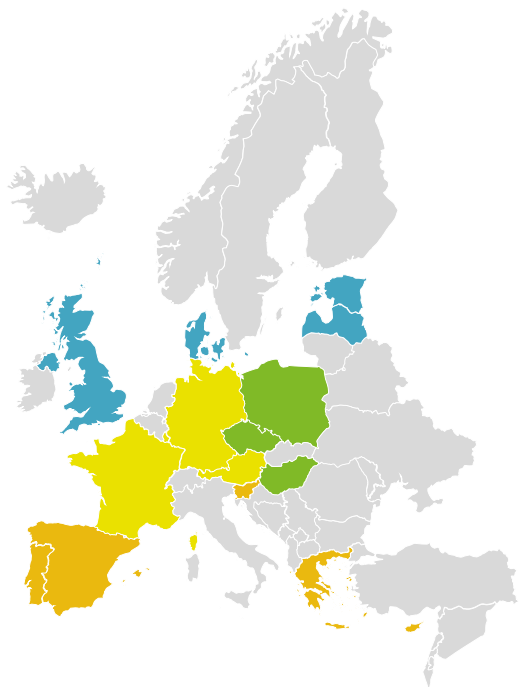


HUMÁN BIOMONITORING FELMÉRÉSEK EREDMÉNYEINEK ÉRTÉKELÉSE



Humán biomonitoring vizsgálatok

Gyermekek (6-11 év)



16 ország



± 3300-3550 résztvevő



ftalátok és DINCH,
biszfenolok, növényvédő
szerek, fémek, Hg (haj)



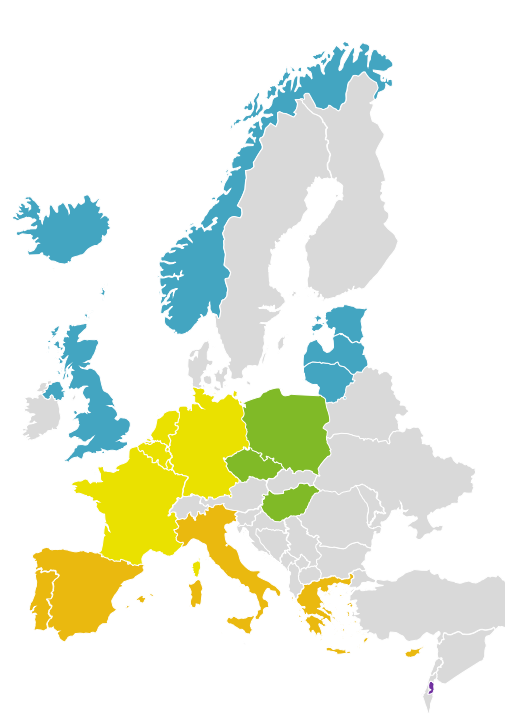
Vizelet- és hajminták



2023-2026

Magyarország: 300 fő
(2024 május - 2025 június)

Felnőttek (18-39 év)



19 ország



± 4600-4900 résztvevő



ftalátok és DINCH,
biszfenolok, PFAS,
növényvédő szerek,
fémek



Vizelet- és vérminták



2023-2026

Magyarország: 150 fő
(2026 március -)

Lágyítószerek — hazai HBM vizsgálatok

DEMOCOPHES (2011/2012)

- Korcsoport: 6-11 év
- Terület: Budapest, Rétság
- Vizeletminták száma: 120
- Vizsgálat vegyületek: 6 ftalát (DEP, DMP, DnBP, BBzP, DCHP, DEHP) metabolitja

InAirQ/HBM4EU (2017/2018)

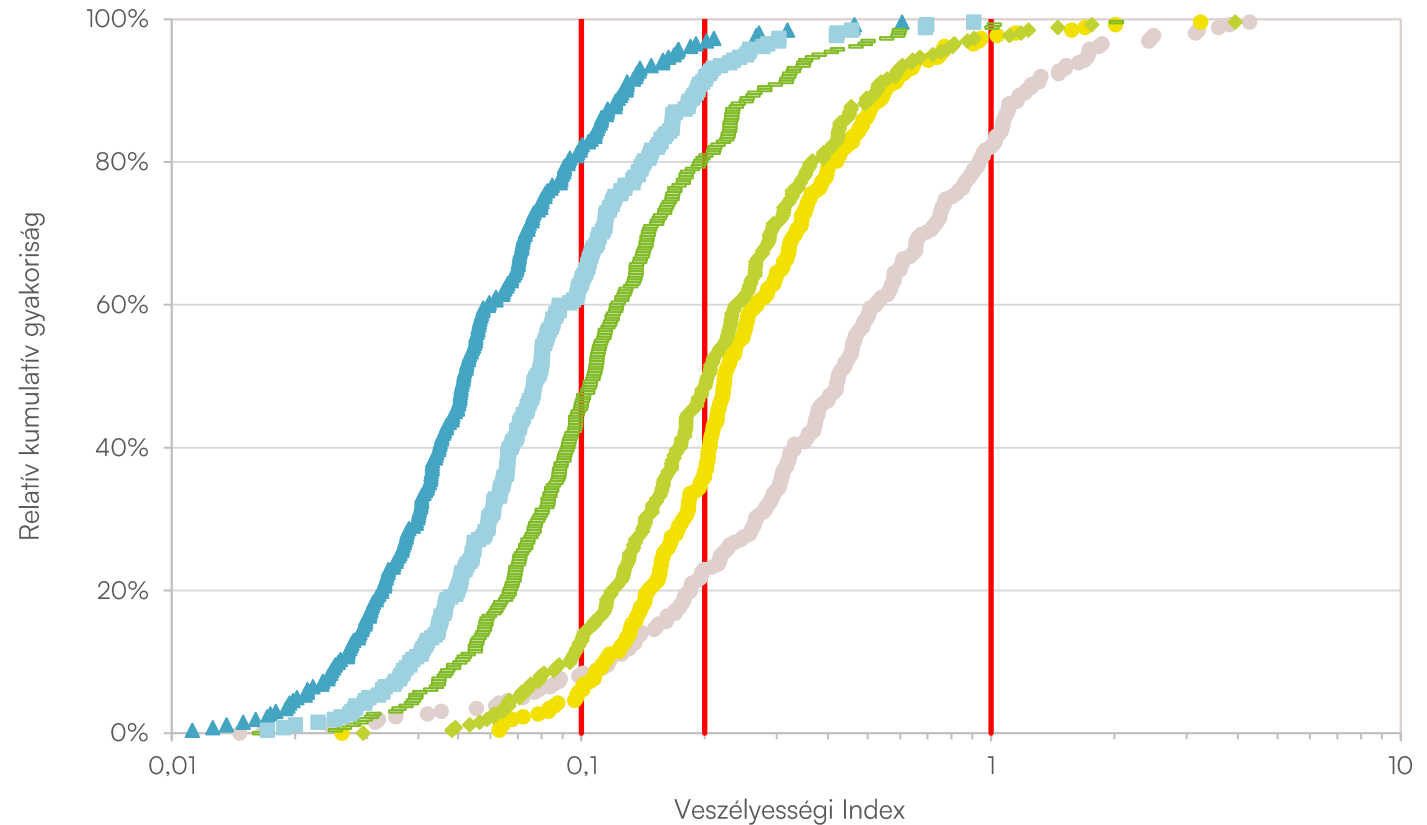
- Korcsoport: 8-11 év
- Terület: Budapest, Várpalota, Szentendre, Karcag, Péteri, Debrecen
- Vizeletminták száma: 262
- Vizsgálat vegyületek: 10 ftalát (DEP, DiBP, DnBP, BBzP, DCHP, DnPeP, DnOP, DEHP, DiNP, DiDP) + DINCH metabolitja

Lágyítószerek — hazai HBM vizsgálatok eredményei

Ftalát anyavegyület	Metabolit	DEMOCOPHES (2011/2012)		InAirQ (2017/2018)	
		Geometriai átlag (95% CI)			
DEP	MEP	39,0 (32,3 – 47,1)*	>	10,7 (9,61 - 11,8)*	
DnBP	MBP	50,2 (44,1 - 57,1)*	>	19,2 (17,5 - 21,2)*	
BBzP	MBzP	6,55 (5,40 - 7,9)*	>	1,67 (1,48 - 1,88)*	
DCHP	MCHP	<LOQ		<LOD	
	MEHP	3,16 (2,72 - 3,68)*	>	1,59 (1,43 - 1,78)*	
DEHP	OH-MEHP	28,9 (25,6 - 32,6)*	>	10,7 (9,77 - 11,6)*	
	oxo-MEHP	19,6 (17,3 - 22,2)*	>	5,28 (4,84 - 5,78)*	
	Σ MEHP + OH-MEHP + oxo-MEHP*	18,2 (15,7 - 21,1)*	>	7,0 (6,41 - 7,62)*	

Lágyítószeresek — hazai HBM vizsgálatok eredményei

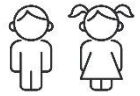
- A ftalát-metabolitok által okozott nem daganatkeltő egészségkockázat nem elhanyagolható.
- Összességében, a DnBP, DiBP és a DEHP vegyületek jelentik a legnagyobb egészségkockázat.



- HI - HBM-GV (Lange et al., 2021)
- ▲ HI - RfD AA (Kortenkamp & Faust, 2010)
- ◆ HI - TDI (EFSA, 2005-2006)
- HI - RfD AA (Kortenkamp & Koch, 2020)
- HI - TDI (Danish EPA, 2009)
- HI - RfD (US EPA, 1986-1989)

Lágyítószerek — hazai HBM vizsgálatok eredményei

Egyéni jellemzők:



nem - DINCH
kor - DiBP, DnBP, BBzP, DEHP, DiNP, DiDP,
DINCH
BMI - DiDP

Testápolási termékek használata:



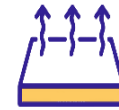
parfüm - DEP
testápoló - DEP

Otthoni környezet:



forgalmas út közelsége - DEP, DiNP, DiDP
dohányfüst - DEP, DiBP, DEHP, DiNP
szőnyeg - DiNP
gépjármű kora - DiBP, DnBP, BBzP

Iskolai környezet:



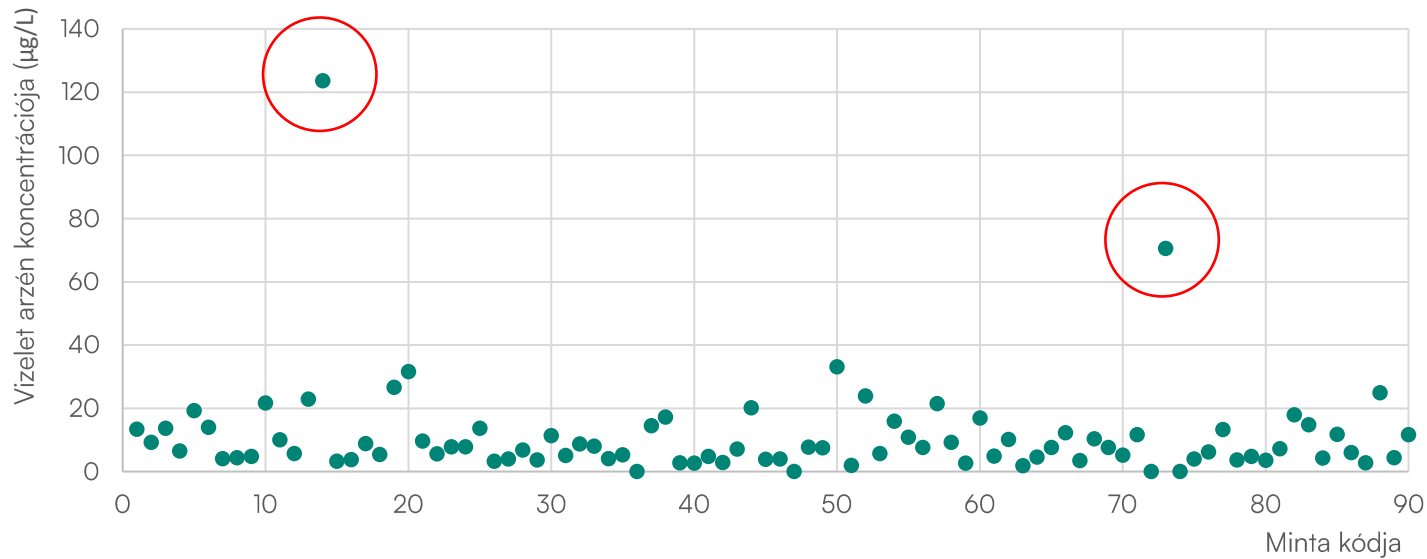
PVC padló - DEP, BBzP, DEHP, DiNP
oldószeres festék - DiBP, DnBP, BBzP
fából készült íróasztal - DEP
laminált anyagból készült íróasztal - DINCH
PM_{2.5} tömegkoncentráció - DnBP, DiDP

Élelmiszerfogyasztás:



Fagyasztott élelmiszer, műanyag
csomagolásban, otthon - DiDP
Készétel, műanyag csomagolásban,
iskolában - DiNP
Szénszavas víz, PET palackban, otthon -
DnBP
...

HBM-HU I. - NYOMELEMEK



Mitől lehet magas egyes esetekben az arzén-koncentráció?

1. ivóvíz vizsgálata
2. kérdőív áttekintése

KÉRDŐÍV

**A Nemzeti Humán Biomonitoring Program (HBM-HU)
megalapozása a PARC projekt támogatásával**
Gyermekek egyes kémiai anyagoknak való kitettségének felmérése

ÁLTALÁNOS INFORMÁCIÓK	
AZONOSÍTÓ Q093 (RESZTVEVO GYERMEK)	□□□□□□□□
AZONOSÍTÓ Q094 (INTERJUKESZITŐ)	□□□□□□□□
INTERJÚ DÁTUMA Q095 KEZDETE Q096 VEGE Q097	□□□□□□□□ □□□□ □□□□
HELYE Q098	

Foglalkozás- egészségügyi HBM vizsgálatok

Waste management sector

13 countries involved

European workers monitored

Target number of participants

700 workers	285 controls
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Achieved in 2025

478 workers	226 controls	704 of 985
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Environmental hygiene matrices

Air
Settled dust
Hand wipes
Wristbands

Human matrices

Urine
Blood
Buccal cells



Köszönöm a megtisztelő figyelmet!

Dr. Szigeti Tamás
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