Understanding how endocrine disruptors and chemical mixtures of concern target the immune system to trigger or perpetuate disease

HORIZON-HLTH-2023-ENVHLTH-02-03

Deliverable D7.1

COMMUNICATION KIT

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Disclaimer

1. Introduction

ENDOMIX is a pioneering research project dedicated to uncovering the true impact of endocrine disrupting chemicals (EDCs) and mixtures on human health, bridging gaps between science and policy to inform regulations and protect vulnerable populations. Employing an interdisciplinary strategy, ENDOMIX investigates the complex interactions of EDCs with the immune system, aiming to deliver new knowledge and recommendations for minimizing exposure and preventing adverse health effects.

As a collaborative effort involving numerous partners, it is essential to maintain clear and consistent communication throughout the project's duration.

This communication kit serves as a comprehensive resource for project partners, providing them with the necessary materials and guidelines to effectively introduce, present, and promote the ENDOMIX project. The kit contains a range of items, including project summaries, press releases, branding guidelines, templates for presentations and social media, and more. The goal of this kit is to streamline communication efforts, ensure a unified message, and facilitate smooth collaboration among all involved parties.

2. Scientific Abstract

The ENDOMIX communication kit includes the scientific abstract that succinctly outlines the objectives, methodology, and expected outcomes of the project. The abstract serves as a comprehensive yet concise summary, making it an invaluable resource for project partners who need to quickly familiarise themselves with the project's details or share information with external stakeholders. It is written in a technical and precise language to cater to a more specialised audience, ensuring that the project's key messages are accurately conveyed. The scientific abstract is provided in the following:

> The ENDOMIX project addresses the urgent need to understand the true impact of endocrine disrupting chemicals (EDCs) on human health in order to inform regulators and advise citizens. ENDOMIX will tackle this challenge by revealing associations and causality between EDCs and adverse health outcomes by focusing on exposure to multiple EDCs during life course including windows of susceptibility and making use of already existing robust data from multiple European cohorts. Modelling how real-life EDC mixtures target the immune system to initiate, trigger or perpetuate diseases combined with high throughput bioassays will reveal health-relevant mixtures of concern whose impact will be studied using ground-breaking methodology while delivering valuable information on mechanistic pathways and transgenerational impact of exposure to EDCs. This strategy will lead to the identification of biomarkers and patterns of exposure that are easy to measure, available for big sample sizes, and indicative of health endpoints. Finally, we will provide evidence synthesis of in vitro, in silico and in vivo data for strengthening causal inference and use a weight of evidence approach to generate artificial intelligence-assisted knowledge graphs.
>
> This unique loop approach with a novel focus on the immune system as EDC target is only made possible by the consortium’s interdisciplinary expertise and extensive access to existing data and biosamples as well as a meticulous study design. The knowledge generated by this consortium will be disseminated to the scientific community provide a thorough new evidence base for policy making and will reach citizens of all ages to raise awareness about the risks of EDC exposure and promote health-preserving behaviour. Hence, the outcomes of ENDOMIX do not only provide essential new knowledge and understanding but also and have far-reaching implications for the health and well-being of society, including significant savings in European health care systems.

3. Lay audience summary

In addition to the scientific abstract, the ENDOMIX communication kit provides a summary tailored for a lay audience. This summary aims to effectively communicate the project's goals, progress, and significance to non-experts or individuals outside the field of medical research and imaging. Written in clear, non-technical language, it ensures that the project's key aspects are easily understood by a broader

audience, facilitating wider outreach and engagement. The lay audience summary can be particularly useful when communicating with the general public, media, or non-specialised stakeholders. The lay audience summary is provided in the following:

> The ENDOMIX project aims to uncover how endocrine disrupting chemicals (EDCs) impact human health. These chemicals are found in everyday products and can affect our hormones, potentially leading to health problems. By studying data from various European groups over a person's lifetime, including critical periods of vulnerability, ENDOMIX hopes to reveal links between EDC exposure and health issues.
>
> One key aspect of the project is investigating how combinations of different EDCs affect our immune system and contribute to diseases. Advanced methods will help identify which mixtures are most concerning for our health. The project will also explore how EDC exposure can affect future generations.
>
> Through this research, ENDOMIX aims to find simple ways to measure EDC exposure and identify health risks. By combining different types of data and using artificial intelligence, the project will create easy-to-understand summaries of the evidence.
>
> What makes ENDOMIX unique is its interdisciplinary team and access to large datasets and biological samples. The knowledge gained will be shared with scientists, policymakers, and the public to raise awareness about EDC risks and promote healthier lifestyles. Ultimately, the project could lead to significant savings in healthcare costs and improve the well-being of people across Europe.

4. Press release

The ENDOMIX communication kit features the initial press release, which provides a comprehensive overview of the project's objectives, consortium, and potential impact. It marked the official launch of the project. Further press releases will be developed throughout the project's duration to keep stakeholders and the public informed about key milestones and accomplishments. As with the initial press release, all future press releases will be shared with project partners ahead of publication to ensure proper dissemination and alignment across all parties. The initial press release can be found at the end of this section.

> **Hidden health risks of endocrine disruptors?**
>
> *New EU project sheds light on the interplay between endocrine disrupting chemicals and human health*
>
> Endocrine disruptors are chemical substances that may mimic endogenous hormones and thereby interfere with the endocrine system. The EU-funded research project ENDOMIX started January 1st and aims to comprehensively unravel how exposure to everyday chemicals with endocrine disrupting properties affect human health. The researchers will also elaborate recommendations to reduce exposure to these chemicals and minimize thereby health risks.
>
> We are exposed to a multitude of chemicals every day, including those with endocrine disruption effects. Potentially harmful chemicals can enter into our body by eating or drinking, can be absorbed through the skin, or inhaled as tiny particles. “Endocrine disruptors are indeed omnipresent – we can hardly escape them”, says Prof Ana Zenclussen, Immunologist and Head of the Department of Environmental Immunology at the Helmholtz Centre for Environmental Research (UFZ) in Leipzig, Germany. “Even if the doses of chemicals to which we are in contact to are low, the exposure occurs over a long period of time, and this can have serious effects on our health”. Chemicals with the potential of disrupting endocrine processes in our body, may intensify, inhibit or just modify hormonal pathways. What are the consequences for our health? What diseases can these chemicals cause

or accelerate? And where and how exactly do endocrine disruptors act in the body – especially as a mixture?

“With ENDOMIX, we are committed to find answers to these important questions”, says Zenclussen, who coordinates the consortium of 11 partner institutions from seven countries. “Our research project is based on several European cohort population studies, including the LiNA mother–child study established at the UFZ. This provides us with a wealth of data”. Because the biosamples of the participants have already been chemically analysed, the research team knows which endocrine disruptors each person was exposed to at what time point in life. In a first step, the scientists will dissect which mixtures of endocrine disruptors – found in the biosamples of the study participants – are associated with health-relevant effects. To do this, they use computer-based modelling methods and high-throughput cell culture experiments. “We will then generate the most promising mixtures in our laboratories and use them for further investigations in order to better understand the starting points, molecular relationships, and metabolic pathways involved in their effects”, explains Zenclussen. Various carefully selected in vitro, in vivo and in silico methods as well as modern OMICS technologies will be used.

One of the key questions of ENDOMIX is how mixtures of endocrine disruptors affect the immune system. “Immune cells play a central role in the development of many chronic diseases such as asthma, allergies, reproductive disorders, and metabolic diseases. It is therefore important that we gain a better understanding of the interactions between endocrine disruptors and the immune system”, says Zenclussen. With the help of Artificial Intelligence (AI), among other tools, the research team will investigate whether the data and results obtained from the experimental settings are indeed the underlying causes for the existing diseases of the study participants. “With ENDOMIX, we want to uncover the real life effects of endocrine disruptors on human health and identify possible differences between age and sex”, says Zenclussen. “Our project is unique in that we are scrutinising exposure to endocrine disruptors and the associated health effects over the entire lifespan”. An overarching aim is to identify the critical time windows in which the body reacts particularly sensitively to endocrine disruptors. “If these time windows are better defined and known, protective measures can be particularly effective, and health risks can be minimised”, says Zenclussen. “We are working hard to ensure that our research findings can lead to practical recommendations for action – so that people can better protect themselves from everyday chemicals with hormonal effects”.

ENDOMIX runs until the end of 2027 and is funded by the European Union’s Horizon Europe research and innovation programme under grant agreement No 101136566 with around EUR 7 million. Coordinated at the Helmholtz Centre for Environmental Research (UFZ). Project partners are: Institut national de la santé et de la recherche médical (INSERM, France), Fundación Privada Instituto de Salud Global Barcelona (ISGlobal/Spain), Fundación para el Fomento de la Investigación Sanitaria y Biomedica de la Comunitat Valencia (FISABIO/Spain), Imperial College of Science Technology and Medicine (ICL, United Kingdom), Universiteit Utrecht (UU, Netherlands), Erasmus Universitair Medisch Centrum Rotterdam (EMC, Netherlands), Federal Institute for Risk Assessment (BfR), Masarykova univerzita (MU, Czech Republic), Fraunhofer Institute for Biomedical Engineering (IBMT), European Institute for Biomedical Imaging Resesarch (Austria).

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5. Branding guidelines

The ENDOMIX project's visual identity plays a crucial role in maintaining a consistent and professional image across all communication materials. To ensure that all project partners adhere to the same design principles, a set of branding guidelines has been developed. These guidelines cover various aspects of the project's visual identity, including logo usage, typography, colour palette, and other design elements. By following the branding guidelines, partners can ensure that all ENDOMIX-related materials are easily recognizable and convey a unified message.

Logo usage

A professional, custom-made logo was prepared for the ENDOMIX project. It is an essential component of the project's visual identity.

This section outlines the proper use of the logo, including placement, sizing, and any restrictions on altering its design. By adhering to these guidelines, partners can ensure that the logo is used consistently across all communication materials.

Colours

The ENDOMIX logo is available in a full colour colourway, which is to be used whenever possible and legible. Whenever the logo is used, it should be surrounded with clear space to ensure its visibility and impact. No graphic elements of any kind should invade this zone. The minimum whitespace surrounding the logo should be 50% of the logo's vertical height of the typography, at all sides.

Typography

Typography plays a significant role in maintaining a consistent visual identity for the ENDOMIX project. This section provides details on the typefaces, font sizes, and font styles that should be used in project materials, as well as any recommended usage for headings, subheadings, and body text.

On the project website, the Poppins typeface is used for headlines and general text. For deliverables and milestones reports, Helvetica is the chosen typography.

Font sizes should be selected for optimal legibility and not condensed.

Increased font weights should be used for emphasis, together with a colour emphasis.

Colour palette

The ENDOMIX project's colour palette consists of a set of primary and secondary colours that have been carefully chosen to represent the project's values and goals. This section outlines the specific colour codes (HEX, RGB and CMYK) for each colour in the palette and provides guidelines on how to apply these colours to various communication materials.

In the table below four colours are features, as well as their usage.

Colour	**Blue**	**Green**	**Dark Blue**	**Dark Green**	**Light Blue**	**Light Green**
Swatch						
HEX	#41BDCE	#C1D008	#2E95A4	#728D3D	#CCEDF0	#EBF2C7

RGB	65, 189, 206	193, 208, 8	46, 149, 164	114, 141, 61	204, 237, 240	235, 242, 199
CMYK	68%, 8%, 0%, 19%	7%, 0%, 96%, 18%	72%, 9%, 0%, 36%	19%, 0%, 57%, 45%	15%, 1%, 0%, 6%	3%, 0%, 18%, 5%
Gradient	X	X				
Comment	Primary logo colour, primary headlines in templates	Secondary logo colour, secondary headlines in templates	Subordinate headlines in templates	Subordinate headlines in templates	Colour used on the website	Colour used on the website

The primary colour is blue. This is to be used for the main headlines for instance. As a secondary colour, green provides some contrast.

Black is the primary colour for text.

As a high-contrast colour, violet accent (HEX #8064A2) be used, although this should only be used when absolutely necessary.

PowerPoint template for presentations

To ensure consistency in presentations related to the ENDOMIX project, a PowerPoint template has been developed for use by all project partners. This template includes pre-designed slide layouts, typography, and colour schemes that adhere to the project's branding guidelines. By using the PowerPoint template, partners can create professional and visually cohesive presentations that align with the ENDOMIX project's visual identity.

It features two designs. The primary layout uses white as its main design element. A secondary layout uses a gradient colour of blue and green, so the secondary layout can be used for emphasis or as a visual break. The PowerPoint template is available to the consortium on its collaborative platform and document archive Teamwork.

6. Social media guidelines and templates

To facilitate effective communication and to promote the ENDOMIX project on social media, a set of guidelines and templates have been prepared for project partners. The social media guidelines outline best practices for partners when sharing ENDOMIX project-related content on their institutional accounts. These guidelines aim to ensure a consistent message and cover aspects such as tone, language, and the use of visuals, ensuring that all social media posts align with the project's overall communication strategy and visual identity.

Hashtags

In order to highlight the European Union's support and funding to the ENDOMIX project, it is recommended to all partners to add the following hashtags to the end of a post: #EUfunding and #HorizonEurope.

Institutional accounts

Partners are encouraged to use their institutional social media accounts to share updates about the ENDOMIX project. This approach takes advantage of the established audiences and reach of these accounts, ensuring that the project's messages reach a wide audience.

However, in addition, a dedicated ENDOMIX X account (@EndomixProject) and LinkedIn showcase page (www.linkedin.com/showcase/endomix) have been established. This should be linked by project partners when posting on their institutional accounts.

Posts templates

To streamline the process of creating social media content, we have provided a set of templates for various platforms, including Twitter, Facebook, and LinkedIn. These templates include suggested post formats, imagery, and key messaging points that partners can customise to suit their specific needs and audiences.

These social media templates are also available to the consortium on its collaborative platform and file archive Teamwork.

Some templates are provided exemplarily below.

LinkedIn banner:

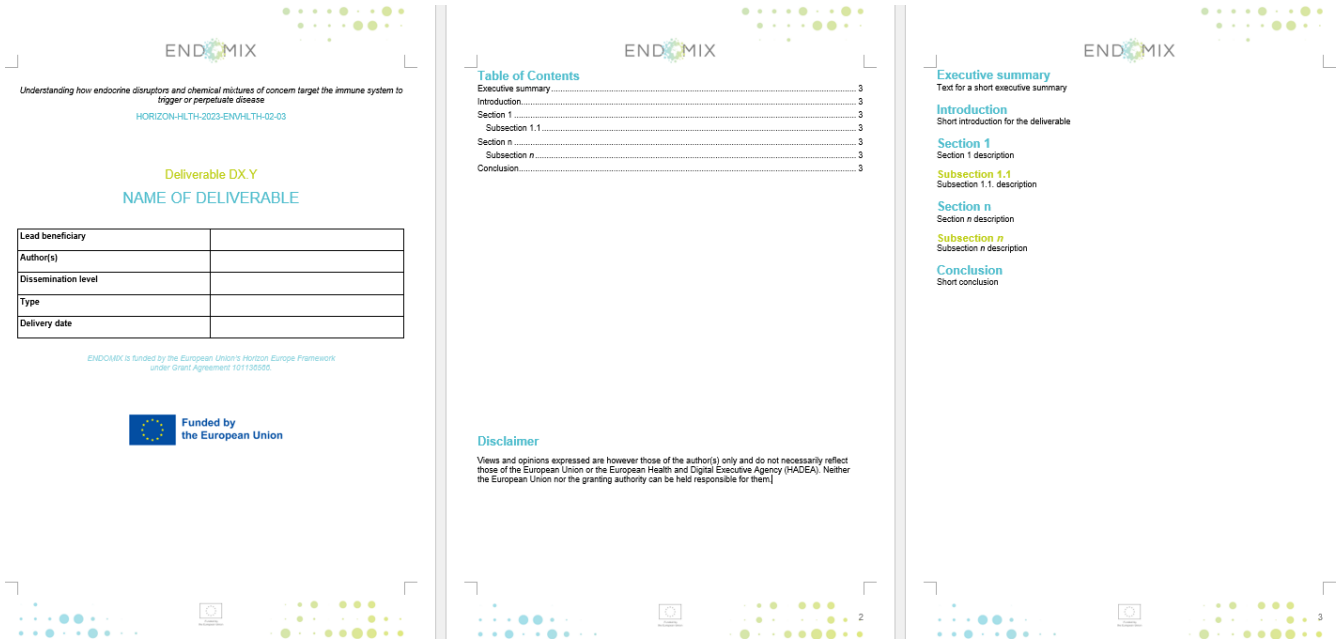
X banner:

LinkedIn and X posts:

Word templates

Additionally, uniform word templates were prepared for ENDOMIX reports, such as deliverables and milestones, and formal letters. They are available for all project partners on the collaborative platform and file archive Teamwork.

Deliverable template:



ENDOMIX

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HORIZON-HLTH-2023-ENVHLTH-02-03

Deliverable DX.Y

NAME OF DELIVERABLE

Lead beneficiary	
Author(s)	
Dissemination level	
Type	
Delivery date	

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ENDOMIX

Executive summary
Text for a short executive summary

Introduction
Short introduction for the deliverable

Section 1
Section 1 description

Subsection 1.1
Subsection 1.1. description

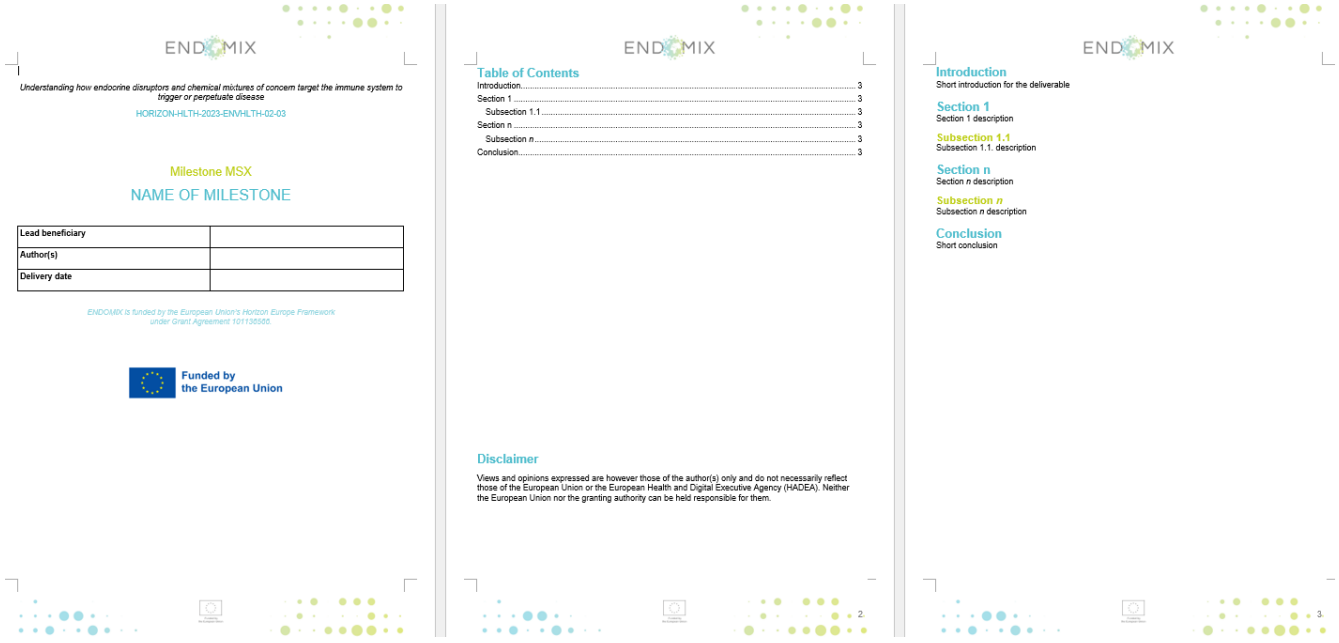
Section n
Section *n* description

Subsection *n*
Subsection *n* description

Conclusion
Short conclusion

3

Milestone template:



ENDOMIX

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Milestone MSX

NAME OF MILESTONE

Lead beneficiary	
Author(s)	
Delivery date	

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2

ENDOMIX

Introduction
Short introduction for the deliverable

Section 1
Section 1 description

Subsection 1.1
Subsection 1.1. description

Section n
Section *n* description

Subsection *n*
Subsection *n* description

Conclusion
Short conclusion

3

7. ENDOMIX online presence

The ENDOMIX project website, endomix.eu, has been developed as the main public-facing online presence for the project.

Currently, it contains the most important information about the project and efforts were made to keep the information understandable for the general public.

The website is a constantly changing and evolving platform. The initial release provides basic functionality and information, but this will change over the course of the project. This also means that the overall look of the website can change, and the order of pages and information will be tweaked and finetuned as well.

Screenshots of the separate pages, which are available at this point of time, are attached at the end of this document**.**

Landing page

The landing page features an attention-grabbing hero element at the top of the page with bold headlines. This is followed by a short presentation of the project, which links to more in-depth information about ENDOMIX, and a section with the project's key objectives and impact.

Thereafter, a section with the latest ENDOMIX news is provided. It provides in-line navigation to other news items. At a later stage, when more news items are available and in-line navigation becomes unpractical, a separate news room section will be added with and overview of all articles.

This is followed by a brief overview of the ENDOMIX structure, which is linked to the detailed description of work packages. As well as a section about the project's results and publications that leads to the achievements page. Before the next section, the website includes a quote from ENDOMIX's Scientific Coordinator, Prof. Ana Zenclussen.

As a final section, an overview of the consortium is included. All consortium partners are presented with their logo, and a link to a page for more details for all consortium partners is added.

The menu at the top of the page remains at the top for easy navigation.

A footer at the bottom of the page includes information about the EC funding and the disclaimer. It also includes direct contact details and quick links to each main section.

Impact page

The Impact page provides more details about the project, its mission and vision, as well as the overall context. Also, the expected impacts and potential barriers are presented briefly.

Structure page

This page provides more details on the structure of the ENDOMIX project. In particular, the separate work packages are presented, featuring the work package leads.

Consortium and partner-specific pages

This page provides an overview of the consortium. Every partner's logo can be clicked on for navigation to more details about each partner. This includes a general description of the organisation, their role in the project and the staff involved.

This page also includes information about the multidisciplinary nature of the consortium, and its complementary expertise.

Results

The achievements page features searchable and sortable tables for three categories of public results: scientific publications, public deliverables and reports and tools/resources. The respective tables will be populated with results as they become available.

Contact section

The contact section provides direct links to the project's social media accounts on X and LinkedIn, as well as a dedicated email address and phone number. The contact details are also included in the footer

present on all pages. This does not include any contact forms, but only provides details for direct contact means; a dedicated email address and a phone number.

The decision not to include a contact form was made for GDPR compliance reasons.

Security and compliance

All connections to and from the website are SSL-encrypted and secure.

All data is stored in a data centre in Belgium.

A GDPR-compliant cookie banner for consent and management is implemented.

The backend of the website is running on WordPress with Elementor. Elementor does not set HTTP cookies. Instead, Elementor works with LocalStorage and Session Storage. However, these are legally treated as (HTTP) cookies. Rather than HTTP cookies, data stored is an entry in the local storage and in the session storage of the browser. The collected data will most only be stored on the visitor's local browser for a limited period and will not be sent to Elementor, the website operator's server or any third party.

The LocalStorage and Session Storage data is classified as essential according to the current state of knowledge. In this case, local storage and session storage are responsible for ensuring that pop-ups, sitebars, etc. are not displayed again so that the visitor can use the website undisturbed. Whether these "cookies" are actually considered necessary is disputed.

Nevertheless, according to ePrivacy Directive 2002/58/EC, access to browser memory is only permitted if the visitor has consented (GDPR Article 6 (1) lit. a) or if the access is absolutely necessary in order to provide or operate the service.

In both cases, this means that European users of Elementor should provide their website visitors with detailed information on what data is stored locally in accordance with the GDPR.

Since we consider local and session storage to be essential in this case, opt-in consent from website visitors is technically not needed. However, to err in the safe side, we comply with the obligation to inform according to Article 13 of the GDPR. In addition to cookies, we refer to the data storage in our cookie notice.

In addition to the Elementor local storage, we also intend to use Matomo Cloud for tracking visitor statistics. This data is also stored in Belgium. Matomo is a fully GDPR-compliant alternative to Google's Analytics for website. At the time of submission of this deliverable, this has not been implemented, however.

Cookies are only stored on the visitor's computer if they consent in the cookie notice. Following this, an option to manage consent is permanently available at the bottom right of each page.

A contact form is not provided on this website, as the added value and ease of use of such a contact form is not high enough considering the implication in processing data in terms of GDPR compliance.

Cookie policy

The cookie policy has been included on the website:

This Cookie Policy was last updated on March 26, 2024 and applies to citizens and legal permanent residents of the European Economic Area and Switzerland.

1. Introduction

Our website, www.endomix.eu (hereinafter: "the website") uses cookies and other related technologies (for convenience all technologies are referred to as "cookies"). Cookies are also placed by third parties we have engaged. In the document below we inform you about the use of cookies on our website.

2. What are cookies?

A cookie is a small simple file that is sent along with pages of this website and stored by your browser on the hard drive of your computer or another device. The information stored therein may be returned to our servers or to the servers of the relevant third parties during a subsequent visit.

3. What are scripts?

A script is a piece of program code that is used to make our website function properly and interactively. This code is executed on our server or on your device.

4. What is a web beacon?

A web beacon (or a pixel tag) is a small, invisible piece of text or image on a website that is used to monitor traffic on a website. In order to do this, various data about you is stored using web beacons.

5. Cookies

5.1 Technical or functional cookies

Some cookies ensure that certain parts of the website work properly and that your user preferences remain known. By placing functional cookies, we make it easier for you to visit our website. This way, you do not need to repeatedly enter the same information when visiting our website and, for example, the items remain in your shopping cart until you have paid. We may place these cookies without your consent.

5.2 Statistics cookies

We use statistics cookies to optimize the website experience for our users. With these statistics cookies we get insights in the usage of our website. We ask your permission to place statistics cookies.

5.3 Marketing/Tracking cookies

Marketing/Tracking cookies are cookies or any other form of local storage, used to create user profiles to display advertising or to track the user on this website or across several websites for similar marketing purposes.

6. Placed cookies

Elementor - Statistics (anonymous)

We use Elementor for content creation.

This data is not shared with third parties.

7. Consent

When you visit our website for the first time, we will show you a pop-up with an explanation about cookies. As soon as you click on "Save preferences", you consent to us using the categories of cookies and plug-ins you selected in the pop-up, as described in this Cookie Policy. You can disable the use of cookies via your browser, but please note that our website may no longer work properly.

7.1 Manage your consent settings

Functional (Always active)

The technical storage or access is strictly necessary for the legitimate purpose of enabling the use of a specific service explicitly requested by the subscriber or user, or for the sole purpose of carrying out the transmission of a communication over an electronic communications network.

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Statistics

The technical storage or access that is used exclusively for statistical purposes.

Marketing

The technical storage or access is required to create user profiles to send advertising, or to track the user on a website or across several websites for similar marketing purposes.

8. Enabling/disabling and deleting cookies

You can use your internet browser to automatically or manually delete cookies. You can also specify that certain cookies may not be placed. Another option is to change the settings of your internet browser so that you receive a message each time a cookie is placed. For more information about these options, please refer to the instructions in the Help section of your browser.

Please note that our website may not work properly if all cookies are disabled. If you do delete the cookies in your browser, they will be placed again after your consent when you visit our websites again.

9. Your rights with respect to personal data

You have the following rights with respect to your personal data:

- You have the right to know why your personal data is needed, what will happen to it, and how long it will be retained for.
- Right of access: You have the right to access your personal data that is known to us.
- Right to rectification: you have the right to supplement, correct, have deleted or blocked your personal data whenever you wish.
- If you give us your consent to process your data, you have the right to revoke that consent and to have your personal data deleted.
- Right to transfer your data: you have the right to request all your personal data from the controller and transfer it in its entirety to another controller.
- Right to object: you may object to the processing of your data. We comply with this, unless there are justified grounds for processing.
- To exercise these rights, please contact us. Please refer to the contact details at the bottom of this Cookie Policy. If you have a complaint about how we handle your data, we would like to hear from you, but you also have the right to submit a complaint to the supervisory authority (the Data Protection Authority).

10. Contact details

For questions and/or comments about our Cookie Policy and this statement, please contact us by using the following contact details:

European Institute for Biomedical Imaging Research
Am Gestade 1
1010 Vienna
Austria
Website: https://endomix.eu
Email: endomix@eibir.org
Phone number: +43 1 533 4064 13

This Cookie Policy was synchronised with cookiedatabase.org on March 26, 2024.

Privacy statement

The privacy statement has been included on the website:

What data do we collect?

The European Institute for Biomedical Imaging Research collects the following data solely and only for the purpose of managing the dissemination activities of the ENDOMIX project and related projects within the ENKORE project cluster:

- Personal identification information (Name, email address) only when signing up for the project's newsletter and/or contacting the us via email or leaving a comment on our website.
- Usage data when visiting the ENDOMIX website is processed through the use of the analytics tool MATOMO (the website from which you visited us from, the parts of our app you visit, the date and duration of your visit, your anonymised IP address, information from the device (device type, operating system, screen resolution, language, country you are located in, and web browser type) you used during your visit, etc. – see the full list here). The data that we collect through MATOMO are anonymised and are therefore not personally identifiable.
- We use cookies (small data files transferred onto computers or devices by sites) for record-keeping purposes and to enhance functionality on our site. For details, see our cookie policy.

How do we collect your data?

You directly provide EIBIR with most of the data we collect. We collect data and process data when you:

- Voluntarily sign up for our newsletter and email updates, provide feedback through our comments function or contact us via email.
- Use or view our website via your browser's cookies.

How will we use your data?

EIBIR collects your data:

- To process your queries.
- To email you the ENDOMIX project newsletter.
- For statistical purposes to improve our site and to report on the impact of the project's dissemination activities.

How do we store your data?

Your date is securely stored on servers in Europe.

EIBIR will keep your personal data and usage data for up to 4 years after the project end (December 2031). Once this time period has expired, we will delete your data.

Newsletter and Event Announcements

EIBIR would like to send you information about our project and related events of ours that we think you might like. We use Mailchimp as our email marketing platform. By subscribing to this mailing list, you acknowledge that your personal data will be transferred to Mailchimp for processing. Learn more about Mailchimp's privacy practices here.

If you have agreed to receive our project newsletter and related updates, you may always opt out at a later date.

You have the right at any time to stop EIBIR from contacting you for the purpose of the newsletter and event announcements related to ENDOMIX and ENKORE. In addition to this regular newsletter, we may

also send you news, updates and opportunities related to the ENDOMIX project and its partners. Processing your data in this way is on the legal basis of “legitimate interest”. You can choose to unsubscribe from these email updates at any time.

When you subscribe to the ENDOMIX newsletter, your contact information is securely stored on the Mailchimp platform. The Mailchimp privacy policy can be viewed here: mailchimp.com/legal/privacy/. EIBIR is the data processor for this information.

What are your data protection rights?

EIBIR would like to make sure you are fully aware of all of your data protection rights. Every user is entitled to the following:

The right to access – You have the right to request EIBIR for copies of your personal data.

The right to rectification – You have the right to request that EIBIR correct any information you believe is inaccurate. You also have the right to request EIBIR to complete the information you believe is incomplete.

The right to erasure – You have the right to request that EIBIR erase your personal data, under certain conditions.

The right to restrict processing – You have the right to request that EIBIR restrict the processing of your personal data, under certain conditions.

The right to object to processing – You have the right to object to EIBIR’s processing of your personal data, under certain conditions.

The right to data portability – You have the right to request that EIBIR transfer the data that we have collected to another organisation, or directly to you, under certain conditions.

How to contact us

If you make a request, we have one month to respond to you. If you would like to exercise any of these rights, have any questions about EIBIR’s privacy policy, the data we hold on you, or you would like to exercise one of your data protection rights, please do not hesitate to contact us:

Email us at: endomix@eibir.org

Call us at: +43 1 533 4064 13

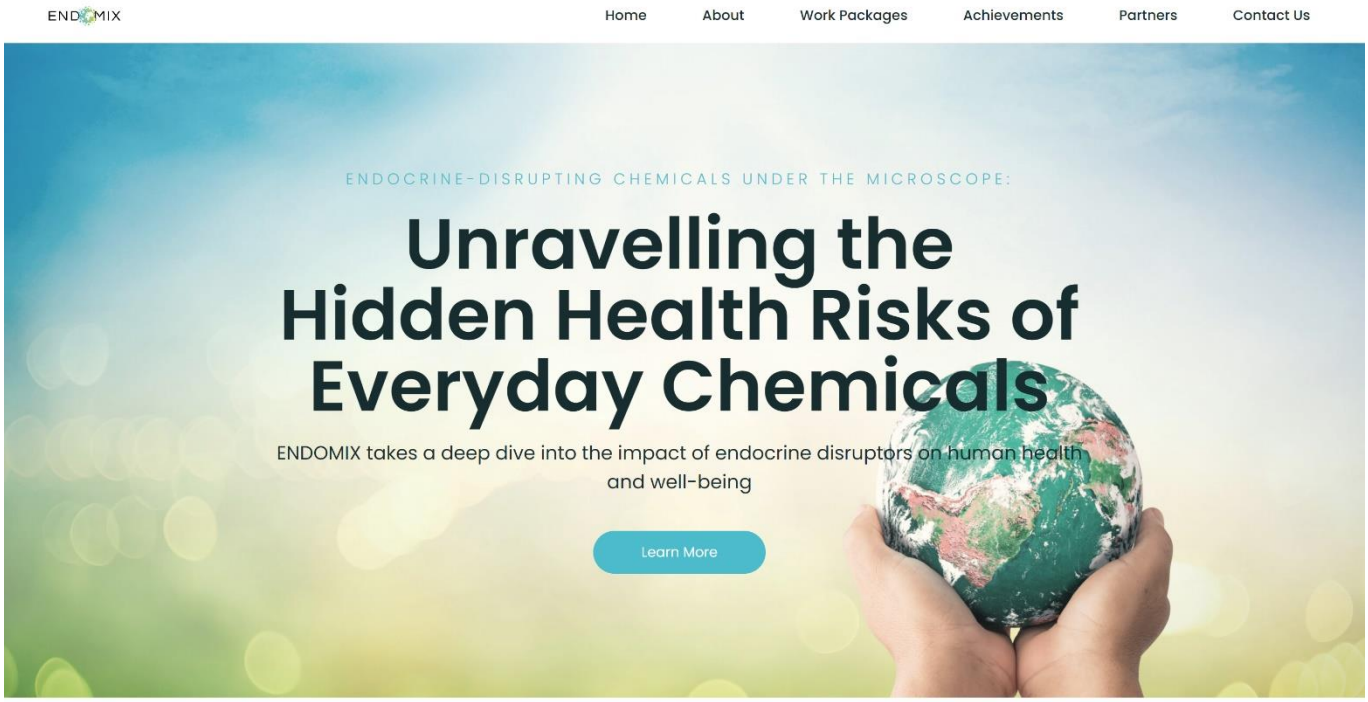
Or write to us: European Institute for Biomedical Imaging Research, Am Gestade 1, A-1010 Vienna, Austria

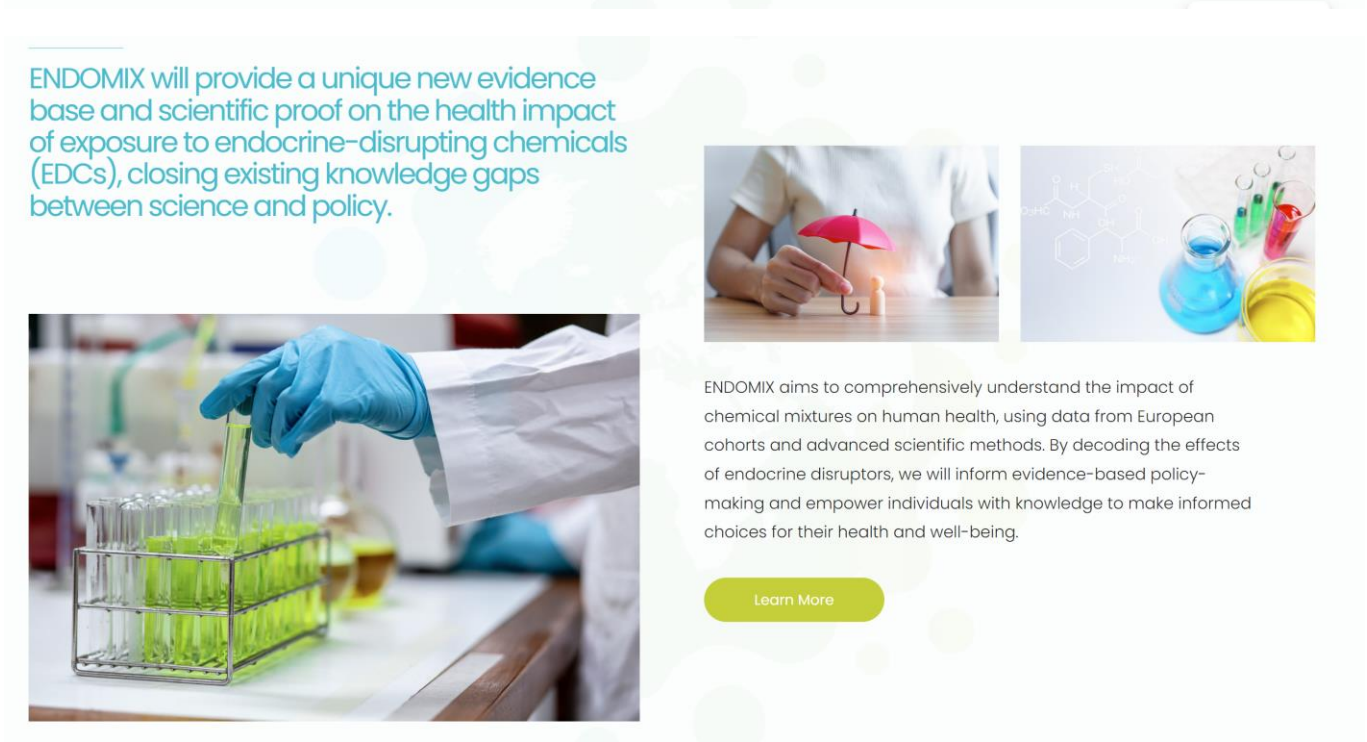
In the event you are of the opinion that the processing of your personal data infringes data protection law or your right to privacy, you may complain with the relevant authority being the Data Protection Authority (Datenschutzbehörde) in Austria.

8. Conclusion

Deliverable 7.1, the communication kit, comprehensively addresses all specified topics outlined in the Grant Agreement. The website, along with branding resources, guidelines, and communication templates, have been meticulously crafted. This deliverable serves as a vital resource for project partners, facilitating streamlined communication efforts within the ENDOMIX project.

Annex: screenshots





KEY OBJECTIVES AND IMPACT

Paving the Way for a Safer, Healthier Tomorrow

Cutting-Edge Insights

Uncovering meaningful associations and causality between exposure to multiple EDCs and adverse health outcomes, leveraging robst data from European cohorts and advanced scientific methods.

Mixtures Of Concern

Identifying specific EDC mixtures of concern that have significant health implications, allowing for a more precise understanding of the risks associated with certain chemical combinations.

Biomarkers & Patterns

Identifying biomarkers and exposure patterns to create easily measurable indicators indicative of health endpoints, contributing to a holistic approach to understanding and mitigating the helath effects of EDCs.

Real-World Application

Creating a unique evidence base for more informed policy-making and translating findings into actionable recommendations for individuals, policymakers, and society as a whole.

Newsroom

Stay updated with the latest developments and findings from ENDOMIX.

ENDOMIX Website Launch

Explore Our Journey to Unraveling the Impacts of Endocrine Disrupting Chemicals We are thrilled to unveil the official ENDOMIX

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Follow Us On Social Media

We are thrilled to announce that the ENDOMIX project is now available on X and LinkedIn! Follow us on

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The ENDOMIX project commenced its journey with a successful kick-off meeting in Leipzig, Germany, on January 30 and 31,

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ENDOMIX

A LOOK INTO OUR PROJECT STRUCTURE

Our Roadmap to Discovery

Our research is organised into distinct work packages, each focusing on key aspects of the project. From data synthesis and biomarker identification to mechanistic pathways and actionable policy recommendations, our work packages ensure a comprehensive and interdisciplinary approach to understanding the impact of endocrine disruptors.

Our Work Packages

RESULTS & PUBLICATIONS

Our Achievements

Read More

Our team of experts shares cutting-edge research on EDC exposure and mixtures of concern that will shape the future of public health policy and intervention on EDC exposure.

Results

Browse through our public deliverables and reports and learn about the milestones we have achieved.

Scientific Publications

Explore our growing collection of scientific publications, showcasing the latest research findings and insights from ENDOMIX.

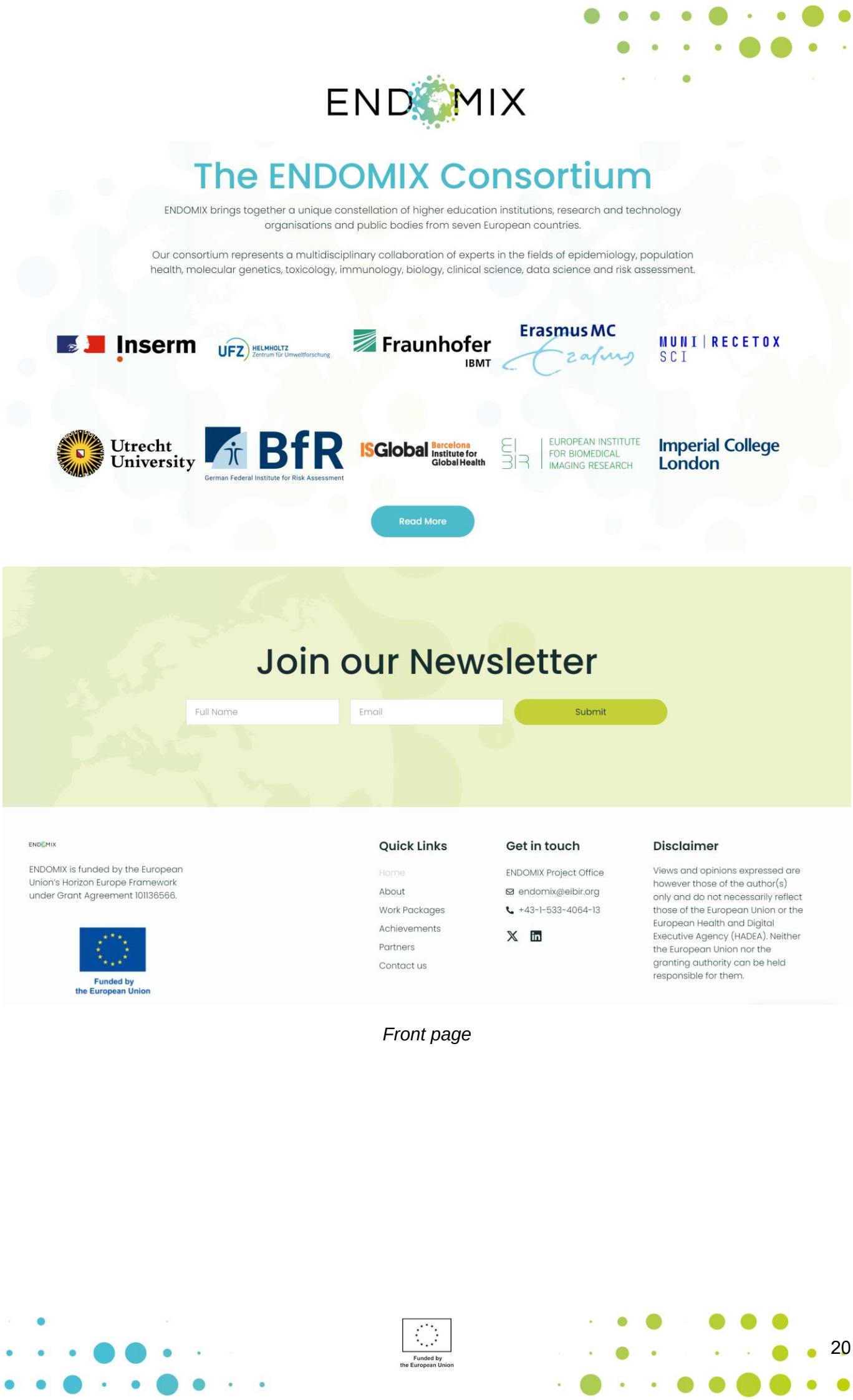
Media & Resources

Access our promotional material, such as flyers and folders, and read our news articles and press releases.

"Our project uniquely scrutinizes how everyday chemicals affect our health throughout our lives. By defining critical time windows, we aim to minimise health risks and offer practical recommendations for protection. We are dedicated to empowering individuals with knowledge to protect their health and well-being"

Ana Zenclussen
Project Coordinator

Funded by the European Union


ENDOMIX
The ENDOMIX Consortium
ENDOMIX brings together a unique constellation of higher education institutions, research and technology organisations and public bodies from seven European countries.
Our consortium represents a multidisciplinary collaboration of experts in the fields of epidemiology, population health, molecular genetics, toxicology, immunology, biology, clinical science, data science and risk assessment.
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Front page

The ENDOMIX Project

Understanding how endocrine disruptors and chemical mixtures of concern target the immune system to trigger or perpetuate disease

Closing the gap between science and policy, ENDOMIX pioneers a holistic approach to uncover the hidden impacts of EDCs on human health. Together, we pave the way towards a healthier future for all.

ENDOMIX is a pioneering research project dedicated to uncovering the true impact of endocrine disrupting chemicals (EDCs) and mixtures on human health, bridging gaps between science and policy to inform regulations and protect vulnerable populations. Employing an interdisciplinary strategy, ENDOMIX investigates the complex interactions of EDCs with the immune system, aiming to deliver new knowledge and recommendations for minimizing exposure and preventing adverse health effects. By focusing on real-life EDC mixtures, vulnerable life stages, and advanced research methodologies, ENDOMIX aims to revolutionise our understanding of immunotoxicity and its implications for human health outcomes.

Our Vision

ENDOMIX envisions a future where the true impact of EDCs is fully understood, leading to informed policies and practices that safeguard human health. By pioneering innovative research methodologies and fostering interdisciplinary collaboration, we aim to close existing knowledge gaps and revolutionise our understanding of EDCs and their implications for public health.

Our Mission

Our mission is to rigorously uncover the complex interactions between EDCs and human health, focusing on immunotoxicity and critical periods of development. Through comprehensive data generation, synthesis, and translation, we strive to deliver disruptive insights that inform evidence-based policies, empower decision-makers, and ultimately minimise exposures to hazardous chemicals. By bridging the gap between science and policy, we aim to protect vulnerable populations and promote a healthier environment for all.

Our Impact

The impact of ENDOMIX extends beyond the realms of research, catalysing positive change in policies, regulations, and public awareness surrounding EDCs and their health effects. By delivering critical new knowledge and evidence-based recommendations, we empower policymakers, regulatory bodies, and the public to make informed decisions that prioritise health and well-being.

Facts and Figures

Project name	Understanding how endocrine disruptors and chemical mixtures of concern target the immune system to trigger or perpetuate disease
Acronym	ENDOMIX
Coordinator	Helmholtz-Zentrum für Umweltforschung GmbH (UFZ)
Partners	10 partners from 7 European countries
Start date	1 January 2024
End date	31 December 2027
Duration	48 months
Grant amount	EUR 6 488 875.00

Funded by the European Union

Context

The project operates within the context of rising concerns about the health effects of EDC exposure, particularly in relation to non-communicable diseases (NCDs) such as obesity and diabetes, and the European Commission's commitment to assess and manage EDCs. Understanding how EDCs cause adverse health outcomes is crucial, as these diseases not only cause individual suffering but also generate enormous costs to healthcare systems.

Impact

The project will deliver disruptive insights into the immunotoxic effects of EDC mixtures and identify biomarkers of exposure, thereby generating a solid scientific knowledge base, informing evidence-based policies, and minimising exposures to hazardous chemicals. ENDOMIX will significantly contribute to improving public health and well-being and to alleviating the economic burden of diseases associated with EDC exposure on the healthcare system.

Benefit

ENDOMIX will significantly contribute to deepening our understanding of EDCs, thus providing a robust foundation for informing policies aimed at their effective management. By empowering individuals with knowledge and strategies to minimise exposure, the project will ultimately lead to improved public health outcomes through the implementation of targeted recommendations and preventive measures.

Why is ENDOMIX important?

ENDOMIX addresses critical gaps in understanding the impact of EDCs on human health and the interactions between endocrine disruptors and the immune system, as immune cells play a central role in the development of many chronic diseases such as asthma, allergies, reproductive disorders, and metabolic diseases. By rigorously investigating EDC exposure and its effects across different life stages, the project provides essential insights for policymakers, regulatory bodies, and the public, leading to informed decisions, improved health outcomes, and ultimately, a safer, healthier environment for all.

About page

The ENDOMIX Project

Our work plan comprises 10 well-coordinated work packages, forming the core of our interdisciplinary approach to understanding EDCs' impact on human health

Work Package 1

WP Lead: Charline Warembourg, INSERM

LIFE COURSE STUDIES TO EXAMINE THE IMMUNE-MEDIATED EFFECTS OF EDC MIXTURES ON HEALTH

Work Package 1 sets out to assess the health effects associated with exposure to EDC mixtures across different stages of human life. Through rigorous evaluation, WP1 aims to uncover the intricate relationship between EDC mixtures and long-term disease development. Central to this investigation is the examination of immunological markers, providing valuable insights into the underlying mechanisms driving these associations. By focusing on a diverse range of life stages, WP1 endeavours to shed light on the varying susceptibilities and impacts of EDC mixtures on human health.

Funded by the European Union

Work Package 2

WP Lead: Beate Escher, UFZ

IDENTIFYING COMPLEX CHEMICAL MIXTURES OF CONCERN FOR ENDOCRINE DISRUPTION AND IMMUNOMODULATION

Work Package 2 is dedicated to the identification of chemical mixtures of concerns for endocrine disruption and immunotoxicity-related adverse outcomes. Employing a multifaceted approach, WP2 utilizes cutting-edge in silico, in vitro, and alternative toxicity tools to comprehensively assess the potential effects of these chemical mixtures.

Work Package 3

WP Lead: Anne Schumacher, UFZ

ASSAYS TO STUDY THE IMPACT AND TOXICITY OF MIXTURES OF CONCERN ON IMMUNE CELL POPULATIONS

Work Package 3 focuses on analysing the immunotoxic and immunomodulatory potential of selected EDCs and mixtures. Through the utilization of cellular assays, WP3 investigates the impact of these substances on various aspects of immune cell biology, including population dynamics, functionality, differentiation, maturation, and plasticity.

Work Package 4

WP Lead: Yvonne Kohl, Fraunhofer

IMPACT OF EDC AND EDC MIXTURES ON PHYSIOLOGICAL BARRIERS AND TARGET ORGANS – THROUGH THE LENS OF IMMUNOTOXICITY

Work Package 4 is dedicated to assessing the impact of EDCs and mixtures on physiological barriers, target organs, and immune cell-organ interactions. Employing human-relevant in vitro and alternative models, WP4 investigates how EDC exposure influences the integrity and function of physiological barriers.

Work Package 5

WP Lead: Janine Felix, EMC

BIOLOGICAL PATHWAYS INVOLVED IN IMMUNE-RELATED EFFECTS OF ENDOCRINE DISRUPTING CHEMICALS ON HUMAN HEALTH

Work Package 5 delves into the intricate relationship between immune-mediated effects of EDCs and human health outcomes. Through comprehensive analysis, WP5 investigates the associations of EDC exposure with inflammatory immune markers, shedding light on the underlying biological pathways involved.

Funded by the European Union

Work Package 6

WP Lead: Roel Vermeulen, UU

TRIANGULATION OF EXPERIMENTAL AND EPIDEMIOLOGICAL EVIDENCE AND VALIDATION OF RELEVANT MIXTURES IN TRANSGENERATIONAL MODELS

Work Package 6 serves as a crucial nexus for deriving causal associations between EDC exposure and health outcomes. Drawing upon the comprehensive findings from WP3, WP4, and WP5, WP6 synthesizes information to establish causal inference and provide integrated evidence for informing risk assessment policies and approaches. By elucidating the pathways linking EDC exposure to adverse health outcomes, WP6 facilitates the translation of research findings into actionable insights for policymakers, regulatory bodies, and public health practitioners.

Work Package 7

WP Lead: Katharina Krischak, EIBIR

DISSEMINATION, SCIENCE-TO-POLICY TRANSLATION, AND EXPLOITATION

Work Package 7 is tasked with coordinating the dissemination activities of the ENDOMIX project to maximize visibility and engage a broad range of stakeholders. Through strategic planning and implementation, WP7 ensures that the project's findings and outcomes reach relevant audiences, including policymakers, regulatory bodies, scientific communities, and the general public. Additionally, WP7 establishes a framework for identifying and capitalizing on exploitation opportunities, facilitating the uptake and utilization of project results. Moreover, WP7 plays a vital role in managing intellectual property (IP) to safeguard the project's innovations and support their effective exploitation.

Work Package 8

WP Lead: Ana Zenclussen, UFZ

PROJECT COORDINATION AND MANAGEMENT

Work Package 8 is dedicated to ensuring the comprehensive management of the ENDOMIX project across legal, contractual, administrative, financial, and ethical domains. With a focus on effective governance and decision-making mechanisms, WP8 oversees project coordination, facilitating seamless communication and collaboration among project partners. Furthermore, WP8 is responsible for reporting to the European Commission (EC), ensuring compliance with regulatory requirements and guidelines.

Funded by the European Union

Work Package 9

WP Lead: Ana Zenclussen, UFZ

CLUSTERING ACTIVITIES

Work Package 9 coordinates, organises and executes the activities of ENDOMIX within the ENKORE cluster, establishing a strong foundation for the collaborative efforts within the cluster and ensuring efficient coordination and implementation of the joint activities across the various projects involved.

Work Package 10

WP Lead: Ana Zenclussen, UFZ

ETHICS REQUIREMENTS

Work Package 10 sets out the necessary ethics requirements for the project and ensures the compliance of ENDOMIX with all relevant ethics rules and regulations.

Work packages page

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NEWS

ENDOMIX Project Launched

January 15, 2024

Hidden health risks of endocrine disruptors?

New EU project sheds light on the interplay between endocrine disrupting chemicals and human health

Endocrine disruptors are chemical substances that may mimic endogenous hormones and thereby interfere with the endocrine system. The EU-funded research project ENDOMIX started January 1st and aims to comprehensively unravel how exposure to everyday chemicals with endocrine disrupting properties affect human health. The researchers will also elaborate recommendations to reduce exposure to these chemicals and minimize thereby health risks.

We are exposed to a multitude of chemicals every day, including those with endocrine disruption effects. Potentially harmful chemicals can enter into our body by eating or drinking, can be absorbed through the skin, or inhaled as tiny particles. "Endocrine disruptors are indeed omnipresent – we can hardly escape them", says Prof Ana Zenclussen, Immunologist and Head of the Department of Environmental Immunology at the Helmholtz Centre for Environmental Research (UFZ) in Leipzig, Germany. "Even if the doses of chemicals to which we are in contact to are low, the exposure occurs over a long period of time, and this can have serious effects on our health". Chemicals with the potential of disrupting endocrine processes in our body, may intensify, inhibit or just modify hormonal pathways. What are the consequences for our health? What diseases can these chemicals cause or accelerate? And where and how exactly do endocrine disruptors act in the body – especially as a mixture?

"With ENDOMIX, we are committed to find answers to these important questions", says Zenclussen, who coordinates the consortium of 11 partner institutions from seven countries. "Our research project is based on several European cohort population studies, including the LiNA mother–child study established at the UFZ. This provides us with a wealth of data". Because the biosamples of the participants have already been chemically analysed, the research team knows which endocrine disruptors each person was exposed to at what time point in life. In a first step, the scientists will dissect which mixtures of endocrine disruptors – found in the biosamples of the study participants – are associated with health-relevant effects. To do this, they use computer-based modelling methods and high-throughput cell culture experiments. "We will then generate the most promising mixtures in our laboratories and use them for further investigations in order to better understand the starting points, molecular relationships, and metabolic pathways involved in their effects", explains Zenclussen. Various carefully selected *in vitro, in vivo* and *in silico* methods as well as modern OMICS technologies will be used.

One of the key questions of ENDOMIX is how mixtures of endocrine disruptors affect the immune system. "Immune cells play a central role in the development of many chronic diseases such as asthma, allergies, reproductive disorders, and metabolic diseases. It is therefore important that we gain a better understanding of the interactions between endocrine disruptors and the immune system", says Zenclussen. With the help of Artificial Intelligence (AI), among other tools, the research team will investigate whether the data and results obtained from the experimental settings are indeed the underlying causes for the existing diseases of the study participants. "With ENDOMIX, we want to uncover the real life effects of endocrine disruptors on human health and identify possible differences between age and sex", says Zenclussen. "Our project is unique in that we are scrutinising exposure to endocrine disruptors and the associated health effects over the entire lifespan". An overarching aim is to identify the critical time windows in which the body reacts particularly sensitively to endocrine disruptors. "If these time windows are better defined and known, protective measures can be particularly effective, and health risks can be minimised", says Zenclussen. "We are working hard to ensure that our research findings can lead to practical recommendations for action – so that people can better protect themselves from everyday chemicals with hormonal effects".

ENDOMIX runs until the end of 2027 and is funded by the European Union's Horizon Europe research and innovation programme under grant agreement No 101136566 with around EUR 7 million. Coordinated at the Helmholtz Centre for Environmental Research (UFZ). Project partners are: Institut national de la santé et de la recherche médical (INSERM, France), Fundación Privada Instituto de Salud Global Barcelona (ISGlobal/Spain), Fundación para el Fomento de la Investigación Sanitaria y Biomedica de la Comunitat Valencia (FISABIO/Spain), Imperial College of Science Technology and Medicine (ICL, United Kingdom), Universiteit Utrecht (UU, Netherlands), Erasmus Universitair Medisch Centrum Rotterdam (EMC, Netherlands), Federal Institute for Risk Assessment (BfR), Masarykova univerzita (MU, Czech Republic), Fraunhofer Institute for Biomedical Engineering (IBMT), European Institute for Biomedical Imaging Resesarch (Austria).

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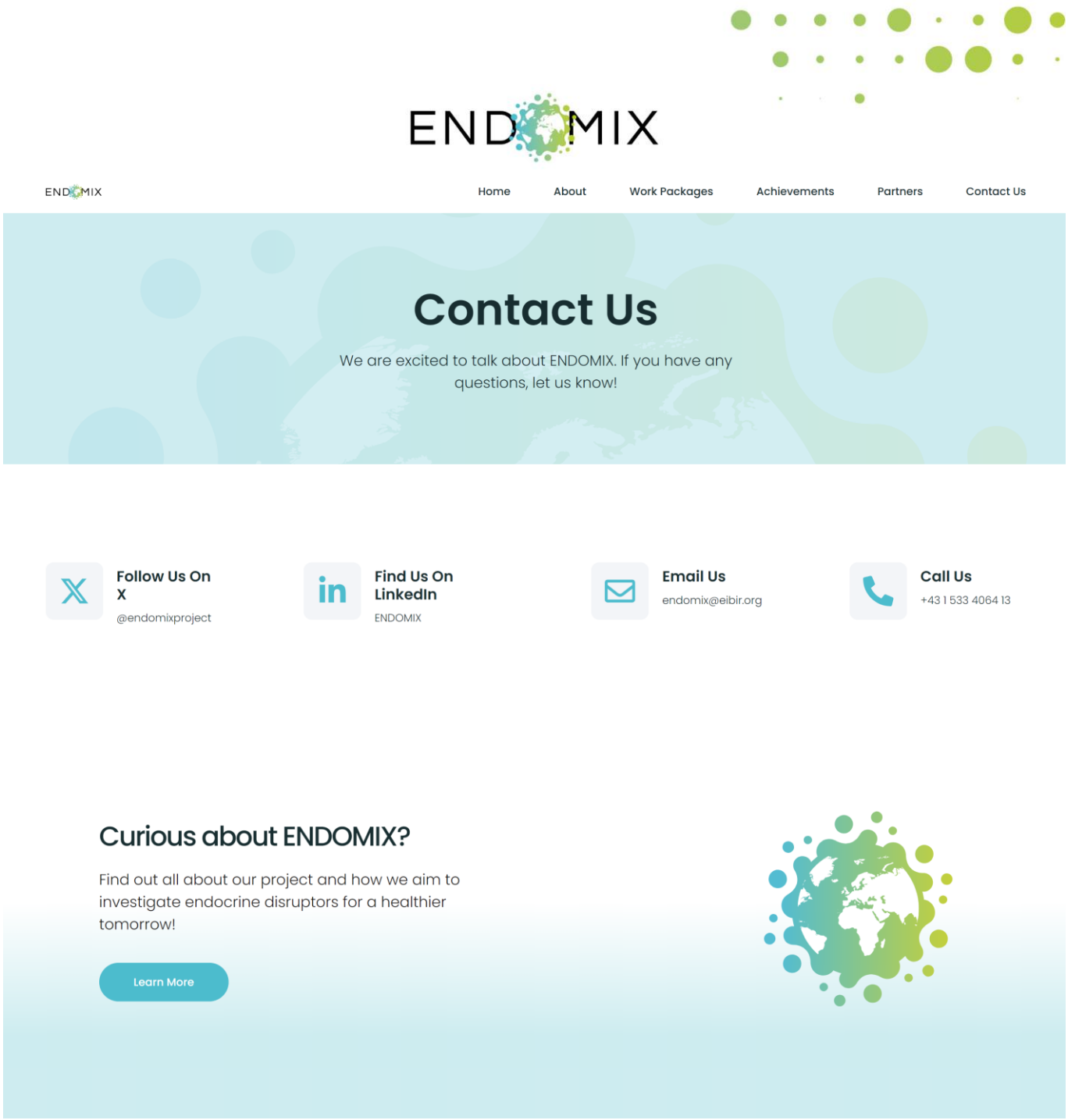

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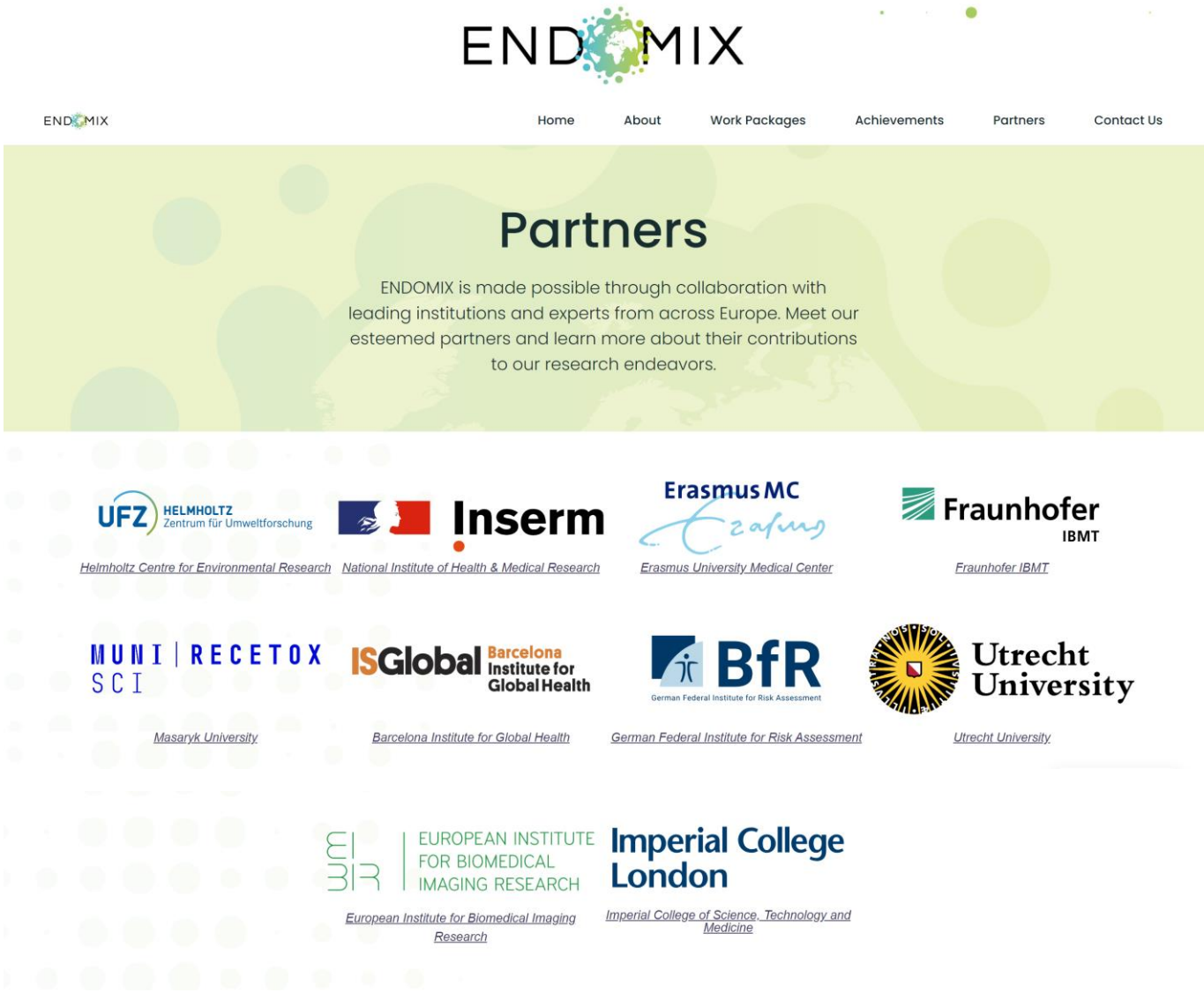

Consortium overview page

ENDOMIX

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Erasmus University Medical Center Rotterdam

Rotterdam, NL

Erasmus MC

Erasmus University Medical Center Rotterdam (www.erasmusmc.nl) is committed to a healthy population and excellence in healthcare through research and education. It is the largest medical center in the Netherlands, excelling in various research fields, including fundamental, clinical, public health and prevention research. It is ranked the 12th best University in Europe for Medicine (QS World University Ranking). In addition to scientific research, patient care and education are core tasks of Erasmus MC. It is the top referral centre for a region of about five million inhabitants. Erasmus MC is the largest medical school in the Netherlands, with over 4,000 medical students and 250 PhD graduations each year. Together, the students and almost 14,000 employees at Erasmus MC improve the individual patient care and public health of tomorrow. The Core Facility Generation R runs the Generation R Programme, which is focused on life-course health and includes two population-based cohorts: Generation R (10,000 children included during pregnancy, born 2002-2006, and their parents) and Generation R Next (3500 mothers, 2500 children, born 2018-2021). Twenty departments participate in the Generation R Programme, as well as other faculties of Erasmus University and the City of Rotterdam.

Role in the project

As leaders of Work Package 5 (WP5), Erasmus MC leads the investigation into the immune-mediated effects of EDCs and their correlation with human health outcomes. This involves analyzing the associations between EDC exposure and inflammatory immune markers, thereby uncovering the underlying biological pathways involved. Additionally, Erasmus MC co-leads Work Package 1 (WP1), which aims to assess the health effects linked to exposure to EDC mixtures across various stages of human life.

Team

Liesbeth Duijts

Liesbeth Duijts is Associated Professor and works as Paediatrician- Pulmonologist / Epidemiol in the Department of Paediatrics at Erasmus MC in Rotterdam, the Netherlands. Her research focuses on unravelling how environmental exposures, genetics and their interactions in specific critical periods of early life lead to structural and functional developmental adaptations, and subsequent risk of respiratory diseases across the life course. Her research is largely embedded within the prospective population-based Generation R cohorts (~10,000 children; Principal Investigator (PI) Asthma and Atopy Group). As PI for Allergy and Respiratory Health in this study, she aims to gain insight into the effect of exposure to EDC mixtures assessed at various time windows on allergies and respiratory health from childhood to adulthood, through alteration of the immune system function.

Janine Felix

Janine Felix is Associate Professor in the Department of Paediatrics at Erasmus MC in Rotterdam, the Netherlands. Her team's research aims to understand biological mechanisms underlying the associations of early-life exposures and later health, especially cardiometabolic health. She is Deputy Head of the Generation R Study, a population-based birth cohort of almost 10,000 participants. As Principal Investigator (PI) for Epigenetics in this study, she uses (epi-)genome-wide data in combination with other 'omics and detailed phenotypic data to gain insight into these processes.

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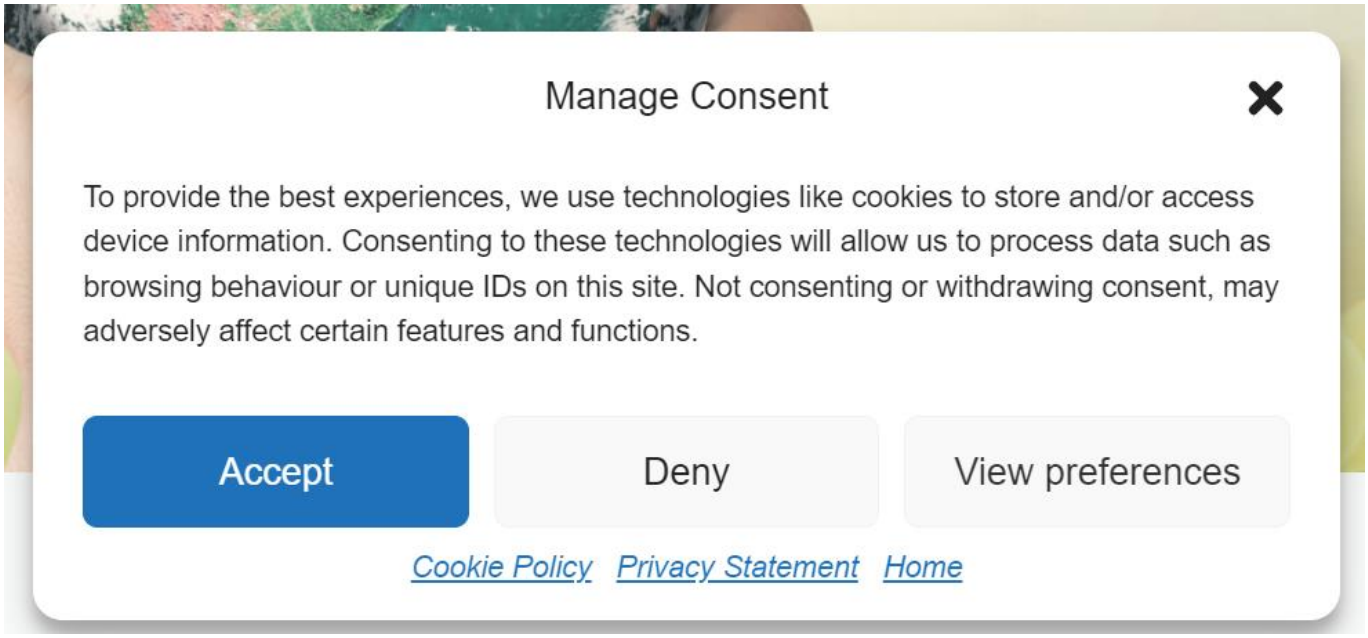

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