

# ENDOCRINE DISRUPTORS: TIME TO PROTECT OUR HEALTH

Position paper of the Independent Health Insurance Funds





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## Contents

1	INTRODUCTION.....	5
2	THE OPPORTUNITY OF THE COVID-19 ERA .....	7
3	CONTEXT .....	8
3.1	What does the citizen say.....	8
3.1.1	Survey by the Independent Health Insurance Funds.....	8
	On Belgian people's habits .....	8
	On Belgian people's knowledge.....	9
	On Belgian people's sources of information .....	10
	On Belgian people's concerns.....	10
	On the willingness of Belgian people to adapt.....	11
	On the expectations of Belgian people with regard to the policy .....	11
3.1.2	Other surveys.....	12
3.2	What does science say .....	13
3.2.1	International studies .....	13
	Definitions.....	14
	Exposure to endocrine disruptors.....	14
	Harmful effects associated to exposure to endocrine disruptors.....	15
	Impact of exposure on the human body .....	16
	Conclusion.....	17
3.2.2	Human biomonitoring.....	17
	The Flemish human biomonitoring campaign .....	18
	The Walloon human biomonitoring campaign.....	19
3.3	What do the stakeholders say.....	20
3.3.1	General.....	20
3.3.2	Specific positions .....	20
	Industry and agriculture.....	20
	Non-governmental organisations .....	21
	Health insurance sector.....	22
	Healthcare providers.....	23
	Political world.....	23

3.4	<b>What are the federal and regional governments doing .....</b>	<b>25</b>
3.4.1	Federal government.....	25
	The information report by the Senate on endocrine-disrupting substances (2018) .....	25
	Guidance no. 9404 from the Superior Health Council (2019) .....	26
	The national action plan on endocrine disruptors (2020) .....	27
3.4.2	Regional government .....	28
	Flanders.....	28
	Wallonia .....	29
	Brussels.....	30
3.5	<b>What is Europe doing.....</b>	<b>32</b>
3.5.1	The European Green Deal.....	32
3.5.2	The HERA scientific research project.....	34
3.5.3	The website with lists of endocrine disruptors .....	34
3.6	<b>What are other countries doing.....</b>	<b>35</b>
3.6.1	Denmark.....	35
3.6.2	France.....	36
4	<b>POLICY RECOMMENDATIONS .....</b>	<b>37</b>
4.1	<b>Guiding principles .....</b>	<b>37</b>
4.1.1	Health in all policies.....	37
4.1.2	Precautionary principle .....	37
4.1.3	Child standard .....	38
4.1.4	Health objectives.....	38
4.1.5	Coherence between all policy levels.....	38
4.1.6	Health literacy.....	39
4.1.7	Transparency .....	39
4.2	<b>Objectives and recommendations .....</b>	<b>40</b>
4.2.1	Objective 1: To inform citizens and raise awareness .....	40
	Involve all stakeholders.....	40
	Do not forget the healthcare providers.....	41
	Communicate using a clear and understandable message.....	42
	Develop the right communication tools and channels.....	42
	Be transparent in consumer information.....	43
4.2.2	Objective 2: To green innovation and research .....	44
4.2.3	Objective 3: To develop a policy based on the precautionary principle .....	46
	Define the application of the precautionary principle .....	46
	Work towards a clear legislative framework .....	47
	Organise good coordination and control.....	49
4.2.4	Objective 4: To play a pioneering role in Europe .....	50
	Take coherent positions at European level.....	50
	Create a European ‘coalition of the willing’ .....	52
5	<b>CONCLUSION.....</b>	<b>53</b>
6	<b>APPENDIX: REDUCING THE RISK IN DAILY LIFE.....</b>	<b>55</b>

# 1 INTRODUCTION

In 2019, the memorandum<sup>1</sup> by the Independent Health Insurance Funds mentioned reducing the impact of the environment on our health as one of the ten major priorities for policy in Belgium. Several proposals were formulated, including the need for greater awareness of endocrine disruptors<sup>2</sup> and a ban on the toxic substances that pose a danger to our health, especially to vulnerable groups. What's more, the exposure to endocrine disruptors has a cost. The economic cost in Europe is estimated to be at least €163 billion a year.<sup>3</sup>

On 19 November 2020, the Independent Health Insurance Funds will host a symposium in collaboration with the *Health and Environment Alliance* (HEAL) on the exposure to endocrine disruptors in our daily lives, and what we can do to mitigate such exposure. The aim of the Independent Health Insurance Funds is to contribute to the debate on endocrine disruptors in Belgium.

The Belgian Senate published a very valuable report<sup>4</sup> of a hearing on endocrine disruptors as early as 2018, and in 2019 an advisory report<sup>5</sup> containing relevant recommendations was published by the Superior Health Council.

The timing is perfect to tackle this problem:

- the issue of chemical substances and/or endocrine disruptors is on the radar of the federal and regional governments;
- the Green Deal shows Europe has set ambitious goals;
- the FPS Public Health is working on a national action plan on endocrine-disrupting substances, in collaboration with the federal states.

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<sup>1</sup> 2019 Memorandum: 10 priorities for the future of healthcare, Independent Health Insurance Funds, 2019 - <https://www.mloz.be/nl/memorandum2019>

<sup>2</sup> According to the World Health Organization, an endocrine disruptor is an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub)populations. – Extract from State of the Science of Endocrine Disrupting Chemicals 2012 - Summary for Decision-Makers, WHO, 2012

<sup>3</sup> Endocrine Disruptors: From Scientific Evidence to Human Health Protection. European Parliament Think Tank, 2019

<sup>4</sup> Information report on the necessary cooperation between the federal government, the Communities and the Regions for the prevention and elimination of endocrine-disrupting substances in consumption, with a view to promoting public health, Senate, 2018 - <https://www.senate.be/www/webdriver?MltabObj=pdf&MlcolObj=pdf&MlInamObj=pdfid&MltypeObj=application/pdf&MlvalObj=100663866>

<sup>5</sup> [https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/190617\\_shc-9404\\_fys\\_chem\\_env\\_hygiene\\_vcabdem.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/190617_shc-9404_fys_chem_env_hygiene_vcabdem.pdf)

The Independent Health Insurance Funds welcome the development of a national action plan on endocrine disruptors to which they have been able to contribute. We are now looking forward to the specific implementation and execution of the national action plan.

This position paper is the result of internal analysis of the topic and covers the following aspects:

- context: description of what citizens and science are saying, and what the government has done so far at different levels.
- policy recommendations: what principles should guide us and what objectives should we pursue?
- reducing exposure in our daily lives: how can we translate these principles and objectives into specific measures that are in line with the national action plan?

The content of this position paper forms the basis of the content preparation for the Independent Health Insurance Funds' symposium on endocrine disruptors on 19 November 2020.

## 2 THE OPPORTUNITY OF THE COVID-19 ERA

The COVID-19 crisis has a heavy impact on people and our society. But it may also be an opportunity, since we are now living in a time that forces us to organise ourselves in a different way. People are thinking about their behaviours and are open to change. Society is thinking about what could/should be done differently in future.

On Denmark's initiative, several member states already indicated to the European Commission earlier this year that, after the COVID-19 crisis, the **Green Deal** roadmap should be continued and should not be sidelined in favour of a purely economic agenda. In the meantime, the European Commission seems to have adopted this position and to continue on the path that has been started.

In addition, several Member States have opted to make state aid conditional on new conditions. For example, companies with accounts in tax havens are not eligible for financial support in certain EU Member States, such as Denmark<sup>6</sup>. With regard to the aviation sector, state aid in certain countries is made conditional on efforts to reduce environmental pollution and achieve climate targets, as agreed with Austrian Airlines, for example<sup>7</sup>.

Such an attitude could also be adopted in the dossier on endocrine disruptors. The use or allocation of public funds could be a lever to encourage a switch to the use of alternatives in certain sectors of the economy, just think of all the discussions about the European agricultural policy.

The question is whether this transition will be at the right tempo. It is clear this will also require a European approach, so that farmers or businesses in one country are not disadvantaged in relation to those in other Member States. But the latter should not be an excuse for doing nothing at federal and regional levels. To go 'business as usual' would be an opportunity missed.

For this reason, the Independent Health Insurance Funds have joined the 'Corona Coalition'<sup>8</sup>, an initiative by various civil society actors (health insurance funds, trade unions, NGOs) to call on the Belgian government to strive for *a sustainable, just and resilient society*. Future policies should seek to build *an ecological state, capable of protecting citizens from environmental and health risks, preserving biodiversity and decarbonising energy, transport, industry, agriculture and housing, as envisaged by the European Green Deal, with which recovery plans must comply*. Addressing the problem of endocrine disruptors is an opportunity to do things differently in these Corona times.

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<sup>6</sup> <https://www.demorgen.be/meningen/overheidssteun-aan-grote-bedrijven-mag-geen-blanco-cheque-zijn~b7d837b7/>

<sup>7</sup> [https://www.standaard.be/cnt/dmf20200608\\_04984774](https://www.standaard.be/cnt/dmf20200608_04984774)

<sup>8</sup> [www.corona-coalitie.be](http://www.corona-coalitie.be) (NL) - [www.coalitioncorona.be](http://www.coalitioncorona.be) (FR)

# 3 CONTEXT

## 3.1 WHAT DOES THE CITIZEN SAY

In any policy, it is important to be aware of the citizen's opinion too. This is significant input that contributes to the development of an efficient and coherent policy with public support. All too often, health policy is limited to a debate between experts, but it should also reflect societal preferences so that the citizen/patient supports the choices and decisions made. Many opinion polls underline the desire of citizens to allocate more resources to prevention and to put in place decisive policies to improve the quality of life.

Meeting the needs of the population remains a core mission of the health insurance funds, convinced as we are that a health policy must reflect the preferences of citizens, patients and their environment. That is why the Independent Health Insurance Funds organised a survey on endocrine disruptors in 2020 in which 1,000 people participated. Other surveys conducted in recent years have also shown that while citizens are concerned about endocrine disruptors, they are not always well informed about the potential risks, not least because the subject matter is sometimes complex and technical.

### 3.1.1 Survey by the Independent Health Insurance Funds

In June 2020, the Independent Health Insurance Funds organised a survey on endocrine disruptors among a group representative of the Belgian population (1,000 people). The survey gauged the participants' knowledge, concerns and expectations related to endocrine disruptors.

Below is an overview of the principal results.

#### On Belgian people's habits

In our daily lives we perform actions that can expose us to endocrine disruptors. The survey shows that many Belgians already do certain everyday things that reduce this exposure. The 3 highest-scoring good habits are airing the house (86% of respondents do this always or often), peeling non-organic fruit and vegetables (53%) and buying organic fruit and vegetables (26%).

However, there are also habits that increase our exposure to endocrine disruptors. The following habits make up the top 3:

- 61% of respondents heat up food in plastic containers, of which 29% always or often, and 32% occasionally;
- 50% of respondents use new clothing or bedlinen without washing the items first, of which 34% always or often, and 16% occasionally.

The figures also show that people in Wallonia and the Brussels Capital Region (BCR) make more effort to reducing exposure in daily activities. In Flanders, for example, 67% of respondents heat up their food in plastic containers, while this total was 53% of those surveyed in Wallonia as well as in the BCR. 45% of respondents in Wallonia and 52% in the BCR say they check the ingredients in cosmetics before purchasing, while only 28% of respondents in Flanders do the same. Finally, Flanders uses more non-natural pesticides and insecticides than Wallonia and the BCR: 45% as opposed to 27% and 15%.

### On Belgian people's knowledge

48% of those surveyed have never heard of endocrine disruptors

48% of those surveyed have never heard of endocrine disruptors, 22% know what it is, 30% have heard of it but don't really know anything about it. There are regional differences here too: while 62% of those questioned in Flanders have never heard of endocrine disruptors, this group is limited to 32% in Wallonia and 23% in the BCR. Also notable: **only 4 out of 29 survey participants who were pregnant or had recently given birth know what endocrine disruptors are, even though they represent one of the vulnerable groups.**

People who knew or had heard of endocrine disruptors were asked a number of additional questions, including related to the information about the possible dangers of endocrine disruptors in a number of everyday products, awareness of the health effects of endocrine disruptors and the possible presence of endocrine disruptors in a number of products. Converted to the total sample, the following results were obtained:

- only 5% feel informed about endocrine disruptors in everyday products, rising to 10% among those who have already heard about endocrine disruptors and 15% among those who know what endocrine disruptors are.
- in relation to the presence of endocrine disruptors in specific products, the presence of endocrine disruptors / harmful substances in pesticides is best known: 1 in 3 Belgians (36%) are aware of this. This is lower for other products: packaging (30%), personal hygiene products (27%), toys (22%), plastic pots and pans with anti-stick coating (22%). Here, too, knowledge in Wallonia and the BCR is often more than 20% higher than in Flanders.
- when asked about the possible health effects of endocrine disruptors, 1 in 4 of the respondents stated they were aware of these. Another 20% are somewhat aware, **but almost 60% are not at all aware that endocrine disruptors can cause cancers or have a negative impact on the development of babies, children and adolescents.** 7 out of 29 survey participants who were pregnant or had recently given birth are aware that endocrine disruptors can lead to health problems, only 3 out of 29 know that endocrine disruptors can have a negative effect on the development of the baby, 6 out of 29 know the danger to the development of children.

Knowledge about a number of specific endocrine-disrupting chemicals, which are regularly mentioned in the information distributed related to endocrine disruptors, was examined:

- bisphenol A: 55% of respondents have never heard of this, 17% know what it is;
- phthalates: 64% of respondents have never heard of this, 11% know what it is;
- parabens: 28% of respondents have never heard of this, 25% know what it is;

3 out of 4 Belgians (73%) assume the Belgian market only allows products that do not contain potentially hazardous substances. People in Flanders are a little more convinced of this (80%) than those in Wallonia (63%) and the BCR (73%).

### On Belgian people's sources of information

The respondents indicate that they inform themselves:

- 21% have looked up information about endocrine disruptors at some point;
- 85% have read a packaging label (not specifically because of the possible presence of endocrine disruptors) at some point;
- 50% have looked up a chemical substance at some point.

6 out of 29 survey participants who were pregnant or had recently given birth indicated that they had looked up information about endocrine disruptors at some point.

Those who have searched for information are generally fairly positive about the information they found: 2 out of 3 consumers seem satisfied with the information they found. Information is mainly sought via a website (not necessarily an official authority), and to a lesser extent doctors and pharmacists are called upon.

What do the respondents feel is important with regard to the information they are looking for?

- The information comes from an official, reliable source.
- The information is understandable and scientifically substantiated (but the scientific details are not needed).
- The information is brief, clear and easy to understand.

### On Belgian people's concerns

**39% of respondents are concerned (8% are very concerned) about exposure to endocrine disruptors present in everyday products**, not just for their own family but also for the environment. However, the majority (60%) of Belgians are not really losing any sleep about it.



**3 out of 4 Belgians (73%) assume the Belgian market only allows products that do not contain potentially hazardous substances.**

Concerns rise sharply with knowledge: the more one knows, **the greater the concern about exposure to endocrine disruptors**:

- 66% of the people who know what endocrine disruptors are, are concerned.
- 77% of the people who have already looked for information on endocrine disruptors, are concerned.

10 out of 29 survey participants who were pregnant or had recently given birth said they were concerned about the exposure to endocrine disruptors from everyday products.

### On the willingness of Belgian people to adapt

Knowledge is the great driver of behavioural change<sup>9</sup>; those who are informed are more concerned and more willing to adjust their behaviours. This is the reason why, according to the survey, the current willingness to change often seems to be a little higher in Wallonia than in Flanders.

A large majority of Belgians is willing to adapt their behaviours for most of the habits presented (till 70% of the respondents, and sometimes even more). 59% of those surveyed, for instance, already peel non organic fruit and vegetables, and 31% is willing to do this in the future.

Nevertheless, the driver to adapt one's habits is strongly related to the effort needed to do so (time, money etc.) Switching to organic alternatives (detergents - pesticides - fruit and vegetables) seems to be the easiest behavioural change.

There are also reservations about toys and antibacterial clothing. In terms of behaviour, resistance is greatest when checking labels at the time of purchase and heating food in plastic containers. The survey shows that 31% for instance is not willing to stop microwaving food in plastic containers.

### On the expectations of Belgian people with regard to the policy

First and foremost, the **government** is expected to ban dangerous substances: 59% of people classed 'banning dangerous substances' among the 2 most important measures they expect from the government.

The following possible initiatives to tackle exposure to endocrine disruptors also received a great deal of support from respondents (in order of importance):

- European legislation and measures
- awareness-raising campaigns
- a national action plan to reduce the use of endocrine disruptors

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<sup>9</sup>There are methods to achieve these behavioural changes. Example: <https://www.gezondleven.be/gezond-leven-gezonde-omgeving/gedragsverandering-in-1-2-3>

3 out of 4 consumers also expect **healthcare providers** (e.g. doctors, pharmacists, gynaecologists) to provide information about endocrine disruptors. This mainly relates to specific information/advice to protect oneself against exposure to endocrine disruptors (47%) and more general information on endocrine disruptors (45%).

A **health insurance fund** is expected to provide a bridging role between the consumer and all relevant actors, both governments and healthcare providers. What specifically is expected from the health insurance fund? General information about endocrine disruptors and specific advice on reducing endocrine disruptors in daily life. An inventory has been added as an appendix to this position paper (see section 6), with tips on reducing exposure to endocrine disruptors as currently recommended by various organisations. These recommendations can also be used by the health insurance funds to raise awareness among their members.

When it comes to **tools**, simple solutions come to mind first and foremost, particularly an easily recognisable, visual symbol that assists in making the right decision at the time of purchase, such as labels and pictograms: not just easy to understand but also available when it matters (at the time of purchase in the store).

### 3.1.2 Other surveys

There are not many other surveys on the subject of endocrine disruptors. However, the following surveys did make reference to endocrine disrupting substances:

- in the Eurobarometer 501<sup>10</sup> from 2019, citizens in various countries (including Belgium) were questioned about the environment. The survey also included a number of questions about the impact of chemical substances:
  - 90% of respondents (88% of Belgian respondents) expressed concern about the environmental impact of chemicals in products used in everyday life.
  - 85% of respondents (83% of Belgian respondents) expressed concern about the health impact of chemicals in products used in everyday life.
- the Eurobarometer 456<sup>11</sup>, published in 2017, looked at concerns related to the presence of hazardous chemicals (i.e. broader than just endocrine disruptors) in daily life, the information about these substances and regulations in different countries. The most noteworthy results:
  - 69% of Belgians surveyed are at least somewhat worried about exposure to hazardous chemicals in their daily lives, 32% are very worried.
  - only 42% of Belgians surveyed feel well-informed about the potential dangers of chemicals in products.

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<sup>10</sup> European Commission. Special Eurobarometer 501. Attitudes of Europeans towards the Environment – December 2019. Publication March 2020

<sup>11</sup> Special Eurobarometer 456 – ‘Chemical safety’ Summary European Commission, 2017

- the main sources of information on the potential danger of chemicals are the product labels (77%) and the media (57%).
- 44% of Belgians surveyed think that products containing chemicals are safe for human health and the environment (5% think they are completely safe, 39% to some extent, 15% not at all).
- Research was also carried out into the use of pesticides - which contain hazardous chemicals and endocrine disruptors. In 2015, Ghent University conducted a study<sup>12</sup> on the pesticide labelling. Almost half of those who use pesticides at home or in the garden feel the label is not clear enough. 15% just don't read it. 30% of users indicate that they pour the rinse water down the sink after cleaning the equipment. These discharges can damage the environment and human health in the long term. Finally, it is also interesting to mention that in 2017 the Vlaamse Milieu Maatschappij (VMM, Flanders Environment Agency) carried out a study<sup>13</sup> on the use of pesticides among more than 2,000 Flemish people and found that about half of respondents no longer use pesticides in the garden and that pesticide-free products are on the rise.

## 3.2 WHAT DOES SCIENCE SAY

### 3.2.1 International studies

In addition to the opinion of the citizen, the latest scientific knowledge also forms an essential basis for the recommendations by the Independent Health Insurance Funds on endocrine disruptors.

Scientific knowledge about endocrine disruptors has increased significantly in recent years: innumerable scientific publications describe the mechanisms of action of endocrine disruptors, link chronic diseases to exposure to endocrine disruptors and formulate recommendations for better protection of human health. In addition, there is an increasing body of literature suggesting that traditional scientific methods for assessing the safety of chemicals are sometimes not adequate to properly evaluate the impact of endocrine disruptors on human health.

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<sup>12</sup> [http://www.gezondheidsmilieu.be/nl/actueel/helpt\\_belgen\\_begrijpt\\_etiket\\_pesticiden\\_niet-1434.html](http://www.gezondheidsmilieu.be/nl/actueel/helpt_belgen_begrijpt_etiket_pesticiden_niet-1434.html)

<sup>13</sup> <https://www.vmm.be/publicaties/de-vlaamse-tuin-met-of-zonder-pesticiden>

## Definitions

### Endocrine system and hormones

The endocrine system consists of glands that secrete chemical messengers (hormones) that interact with specific target organs or tissues (receptors)<sup>14</sup>.

Hormones are natural chemicals produced by endocrine glands that are found throughout the body (e.g. thyroid, ovaries, testes, pancreas etc.). They are secreted, and - via the blood - reach receptors of target organs and cells, where they trigger specific reactions. While only present in the body in very low concentrations, hormones regulate a wide range of body functions, including growth, development, reproduction, immunity, metabolism and body weight. The hormonal needs of each organ and tissue change throughout a person's lifetime, requiring hormones to be present in very precise amounts at specific times. Examples of hormones are insulin, adrenaline, oestrogen, testosterone and endorphin.

### Endocrine disruptors

The World Health Organization (WHO) defines an endocrine disruptor (also called EDC, or Endocrine Disrupting Chemical) as follows: "An endocrine disruptor is an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub) populations".<sup>15</sup> Or as indicated in the Senate<sup>16</sup> report of 2018, a hormone disruptor is a chemical substance or mixture of chemicals:

- which is not produced by the human body.
- which disrupts or impedes the operation of the endocrine system.
- which has a harmful impact on the health of the exposed individual and/or his descendants.

## Exposure to endocrine disruptors

Endocrine disruptors are a global problem for the environment and human health<sup>17</sup> and are omnipresent<sup>18</sup>. Human exposure to endocrine disruptors occurs through ingestion of food and water, through inhalation of gases and particles in the air and through the skin.

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<sup>14</sup> La Merrill MA, et al. Consensus on the key characteristics of endocrine-disrupting chemicals as a basis for hazard identification. *Nat Rev Endocrinol*. 2020 Jan;16(1):45-57. doi: 10.1038/s41574-019-0273-8.

<sup>15</sup> World Health Organisation - WHO - State of the Science of Endocrine Disrupting Chemicals 2012 - Summary for Decision-Makers, 2012

<sup>16</sup> Information report on the necessary cooperation between the federal government, the Communities and the Regions for the prevention and elimination of endocrine-disrupting substances in consumption, with a view to promoting public health, Senate, 2018, p. 23

<sup>17</sup> Yilmaz B, et al. Endocrine disrupting chemicals: exposure, effects on human health, mechanism of action, models for testing and strategies for prevention. *Rev Endocr Metab Disord*. 2020 Mar;21(1):127-147. doi: 10.1007/s11154-019-09521-z.

<sup>18</sup> Encarnaçao T, et al. Endocrine disrupting chemicals: Impact on human health, wildlife and the environment. *Sci Prog*. 2019 Mar;102(1):3-42. doi: 10.1177/0036850419826802.

They can also be transferred from a pregnant woman to her developing foetus via the placenta, or to a child through breast milk<sup>19</sup>.

**As such, people can be exposed to endocrine disruptors throughout their lives:** at work, through consumer goods and medicines, natural resources and many other circumstances<sup>20</sup>. What's more, hundreds of new chemicals are produced and marketed every year without being tested for potential endocrine-disrupting properties, which can then reach the human body through everyday products<sup>21</sup>. Continuous exposure to these chemicals may intensify or even become the main cause for the development of diseases such as type 2 diabetes, obesity, cardiovascular disease and certain types of cancer.



Endocrine disruptors can reach the human body through everyday products.

The presence of endocrine disruptors in the human body is confirmed by biomonitoring studies, including those focusing specifically on vulnerable subgroups such as pregnant women and children<sup>22</sup>. But there is uncertainty about which fraction of synthetic chemicals that end up in the environment are endocrine disruptors<sup>23</sup>. More than 140,000 compounds have been registered under the European REACH Regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals), of which about 30,000 are in use.<sup>23</sup> Most of these were not tested for endocrine-disrupting effects in a laboratory. The number of chemicals estimated or suspected of having endocrine-disrupting properties is currently limited to 800 to 1,000 substances.<sup>23</sup>

Estimating the exact level of exposure is therefore quite a challenge due to the great diversity of chemical substances present in numerous sources, and this in doses below the detection limits of conventional detection methods<sup>24</sup>.

## Harmful effects associated to exposure to endocrine disruptors

Literature has described certain aspects related to endocrine disruptors toxicology<sup>25</sup>:

- complex relationships between dosages and effects
- potential delays between exposure and effects
- the relevance of the target organism and its vulnerability
- the effects of combinations of different substances

<sup>19</sup> Stefanidou M, et al. Human exposure to endocrine disruptors and breast milk. *Endocr Metab Immune Disord Drug Targets*. 2009 Sep; 9(3): 269-76. doi: 10.2174/187153009789044374.

<sup>20</sup> La Merrill MA, et al. Consensus on the key characteristics of endocrine-disrupting chemicals as a basis for hazard identification. *Nat Rev Endocrinol*. 2020 Jan;16(1):45-57. doi: 10.1038/s41574-019-0273-8.

<sup>21</sup> Encarnação T, et al. Endocrine disrupting chemicals: Impact on human health, wildlife and the environment. *Sci Prog*. 2019 Mar;102(1):3-42. doi: 10.1177/0036850419826802.

<sup>22</sup> See section 3.2.2 on human biomonitoring.

<sup>23</sup> Godfray HCJ, et al. A restatement of the natural science evidence base on the effects of endocrine disrupting chemicals on wildlife. *Proc Biol Sci*. 2019 Feb 27;286(1897):20182416. doi: 10.1098/rspb.2018.2416.

<sup>24</sup> Sifakis S, et al. Human exposure to endocrine disrupting chemicals: effects on the male and female reproductive systems. *Environ Toxicol Pharmacol*. 2017 Apr;51:56-70. doi: 10.1016/j.etap.2017.02.024.

<sup>25</sup> Barouki R. Endocrine disruptor compounds and new mechanisms of toxicity networks. *Rev Prat*. 2018 Dec;68(10):1069-1074.

Extended and meticulous research in regard to mixtures of endocrine disruptors is needed. During their life, every person is exposed to a combination of different chemicals. The compounds to which each person is exposed and the consequences on their body depend highly on genetics, metabolism and life style.<sup>26</sup>

The risk assessment of chemical substances for regulatory purposes is mainly based on the assessment of individual chemicals<sup>27</sup>. Methods and guidelines for the assessment of risks of combined exposure to multiple chemical substances have been developed for different regulatory sectors, but a harmonised, consistent approach to assessment and management of the risk of mixtures is still lacking.

### Impact of exposure on the human body

Endocrine disruptors interfere with the hormone balance, which leads to potential negative effects on human<sup>28</sup> health and development. Endocrine disruptors can disrupt the synthesis, action and metabolism of sex hormones, which in turn cause developmental and fertility problems, infertility and hormone-sensitive cancers in women and men<sup>29</sup>. Some endocrine disruptors lead to obesity and disruption of energy homeostasis. Interference with hypothalamus-pituitary-thyroid and adrenal axes has also been reported.

A growing number of in vitro, in vivo and epidemiological studies document the link between exposure to endocrine disruptors and obesity, diabetes and metabolic syndrome, which are underlying factors in the development of non-communicable diseases (NCDs).<sup>30</sup>

However, it is difficult to assess the full impact of human exposure to endocrine disruptors, as the adverse effects can develop latently and manifest later in life, and are not present in some people.

The mechanisms by which hormones and endocrine disruptors perform specific actions depend, among other things, on a person's stage of life. The timing of the exposure is important<sup>31</sup>. For instance, the risk of life-long adverse health effects is amplified when periods of exposure to endocrine disruptors coincide with the formation and differentiation of organ systems in early development.<sup>32</sup> This means fetuses and



**Foetuses and newborns are the most vulnerable to endocrine disruption.**

<sup>26</sup> Gore A, et al. EDC-2: The Endocrine Society's Second Scientific Statement on Endocrine-Disrupting Chemicals. *Endocr Rev*. 2015 Dec;36(6):E1-E150. doi: 10.1210/er.2015-1010

<sup>27</sup> Bopp SK, et al. Current EU research activities on combined exposure to multiple chemicals. *Environ Int*. 2018 Nov;120:544-562. doi: 10.1016/j.envint.2018.07.037.

<sup>28</sup> Wong KH, Durrani TS. Exposures to Endocrine Disrupting Chemicals in Consumer Products-A Guide for Pediatricians. *Curr Probl Pediatr Adolesc Healthcare*. 2017 May;47(5):107-118. doi: 10.1016/j.cppeds.2017.04.002.

<sup>29</sup> Yilmaz B, et al. Endocrine disrupting chemicals: exposure, effects on human health, mechanism of action, models for testing and strategies for prevention. *Rev Endocr Metab Disord*. 2020 Mar;21(1):127-147. doi: 10.1007/s11154-019-09521-z.

<sup>30</sup> Zarean M, Poursafa P. The Role of Environmental Disruptor Chemicals in the Development of Non Communicable Disease. *Adv Exp Med Biol*. 2019;1121:21-31. doi: 10.1007/978-3-030-10616-4\_3.

<sup>31</sup> Yilmaz B, et al. Endocrine disrupting chemicals: exposure, effects on human health, mechanism of action, models for testing and strategies for prevention. *Rev Endocr Metab Disord*. 2020 Mar;21(1):127-147. doi: 10.1007/s11154-019-09521-z..

<sup>32</sup> La Merrill MA, et al. Consensus on the key characteristics of endocrine-disrupting chemicals as a basis for hazard identification. *Nat Rev Endocrinol*. 2020 Jan;16(1):45-57. doi: 10.1038/s41574-019-0273-8.

newborns are the most vulnerable to endocrine disruption.<sup>33</sup> The scientific community is also paying increasing attention to the exposure of mother and child to chemical and environmental contaminants<sup>34</sup>.

## Conclusion

Scientific research on endocrine disruptors and the impact of exposure on human health is developing rapidly. Indeed, there is now scientific evidence on:

- the definition of endocrine disruptors
- the fact that endocrine disruptors should be considered a serious potential problem for the health of current and future generations, especially for vulnerable groups such as pregnant women and (unborn) children
- the presence of suspected or recognised endocrine disruptors in the environment and in the human body
- the need of research on exposures to separate endocrine disruptors and ED mixtures

It is essential that policy recommendations for endocrine disruptors are based on the latest scientific knowledge. In the absence of watertight scientific evidence according to current methodologies, the application of the precautionary principle is of great importance for public health: one should focus on protecting public health, even if not all the scientific evidence is readily available.

### 3.2.2 Human biomonitoring

Human biomonitoring is used to examine the presence of chemical substances such as endocrine disruptors in the body and to investigate the effects associated to exposure. In these studies (e.g. in high-risk groups such as young people or pregnant women), the presence of potentially harmful substances such as phthalates and parabens in the blood, urine, and hair samples of test subjects are monitored.

Human biomonitoring is important:

- because it provides a picture of the concentrations of environmental pollutants that effectively end up in the human body.
- because it can measure the effects of prolonged exposure.
- because it gives timely health signals ('early warnings'), i.e. changes in the body even before illness occurs, which can be used to develop a prevention policy.
- because it plays an important role in raising awareness about exposure to chemical substances in daily life, as those participating in these measurements are being personally engaged in the study.<sup>35</sup>

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<sup>33</sup> Yilmaz B, et al. Endocrine disrupting chemicals: exposure, effects on human health, mechanism of action, models for testing and strategies for prevention. *Rev Endocr Metab Disord*. 2020 Mar;21(1):127-147. doi: 10.1007/s11154-019-09521-z.

<sup>34</sup> Burgio E, et al. Environmental Carcinogenesis and Transgenerational Transmission of Carcinogenic Risk: From Genetics to Epigenetics. *Int J Environ Res Public Health*. 2018 Aug 20;15(8). doi: 10.3390/ijerph15081791.

<sup>35</sup> <http://www.milieu-en-gezondheid.be/nl/humane-biomonitoring>

At European level, there are human biomonitoring projects that Belgium also takes part in, such as the DEMOCOPHES project<sup>36</sup> and the HBM4EU project<sup>37</sup>. In Belgium, human biomonitoring is organised at regional level.

### The Flemish human biomonitoring campaign

In Flanders, a consortium of research institutes, called Steunpunt Milieu en Gezondheid (Environment and Health Support Centre)<sup>38</sup>, has been working on the development of a human biomonitoring network since 2002.

Analyses of samples, including blood and urine, are used to measure which substances end up in the body and what health effects they cause. A measurement campaign was carried out in 2017 and 2018, the results<sup>39</sup> were announced in February 2020. The levels of various pollutants measured in the blood and urine of Flemish young people were lower than five years ago, but traces were found of new substances of which the harmful effects are not yet well known.

The level of bisphenol A (a hormone disruptor - its use in till receipts has been banned since 2 January 2020) in the urine of young people is lower than five years ago (stricter regulations). However, manufacturers are replacing bisphenol A with new bisphenols such as bisphenol S and bisphenol F, which are believed to be equally harmful.

Glyphosate was found in 42% of the young people's urine samples. In the autumn of 2018, the sale of glyphosate to private individuals was banned in Belgium, after Flanders had already banned its use. Future measurements should show whether these measures are sufficiently effective.

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<sup>36</sup> Under DEMOCOPHES, 17 European countries (including Belgium) tested a common approach to human biomonitoring - [https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/19100876/democophes\\_NL.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/19100876/democophes_NL.pdf)

<sup>37</sup> HBM4EU brings together 30 countries (including Belgium) working on humane biomonitoring of the effects of exposure to chemical substances and analysis of the data - <https://www.hbm4eu.eu/>

<sup>38</sup> Steunpunt Milieu en Gezondheid consists of researchers from the five Flemish universities (UAntwerpen, UGent, UHasselt, VUB, KULeuven) and the research institutes VITO and PIH. - [www.milieu-gezondheid.be](http://www.milieu-gezondheid.be)

<sup>39</sup> <http://www.milieu-en-gezondheid.be/nl/nieuwe-resultaten-steunpunt-milieu-en-gezondheid>

## The Walloon human biomonitoring campaign

Biomonitoring<sup>40</sup> was first launched in Wallonia at the start of 2020, to measure the impact of endocrine disruptors on the Walloon population. The *Institut Scientifique de Service Public* will observe 900 volunteers, initially targeting babies, adolescents (12 to 19 years old) and young adults (20 to 39 years old). The first results will be available within 2 years. This initiative is part of the Plan wallon environnement-santé ENVieS 2019-2023<sup>41</sup>.

This biomonitoring will determine - for the first time - to which polluting substances, chemical substances, and endocrine disruptors the Walloon population is exposed. The Walloon Health Minister Morreale commented: *Grâce au travail en cours, nous disposerons d'ici peu de la première étude wallonne sur la santé environnementale des personnes. Nous pourrions ainsi déterminer les niveaux d'imprégnation de la population aux substances chimiques présentes dans l'environnement et prendre d'éventuelles mesures de santé publique, notamment en matière de prévention et protection.*

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<sup>40</sup> <https://tellier.wallonie.be/home/presse--actualites/publications/lancement-de-la-premiere-campagne-de-biosurveillance-humaine-en-wallonie.publicationfull.html>

<sup>41</sup> <http://environnement.sante.wallonie.be/files/Plan%20ENVieS.pdf>

## 3.3 WHAT DO THE STAKEHOLDERS SAY

### 3.3.1 General

Within the group of organisations that are focused on the environment, family and health, there is a belief in a need for strong regulation of endocrine-disrupting substances and for more research to identify more substances and to phase them out in case of proven effect.

The organisations representing the interests of industry and agriculture are more cautious, although they do not deny the problems and health risks associated with certain chemical substances. They point out that strict rules already exist, which are enforced in Belgium, and they consistently refer to the European level due to the impact on the single market. Rather, they argue for more research in which they are involved. Moreover, the agricultural sector states it is already very cautious in its use of chemical products.

The opinions of the political parties are divided, but they do agree that something should be done. Some are in favour of a stricter policy on endocrine-disrupting substances, while others are at least open to a debate on the subject. Europe is often used as a reference, as is the scientific justification for measures.

### 3.3.2 Specific positions<sup>42</sup>

#### Industry and agriculture

The **industrial sector** and its various employers' organisations consistently emphasise the strict guidelines and legislation that already exist and have good compliance and enforcement. In addition, they demand proper and rigorous scientific research in collaboration with industry. All point to the European internal market to indicate that actions should always be taken at European level, in order not to distort the equal level playing field within the internal market. **PlasticsEurope** does go further by defending the argument that there is no evidence that bisphenol A is harmful to human health.

**AGROfront**, a united front of the Algemeen Boerensyndicaat (General Farmers' Syndicate), the Boerenbond (Farmers' Union) and the Fédération wallonne de l'agriculture (Walloon Agricultural Federation), asserts that the products used are already strictly regulated. Products have to go through a dual authorisation procedure before being allowed on the market. What's more, they prefer non-chemical treatment and focus on prevention, use of monitoring and alert mechanisms. Chemicals are used in a very limited and targeted way. They also stress the importance of an equal level playing field within the European single market. The **Boerenbond** was very critical of the

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<sup>42</sup>Many points of view originate from the following document: Information report on the necessary cooperation between the federal government, the Communities and the Regions for the prevention and elimination of endocrine-disrupting substances in consumption, with a view to promoting public health, Senate, 2018

announced ban on the use of glyphosate by private individuals. They indicate that there are few alternatives that are as efficient.<sup>43</sup>

## Non-governmental organisations

The **Gezinsbond** (Family Association) has the most outspoken position with regard to endocrine disruptors. The Gezinsbond talks about the need to introduce a 'child standard' whereby substances are analysed from a child's perspective: if it is safe for children, it is safe for everyone. The *design for all principle* is also put forward, which states that when the protection of the weakest link is the policy standard, all other segments of society benefit as well. To further develop this concept, the expert platform *Childproof*<sup>44</sup> was set up, including positions and actions on endocrine-disrupting substances. The Gezinsbond also attaches great importance to the *right to know* principle, which is enshrined in the European REACH<sup>45</sup>-regulation. In addition to an informative brochure, they also have a well documented web page.<sup>46</sup>

On the French-speaking side, the umbrella organisation **Inter-Environnement Wallonie** developed a paper on a healthy environment in 2016. This paper focused on air pollution (indoor and outdoor), but also endocrine disruptors.<sup>47</sup> In the report, they strongly emphasise the importance of social psychology in order to adapt unhealthy habits through social influence.

**Kom op tegen Kanker** (Stand up to Cancer) has been asking for better protection against endocrine-disrupting substances for some years now, especially from a European perspective as a member of the EDC-Free Europe campaign<sup>48</sup>. They are currently working on a more comprehensive position paper that will also be published in 2020.

In 2018, the **Health and Environment Alliance (HEAL)** launched its vision of European policy against toxic chemicals, including endocrine disruptors.<sup>49</sup> In doing so, they call on the European Commission to take action to:

- prevent exposure to unhealthy chemicals and limit their impact on health, phasing them out if possible
- align different legislative texts dealing with chemicals
- accelerate the identification of substances of concern
- prevent harmful substances from getting into food or consumer goods
- reform the current assessment process
- release funds for research and testing methods
- develop coordinated campaigns to provide information and raise awareness throughout Europe.

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<sup>43</sup> <https://www.demorgen.be/tech-wetenschap/boerenbond-wil-niet-weten-van-verbod-op-roundup-b27b0910/>

<sup>44</sup> Childproof is an expert platform of various civil society organisations, concerned scientists and doctors and is coordinated by the Gezinsbond - <https://www.gezinsbond.be/childproof>

<sup>45</sup> <https://eur-lex.europa.eu/legal-content/NL/TXT/?uri=LEGISSUM:l21282>

<sup>46</sup> <https://www.goedgezind.be/hormoonverstoorders/>

<sup>47</sup> [https://www.iew-test.be/wp-content/uploads/2016/12/dossieriew\\_sante.pdf](https://www.iew-test.be/wp-content/uploads/2016/12/dossieriew_sante.pdf)

<sup>48</sup> <https://www.edc-free-europe.org/about-us>

<sup>49</sup> [https://www.env-health.org/wp-content/uploads/2018/06/Non-Toxic-Environment-Report\\_V4-NL-final.pdf](https://www.env-health.org/wp-content/uploads/2018/06/Non-Toxic-Environment-Report_V4-NL-final.pdf)

In addition, HEAL contributes to building public awareness and proving evidence for stronger policy action on EDCs as a founding member of the Europe EDC-Free coalition<sup>50</sup>, as well as through the CHE EDC Strategies Partnership<sup>51</sup>, to provide webinars and resources exploring new science on EDCs and health outcomes.

Nowadays, HEAL is very active in the follow-up of the various Green Deal projects, including the EU chemicals strategy for sustainability, which contains a number of commitments to reform the regulatory framework on endocrine disrupting chemicals.<sup>52</sup>

## Health insurance sector

In their Memorandum following the elections in 2019<sup>53</sup>, the Independent Health Insurance Funds included the reduction of exposure to endocrine disruptors on their list of priorities, a message that was repeated in 2020<sup>54</sup>. No formal positions have been taken by the other Belgian health insurance funds on this issue. Their communication relating to disease prevention and health promotion does refer to endocrine disruptors, but this communication is mainly aimed at their own members.

By contrast and within the framework of the international umbrella organisation, the International Association of Mutual Benefit Societies (**Association Internationale de la Mutualité, AIM**), the insurance funds have supported a number of positions<sup>55</sup> on endocrine disruptors. They ask:

- to develop criteria for identifying endocrine disruptors that are based on scientific evidence, both toxicological and epidemiological
- to develop categories to rank substances according to the weight of scientific evidence
- to invoke the precautionary principle in order to include those substances likely to have an adverse effect on health
- to replace harmful products and to chart the effects of the diseases caused by endocrine disruptors
- to increase public knowledge and formulate scientifically-based recommendations for people, and especially for the vulnerable groups

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<sup>50</sup> <https://www.edc-free-europe.org/>

<sup>51</sup> <https://www.healthandenvironment.org/our-work/webinars/che-edc-strategies-partnership>

<sup>52</sup> Response to consultation on roadmap on a chemical strategy for sustainability <https://www.env-health.org/wp-content/uploads/2020/06/090166e5d0342750-2.pdf> - Reaction to EU chemicals strategy publication: <https://www.env-health.org/eu-chemicals-strategy-speedy-implementation-steps-key-to-truly-protect-peoples-health/> - Response to consultation on fitness check of the EU legislation with regard to endocrine disruptors: <https://www.env-health.org/wp-content/uploads/2020/04/Jan-2020-HEAL-response-to-stakeholder-survey-EDCs.pdf>

<sup>53</sup> 10 priorities for the future of healthcare, Independent Health Insurance Funds, 2019, p. 53 - <https://www.mloz.be/nl/verkiezingen2019>

<sup>54</sup> <https://www.artsenkrant.com/actueel/kan-europa-ons-helpen-eeen-gezondere-leefomgeving-te-creeren/article-opinion-46143.htm>

<sup>55</sup> <https://aim-mutual.org/wp-content/uploads/2017/02/DeclarationEDCsFeb2017.pdf>

## Healthcare providers

The various healthcare providers and their professional organisations have not published specific opinions on endocrine-disrupting substances. In French-speaking Belgium, the *Société Scientifique de Médecine Générale (SSMG)* did organise an information evening<sup>56</sup> about endocrine disruptors.

The *European Society of Endocrinology* is very actively involved with the endocrine disruptors dossier at European level. In 2020, they responded to the European Commission's proposed roadmap on the sustainability strategy for chemical substances. They stressed that there is increasing evidence that endocrine disruptors are partly the cause of chronic diseases such as obesity and diabetes, resulting in a higher sensitivity to COVID-19. They also called for a review of the European methodology on the identification of endocrine disruptors and the current legislation on the burden of proof, as well as support for more independent research on endocrine disruptors.<sup>57</sup>

## Political world

- **CdH:** call for strict measures, especially with regard to young children, and have advocated this a number of times in the Chamber calling for a more ambitious approach.<sup>58</sup>
- **CD&V:** advocate measures to reduce the impact of endocrine-disrupting substances, including via Europe. Increased awareness and stricter standards.<sup>59</sup>
- **Défi:** advocate phasing out of hazardous products, with offer of alternatives. Also demand for more transparency.<sup>60</sup>
- **Ecolo:** their 2019 election programme calls for an integrated action plan to reduce pollutants, including a ban on chemical products.<sup>61</sup>
- **Groen:** in favour of a firm stance against economic and industrial players to safeguard public health with regard to chemical products. Hormone-disrupting substances such as bisphenol A, phthalates, pesticides and parabens are to be banned from products.<sup>62</sup>
- **N-VA:** in favour of strict criteria at European level<sup>63</sup>

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<sup>56</sup> <https://www.ssmg.be/evenements/20-10-2020-webinar-perturbateurs-endocriniens>

<sup>57</sup> <https://www.es-e-hormones.org/media/2597/ese-consultation-on-the-roadmap-for-the-chemicals-strategy-for-sustainability-june-2020.pdf>

<sup>58</sup> <https://www.lachambre.be/FLWB/pdf/54/1367/54K1367006.pdf>

<sup>59</sup> <https://cdenv.be/storage/main/20190428-verkiezingscongres-28-april-2019-verkiezingsprogramma-2019-zonder-regelnummers.pdf>

<sup>60</sup> <https://www.iew.be/voteforfuture-decodage-pour-le-26-mai/>

<sup>61</sup> <https://ecolo.be/programme2019/>

<sup>62</sup> <https://www.groen.be/milieu>

<sup>63</sup> <https://www.n-va.be/nieuws/regels-rond-hormoonverstoorders-niet-afzwakken?pq=search/site&keyword=hormoonverstoorders&page=1#vr1>

- **MR:** in favour of measures, especially with regard to endocrine disruptors in food packaging, but is looking mainly to Europe to make this happen.<sup>64</sup>
- **Open VLD:** more cautious, by also referring to the EU and the need for further research.<sup>65</sup>
- **PS:** in favour of stricter rules on endocrine disruptors, for example by banning their use in packaging.<sup>66</sup>
- **Sp.a:** in favour of ambitious European eco-design legislation, including regulation of endocrine-disrupting substances.<sup>67</sup>

In short: all parties seem willing to address the issue of endocrine disruptors in one way or another. It seems they are all singing from more or less the same hymn sheet.

<sup>64</sup> <https://www.iew.be/voteforfuture-decodage-pour-le-26-mai/>

<sup>65</sup> <https://www.mo.be/analyse/hormoonverstoorders-reacties-uit-de-belgische-politiek>

<sup>66</sup> <https://www.ps.be/Content/Uploads/Projet-de-programme-wallon.pdf>

<sup>67</sup> <https://www.s-p-a.be/verkiezingen-2019/>

## 3.4 WHAT ARE THE FEDERAL AND REGIONAL GOVERNMENTS DOING

Reducing the impact of environmental pollution and climate change on our health is only possible if measures are taken in the various policy areas at different policy levels. The core competences linked to endocrine disruptors is mainly located at **regional** level. The federal government, on the other hand, plays an important coordinating role. The prevention aspect (informing and raising awareness) is the responsibility of the communities.

### 3.4.1 Federal government

The federal level plays an important **coordinating role**. And this is necessary because both the federal and regional levels, as well as the regions and communities, have powers that are important in the dossier on endocrine disruptors. What's more, scientific institutions at federal level are also involved. There are 3 important federal initiatives that are of great importance in the dossier on endocrine disruptors.

#### The information report by the Senate on endocrine-disrupting substances (2018)

In 2018, the Senate published an information report on the necessary cooperation between the Federal Government, the Communities and the Regions on the prevention and elimination of endocrine-disrupting substances in consumption, with a view to promoting public health.

The document is the result of an extensive hearing at which many experts spoke. This hearing resulted in a list of 72 recommendations to address the issue of endocrine disruptors, across different domains and policy levels:

*The prevention and elimination of endocrine-disrupting substances requires an inclusive, cross-sectional and coordinated approach across all policy levels (European, Federal, Communities, Regions and local). Coordination between the various policy areas (Public Health, Environment, Work, Housing, Economy, Consumption, etc.) is also important under the precautionary principle when making policy choices related to endocrine disruptors. It follows that each government has levers at its disposal to take action within its areas of competence to promote public health, according to the 'Health in all policies' principle.<sup>68</sup>*

The future national action plan referred to in this document has its origins in this Senate information report.

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<sup>68</sup> Information report on the necessary cooperation between the federal government, the Communities and the Regions for the prevention and elimination of endocrine-disrupting substances in consumption, with a view to promoting public health, Senate, 2018, p. 6.

The recommendations from the information report by the Senate form the guidelines for the future policy and revolve around 5 themes:

- raising awareness, prevention, labels and labelling
- standardisation, restriction, prohibition and economic regulation
- scientific research and education
- consultation and cooperation
- policy

Several recommendations from this information report are discussed further in this position paper.

### Guidance no. 9404 from the Superior Health Council (2019)

In 2019, the Superior Health Council published an important advisory report with the somewhat complex title 'Physical chemical environmental hygiene (limiting exposure to mutagenic or endocrine-disrupting agents) and the importance of exposures early in life'.

In this report, the Superior Health Council indicated that for these substances, prevention policy does not depend on the availability of definitive scientific evidence: *The Council is of the opinion that by now sufficient mechanistic insights and molecular-epidemiological data are available indicating that a series of agents contribute importantly to many diseases of civilization, even if definite epidemiological proof is not yet available. Prevention should be knowledge-based, and not merely evidence-based*.<sup>69</sup>

The Superior Health Council points out the high number of chemical substances (in the EU 145,297 chemical substances are thought to have been registered in 2017), while only 1% of chemical substances have been analysed for toxicological properties as of now.

Two important recommendations are formulated by the Superior Health Council:

- The Council calls for 'environmental physicochemical hygiene' to be addressed: environmental physicochemical hygiene refers to a global change in collective (regulatory) and individual (consumer and citizen) behaviour that should result in a reduction of exposure to substances harmful to health, in particular carcinogens, mutagens, receptor-binding or hormone disrupting substances.<sup>70</sup> Therefore, both government and citizens have a role to play here. But the Council is also very clear: *Chemicals suspected to have endocrine disrupting or carcinogenic properties based on human or animal data, or showing, in tests that can be performed on numerous substances, mutagenic activity, binding to hormone receptors or to nuclear receptors, should be considered as potentially harmful to human health..* If the safety of these

<sup>69</sup> Physical chemical environmental hygiene (limiting exposure to mutagenic or endocrine disrupting agents) and the importance of exposures early in life, Guidance no. 9404, Superior Health Council, 2019, p. 2 - [https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/190617\\_shc-9404\\_fys\\_chem\\_env\\_hygiene\\_vcabdem.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/190617_shc-9404_fys_chem_env_hygiene_vcabdem.pdf).

<sup>70</sup> Idem, p. 30.

145,297 chemical substances are thought to have been registered in the EU in 2017, while only 1% of chemical substances have been analysed for toxicological properties as of now

substances cannot be convincingly demonstrated, government should minimise exposure to these substances as much as possible.

- Exposure to harmful chemical substances or mixtures thereof can have a negative impact on the development of fetuses, babies, children and adolescents, and result in illness later in life. The Council recommends that research should focus more on the effect of mixtures of chemical substances, in order to be able to better identify their harmful effects, especially with regard to vulnerable groups. Recommendations should be formulated on the basis of the above.

### The national action plan on endocrine disruptors (2020)

An explicit project was included in the Management Contract 2019 - 2021<sup>71</sup>: the implementation of a national action plan on endocrine-disrupting substances in line with the recommendations of the Senate. *A national action plan on endocrine-disrupting substances will be developed in consultation with the federal states, the public scientific institutions including Sciensano, and will be based on the recommendations of the Senate report dated 23 March 2018, on the necessary cooperation between the Federal Government, the Communities and the Regions for the prevention and elimination of endocrine-disrupting substances in consumption, for the purpose of promoting public health.*

In addition to taking stock of the actions carried out or still to be carried out and identifying who is responsible for what, setting priorities and facilitating consultation and decision-making on all competent institutions and authorities are important elements in this project.

The following phases are planned for the development of the national action plan coordinated by the Environment DG of the FPS Public Health<sup>72</sup>:

- consultation of stakeholders (March until May 2020)
- consultation of the competent authorities (June 2020)
- consultation of the Ministers responsible for Public Health and the Environment

The official publication was planned for autumn 2020.

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<sup>71</sup> Management contract 2019-2021, FPS Public Health, p. 62 - [https://healthpr.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/boca\\_2019-2021\\_fod\\_volksgezondheid.pdf](https://healthpr.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/boca_2019-2021_fod_volksgezondheid.pdf)

<sup>72</sup> <https://www.health.belgium.be/nl/hormoonverstoorders>

## 3.4.2 Regional government

### Flanders

Important for this issue is the Environment domain, which falls under the authority of Minister Zuhal Demir. On the one hand there is the positive impact of green space for health, and on the other hand there is the fight against environmental pollution (and thus limiting the impact on our health).

The following plans are in place with regard to the impact of green space on our health<sup>73</sup>:

- As far as prevention is concerned, more attention will be paid to a green, healthy environment, whereby as many care institutions and schools as possible will be provided with substantial green facilities as part of the positive link between health and nature experience.
- The Flemish Government wants to strengthen the cooperation between relevant sectors in order to make better use of the beneficial effect of green space on health and to further substantiate this scientifically, among other things by setting up specific goals and pilot projects, linked to research. It will also look at the possibilities of using innovative financing methods, such as social impact bonds<sup>74</sup>.

Endocrine disruptors are not explicitly mentioned, but it can be said that a healthy living environment is one without endocrine disruptors. Whether and how this will be tackled is not specified in the Flemish coalition agreement. Different domains have to be involved. In addition to Environment, domains such as Agriculture and Welfare (prevention aspect) are also crucial.

In 2019, the Flemish Decree on preventive health policy of 2003 was amended with an addition to art. 51, which reads as follows: *the Flemish Government will raise awareness for the issue of exposure to chemical substances that disrupt, or have the potential to disrupt, normal hormonal function during important phases of development of the human organism, and shall take initiatives for the prevention of conditions caused by those chemical substances.*<sup>75</sup> This provides Flanders with an excellent legal basis to take appropriate measures to inform and raise awareness among the general public about the impact of endocrine disruptors.

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<sup>73</sup> Flemish coalition agreement 2019 – 2024, p. 225

<sup>74</sup>A Social Impact Bond (SIB) is a contract between a government body, an external contractor and a private investor aimed at tackling a social challenge. The objective is to solve or reduce a social problem and thereby reduce the associated social costs - <https://esf-vlaanderen.be/nl/projectenkaart/social-impact-bond>

<sup>75</sup>Decree amending the Decree of 21 November 2003 on the preventive health policy, as regards the obligation to raise awareness and the preventive policy with regard to exposure to chemical substances that disrupt or may disrupt the normal hormonal action of the human organism, 5 April 2019 - [http://www.ejustice.just.fgov.be/cgi\\_loi/change\\_lg.pl?language=nl&la=N&cn=2019040512&table\\_name=wet](http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&cn=2019040512&table_name=wet)

On 6 April 2020, a parliamentary question<sup>76</sup> to Minister Wouter Beke (responsible for Welfare) asked about the plans to implement a prevention policy for endocrine-disrupting substances. The Minister announced that the Environment Department is working on a Flemish action plan for Per- and Polyfluoroalkyl substances (PFAS). This would form a concrete case in the elaboration of the Flemish strategy on endocrine disruption and could serve as a template for an integrated policy for other endocrine-disrupting substances.

Minister Beke also referred to the subsequent paragraph of his policy paper: *We are integrating new pollutants into environmental healthcare. We pay attention to the health impact of microplastics, endocrine disruptors, black carbon, microbiota, and many more in our drinking water and our indoor and outdoor environment. We keep our finger on the pulse for opportunities and create useful partnerships.*<sup>77</sup>

There is a plan for structural monitoring of endocrine disruptors in drinking water. **There is also a wish to address 'New Emerging Pollutants', including the endocrine disruptors, which is why this was included in the call for an Environmental Healthcare partner organisation 2021-2025.** In the meantime, the third National Environmental Health Action Plan (NEHAP)<sup>78</sup> is under preparation and would include the National Action Plan on endocrine disruptors as a priority.

## Wallonia

The pursuit of a healthy (healthier) living environment was included as an important policy point in the Walloon coalition agreement.<sup>79</sup> **Endocrine disruptors are indicated to be a priority dossier:** *Le Gouvernement adoptera un programme intégré de réduction de l'ensemble des pollutions environnementales (y compris par ondes et par bruit) et de prévention de leurs effets sur la santé, en complétant, renforçant et implémentant le plan ENVieS. L'angle prioritaire sera celui de la prévention, notamment par la préservation d'un environnement de qualité pour toutes les Wallonnes et tous les Wallons. La réduction de l'exposition des citoyens aux substances chimiques sera prioritaire en particulier vis-à-vis des perturbateurs endocriniens.*

This ambition was put into practice in the Plan wallon environnement-santé 2019 - 2024 (or Plan ENVieS 2019-2023),<sup>80</sup> which groups 79 specific actions aimed at reducing the impact of environmental pollution and creating a healthier living environment. The general objective is formulated as follows: *limiter l'exposition des populations*

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<sup>76</sup>Written Question No 410 by Katrien Schrijvers to Minister Beke on endocrine-disrupting substances and prevention policy - [http://docs.vlaamsparlement.be/pfile?id=1553501&utm\\_medium=email&utm\\_source=transactional&utm\\_campaign=no-reply%40parlement.vlaanderen](http://docs.vlaamsparlement.be/pfile?id=1553501&utm_medium=email&utm_source=transactional&utm_campaign=no-reply%40parlement.vlaanderen)

<sup>77</sup>Policy paper 2019 - 2024, Welfare, Public Health, Family and Poverty Reduction, p. 50 - <https://www.vlaanderen.be/publicaties/beleidsnota-2019-2024-welzijn-volksgesondheid-gezin-en-armoedebestrijding>

<sup>78</sup> <https://www.leefmilieu-gezondheid.be/nl/welkom-bij-nehap-belgie>

<sup>79</sup> Déclaration de politique régionale pour la Wallonie 2019-2024, p. 89 - [https://www.wallonie.be/sites/default/files/2019-09/declaration\\_politique\\_regionale\\_2019-2024.pdf](https://www.wallonie.be/sites/default/files/2019-09/declaration_politique_regionale_2019-2024.pdf)

<sup>80</sup> Plan wallon environnement-santé 2019 - 2024, p. 14 - <http://environnement.sante.wallonie.be/files/Plan%20ENVieS.pdf>

*vulnérables aux perturbateurs endocriniens (PE)*. To achieve this, several specific objectives were defined, such as:

- developing clear information and raising awareness, including among medical staff
- limiting the exposure to endocrine disruptors in public spaces
- promoting research into safe alternatives
- guiding consumers towards products without endocrine disruptors

The first biomonitoring in Wallonia was started at the beginning of this year and will produce its first results within 2 years.

Minister Tellier also had it noted that dossiers such as on the endocrine disruptors must not disappear from the agenda as a result of the COVID-19 crisis: *C'est d'autant plus important que cette crise du Covid rappelle combien la santé est une valeur importante. Et dans cette santé, il y a la prévention des risques et la préservation d'un environnement de qualité. Car même si ce n'est pas la même chose qu'un virus qui s'attrape en quelques jours, les pesticides ou les perturbateurs endocriniens représentent un risque considérable pour la santé.*<sup>81</sup>

## Brussels

In Brussels, the environment is a competence of the Region on the one hand, and therefore of the Brussels Government, while on the other hand, public health is a competence of the Communities, and this competence is fragmented among 3 Brussels authorities, i.e. the Joint Community Commission (GCC), the French Community Commission (COCOF) and the Flemish Community Commission (VGC).

The Brussels coalition agreement announces various measures to ensure a healthier living environment, including related to chemical products: *Furthermore, the Government is committed to a 'pesticide-free approach', particularly for the administrations. It will abolish the use of 'chemical' pesticides*<sup>82</sup>.

The Brussels Health Plan (published in 2019)<sup>83</sup> will play an important role in the creation of a healthy living environment. This plan is based on the following pillars:

- halting the increase, and reducing major social inequalities in health
- alignment of the supply of care with the real needs of the population of Brussels with a care pathway that is accessible and coherent for every inhabitant of Brussels
- the extension of a high-quality health policy with all the instruments needed to achieve this

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<sup>81</sup> <https://www.lalibre.be/belgique/politique-belge/celine-tellier-le-covid-n-a-pas-arrete-la-crise-climatique-ni-celle-de-la-biodiversite-5eafa6b6d8ad580d3d87bdf3>

<sup>82</sup> Joint General Policy Statement of the Government of the Brussels-Capital Region and the United College of the Joint Community Commission - Coalition Period 2019 - 2024, p. 95 - <http://www.parlement.brussels/wp-content/uploads/2019/07/07-20-Algemene-Beleidsverklaring-brussels-parelement-2019.pdf>

<sup>83</sup> Brussels health plan - Growing up and living in good health in Brussels, GGC, 2019 - [https://www.ccc-ggc.brussels/sites/default/files/documents/graphics/rapports-externes/brussels\\_gezondheidsplan\\_def\\_nl.pdf](https://www.ccc-ggc.brussels/sites/default/files/documents/graphics/rapports-externes/brussels_gezondheidsplan_def_nl.pdf)

**A striking and important measure in the Brussels Health Plan concerns the strengthening of the links between health and the environment in the policy.** This is to be achieved through cooperation between the Brussels authorities responsible for the Environment and the bicomunal authorities responsible for Health. In the near future, this will be put into practice with a Protocol agreement for cooperation between Environment Brussels and the services of the United College (DVC) of the Joint Community Commission (GGC).

The Brussels Parliament also discusses the dossier on the endocrine disruptors. In 2019, a Resolution was adopted "on the prevention of the impact of endocrine disruptors on human health and the environment"<sup>84</sup>. **This resolution endorses the analysis and recommendations made by the Senate in 2018 and calls on the Government of the Brussels-Capital Region, in consultation with the federal and community governments, to address a long list of recommendations.** These recommendations concern both providing information and raising awareness, as well as specific measures to reduce the risks of endocrine disruptors in a defined manner and to support scientific research. To a large extent, Brussels is also looking to Europe for this. This resolution is definitely a strong signal from the Brussels institutions, and several points from it will most probably be found in the national action plan in which Brussels will also participate.

Finally, it is important to mention Leefmilieu Brussel<sup>85</sup>. Leefmilieu Brussel is the Brussels-Capital Region's public service for the environment (including air quality, the fight against climate change) and energy, grouping all relevant areas under one roof. Leefmilieu Brussel is also responsible for the link between the environment and health.

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This resolution is definitely a strong signal from the Brussels institutions, and several points from it will most probably be found in the national action plan in which Brussels will also participate.

<sup>84</sup> Resolution on the prevention of the impact of endocrine disruptors on human health and the environment, Brussels Parliament, 2019 - <http://weblex.brussels/data/crb/doc/2018-19/137814/images.pdf>

<sup>85</sup> <https://leefmilieu.brussels/leefmilieu-brussel>

## 3.5 WHAT IS EUROPE DOING

### 3.5.1 The European Green Deal

The European Union's Green Deal will play a crucial role in defining and implementing future policy on endocrine-disrupting substances. The Green Deal represents 47 specific actions around 10 central themes, one of which is of great importance to our health: *a zero-pollution ambition for a toxic-free environment*.

In April 2020, Denmark launched an appeal for the Green Deal not to be pushed aside after the corona crisis: *The Green Deal provides us with a roadmap to make the right choices in responding to the economic crisis while transforming Europe into a sustainable and climate neutral economy*.<sup>86</sup> An appeal signed by 17 Member States. Unfortunately, Belgium was not one of them. In an opinion article in the *Artsenkrant*<sup>87</sup>, the Independent Health Insurance Funds emphasised the need to continue the development and implementation of the projects that are part of the Green Deal, in spite of COVID-19.

The Green Deal features various initiatives that are relevant to the matter of endocrine-disrupting substances. The following dossiers will have to be reviewed in the coming months and years and are important for the dossier on endocrine disruptors:

- Chemicals strategy for sustainability (2020)
- Farm to Fork Strategy (2020 – significant with regard to pesticides (2020)
- Review of EU rules on harmful chemical substances and endocrine disruptors - Public consultation report - (2020)
- Review of food contact materials legislation (expected to start at the end of 2020)
- Circular economy action plan (2020) – e.g. danger of reusing toxic substances
- Examination of the draft national strategic plans, with reference to the ambitions of the European Green Deal and the Farm to Fork Strategy (2020 – 2021)
- Proposal 8th Environmental Action Programme 2021 – 2030 (2020)
- Zero pollution action plan for water, air and soil (2021) – significant with regard to antibiotics in water, for example

At the end of May 2020, the 'From Farm to Fork Strategy'<sup>88</sup> was presented, which should lead to a transition to healthy and sustainable eating patterns in the EU. One of the objectives is to reduce the overall use of chemical pesticides and related risks as well as the use of more dangerous pesticides<sup>89</sup> by 50%, by 2030. This is also important for

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<sup>86</sup> <https://www.climatechangenews.com/2020/04/09/european-green-deal-must-central-resilient-recovery-covid-19/>

<sup>87</sup> Can Europe help us create a healthier environment? - <https://www.artsenkrant.com/actueel/kan-europa-ons-helpen-een-gezondere-leefomgeving-te-creeren/article-opinion-46143.html>

<sup>88</sup> Communication - A 'farm-to-fork' strategy for a fair, healthy and environmentally friendly food system, COM(2020) 381, European Commission, 2020 - [https://eur-lex.europa.eu/resource.html?uri=cellar:ea0f9f73-9ab2-11ea-9d2d-01aa75ed71a1.0010.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:ea0f9f73-9ab2-11ea-9d2d-01aa75ed71a1.0010.02/DOC_1&format=PDF)

<sup>89</sup> These are plant protection products containing active substances that meet the criteria set out in points 3.6.2 to 3.6.5 and 3.8.2 of Annex II to Regulation (EC) No 1107/2009 or which may be substituted in accordance with the criteria set out in point 4 of this Annex.

reducing exposure to endocrine disruptors. The proposed actions include a revision of the guideline on the sustainable use of pesticides to significantly reduce the use, risks and dependence on chemical pesticides and to improve integrated crop protection.

On 10 July 2020, the European Parliament adopted the resolution entitled *European Parliament Resolution of 10 July 2020 on the Strategy on the Sustainable Use of Chemicals*<sup>90</sup>. This resolution devotes a great deal of attention to endocrine disruptors and calls, among other things, for the exposure to endocrine-disrupting substances in the EU to be decreased. The main calls of the European Parliament:

- There is a need for ambitious targets to increase the number of chemical substances investigated each year, in particular with regard to their endocrine-disrupting properties.
- The new strategy for the sustainable use of chemical substances should be based on sound and up-to-date scientific evidence, taking into account the risks posed by endocrine disruptors, hazardous chemical substances in imported products, the combined effects of different chemical substances and highly persistent chemical substances.
- The European Parliament recalls that by 2020 all relevant Substances of Very High Concern (SVHCs), including substances with endocrine-disrupting properties of equivalent concern, should be placed on the REACH candidate list.
- The Commission is asked to improve the testing of modalities and endpoints of endocrine-disrupting substances.
- The European Parliament reiterates its request of 18 April 2019<sup>91</sup> for the establishment of a comprehensive EU framework for endocrine-disrupting substances (EDCs), and in particular its request for the establishment of a horizontal definition for suspected EDCs and for known and alleged EDCs, based on the WHO definition.
- A faster and comprehensive (re-)assessment of the safety of active substances in biocidal products, co-formulants and whole products - including their endocrine-disrupting properties - is necessary to ensure the protection of the health of citizens and the environment.
- The European Parliament calls on the Commission to support the establishment of a European network of cities and local communities free of endocrine disruptors, with the aim of increasing cooperation and encouraging the exchange of good practice, along the lines of the Covenant of Mayors on Climate and Energy.

On October 14, 2020, the European Commission published its proposal for a European sustainability strategy for chemicals<sup>92</sup>, as part of the zero-pollution ambition of the Green Deal. With this proposal, Europe wants to better protect the environment and the health of European citizens, as well as stimulate the search for safe and sustainable chemicals. This initiative is of great importance for tackling the problem of endocrine disruptors.

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<sup>90</sup> [https://www.europarl.europa.eu/doceo/document/TA-9-2020-0201\\_NL.html](https://www.europarl.europa.eu/doceo/document/TA-9-2020-0201_NL.html)

<sup>91</sup> [https://www.europarl.europa.eu/doceo/document/TA-8-2019-0441\\_NL.html](https://www.europarl.europa.eu/doceo/document/TA-8-2019-0441_NL.html)

<sup>92</sup> [https://ec.europa.eu/commission/presscorner/detail/nl/ip\\_20\\_1839](https://ec.europa.eu/commission/presscorner/detail/nl/ip_20_1839)

### 3.5.2 The HERA scientific research project

The HERA project (Health Environment Research Agenda for Europe<sup>93</sup>) is very interesting for scientific research in Europe on the environment and health - and as such, endocrine disruptors too. In Belgium, only VITO<sup>94</sup> (Flemish Institute for Technological Research) is part of the consortium. HERA will run until the end of 2021.

One of the aims of this project is to identify the policy and research needs required to draw up the *European Health and Environment Research Agenda 2020-2030*. An interim report<sup>95</sup> was published in February 2020, which includes the issue of endocrine disruptors: *Exposure and effect data should be collected on particular types of chemical mixtures, both related to specific usage (pesticides, pharmaceuticals, flame retardants, surfactants, food additives, etc.) or similar health effects (e.g. endocrine disruption, epigenetic effects). Their combined toxicity and potential for negative impact on environmental and human health should be assessed using experimental, observational (novel biomarkers, multi-omics, exposome) and modelling (adverse outcome pathways, pharmacokinetics) approaches.*

A workshop was organized in October 2020 on the theme '*Shaping the research agenda for the environment, climate and health nexus in Europe for the next decade*', in which the Independent Health Insurance Funds would also participated.

### 3.5.3 The website with lists of endocrine disruptors

The European REACH regulation<sup>96</sup> has been in force since 2007 and is used by Europe, among other things, to better protect human health and the environment against hazards emanating from chemical substances. REACH places the burden of proof on companies. In order to comply with the regulation, companies must identify and control the risks posed by the substances they manufacture or place on the EU market. Work is also underway within REACH to identify all relevant substances of very high concern (SVHCs) by 2020, including endocrine disruptors.

However, several Member States decided to publish the available information on the endocrine disruptors ahead of this. Together with several other European countries, **Belgium launched a new website on endocrine disruptors in the European Union at the start of June 2020: [www.edlists.org](http://www.edlists.org)**. The website is aimed at informing companies and stakeholders about substances that have already been identified as endocrine disruptors or are being assessed in the EU for their endocrine-disrupting properties.

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<sup>93</sup> <https://www.heraresearcheu.eu/hera-partners>

<sup>94</sup> Flemish Institute for Technological Research - [www.vito.be](http://www.vito.be)

<sup>95</sup> EU Research agenda for the Environment, Climate & Health 2020-2030, Interim rapport, 2020, <https://static1.squarespace.com/static/5d6d2b4f677cfc00014c7b53/t/5e8d9fbd9a6ae9365a0eaa71/1586339785056/HERA+EU+Research+Agenda.pdf>

<sup>96</sup> <https://echa.europa.eu/nl/regulations/reach/understanding-reach>

The website comprises 3 lists:

- list of substances identified as endocrine disruptors at EU level (list I)
- list of substances that are currently being assessed within the framework of EU legislation on endocrine-disrupting properties (list II)
- list of substances of which endocrine-disrupting properties have been assessed by a participating national authority on the basis of scientific evidence (list III)

The database is a joint initiative of Belgium, Denmark, France, the Netherlands and Sweden and aims to offer information that can contribute to a legislation for better protection of public health and the environment.

## 3.6 WHAT ARE OTHER COUNTRIES DOING

Various member states have been working on reducing exposure to endocrine disruptors for some time now. These countries can inspire Belgium to tackle this problem.

### 3.6.1 Denmark

- Since 1995, Denmark has launched several government programmes on endocrine disruptors, resulting in the publication of reports summarising current scientific knowledge on endocrine disruptors and supporting research programmes on endocrine disruptors.
- A national strategy for research work on endocrine disruptors was presented in 2002.
- In 2008, the Danish Centre for Endocrine Disruptors (CeHOS)<sup>97</sup> was established, financed by the Danish government.
- In 2011, the Danish Environmental Protection Agency submitted a proposal to the European Commission for endocrine disruptor identification criteria and a possible legislative framework.
- The Danish Environmental Protection Agency ran a campaign to raise public awareness of the endocrine disruptors and their effects on the unborn child. The campaign brought together midwives, doctors and nurses in a network to circulate the material, which was also used in the dialogue with pregnant and breastfeeding women. Research<sup>98</sup> was also conducted into the exposure of pregnant consumers to suspected endocrine disruptors and an information booklet was published that contained advice on chemical substances and pregnancy.

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<sup>97</sup> <http://www.cend.dk/>

<sup>98</sup> <https://www2.mst.dk/Udgiv/publications/2012/04/978-87-92903-02-0.pdf>

### 3.6.2 France

- In 2005, the French National Research Programme on Endocrine Disruptors (PNRPE)<sup>99</sup> was launched. Specifically, it includes 5 priority research themes and funding for 5 research projects, totalling €6 million, which has already led to more than 85 scientific publications in international journals.
- In 2019, the second national strategic action plan on endocrine disruptors was published: SNPE2: 2019-2022<sup>100</sup>
- In addition, there are 2 major government programmes aimed at evaluating the impact of various factors (including endocrine disruptors) on the population in general and on employees:
  - 2019: France's fourth national environment and health action plan (PNSE 4: 2020-2024)<sup>101</sup>
  - the plan for occupational health (PST 3: 2016-2020)<sup>102</sup>

<sup>99</sup> <https://www.ecologique-solidaire.gouv.fr/programme-sur-perturbateurs-endocriniens>

<sup>100</sup> <https://solidarites-sante.gouv.fr/sante-et-environnement/les-plans-nationaux-sante-environnement/article/deuxieme-strategie-nationale-sur-les-perturbateurs-endocriniens-2019-2022>

<sup>101</sup> <https://solidarites-sante.gouv.fr/sante-et-environnement/les-plans-nationaux-sante-environnement/article/plan-national-sante-environnement-4-pnse-4-mon-environnement-ma-sante-2020-2024>

<sup>102</sup> <https://travail-emploi.gouv.fr/sante-au-travail/plans-gouvernementaux-sante-au-travail/article/plans-de-sante-au-travail-pst>

## 4 POLICY RECOMMENDATIONS

### 4.1 GUIDING PRINCIPLES

The report of the Belgian Senate hearing in 2018 also refers to policy principles. According to the Independent Health Insurance Funds, there are a number of guiding principles that should form the central thread of future policy in Belgium. Undoubtedly there are more, but the following principles already seem essential to protect public health.

#### 4.1.1 Health in all policies

The dossier on endocrine disruptors is a good example of a problem in which a ‘health in all policies’ approach is necessary. In order to achieve greater effectiveness in health policy, one cannot limit oneself to one domain, but measures must be taken in different domains: environment, agriculture, economy, science, care, education, etc., each time focusing on the health of the citizen. For example: industry uses different endocrine-disrupting substances in products and packaging. Economic/industrial policy must include mention of health risks and necessary measures must be taken if certain substances are found to be harmful to human health.

It is clear that a comprehensive strategy is needed, clearly indicating which measures are expected in which areas and at which policy level.

#### 4.1.2 Precautionary principle

**A dossier such as on endocrine disruptors must focus all attention on protecting public health. The precautionary principle<sup>103</sup> is essential here.** On the basis of this principle, rapid action can be taken against a potential danger to the health of humans, animals or plants, or to protect the environment. After all, if scientific data do not allow a full risk assessment, this principle could, for example, prevent the distribution of potentially dangerous products or even withdraw the products from the market. This principle is one of the key principles for the future national action plan: one should avoid taking unnecessary risks and focus on protecting public health, even if not all the scientific evidence is available yet.

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<sup>103</sup> Communication from the Commission on the Precautionary Principle, COM(2000) 1 - <https://eur-lex.europa.eu/legal-content/NL/TXT/PDF/?uri=CELEX:52000DC0001&from=NL>

### 4.1.3 Child standard

In addition to the precautionary principle, the child standard is an important principle that should be taken into account when developing the measures to be taken. The principle is obvious: if it is safe for children, it is safe for everyone. It is a *design for all* vision where no distinction is made between the different sections of the population. Everyone has the right to the same level of safety and health protection. In effect, the standard should not be limited to products that only children come into contact with.

The implementation of such a standard is a challenge, as it is often not known what the consequences are of combining substances (cocktail effect), for example.

The advisory report by the Superior Health Council is of great importance in this issue.

### 4.1.4 Health objectives

An efficient policy aimed at improving public health should strive for specific health objectives, with quantified targets where possible and a clear timeframe. The policy should not be limited to good intentions or a best-efforts obligation, but should be translated into specific, and ideally also measurable, health objectives (an obligation of results), in consultation with the actors concerned.

Such health objectives make the policy specific and tangible to the citizen. In our Belgian system with fragmented competences, this is a much-needed instrument for connection and coordination, both in terms of cooperation between policy levels and between politicians or actors. These objectives should be inspiring and encourage actors to be active participants.

### 4.1.5 Coherence between all policy levels

As far as endocrine disruptors are concerned, more is required than solely a coordinated approach across the borders of the different domains (health in all policies). As the different policy levels have an important part to play in this issue, a coordinated and coherent approach is of great importance. **A national action plan with clear agreements on which measures should be taken at which policy level is the appropriate way to coordinate federal and regional policy, as well as to involve the local level.** Health objectives can make a positive contribution.

The Belgian initiatives (in line with the future national action plan) must also be in line with the European ambitions for the Green Deal with a 'zero pollution' objective. The Belgian position in these European dossiers must support these European initiatives. And the national action plan must include its implementation so that it also contributes to achieving Belgium's objectives. It would be irresponsible to take a position at European level that is not in line with national ambitions.

#### 4.1.6 Health literacy

Health literacy is defined as follows: *Health literacy entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course.*<sup>104</sup> They are essential as a determinant of health in preventive health policy. These skills are also an essential tool for tackling health inequalities, an area in which Belgium performs less well than many other European countries.<sup>105</sup> The lack of health literacy is closely linked to an individual's socioeconomic status.<sup>106</sup> And in our digital age, there is also the need for digital health skills.

The theme of endocrine disruptors is complex, with a lot of technical and scientific data and arguments. **It is important to convey the messages to citizens as clearly as possible and adapt them to the level of health literacy of the target group on the one hand, and on the other hand, to strengthen citizens' health literacy, especially for vulnerable groups such as pregnant women and children.** This way, they are supported in learning to make healthy choices and they can adapt their behaviour and way of life.

#### 4.1.7 Transparency

It is important to strive for the greatest possible transparency with regard to endocrine disruptors, for example as specified by the *right to know* as reiterated in the REACH<sup>107</sup> regulation. Businesses and scientists as well as public authorities must communicate transparently about potential risks and preventive measures, scientific findings, necessary policy measures, etc. The manner of communication and vulgarisation in the essential messages are important issues.

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<sup>104</sup> Sørensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: a systematic review and integration of definitions and models, BMC Public Health, 2012.

<sup>105</sup> Differences based on gender and between socioeconomic groups: *the life expectancy of the lowest educated men is about six years less than that of the highest educated men. Although this gap is slightly smaller than the EU average, it is one of the largest in Western Europe.* - State of Health in the EU - Belgium - Country Profile 2019, pp. 22

<sup>106</sup> *Many behavioural risk factors in Belgium are more common among people with lower levels of education or income. This higher prevalence of risk factors among socially disadvantaged groups contributes greatly to inequalities in health and life expectancy* - State of Health in the EU - Belgium - Country profile 2019, p. 8.

<sup>107</sup> Art. 33 of the REACH regulation - <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ%3AL%3A2007%3A136%3A0003%3A0280%3Anl%3APDF>

## 4.2 OBJECTIVES AND RECOMMENDATIONS

There are already many recommendations on what needs to be done, such as the report of the Belgian Senate hearing on endocrine-disrupting substances in 2018 with 72 recommendations<sup>108</sup>, or the advisory report by the Superior Health Council<sup>109</sup>. On the basis of these recommendations, the federal and regional authorities intend to jointly publish a national action plan, an initiative applauded by the Independent Health Insurance Funds and which should be published in 2020.

In this section, the Independent Health Insurance Funds want to take the recommendations from the Senate report as a starting point and emphasise what they consider essential from their point of view as a health insurance fund (the Senate report numbering has been copied).

### 4.2.1 Objective 1: To inform citizens and raise awareness

The first recommendation in the Senate report of 2018 is the most important one: *To inform and raise awareness among the population as much as possible about the presence and health risks of endocrine disrupting substances in consumer goods, as well as about the different ways in which a person can be exposed to these substances (by respiratory, oral or tactile means), so that citizens can adapt their consumption habits and way of life in full knowledge of the facts.*<sup>110</sup>

In the survey on endocrine disruptors by the Independent Health Insurance Funds, the respondents indicated what they thought was important in the information about the endocrine disruptors:

- the information comes from an official, reliable source.
- the information is understandable and scientifically substantiated (but the scientific details are not needed).
- the information is brief, clear and easy to understand.

In order to achieve this, several aspects are important:

#### Involve all stakeholders

In order to inform the general public, it is advisable to involve all stakeholders who can inform people. Health insurance funds are in direct contact with the entire Belgian population and currently already inform their members through all their information channels about healthcare, diseases, a healthy lifestyle. Other actors such as schools, trade unions, businesses, organisations such as Kind&Gezin, ONE, Gezinsbond can also

“  
Health insurance funds are in direct contact with the entire Belgian population and currently already inform their members through all their information channels about healthcare, illnesses, a healthy lifestyle

<sup>108</sup> Information report on the necessary cooperation between the Federal Government, the Communities and the Regions for the prevention and elimination of endocrine-disrupting substances in consumption, with a view to promoting public health, Senate, 2018

<sup>109</sup> Physicochemical environmental health (limitation of exposure to mutagenic or endocrine-disrupting agents) and the significance of exposure at an early age, Guidance no. 9404, Superior Health Council, 2019.

<sup>110</sup> Information report on the necessary cooperation between the Federal Government, the Communities and the Regions for the prevention and elimination of endocrine-disrupting substances in consumption, with a view to promoting public health, Senate, 2018

take on this informative role. The message can be spread by many parties, and a broad coalition could be organised. And although prevention is a regional competence, a national dimension is desirable, which can be achieved through the future national action plan.

In Flanders, the Medical Environmental Experts can be used to raise awareness. They are employees of the LOGO, which are local prevention organisations, and have been providing information on health and the environment since 2004.

Recommendation 49 of the Senate report proposes *to follow France's example and encourage the creation of a network of 'non-endocrine-disrupting municipalities' so that they can exchange good practices among themselves*. There is a project called 'Healthy Municipalities'<sup>111</sup> in Flanders that could play a similar role around the theme of endocrine disruptors. The federal states should be encouraged to communicate the prevention messages concerning endocrine disruptors at local level too, through the municipal services that are in contact with the citizens.

### Do not forget the healthcare providers

The healthcare providers are an important party. The Independent Health Insurance Funds can only applaud the recommendations in the Senate report of 2018 regarding the integration of endocrine disruptors in medical courses (see recommendations 41 and 42 of the Senate report).

But this shouldn't be limited to education only. It is also advisable to provide information and raise awareness among current medical staff, especially GPs, as they are a trusted person people take advice from. Raising awareness like this can be done in collaboration with medical associations such as *Domus Medica* and *Société Scientifique de Médecine Générale* (SSMG). The latter, for example, has a *Cellule environnement* that organised an information session<sup>112</sup> on endocrine disruptors in 2020.

In Flanders, the Logo Medical Environmental Experts can also be tasked with informing GPs.

**It seems advisable that more specific information material is to be developed for healthcare providers, to be used in their practice and that is easily accessible** (e.g. via screens or posters in the practice or waiting room). Thanks to the scientific skills of healthcare providers, informing them and raising awareness amongst them can be taken to a higher level than the information campaigns for the general public.

However, other care providers can also take on this awareness-raising and informative task. For example, pharmacists can be involved in official campaigns to raise awareness, as well as recommending products that contain no or fewer endocrine disrupting substances (especially in the case of vulnerable profiles). Midwives are also well-placed to raise awareness of reducing exposure to endocrine-disrupting substances in daily life.

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<sup>111</sup> <https://www.gezondleven.be/nieuws/meer-dan-200-gezonde-gemeenten-in-vlaanderen>

<sup>112</sup> <https://www.ssmg.be/evenements/20-10-2020-webinar-perturbateurs-endocriniens/>

## Communicate using a clear and understandable message

The subject of endocrine disruptors is complex. Not only must one understand why endocrine disruptors are dangerous, but also that one can reduce exposure to endocrine disruptors by not performing certain actions in daily life or by doing so differently (e.g. avoiding the use of plastic bowls when heating food in the microwave), or by buying other products.

It's not only important to properly vulgarise the information on endocrine disruptors; attention should also be focused on strengthening health literacy. According to Sciensano's Health Survey 2018<sup>113</sup>, 66.6% of the Belgian population aged 15 and over have a sufficient level of health literacy. It is clear that the need for strong health literacy is not limited to endocrine disruptors, but the issue of endocrine disruptors can be integrated into the development of a health literacy policy. The KCE Report 322<sup>114</sup> on Health Literacy can be a useful source of inspiration. Illustrations of specific measures:

- a suitable existing subject in the secondary education curriculum (biology, chemistry, or a new health-related subject) could include the impact of endocrine-disrupting substances, as well as how to avoid them.
- the theme could become part of the prevention activities within companies.

## Develop the right communication tools and channels

The Senate report from 2018 mainly refers to information brochures to raise awareness among citizens (recommendation 3).

The Independent Health Insurance Funds feel it is also important to utilise other channels, such as social media, websites and innovative tools, such as apps with advice and information that people can use in their daily lives. An interesting example is the Yuka app, which tells you more about the possible unhealthy ingredients in a product with a simple scan.

A single national website with certified information and advice, originating from the government and supported by all actors involved in the national action plan, also reinforces the message.

But one should not lose sight of the vulnerable groups when distributing information. The publications of HEAL can be mentioned as best practice. HEAL regularly publishes documents and recommendations to reduce exposure to endocrine disruptors in the daily lives of pregnant women, children and adolescents.<sup>115</sup> Information and guidance of patients prior to pregnancy remains important to minimise exposure to hazardous chemicals.

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<sup>113</sup> [https://his.wiv-isp.be/nl/Gedeelde%20%20documenten/HL\\_NL\\_2018.pdf](https://his.wiv-isp.be/nl/Gedeelde%20%20documenten/HL_NL_2018.pdf)

<sup>114</sup> [https://kce.fgov.be/sites/default/files/atoms/files/KCE\\_322\\_Health\\_Literacy\\_Report.pdf](https://kce.fgov.be/sites/default/files/atoms/files/KCE_322_Health_Literacy_Report.pdf)

<sup>115</sup> [http://env-health.org/IMG/pdf/20032015\\_paw\\_\\_edcs\\_pesticides\\_and\\_pregnancy\\_final.pdf](http://env-health.org/IMG/pdf/20032015_paw__edcs_pesticides_and_pregnancy_final.pdf)

People from lower socioeconomic categories are also among the vulnerable groups. A recent study<sup>116</sup> showed that these people are more exposed to endocrine disruptors: *We have observed that the levels of di-ethylhexyl phthalate, mono-isobutyl phthalate and mono-ethyl phthalate increase as the socioeconomic position of young people decreases. The lower the family income, the level of education of the mother or the form of education of the young person, the higher the levels of phthalates.* In terms of endocrine disruptors, social inequalities also contribute to deepening the health gap. A special effort must therefore be made to reach this group.

As mentioned above, the distribution of information should not be limited to the public authorities or healthcare providers, but should also involve other actors such as health insurance funds. Schools (health in all policies) could also integrate this theme in their lessons. **It is important to involve children from an early age and familiarise them with caring for their health, and to draw their attention to certain risks and how to avoid or reduce them, as part of the learning pathway.** Other settings, such as youth clubs and sports clubs can also convey such messages and set a good example (e.g. drinking water from the tap or drinking from glass bottles).

Here too, the importance of strengthening health skills should be emphasised, including digital health skills.

### Be transparent in consumer information

The 2018 Senate report rightly emphasises that the consumer should be informed in a transparent manner. The responsibility should not be placed on the public, it cannot be expected that everyone knows about the chemicals or where this information can be accessed. This information should be available when someone buys something. The survey by the Independent Health Insurance Funds shows that citizens consider the use of labels and pictograms to be the most appropriate.

It seems advisable to make agreements at European level on specific warning logos or statements on endocrine disruptors in order to inform and warn people. It is the government's duty to guarantee that products are safe. So, especially in a transitional phase where substances that are known to have an endocrine-disrupting effect (e.g. phthalates) still need to be replaced by a safer alternative, such logos can have important added value in informing about possible exposure to endocrine disruptors, especially for vulnerable groups such as pregnant women, children and adolescents.

Consultation with the sector is important, but **it is the government that has to decide how and on which products a warning should be displayed.** This is non-negotiable. If a substance could present a potential risk, this must be clearly and transparently indicated on the product.

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<sup>116</sup> Morrens B, Colles A, Coertjens D, Bruckers L. Exposure to endocrine-disrupting substances in consumer products. Looking for links between sustainability, health and social inequality. Poverty and Social exclusion - Yearbook 2019; Chapter 7:165-180 - [https://www.uantwerpen.be/images/uantwerpen/container34686/files/Jaarboek%20Armoede%202019\\_WE B3.pdf](https://www.uantwerpen.be/images/uantwerpen/container34686/files/Jaarboek%20Armoede%202019_WE B3.pdf)

In addition, it is necessary to insist on European level that the European eco-label be maintained and that the absence of endocrine-disrupting substances be introduced as an additional criterion for awarding this label (as formulated in recommendation 12 of the Senate report). This is an excellent idea that is achievable within the framework of the Green Deal. However, it should be avoided that such logos are used by companies for greenwashing<sup>117</sup>, i.e. the practice of marketing an organisation's products, objectives or policies as environmentally friendly when they may not be.

#### 4.2.2 Objective 2: To green innovation and research

There are currently an estimated 140,000 different substances on the market and only 1 percent have been tested for endocrine-disrupting properties.

Encouraging green innovation is a must and is recommended in the 2018 Senate report (Recommendation 21). But it could be more compelling, especially in the post-COVID-19 era when the environment and climate will be high on the agenda and there is a certain willingness to do things differently. Just as there is a will to link government support to climate efforts in the aviation sector, certain sectors could be asked to switch to manufacturing without the use of endocrine disruptors more quickly. This could be linked to recommendation 28 of the Senate report: *To encourage studies that examine whether certain economic instruments could reduce the use of endocrine disruptors.* The proposal in recommendation 69 could also help to facilitate the change by *introducing 'health and environment' criteria in public procurement specifications, giving priority to products free of endocrine-disrupting substances and, to this end, developing guidelines for local authorities and other public purchasers to include environmental considerations in public procurement.*

Information about alternatives should be easily accessible, such as the Chemsec.org Marketplace<sup>118</sup> - a 'dating site' for companies looking for suppliers of safer alternatives. Competent authorities should proactively inform companies about existing alternatives. If there really is no alternative, research should focus on this as a matter of priority, whether or not at European level.

It is important to approach investment in research from a **European perspective**, so that it is done in a coordinated way and avoids overlaps. Belgium can utilise the HERA project (see point 3.5.2.) to try to include as many research topics on endocrine disruptors as possible in the *European Health and Environment Research Agenda 2020-2030*. This applies, for example, to the points listed in the following recommendations from the Senate report:

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<sup>117</sup> Communication from the Commission to the European Parliament on the position of the Council with a view to the adoption of a Regulation of the European Parliament and of the Council on establishing a framework for the promotion of sustainable investment 2018/0178 (COD), and amending Regulation 2019/2088 on disclosure of sustainability in the financial services sector, COM (2020) final, p. 2 - <https://ec.europa.eu/transparency/regdoc/rep/1/2020/NL/COM-2020-155-F1-NL-MAIN-PART-1.PDF>.

<sup>118</sup> <https://marketplace.chemsec.org/>

- Recommendation 30: *Invest in research to identify endocrine disruptors and assess their risks by making endocrine disruptors a priority research topic in European research programmes. This task of identifying is essential. The aim is to standardise the models that make this identification possible. However, non-standardised studies should also be taken into account in the meantime. The studies resulting from scientific research may contain data useful for the evaluation of health risks. N.B.: There are currently an estimated 140,000 different substances on the market and only 1 percent has been tested for endocrine-disrupting properties.*<sup>119</sup>
- Recommendation 33: *Use the necessary resources to launch research contracts that:*
  - *focus on alternatives and substitutes for endocrine disruptors, whose harmlessness has been proven, and involving actors and economic stakeholders in related innovation initiatives.*
  - *examine how these endocrine-disrupting substances can be prevented from recirculation during recycling of products containing these substances.*
  - *also specifically address epigenetics in toxicity testing.*
  - *also specifically examine the causal relationship between a change in health and the presence of a particular chemical substance.*

To measure is to know. By gathering specific **data**, the policy can be better supported, and there can be clear formulation of the direction public health should take and how this can be achieved by means of specific measures, and adjusted if necessary. Recommendations 36, 37 and 38 of the Senate report are essential in this respect:

- Recommendation 36: *Set up human biomonitoring programmes in the different federal states and at federal level in order to measure the level of exposure to harmful substances and to have long-term data available, following the example of the research carried out in Flanders on 8,000 people over the past 15 years.*
- Recommendation 37: *Monitor the evolution of breast cancer and prostate cancer in order to determine its causes, taking into account exposure to endocrine disruptors and their impact on reproduction.*
- Recommendation 38: *Since the monitoring of the effects of hazardous substances is a shared competence between the federal states and the federal authorities, an inter-federal report should be drawn up which, in addition to the research results of the individual human biomonitoring programmes, also draws conclusions on the Belgian population as a whole.*

<sup>119</sup>Report on the proposal for a decree amending the decree of 21 November 2003 on the preventive health policy, as regards the duty to raise awareness and the preventive policy with regard to exposure to chemical substances that disrupt or may disrupt the normal hormonal functioning of the human organism, 1859 (2018-2019) - No 2, p.3 - <http://docs.vlaamsparlement.be/pfile?id=1470345>

### 4.2.3 Objective 3: To develop a policy based on the precautionary principle

#### Define the application of the precautionary principle

Recommendation 50 of the Senate report calls for the policy on endocrine disruptors to be guided by the precautionary principle. This will undoubtedly be an essential part of the future national action plan. **The application of this principle will lead to tighter supervision to limit and phase out the use of endocrine disruptors as soon as possible on the basis of *facts & figures* in order to achieve a ban and a switch to safe alternatives.**



The Independent Health Insurance Funds feel it is crucial that future policy specifies how this principle should be applied when scientific data do not allow for a full risk assessment.

But what about products where the scientific evidence is not unequivocal, but there is a strong suspicion that there are risks? The Independent Health Insurance Funds feel it is crucial that future policy specifies how this principle should be applied when scientific data do not allow for a full risk assessment. Recommendation 19 of the Senate report indicates that governments should ban endocrine-disrupting substances when scientific research shows that a substance is harmful. But this scientific evidence is not always unequivocal. The European Commission described the application of this principle in detail in a Communication<sup>120</sup> in 2000. According to the European Commission, the application of this principle should be based on the following principles:

- proportionality: measures should be proportionate to the level of protection sought.
- no discrimination: measures must not lead to discrimination.
- cohesion: measures should be related to previous measures in similar situations or be based on a similar approach.
- examination of the benefits and burdens of action or lack of action: before action is taken, the benefits and burdens of action or lack of action must be examined.
- examination of scientific developments: measures must be taken as long as the scientific data are incomplete, inaccurate or inconclusive and the risk to society is deemed unacceptable.

The most important directive issued by the European Commission is probably the following: *The right response in a given situation is therefore the result of an eminently **political decision** and depends on the level of risk considered ‘acceptable’ by society, which must bear this risk.*<sup>121</sup>

At national level, there must be clear agreements between the federal and regional levels on how this principle should be applied and what criteria apply. The lack of a sufficient burden of proof cannot be used as an excuse not to act. Even if it can only be stated that a chemical may have a negative impact on human health, this should be taken into account in a political decision on its use. One cannot hide behind science.

<sup>120</sup> <https://eur-lex.europa.eu/legal-content/NL/TXT/PDF/?uri=CELEX:52000DC0001&from=NL>

<sup>121</sup> Communication from the Commission on the precautionary principle, COM (2000) 1 final, p. 15.

This precautionary principle is important in several recommendations from the Senate report, such as:

- Recommendation 14: *When taking measures for products that children come into contact with, consider the harmfulness of the endocrine-disrupting substances in those products to children, both on their own and in combination with other substances (**cocktail effect**).*
- Recommendation 15: *Intensify checks on products, especially those intended for **children** such as care products, toys, clothing, etc. Particular attention should be paid to the conformity of products suspected of being subject to less stringent criteria.*
- Recommendation 16: Ensure **traceability** of products containing endocrine-disrupting substances at all stages of the production process, as a means of managing (subsequent) risks and ensuring the greatest possible transparency vis-à-vis public authorities.
- Recommendation 17: *In order to minimise exposure to endocrine-disrupting substances, ensure that the government **prohibits** their use in products where they are not necessary, e.g. in cosmetics.*
- Recommendation 18: *When replacing endocrine-disrupting substances, ensure that the **alternatives** are not harmful.*

### Work towards a clear legislative framework

The recent survey by the Independent Health Insurance Funds (see point 3.1.1) shows that 3 out of 4 Belgians (73%) assume that only products that do not contain potentially harmful substances are allowed to enter the Belgian market. However, the reality today is different, and it is only natural that citizens expect public authorities to have a regulatory framework that can guarantee this.

A regulatory framework should be drawn up on the basis of the objectives of the future national action plan, at federal or regional level, depending on the competence. Such a regulatory framework should focus on the following aspects:

- impose transition from the use of endocrine disruptors to the use of safe alternatives.
- ensure control of the potential harmfulness of the alternative substances.
- ban the use of chemicals that have been scientifically demonstrated to have endocrine-disrupting or harmful effects and for which no alternative substance exists.
- anchor the precautionary principle and the child standard in legislation and its application, even where there are indications of harmfulness to health but insufficient scientific evidence.
- ban the use of endocrine disruptors in non-essential products such as toys, clothes, personal care products.
- provide incentives to encourage the industry to look for alternatives to endocrine disruptors.
- mandate an institution to coordinate the implementation of the future national action plan and to monitor its follow-up.

- use financial instruments (such as VAT) to discourage the consumption of products with endocrine disruptors.
- provide an efficient control system with regular checks.
- ban advertising in the media for products containing endocrine disruptors (TV, radio, etc.).
- create pesticide-free zones close to water supplies and places frequented by children.

Certain matters are better dealt with at European level and have been included in section 4.2.4. The use of logos or pictograms and the revision of the ecolabel (as mentioned in point 4.2.1.5) are also better dealt with at European level.

Using the precautionary principle as a guiding principle requires a critical evaluation of the chemical substances used today. For example, there are three commonly used chemicals that have endocrine-disrupting properties:

- **BPA (bisphenol A):** bisphenol A is a chemical substance used in the production of certain plastics and resins. It might be present in food packaging, tin cans, and other products. The use of BPA has already been banned for packaging materials for food intended for children up to 3 years of age (2012<sup>122</sup>) and for till receipts (2020<sup>123</sup>).
- **phthalates:** phthalates are a group of chemicals used to make certain types of plastic flexible and pliable. Phthalates might be present in widely used products such as food packaging, toys, care products, etc.
- **parabens:** parabens are a group of chemicals that can be used as preservatives, perfumes or because of their antimicrobial effect. They might be present in commonly used products, such as personal care products, cleaning products and medicines.

The Senate information report recommends banning these substances in products intended for children up to 3 years of age<sup>124</sup>: bisphenol in packaging and toys, propylparabens and butylparabens in all personal care products, all phthalates in toys and personal care products.

The Independent Health Insurance Funds are of the opinion that the child standard should be applied to these chemical substances: if it is safe for children, it is safe for everyone. Everyone has the right to the same level of health protection, and for this reason, bisphenol, parabens and phthalates should be banned as a precautionary measure.



The Independent Health Insurance Funds are of the opinion that the child standard should be applied to these chemical substances: if it is safe for children, it is safe for everyone.

<sup>122</sup>Law of 4 September 2012 amending the Law of 24 January 1977 on the protection of the health of users with regard to foodstuffs and other products, in order to prohibit bisphenol A in food packaging - [http://www.ejustice.just.fgov.be/cgi\\_loi/change\\_lg.pl?language=nl&la=N&table\\_name=wet&cn=2012090407](http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&table_name=wet&cn=2012090407)

<sup>123</sup> [https://emis.vito.be/nl/actuele\\_wetgeving/verordening-eu-20162235-van-de-commissie-van-12-december-2016-tot-wijziging-van?passthrough=1](https://emis.vito.be/nl/actuele_wetgeving/verordening-eu-20162235-van-de-commissie-van-12-december-2016-tot-wijziging-van?passthrough=1)

<sup>124</sup>Recommendation 20 from the Senate information report, p. 80-81

## Organise good coordination and control

Belgium has a complex state structure in which the fragmentation of powers can represent a major challenge in the pursuit of a coherent policy. Efficient coordination between the different domains and policy levels is therefore very important.

Recommendations 46 and 47 of the Senate report refer to **the Institute for the Future** to provide this coordination. Although already announced in 2014, this institution does not yet exist. However, the timing of the Green Deal makes it very relevant to have a centralising and coordinating institution for the various environmental and climate issues. Perhaps the future national action plan could take the Green Deal as an opportunity to give a new impetus to the establishment of the Institute for the Future. Reference can be made to foreign examples such as the ANSES in France and the KEMI in Sweden. But it is important that there is a firm decision on the establishment of the Institute for the Future. In the meantime, the joint Environment and Public Health Unit, set up as part of the Belgian National Environment-Health Action Plan, will naturally take on this role.

The national plan should also include clear commitments on **monitoring and enforcement** of legislation, as proposed in Senate recommendation 70: *To designate the regulatory bodies responsible for monitoring and enforcing legislation on endocrine-disrupting substances. Adequate inspections should encourage pro-active behaviour.* To this end, it seems advisable to develop common objectives so that control and enforcement are uniform throughout the territory.

## 4.2.4 Objective 4: To play a pioneering role in Europe

### Take coherent positions at European level

The Independent Health Insurance Funds are pleased to read recommendation 54, about the ambition that Belgium should play a pioneering role at European level: *Given that the European Union is the main arena for taking structural measures on endocrine-disrupting substances in a single market, we need to ensure that our country plays a pioneering role at European level to achieve an ambitious policy aimed at drastically reducing exposure to endocrine-disrupting substances with a view to better protection of health and the environment.*

The Green Deal features various initiatives that also touch on the matter of endocrine-disrupting substances. As mentioned earlier, it is important that Belgium makes full use of these opportunities to achieve the objectives of the future Belgian national action plan. It is therefore advisable for Belgium to take part in the European decision-making process with a positive attitude and strong points of view. **The preparation of the Belgian position on the Green Deal dossiers as well as the implementation of the European decisions must be integrated in the national action plan.** Belgium's European positions must be coherent and in line with the ambitions agreed by the federal and regional authorities in the national action plan. Participating without a viewpoint in these important debates must be avoided in the strongest possible terms.

Recommendations 54 to 66 of the Senate report concern aspects that require a European approach and for which the Green Deal has created the perfect framework.

To improve the European regulatory framework, the outcome of the **review of EU rules** on harmful chemical substances and endocrine disruptors and the proposed next steps will provide an opportunity to put a number of issues on the agenda such as:

- *Recommendation 55: Criteria for identifying and classifying endocrine disruptors into the following three categories: 'proven' endocrine disruptors, 'probable' endocrine disruptors and 'suspected' endocrine disruptors, as defined by the World Health Organisation's International Programme for Chemical Safety (WHO/IPCS).*
- *Recommendation 56: Identify endocrine disrupting substances as substances of very high concern (SVHCs), following the example of France, within the framework of the REACH Regulation, so that they are included on the candidate list of substances for mandatory authorisation; in addition, be active in the detection of problematic substances within the framework of CORAP.*

Other issues will undoubtedly be raised in the discussion surrounding the **Chemicals strategy for sustainability** initiative, presented in October 2020. In this context, the following recommendations from the Senate report will undoubtedly be discussed:

- *Recommendation 57: Ask the European Union that the classification of endocrine-disrupting substances should preferably be drawn up by a single European body in order to avoid any risk of difference in classification.*
- *Recommendation 58: Encourage the European Union to validate new test methods in order to effectively identify endocrine-disrupting substances. Such test methods should be able to detect the effects of very low doses.*
- *Recommendation 59: Ask the European Union that EU producers demonstrate the harmlessness of their products before they are placed on the market, on the basis of objective criteria established at EU level.*
- *Recommendation 60: Once the criteria have been laid down, urge the European Union to act consistently in its legislation in the interests of public health (e.g. through bans, phasing out, etc.).*
- *Recommendation 61: Urge the European Union to approve the adoption of the strategy for non-toxic environment. This strategy should set out the benchmarks to enable an approach by chemical substance group. After all, a 'substance by substance' approach will take too long as there are more than 100,000 chemicals on the market.*
- *Recommendation 63: Encourage the European Union to add endocrine-disrupting substances on labelling in addition to the already mandatory labelling of carcinogenic, mutagenic or reprotoxic substances.*

In 2021, the **Zero pollution action plan for water, air and soil** will be published. This will undoubtedly provide the European regulatory framework to work on recommendation 22 of the Senate report: *Take action to identify the presence of endocrine-disrupting substances in drinking water and ground and surface water and, on that basis, take targeted measures to drastically reduce exposure to and loss of endocrine disruptors in the environment.*

The **Circular economy action plan**, also due for publishing in 2020, is also likely to respond to recommendation 62 in the Senate report: *To ensure a non-toxic circular economy at European level by adapting the criteria for circular economy and recycling so as to prevent the circulation and possible concentration of endocrine disruptors.*

## Create a European 'coalition of the willing'

Over the coming years, the **presidency of the Council of the European Union** will be taken up by Member States where tackling endocrine disruptors is already high on the agenda: France (1<sup>st</sup> semester 2022), Sweden (1<sup>st</sup> semester 2023) and Denmark (2<sup>nd</sup> semester 2025). Belgium itself will assume the presidency in the first semester of 2024. Belgium could use its political influence to have the dossier on endocrine disruptors included as a priority dossier in their work programme, together with these countries. Hopefully, Belgium will be able to show itself to be a pioneer and a good example during its presidency in 2024, and to support and give direction to the further development and implementation of the European initiatives of the Green Deal.

The framework of the Green Deal and the successive presidencies of Member States wishing to address the risk of endocrine disruptors once again create the possibility to achieve concrete results in this dossier. For the Independent Health Insurance Funds, it is essential that this opportunity is integrated into the future national action plan.

## 5 CONCLUSION

The issue of endocrine disruptors is a complex one: technical and scientific in nature, spread across different areas of competence and policy levels, with sometimes conflicting interests. But exposure to endocrine-disrupting substances has a major impact on our health today. Already in 2012, the World Health Organization talked about a 'global threat'.<sup>125</sup> Reducing this exposure requires an ambitious plan of action with the protection of public health as its main objective. It is to be hoped that the future national action plan will meet expectations.

When can we say whether future policy with the announced national action plan has been successful? As soon as we can tick off the following achievements during future evaluations:

- the population understands the risk related to endocrine disruptors and knows how to act on it by either avoiding or reducing their exposure when possible.
- a ban has been issued on substances for which there is scientific evidence (or a well-founded suspicion based on scientific results) that they have a negative impact on health.
- healthcare providers are familiar with the issue of endocrine disruptors and can alert patients to the dangers/potential harm of exposure to endocrine disruptors and inform them on how to reduce this exposure.
- human biomonitoring projects indicate that exposure to endocrine-disrupting substances has decreased.
- Belgium plays a pioneering role at European level and has supported the European proposals enabling a policy towards a living environment where endocrine disruptors exposure is minimised.
- research into the development of alternatives to endocrine disruptors is supported, both in Belgium and at European level.
- industry and agriculture have abandoned hormone-disrupting substances and replaced them with safe alternatives.
- The categorisation of a substance as a suspected endocrine-disruptor is sufficient to ban it from at least consumer products.
- Belgium has developed its own solid policy with clear health objectives that do not just defer to Europe.

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<sup>125</sup> State of the Science of Endocrine Disrupting Chemicals, WHO, 2012 - [https://apps.who.int/iris/bitstream/handle/10665/78102/WHO\\_HSE\\_PHE\\_IHE\\_2013.1\\_eng.pdf;jsessionid=268A3140D084555AFE8CEA67F509E0E2?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/78102/WHO_HSE_PHE_IHE_2013.1_eng.pdf;jsessionid=268A3140D084555AFE8CEA67F509E0E2?sequence=1)

2020 is an important pivotal moment for tackling endocrine disruptors in Belgium. The necessary pieces of the puzzle are in place: recommendations from institutions and advisory bodies, strong ecological ambitions at European level, a consensus between the various Belgian authorities to draw up an action plan. The precautionary principle should form the basis of the policy. Taking the appropriate measures is a political decision which must be motivated by a concern to protect public health above all else; economic interests should not take precedence over our health.

The health insurance funds can make a valuable contribution to the future national action plan, especially in raising awareness and informing their members. In any case, this important dossier can count on the support of the Independent Health Insurance Funds.

## 6 APPENDIX: REDUCING THE RISK IN DAILY LIFE

The subject of endocrine disruptors is complex and technical in nature, but that shouldn't be a reason to stick your head in the sand. After all, small interventions can help to reduce exposure to endocrine disruptors in daily life.

The leitmotiv is simple: it is better to avoid potentially dangerous substances (which are suspected of having endocrine-disrupting properties, for example), even if no definitive evidence is available yet. As a precautionary measure, exposures should not only be as low as possible, but also as late in life as possible, as short as possible and as little as possible, given the significance of early exposures and low dose effects.<sup>126</sup>

Exposure at an early age could lead to illness later in life and could prevent optimal development. Moreover, in reality, exposure to complex mixtures of substances is the most common. As a precautionary measure, the Superior Health Council recommends a holistic approach, avoiding or reducing exposure to many different agents, a kind of package of preventive measures.

However, the individual can limit his/her exposure to a range of products and situations likely to be associated with an increased risk of adverse health effects. The following tips can be used to achieve this.

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<sup>126</sup> Guidance no. 9404 from the Superior Health Council  
[https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/190617\\_hgr-9404\\_fys\\_chem\\_env\\_hygiene\\_vcabdem\\_0.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/190617_hgr-9404_fys_chem_env_hygiene_vcabdem_0.pdf)

Many organisations have formulated valuable recommendations, which could form the basis for an awareness campaign by the health insurance funds on this matter. The following list of tips to reduce exposure to endocrine disruptors has been drawn up on the basis of the following documents:

- the report from the Superior Health Council (HGR)<sup>127</sup>
- the presentation by Greet Schoeters (VITO) at the HGR General Meeting<sup>128</sup>
- brochures by Kind&Gezin and the Gezinsbond<sup>129</sup>
- the Gezinsbond dossier<sup>130</sup>
- Kom Op Tegen Kanker<sup>131</sup>
- information from 'Perturbateurs endocriniens: s'informer pour se protéger'<sup>132</sup>
- information from HEAL, EU Freia research project, The International Federation of Gynecology and Obstetrics (FIGO), EDC-Free Europe, PAN<sup>133,134,135, 136</sup>
- Danish information brochure for pregnant women: Expecting a baby? Advice about chemicals and pregnancy<sup>137</sup>

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<sup>127</sup> [https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/190617\\_hgr-9404\\_fys\\_chem\\_env\\_hygiene\\_vcabdem\\_0.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/190617_hgr-9404_fys_chem_env_hygiene_vcabdem_0.pdf)

<sup>128</sup> <https://www.health.belgium.be/nl/general-meeting-2019-prof-greet-schoeters>

<sup>129</sup> <https://gezinsbond.be/Documents/Hormoonverstoorders.pdf>

<sup>130</sup> <https://www.goedgezind.be/dossiers/hormoonverstoorders/overal-hormoonverstoorders-waarom-we-voorzichtig-moeten-zijn/>

<sup>131</sup> <https://www.allesoverkanker.be/hormoonversturende-stoffen>

<sup>132</sup> [https://www.generations-futures.fr/wp-content/uploads/2019/02/perturbateurs-endocriniens\\_web.pdf](https://www.generations-futures.fr/wp-content/uploads/2019/02/perturbateurs-endocriniens_web.pdf)

<sup>133</sup> <http://freiaproject.eu/wp/endocrine-disruptors/>

<sup>134</sup> <https://www.edc-free-europe.org/your-food>

<sup>135</sup> [www.disruptingfood.info/images/consumer\\_guideUPDATE2013.pdf](http://www.disruptingfood.info/images/consumer_guideUPDATE2013.pdf)

<sup>136</sup> FIGO/HEAL Chemical tips - <https://www.env-health.org/figo-ucsf-and-heal-share-10-tips-to-avoid-toxic-chemicals-during-and-after-pregnancy/>

<sup>137</sup> <https://eng.mst.dk/media/mst/69080/Expecting%20a%20baby.pdf>

Topic	Recommendation	Reason	Source
FOOD AND DRINK	Choose food and drink in glass containers instead of plastic bottles or metal cans and tins. Avoid plastic boxes, even if they do not contain BPA (bisphenol A). Choose glass or stainless steel instead.	Substances such as phthalates and BPA are thought to be endocrine disruptors and affect foetal development. Some phthalates are suspected of affecting sperm quality and reproduction.  Phthalates or other suspect substances are present in plastic.  Tinned food: the inner layer consists of epoxy resin that could release BPA into the food.	HGR, Focus op hormoonverstoorders Gezinsbond, site Gezinsbond, EDC free Europe, Kom Op Tegen Kanker
	Do not heat food in plastic containers.	Certain substances such as BPA could leak when heated and may end up in the food (especially in fatty foods,).	HGR, site Gezinsbond, Freia project, EDC-free Europe, s'informer pour se protéger
	For plastic, pay attention to the following symbols (especially for young children) or to PVC, PC symbols: (+ avoid use):  	Presence of phthalates or other suspect substances	Site Gezinsbond, EDC-Free Europe, Kom Op Tegen Kanker, s'informer pour se protéger
	Cook fresh food as much as possible.	Ready-to-eat food often contains preservatives, colourants, etc., and is often wrapped in plastic.	Gezinsbond
	Pans: cast-iron and ceramic pans are preferable. When using non-stick pans: replace the pan if damaged. Don't let the pan overheat. Buy a pan with a ceramic layer or pans with a label that states it does not contain PFOA or PFAS.	The non-stick coating contains Teflon. The teflon layer is attached to the pan with the help of PFAS ( <i>per-</i> and <i>polyfluoralkylenes</i> ) that are thought to have an endocrine-disrupting effect. When used correctly and without damage, the PFAS will not be released, only when the layer is damaged or at very high temperatures (> 260°C).	HGR, Gezinsbond website
	Choose organic food whenever possible. Avoid pesticides.	Pesticides can interfere with the action of hormones. Washing only removes part of the substances.	HGR, Gezinsbond, Freia project, EDC Free Europe, Kom Op Tegen Kanker, s'informer pour se protéger
	Peel non-organic fruit and vegetables or choose the 'clean' products (which contain the least pesticide residues).	Washing alone does not remove all pesticides.	Gezinsbond, EDC Free Europe
	Limit the consumption of predatory fish (such as tuna, swordfish) to once a week.	Perfluorinated compounds (fish) could be carcinogenic and endocrine-disrupting.	HGR, Focus op hormoonverstoorders (Gezinsbond)
	Use quality-controlled water in glass bottles.		HGR
	Eat a varied diet. Don't always buy the same brands. This way you spread the risk of exposure as much as possible.	In order to spread the risk of exposure to endocrine disruptors	Danish information campaign (specifically for pregnant women) Gezinsbond brochure
	Wash your new kitchen utensils before use.	In order to wash away superficial residues of the chemicals used in the manufacturing process	Gezinsbond website
	Avoid food packed using PVC film, or use phthalate-free film.		EDC Free Europe, Kom Op Tegen Kanker

Topic	Recommendation	Reason	Source
COSMETICS	Choose fragrance-free products and limit the use of perfumes.	Chemicals such as triclosan (preservative), polycyclic musks (fragrances), diethyl phthalate (carrier), benzophenon-3 (UV screen) or dibutyl phthalate (softener in nail polish) could be added to cosmetics.  These compounds are considered to be endocrine disruptors and most of them also pass through the placenta. Synthetic fragrances are ever-present compounds of personal care products and cleaning products. These compounds have endocrine properties and are easily absorbed through skin contact and inhalation of contaminated dust and fragrance vapour.	HGR, Gezinsbond
	Do not buy cosmetic products or personal care products with antibacterial action.	Endocrine-disrupting substances, such as triclosan, are sometimes used in these products.	Focus op hormoonverstoorders
	Choose products with an ecolabel.		Gezinsbond website
	Limit the use of cosmetics and lotions as much as possible.		HGR
	Limit the use of hair dye and nail polish.	May have endocrine-disrupting properties.	HGR, Danish information campaign (specifically for pregnant women) on hair dye
	Avoid products with 'parabens', 'phthalates', or abbreviations such as BzBP, DEP and DMP in the list of ingredients, especially for products that penetrate the skin (e.g. creams, lotions, etc.) and are not washed off.  Avoid products containing bisphenol A (BPA), Triclosan, Benzophenone, Cyclotetrasiloxane, butylated hydroxyanisole (BHA) and Ethylhexyl methoxycinnamate (EHMC).	may have endocrine-disrupting properties.	Focus op hormoonverstoorders, site Gezinsbond, Kom Op Tegen Kanker

Topic	Recommendation	Reason	Source
HOME	Avoid fragranced cleaning products, air fresheners and home fragrances.	Air fresheners release hazardous components such as benzene, phthalates and limonene and can form secondary pollutants through reaction with ozone. Health risks include damage to the central nervous system and alteration of hormone levels.	HGR, Gezinsbond, Focus op hormoonverstoorders (Gezinsbond), Freia project (air fresheners)
	Clean the house using damp cloths and dust regularly.	House dust contains chemicals such as phthalates, flame retardants, and synthetic fragrances Dust also often contains PFAS.	HGR, Danish information campaign (specifically for pregnant women), Brochure Gezinsbond, Site Gezinsbond, Kom Op Tegen Kanker
	Ventilate bedrooms and living room at home for 10 minutes, once or twice a day.	Ventilation has proved important in reducing indoor concentrations of semi-volatile organic compounds such as formaldehyde.	HGR, Danish information campaign (specifically for pregnant women), Gezinsbond (also recommendations for children), Freia project (HEAL), Kom Op Tegen Kanker, s'informer pour se protéger
	Avoid or limit the use of insecticides.		HGR (Focus op hormoonverstoorders (Gezinsbond))
	Avoid or limit the use of herbicides or pesticides. If possible, use non-chemical alternatives or less harmful products.	May have endocrine-disrupting properties.	HGR, Focus op hormoonverstoorders (Gezinsbond), EDC-Free Europe, Kom Op Tegen Kanker
	Use an organic all-purpose cleaner with an ecolabel (EU ecolabel, Nordic Ecolabel) without perfume.		Gezinsbond brochure, Focus op hormoonverstoorders
	Be moderate with aggressive cleaning products and ventilate well during and after cleaning.		Gezinsbond website
	Use everyday cleaners such as vinegar, soda, salt, lemon juice, soap and borax.		Gezinsbond brochure, Gezinsbond website, Perturbateurs endocriens : s'informer pour se protéger
TEXTILES	Wash new clothes prior to wearing	Reproductive toxicity is mainly associated with flame retardants, phthalates, highly fluorinated water and stain repellents, and biocide-treated textiles.	HGR, Focus op hormoonverstoorders, Freia project
	Choose textiles with a label (e.g. EU Ecolabel, Global Organic Textile Standard, Bluesign, Step, etc.).		Focus op hormoonverstoorders
	Avoid clothing with labels such as 'odourless' or 'antibacterial'.	May contain endocrine-disrupting substances (antibacterial triclosan e.g. in socks, perfluorinated compounds e.g. in 'wrinkle-free' products, brominated products such as flame retardants, phthalates in water-resistant clothing, etc.).	Gezinsbond website
	Natural fabrics such as cotton, wool, linen and silk are preferable.		Gezinsbond website

Topic	Recommendation	Reason	Source
<b>TOYS</b>	Restrict the use of plastic or rubber toys and opt for products declared free of bisphenol A or phthalates.	Anti-androgenic activity was found to leach from the surface of toys and baby products in contact with liquids with a composition similar to that of human body fluids. Possible presence of phthalates	HGR, Gezinsbond website
	Be careful with fabric toys. Choose soft toys made of natural fibres.	It may have been treated with chemicals during the production process.	Gezinsbond brochure, Gezinsbond website
	Wash soft toys prior to use.	The filling often contains flame-retardant substances.	Gezinsbond brochure
<b>PREGNANT WOMEN</b>	Avoid products made of soft PVC.	These products may contain phthalates.	Danish information brochure for pregnant women
	Eat organic, so you can avoid pesticides. Is organic food not an option? Rinse and rub your fruit and vegetables and clean and peel them before you eat them.	Consumption of organic food during pregnancy is linked to a reduced risk of obesity and diabetes in mothers (Simões-Wüst et al., 2017) and may reduce the prevalence of hypospadias in the offspring.	HGR, Gezinsbond, Danish information brochure for pregnant women
	Ventilate more, especially when painting or purchasing new electronics or furniture.	Ventilation has proven important in reducing indoor concentrations of semi-volatile organic compounds such as formaldehyde.	HGR, Gezinsbond
	As a pregnant woman, avoid polluted air when renovating homes (etching, painting, insulation, etc.).	Pregnant women are more vulnerable: formation of vital organs, structures. Exposure can have an impact.	Senate report, Focus op hormoonverstoorders (Gezinsbond)
	Use as little cosmetics with hazardous substances as possible. Avoid use of hair dye.		Kom Op Tegen Kanker, Danish information brochure for pregnant women

Topic	Recommendation	Reason	Source
BABIES AND CHILDREN	Use a BPA-free or glass milk bottle if breastfeeding is not an option.	Babies are more sensitive to exposure to endocrine-disrupting substances. Fairly high relative uptake of EDC and functional development of nervous system, reproductive system, immune system <sup>138</sup>	Senate report, Gezinsbond brochure
	Avoid children's clothing with fire retardants.		Gezinsbond brochure
	Avoid children's clothing with PVC coating or print.	Chemicals are used in the colouring, dyeing and printing process. In children, the ratio of their skin is proportionally greater in relation to their weight + more often put clothes in their mouth or suck on them: more exposure.	Gezinsbond brochure, Gezinsbond website
	Avoid clothes labelled 'odour-free'.	Presence of perfluorocarbons, presence of an antibacterial agent	Focus op hormoonverstoorders, Gezinsbond brochure
	Choose textiles with a label (e.g. EU Ecolabel, Global Organic Textile Standard, Bluesign, Step, etc.).		Focus op hormoonverstoorders
	Read the label and avoid products containing hazardous substances. Avoid products with 'parabens', 'phthalates', or abbreviations such as BzBP, DEP and DMP in the list of ingredients, especially for products that penetrate the skin (e.g. creams, lotions, etc.) and are not rinsed off.	Could have endocrine-disrupting properties.	Gezinsbond website
	Avoid sun products with chemical filters.	Possible endocrine-disrupting effect and harmful for child's development	Focus op hormoonverstoorders, Gezinsbond
	Ventilate rooms.	Babies breathe faster than adults, so they breathe more air. In addition, their lung vesicles let in more pollutants than those of adults.	Gezinsbond
	Dust and clean using water.	Household dust absorbs toxic substances from the environment, e.g. from carpets or curtains.	
	Use 'PBA-free' pacifiers.		EDC Free Europe
Avoid children putting receipts or other tickets in their mouths.	May contain BPA.	EDC Free Europe	

<sup>138</sup> Endocrine-disrupting substances. Senate information report, 2018



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