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(This category highlights potential health issues from fragrance chemicals and fragranced products.)

Download the poster to share: <https://www.fragrancefreecoalitionusa.com/>

Go Fragrance Free: Healthier Air Has Never Been Easier

Many hospitals, businesses, and employees are not aware that fragranced products can create access barriers to their facilities and can adversely affect the health of those working there. Fragranced products include fragranced cleaning products, hand sanitizers, lotions, laundry products, deodorant, air fresheners or any other scented items.

COSMETICS

Makeup, Sunscreen Foundation/Foundation, LipGloss/Lipstick, Mascara, Setting Spray, Makeup Remover, Nail Polish/Remover, Mousse, Hairspray, Moisturizer, Primer, Toner

Important Note: (Deep Dive into the new fragrance regulations in California)

IMPORTANT INFO!:

California's 2020 "Cosmetic Fragrance and Flavor Ingredient Right to Know Act" (CFFIRKA), went into effect on Jan. 1, 2022.

What is [CFFIRKA](#) and what does it [mean for us](#)?

You can [search the California Safe Cosmetics Program \(CSCP\) database](#) to see qualifying fragrance ingredients of participating cosmetics and personal care products manufacturers.

The FDA [only regulates Cosmetics and other personal care products](#), which means that other fragranced products are not affected by these laws. Who "regulates" the [other fragranced products](#)? The Consumer Product Safety Commission.

Note: In the EU, [26 known fragrance allergens](#) have been a labeling requirement [since 2009](#), but as of 2022 the EU is planning to add [56 more fragrance allergens](#).

IN THE U.S. NEWS - On Dec. 29, 2022, the MOCRA - (Modernization of Cosmetic Regulation Act) was signed into law. In a few years, the U.S. should start listing [fragrance allergens in cosmetics](#), but this Act may tie the hands of states' ability to make a law pertaining to disclosing the over 3,000 other potentially concerning fragrance ingredients ([like California did](#)).

To learn more, see what [Women's Voices for the Earth \(WVE\)](#) have figured out.

To read the Act, go to [congress.gov link/PDF](#) (page 1396).

What to know:

Which products qualify as '[cosmetics](#)' and [Who regulates what??](#)

Items such as fragranced laundry products, air fresheners, carpet fragrance, fragrance in cleaning products or car / car wash fragrances are not considered cosmetics, therefore, it is safe to say that companies who sell these products will not be obligated to list the known fragrance allergens in their products.

1. Skin safety and health prevention: an overview of chemicals in cosmetic products

Panico A, Serio F, Bagordo F, Grassi T, Idolo A, DE Giorgi M, Guido M, Congedo M, DE Donno A. Skin safety and health prevention: an overview of chemicals in cosmetic products. J Prev Med Hyg. 2019 Mar 29;60(1):E50-E57. doi: 10.15167/2421-4248/jpmh2019.60.1.1080. PMID: 31041411; PMCID: PMC6477564.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/31041411/> - [PDF](#)

“**Cosmetic** products contain a wide range of chemicals to which we are exposed everyday.”

“**Fragrances** were present in 52.3% of the examined products, mostly **limonene** (76.9%) and **linalool** (64.6%) but also **citronellol** (34.1%), **geraniol** (31.5%), **coumarin** (30%) and **hexyl cinnamal** (29.2%).”

“...**substances may induce several acute adverse side-effects, i.e. contact dermatitis and allergic reactions.** For these reasons, an enhancement of the criteria used for cosmetics formulation is required since many chemicals used singularly or combined are potentially unsafe.”

2. Endocrine Disruptors and Asthma-Associated Chemicals in Consumer Products

Dodson RE, Nishioka M, Standley LJ, Perovich LJ, Brody JG, Rudel RA. Endocrine disruptors and asthma-associated chemicals in consumer products. Environ Health Perspect. 2012 Jul;120(7):935-43. doi: 10.1289/ehp.1104052. Epub 2012 Mar 8. PMID: 22398195; PMCID: PMC3404651.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/22398195/> - [PDF](#)

“Endocrine disrupting compounds (**EDCs**) are chemicals that can alter hormonal signaling and have potential effects on developing **reproductive** and **nervous systems, metabolism, and cancer** (Colborn et al. 1993). Some phthalates **inhibit testosterone synthesis**...”

“**Fragrances have been shown to exacerbate asthma** (Kumar et al. 1995). The phthalate bis(2-ethylhexyl) phthalate (DEHP) in dust was associated with asthma and wheezing in children (Bornehag et al. 2004), and several phthalates show an adjuvant effect in animal studies (Bornehag and Nanberg 2010). The sum of **propylene glycol** and **glycol ethers** was associated with **increased asthma** prevalence in preschool-age children (Choi et al. 2010)... **Phthalates** are used as plastic additives, as solvents in **cosmetics** and **perfumes**, and as an inert ingredient in pesticides.”

“More than 3,000 fragrance ingredients have been reported, and a fragranced product may contain 50–300 different chemicals (Bickers et al. 2003). Exact formulations are typically protected from disclosure (Bridges 2002; International Fragrance Association 2010).

“**In a 1996 study, a high proportion of perfumes and cosmetics labeled as containing natural ingredients in fact contained synthetic fragrances** (Rastogi et al. 1996).”

“Fragrances, particularly **terpenes** such as **limonene**, are associated with **secondary chemical reactions** in indoor air and can contribute to the production of **formaldehyde, glycol ethers, ultrafine particles, and secondary organic aerosols** (Nazaroff and Weschler 2004; Singer et al. 2006). Exposure to fragrances has been associated with a range of health effects, including allergic **contact dermatitis, asthma and asthmatic exacerbations, headaches, and mucosal symptoms** (Heydorn et al. 2003; Kumar et al. 1995; Steinemann 2009). **Synthetic musks** have been shown to have **estrogenic effects** (Bitsch et al. 2002; Schreurs et al. 2005; Seinen et al. 1999; van der Burg et al. 2008). Exposure to fragrances has been associated with a range of health effects, including allergic **contact dermatitis, asthma and asthmatic exacerbations, headaches, and mucosal symptoms**... **Synthetic musks** have been shown to have **estrogenic effects**.”

“In human studies, exposure to **glycol ethers** has been associated with **low sperm mobility** (Cherry et al. 2008), **hematological effects** (Starek et al. 2008), and **asthma and allergies** (Choi et al. 2010).”

[Note: **Phthalates** are **synthetic** odorless plasticizers used as solvents, binders or fixatives **in many fragrances**. Why are phthalates **in the news**? **Phthalates** are considered Endocrine Disrupting Chemicals.

On the [California Safe Cosmetics Program Product Database](#): [DEP](#), [DIDP](#), and [DBP](#) are reported as fragrance while [DEHP](#) and [DBP](#) are perfume solvents. [IFRA](#) lists DEP and DMP, as “reported fragrance ingredients”.]

[**Note:** [Endocrine Disrupting Chemicals](#) (EDC's) are [commonly used in perfumes and fragranced products](#) as preservatives or fragrance. [What are EDC's and how can they affect us?](#)]

[**Note:** Fragrance is considered the new ‘second hand smoke’, “[The parallels between second-hand smoke and synthetic fragrance use are many. At its core, both are battles over indoor air quality](#)” - quote and link from De Vader, Christy L. & Barker, Paxson.

Chemicals that cigarettes/cigarette smoke and fragranced products can have in common are: Acetone, Formaldehyde, Benzene, acetaldehyde, terpenoids and phenols.]

3. Fragrance contact allergens in 5,588 cosmetic products identified through a novel smartphone application

Bennike NH, Oturai NB, Müller S, Kirkeby CS, Jørgensen C, Christensen AB, Zachariae C, Johansen JD. Fragrance contact allergens in 5,588 cosmetic products identified through a novel smartphone application. J Eur Acad Dermatol Venereol. 2018 Jan;32(1):79-85. doi: 10.1111/jdv.14513. Epub 2017 Sep 11. PMID: 28796916.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/28796916/>

“More than 25% of the adult European population suffers from contact allergy, with fragrance substances recognized as one of the main causes. Since 2005, 26 fragrance contact allergens have been mandatory to label in cosmetic products within the EU if present at 10 ppm or above in leave-on and 100 ppm or above in wash-off cosmetics.”

“The largest product categories investigated were **“cream, lotion and oil”** (n=1192), “shampoo and conditioner” (n=968) and “deodorants” (n=632). Among cosmetic products labelled to contain at least one of the 26 fragrances, 85.5% and 73.9% contained at least two and at least three of the 26 fragrances, respectively. **Linalool** (49.5%) and **limonene** (48.5%) were labelled most often among all investigated products.... Six of the 26 fragrance substances were labelled on less than one percent of all products, including the natural extracts **Evernia furfuracea (tree moss)** and **Evernia prunastri (oak moss)**. 329 (5.9%) products had one or more of the 26 fragrance substances labelled, but did not have “parfum/fragrance/aroma” listed on the label.”

“Consumers are widely exposed to, often multiple, well-established fragrance contact allergens through various cosmetic products intended for daily use. **Several fragrance substances that are common causes of contact allergy were rarely labelled in this large sample of cosmetic products.**”

4. Fragrance allergens in ‘specific’ cosmetic products

Nardelli A, Drieghe J, Claes L, Boey L, Goossens A. Fragrance allergens in 'specific' cosmetic products. Contact Dermatitis. 2011 Apr;64(4):212-9. doi: 10.1111/j.1600-0536.2011.01877.x. PMID: 21392029.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/21392029/>

“This study not only underlines the usefulness of **fragrance-ingredient labelling** in order to identify the **causal allergen(s)** present in specific **cosmetic** products, but may also provide information on trends in the actual use of **sensitizing fragrance ingredients** in them.”

5. Environmental exposure to xenoestrogens and oestrogen related cancers: reproductive system, breast, lung, kidney, pancreas, and brain

Fucic A, Gamulin M, Ferencic Z, Katic J, Kraymer von Krauss M, Bartonova A, Merlo DF. Environmental exposure to xenoestrogens and oestrogen related cancers: reproductive system, breast, lung, kidney, pancreas, and brain. *Environ Health*. 2012 Jun 28;11 Suppl 1(Suppl 1):S8. doi: 10.1186/1476-069X-11-S1-S8. PMID: 22759508; PMCID: PMC3388472.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/22759508/> - [PDF](#)

“The general population is exposed to a number of hormonally active compounds on a daily basis...”

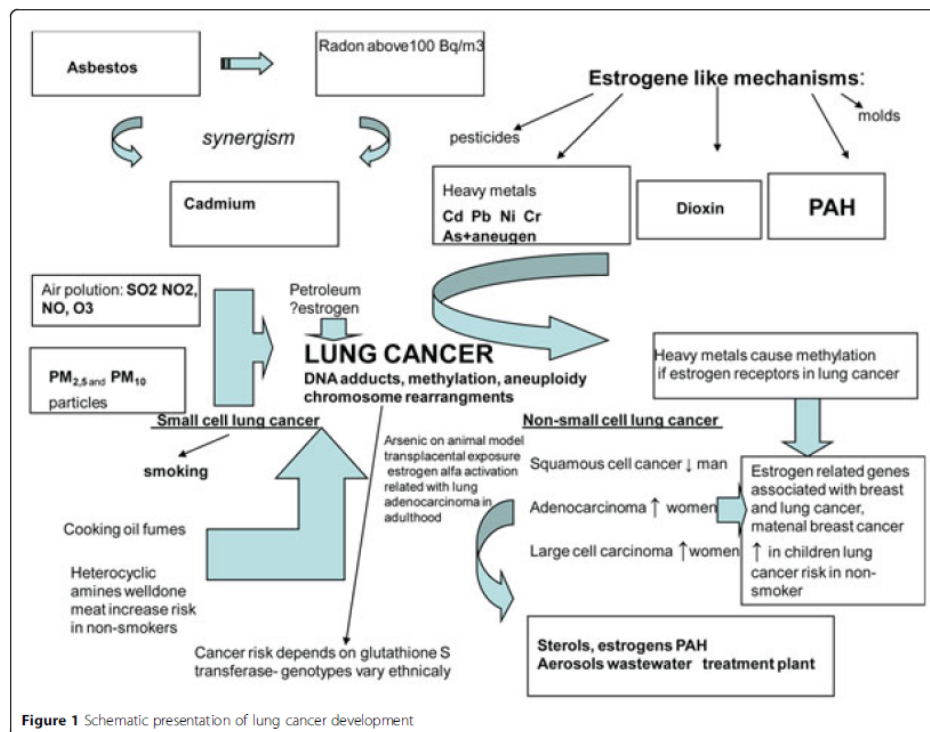
“Currently there are some 160 **xenoestrogens** that may be involved in **breast cancer** development. Women are the largest consumers of **cosmetic products** which may be a significant source of xenoestrogens. Some, such as metalloestrogens (e.g., aluminium salts), parabens, cyclosiloxanes, triclosan, UV screeners, **phthalates**,... Humans are exposed to these chemicals transcutaneously and measurable levels have been detected in human breast tissue.”

(Note: This graphic is from the preceding article)

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Fucic et al. *Environmental Health* 2012, 11(Suppl 1):S8
<http://www.ehjournal.net/content/11/S1/S8>

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“Although gene polymorphisms can change cancer incidence, **it is clear that environment has predominance over genes in cancer risk.** “

[Note: **Phthalates** are **synthetic** odorless plasticizers used as solvents, binders or fixatives **in many fragrances**. Why are phthalates **in the news**? **Phthalates** are considered Endocrine Disrupting Chemicals. On the **California Safe Cosmetics Program Product Database**: **DEP**, **DIDP**, and **DBP** are reported as fragrance while **DEHP** and **DBP** are perfume solvents. **IFRA** lists DEP and DMP, as “reported fragrance ingredients”.]

6. Ubiquity, Hazardous Effects, and Risk Assessment of Fragrances in Consumer

Products

Pastor-Nieto MA, Gatica-Ortega ME. Ubiquity, Hazardous Effects, and Risk Assessment of Fragrances in Consumer Products. *Curr Treat Options Allergy*. 2021;8(1):21-41. doi: 10.1007/s40521-020-00275-7. Epub 2021 Jan 23. PMID: 33520600; PMCID: PMC7825391.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/33520600/> - [PDF](#)

“**Fragrances are the most frequent chemicals causing contact dermatitis**. Their main sources are **cosmetics**, household products, industrial substances, food flavorings, oral hygiene products, and topical medications. **It is difficult for sensitized patients to avoid contact with fragrances**, due to their ubiquity and because manufacturers are not willing to volunteer information regarding fragrance ingredients.”

“The treatment of contact dermatitis relies on allergens avoidance which does not “cure” the disease (sensitization persists for life) but will prevent disabling illness. The patient should understand that **avoiding perfume is not avoiding just fine fragrances or colognes but all scented goods**.”

“**Anaphylaxis** involving a nurse assaulted by a patient who sprayed perfume in her eyes was reported...”

“Fragrances have **neurotoxic** and **neurostimulatory** effects. Certain **perfumes** may be **cytotoxic to human fetal brain development** based on in vitro research with neuroblastoma cell lines.... Ingredients in perfumes with presumed **hormonal activities** are octinoxate and butylated hydroxytoluene (**thyroid and androgen-like activities**) and octinoxalate, oxybenzone, benzophenone-1, **diethyl phthalate**, **galaxolide**, tonalide, **musk ketone**, **benzyl salicylate**, and **butylphenyl methylpropional** (**estrogen or androgen activity**). **Diethyl phthalate**, a **fragrance solvent**, can cause **abnormal development of reproductive organs** in infant males, **attention deficit disorder** in children, and **sperm damage** in adults. **Coumarin also shows endocrine-disrupting activity...**”

“**Fragrances** are not necessary for human survival. Thus, their risks clearly outweigh their benefits. Sensitization results from a failure of the legislation to prevent inappropriately high exposures”

7. Environmental factors in the development of autism spectrum disorders

Sealey LA, Hughes BW, Sriskanda AN, Guest JR, Gibson AD, Johnson-Williams L, Pace DG, Bagasra O. Environmental factors in the development of autism spectrum disorders. *Environ Int*. 2016 Mar;88:288-298. doi: 10.1016/j.envint.2015.12.021. Epub 2016 Jan 28. PMID: 26826339.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/26826339/>

“Many modern companies do not disclose the industrial secrets in many of their fragrances that are, in reality, a complex concoction of synthetic chemicals and natural essences, which often have been found to be petrochemicals.”

“Among those are chemicals, such as **musk ketone** and **diethyl phthalate**, which are responsible for **allergic reactions and hormone disruption**.... Although these **chemicals have been found to accumulate in human tissues**, they have not yet been adequately analyzed for safety in products used by unsuspecting humans. **As a result of a giant loophole in the Federal Fair Packaging and Labeling Act of 1973**, which explicitly exempts fragrance producers from having to disclose cosmetic ingredients on product labels, fragrance concealment is not illegal and is often used by the industry to hide from the public the full list of ingredients, even substances that can cause grave health problems (Environmental Working Group (EWG), 2005). It is a common practice for businesses to list the chemicals as simply “fragrance,” which may mean that **the majority of the ingredients are never revealed to buyers.**”

“Even worse, people who use cologne, fragrances, body spray, and other scented cosmetics are blindly exposed to dangerous chemicals since the Food and Drug Administration lacks authority to control mandates to manufacturers that require testing of all fragrances for safety, before being released to the public.”

“Also, during pregnancy, the use of fragrances and other cosmetics may actually expose the developing fetus to **diethyl phthalate (DEP)**, a common fragrance solvent that can cause **abnormal development of reproductive organs in infant males, Attention Deficit Disorder** in children, and **sperm damage in adults.**”

“The role of environmental factors like **fragrances, glyphosate and other synthetic chemicals derived from petrochemicals containing carcinogenic, mutagenic, hormones disturbing and neuromodifying capabilities** in the molecular and cellular pathogenesis of ASD has not been evaluated. This is partly due to the 1973 FDA decision to exempt fragrances and cosmetics from appropriate testing, which is generally required for any consumer item that enters the human body and is metabolized by human metabolic pathways.”

8. Long-Term Outcomes after Phthalate Exposure: Food Intake, Weight Gain, Fat Storage, and Fertility in Mice

Holtcamp W. Long-term outcomes after phthalate exposure: food intake, weight gain, fat storage, and fertility in mice. Environ Health Perspect. 2012 Aug;120(8):a320. doi: 10.1289/ehp.120-a320a. PMID: 22854284; PMCID: PMC3440097.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/22854284/> - [PDF](#)

“Exposure to **endocrine-disrupting chemicals (EDCs)**, particularly **in utero**, is suspected to contribute to **obesity, diabetes, hypertension, and reproductive abnormalities**. Di(2-ethylhexyl) phthalate (**DEHP**), a plasticizer found in **cosmetics, fragrances, food packaging, and polyvinyl chloride**, is one such EDC. Human studies have found associations between urinary metabolites of DEHP and other phthalates and **increased body mass** in humans, and maternal exposure to DEHP has been associated with **impaired gonadal development and fertility** in baby boys.”

[**Note:** [Endocrine Disrupting Chemicals](#) (EDC's) are [commonly used in perfumes and fragranced products](#) as preservatives or fragrance. [What are EDC's and how can they affect us?](#)]

9. The associations between phthalate exposure and insulin resistance, β -cell function and blood glucose control in a population-based sample

Dales RE, Kauri LM, Cakmak S. The associations between phthalate exposure and insulin resistance, β -cell function and blood glucose control in a population-based sample. *Sci Total Environ*. 2018 Jan 15;612:1287-1292. doi: 10.1016/j.scitotenv.2017.09.009. Epub 2017 Sep 8. PMID: 28898934.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/28898934/>

“DEHP metabolites were also associated with increased glucose concentrations, and indicators of β -cell function and insulin resistance. Our results suggest that exposure to phthalates may possibly impair control of blood glucose and thereby predispose to pre-diabetes.”

[Note: Phthalates are synthetic odorless plasticizers used as solvents, binders or fixatives in many fragrances. Why are phthalates in the news? Phthalates are considered Endocrine Disrupting Chemicals. On the California Safe Cosmetics Program Product Database: DEP, DIDP, and DBP are reported as fragrance while DEHP and DBP are perfume solvents. IFRA lists DEP and DMP, as “reported fragrance ingredients”.]

10. Health risks of chemicals in consumer products: A review

Li D, Suh S. Health risks of chemicals in consumer products: A review. *Environ Int*. 2019 Feb;123:580-587. doi: 10.1016/j.envint.2018.12.033. Epub 2019 Jan 7. PMID: 30622082.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/30622082/> - Full Text

“It should also be noted that some chemicals have multiple functional uses, while we chose the most dominant functional use for each chemical. An example is the grouping of phthalates. Despite categorized as plasticizer together in this review, several phthalates such as diethyl phthalate and dimethyl phthalate are used as solvents in personal care products and cosmetics as carriers of fragrance (Schettler, 2006).”

“...we found that the volume of the peer-reviewed literature that addresses human health risks of the chemicals in consumer products did grow over the last two decades, while its growth could by no means match the speed of increasing volume and diversity of the chemicals produced and used in consumer products by the society. This growing gap between increasing reliance on chemicals in consumer products and our knowledge on their human health risks raises a potential public health concern, given the pervasive nature of today's mass production and consumption practice.”

“As a result, peer-reviewed journal publications largely failed to serve as an early warning or a preventive mechanism. The humidifier disinfectant incident in South Korea is a stark example that shows the potential vulnerability in chemical exposure through consumer products and its consequences, as well as the limited role for peer-reviewed journal publications to prevent them. It also highlights the needs for understanding the risks of chemicals before putting them into consumer products, while the rapidly growing diversity of synthetic chemicals often makes the generation of necessary data cost-prohibitive. As a result, we observed that scientific literature tends to appear only after the outbreak of major exposure incidents, or they tend to be concentrated in the chemicals or chemical groups of which human health risks have been previously reported. This is a structural problem that is poised to grow under the current practice.”

“We believe that there is an urgent need for creating the framework conditions that encourage more exploratory and speculative risk assessments and their publications in peer-reviewed journal space in the absence of known human health risks. Reducing the costs and time needed for toxicity and exposure

assessments is a key, to which the developments in predictive toxicity and risk assessment techniques for screening-level assessment, as well as **the use of systematic prioritization for high-risk exposure pathways and chemicals in consumer products would be crucial.**”

11. Smell of autism: Synthetic fragrances and cause for allergies, asthma, cancer and autism

Bagasra O, Pace DG. Smell of autism: Synthetic fragrances and cause for allergies, asthma, cancer and autism. *OA Autism* 2013 Jun 19;1(2):15.

Article Link:

https://www.researchgate.net/publication/269626082_Smell_of_autism_Synthetic_fragrances_and_cause_for_allergies_asthma_cancer_and_autism)

“The aim of this review was to discuss synthetic fragrances and cause for **allergies, asthma, cancer and autism...**”

“This review summarizes some of the subjective concerns and attempts to date that have brought greater objective scrutiny to the debate over the safety of components used in the imprecise objects called fragrances.”

“The link between autism spectrum disorder (ASD) and exposure to toxic ingredients in perfumes, even at minute (femtomolar) levels, has been suggested by recent scholarship. Scents are known to have the capacity to reach the brain, including the brain of a foetus whose mother uses **perfume that derives from synthetic scents made from mutagenic chemicals.**”

“**Fragrance is a seemingly innocuous term added to health and beauty products. Ultimately, this mysterious term may actually undermine both health and beauty.** Fragrance is a common euphemism for an undisclosed blend of chemical ingredients drawn from an arsenal comprised of about 3,100 total ingredients. ‘Musky’ may increase sales, ‘exotic’ may attract customers and ‘floral’ may sound beautifully natural, but these terms may also conceal the existence of petrochemicals and other synthetic chemicals that, when blended with natural ingredients, can form **dangerous cocktails of fragrance**”

12. Developmental Exposure to Endocrine Disrupting Chemicals and Its Impact on Cardio-Metabolic-Renal Health

Singh RD, Koshta K, Tiwari R, Khan H, Sharma V, Srivastava V. Developmental Exposure to Endocrine Disrupting Chemicals and Its Impact on Cardio-Metabolic-Renal Health. *Front Toxicol.* 2021 Jul 5;3:663372. doi: 10.3389/ftox.2021.663372. PMID: 35295127; PMCID: PMC8915840.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/35295127/> - [Free Full Text](#)

“**Endocrine disrupting chemicals (EDCs)** include **phenols, phthalates**, parabens, flame retardants, heavy metals, pesticides, perfluorinated chemicals, UV filter components, triclosan, and organochlorines.”

“**Cumulative exposure to mixtures of EDCs can lead to adverse effects on the health of the exposed individuals** (Crews et al., 2003). Multiple studies, including the studies of the National Health and Nutrition Examination Survey (NHANES), have shown that **about 75–97% of US and Asian adults have detectable levels of phthalates and phenols [bisphenol A (BPA) and polyfluoroalkyl chemicals] in their urine** (Silva et al., 2004; Calafat et al., 2007, 2008; Vandenberg et al., 2010; Zhang et al., 2011; Husøy et al., 2019).”

“Epidemiological and experimental studies have also linked **adult exposure to EDCs** with **abnormal male and female reproductive health, diabetes, obesity, cardiovascular and metabolic disorders, thyroid function, and hormone sensitive cancers** (Howard and Lee, 2012; Bodin et al., 2015; Heindel et al., 2015, 2017).”

“**Children are also vulnerable to EDCs** (Calafat et al., 2017; Hendryx and Luo, 2018), **making EDC exposure a major health concern for all age groups.**”

“**Chronic kidney disease** is a growing health problem among children and adults. The incidence and the prevalence of chronic kidney disease (CKD) **among children have been steadily increasing since the 1980s**.... A number of traditional risk factors associated with CKD in children include hypertension, obesity, diabetes, and aberrant divalent mineral metabolism.... There is growing evidence that **links exposure to EDCs with early progression to end-stage renal disease (ESRD)** (Kataria et al., 2015)....”

“**Early-life exposure to EDCs was associated with elevated levels of kidney toxicity markers such as albumin-to-creatinine ratio (ACR), estimated glomerular filtration rate (eGFR), and urinary protein-to-creatinine ratio (UPCR) in some human population studies** (Li et al., 2012; Trasande et al., 2013a, 2014; Malits et al., 2018).”

[Note: **Phthalates** are **synthetic** odorless plasticizers used as solvents, binders or fixatives **in many fragrances**. Why are phthalates **in the news**? **Phthalates** are considered Endocrine Disrupting Chemicals. On the **California Safe Cosmetics Program Product Database**: **DEP, DIDP, and DBP** are reported as fragrance while **DEHP** and **DBP** are perfume solvents. **IFRA** lists **DEP and DMP**, as “reported fragrance ingredients”.]

[Note: **Endocrine Disrupting Chemicals** (EDC’s) are **commonly used in perfumes and fragranced products** as preservatives or fragrance. **What are EDC’s** and how can they **affect us**?]

13. Is the Diabetes Epidemic Primarily Due to Toxins?

Pizzorno J. Is the Diabetes Epidemic Primarily Due to Toxins? Integr Med (Encinitas). 2016 Aug;15(4):8-17. PMID: 27574488; PMCID: PMC4991654.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/27574488/> - [PDF](#)

“The incidence of diabetes has increased 7 to 10-fold in the past 50 years. Although increased sugar consumption, obesity, and lack of exercise certainly contribute, the effect of environmental toxins may be far greater. The data are so compelling that some researchers now label these toxins as **diabetogens**. This editorial summarizes the research showing which toxins are the worst offenders, how they disrupt blood sugar control, where they come from, how to assess body load, and strategies for detoxification and excretion.”

“Another possibility is the increased incidence of obesity which is a known major risk factor for diabetes. However, the **obesity epidemic appears because of the same causes as diabetes: diabetogens**, many of which are also called **obesogens**. Of particular significance is the surprising observation that obese people with low levels of persistent organic pollutants (POPs) **do not** have an increased risk of diabetes.³ In contrast, as can be seen in Figure 3, the diabetes epidemic does correlate with the rate of release of POPs into the environment.... More convincing is the correlation between body load of POPs and risk of metabolic syndrome as seen in Figure 4, and the association is synergistic. When POP levels versus diabetes risk is examined, the case becomes even more compelling, as shown in Figure 5.’

“Adding up the numbers shows potentially the **whole epidemic is apparently due to the massive increase in body load of toxins**. A big caveat is that there is a real problem with nonindependence of the correlations and that many of these **diabetogens** are also being labeled **obesogens**, as there is substantial overlap of mechanisms of damage. Nonetheless, even if we do not know the exact percentage contribution of each toxin, their role in the epidemic appears undeniable.”

“**Phthalates** are a family of organic chemicals used as plasticizers (to increase flexibility, transparency, and durability) and for multiple manufactured product purposes, such as **to solubilize and stabilize fragrances** in cosmetics.”

“**Diethyl phthalate and dibutyl phthalate are especially common in health and beauty aids, except in Europe where they have now been banned due the very large amount of research showing their toxicity**, regardless of the source. As can be seen in Figure 11, **phthalate levels in the blood directly correlate with use of health and beauty aids**.”

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14. History of the Obesogen Field: Looking Back to Look Forward

Heindel JJ. History of the Obesogen Field: Looking Back to Look Forward. Front Endocrinol (Lausanne). 2019 Jan 29;10:14. doi: 10.3389/fendo.2019.00014. PMID: 30761083; PMCID: PMC6362096.

Article Link: <https://pubmed.ncbi.nlm.nih.gov/30761083/>

“**Exposure to EDCs during early development (DOHaD) has been shown to increase susceptibility to a variety of diseases including infertility, asthma, breast and prostate cancer, early puberty, susceptibility to infections, heart disease, autoimmune disease, and attention deficit hyperactivity disorder/learning disability**. The chemicals that she noted as having the ability to cause weight gain include organochlorine pesticides, carbamates, polychlorinated biphenols, plastics such as **phthalates** and bisphenol A (BPA), heavy metals and solvents.”

“**EDCs are found in a wide variety of products including pesticides/herbicides/fungicides, flame retardants, surfactants, plastics, sunscreens, cosmetics, and personal care products**, etc. [reviewed in (5)].”

“**Originally, EDCs were shown to interfere with estrogen, androgen and thyroid hormone signaling (7, 8) resulting in diseases and dysfunctions in reproduction, learning, memory, and behavior**.”

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