

# TOXINS AND DETOXIFICATION SUPPORT PATIENT GUIDE



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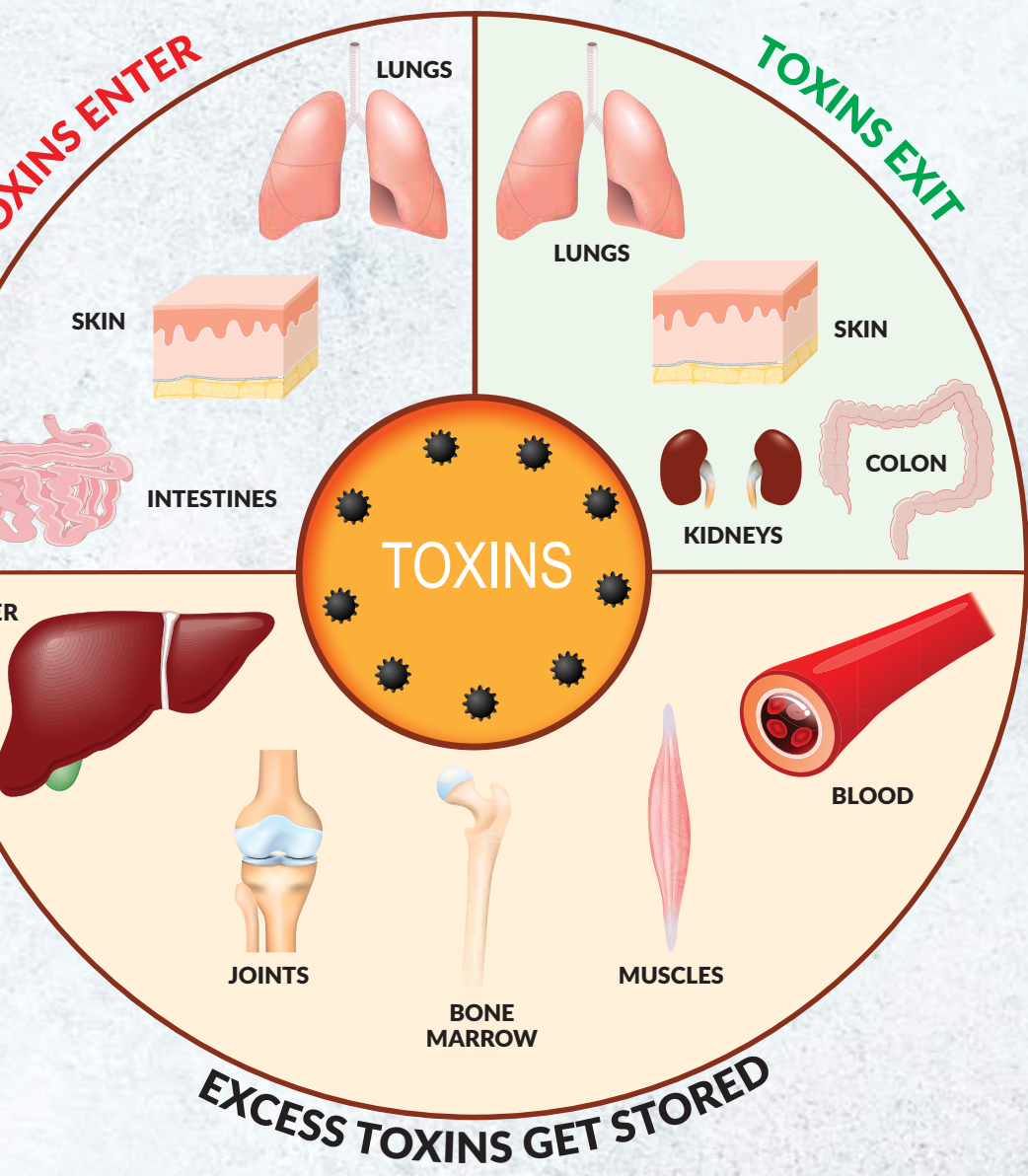
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# WHY DETOX?

Your practitioner may be suggesting a detoxification protocol for obvious health concerns, but there are also many other, more subtle, reasons our bodies may need a detox. When toxic metabolites accumulate, our systems of elimination become overloaded, and we become progressively more sensitive to additional chemicals (some of which may not normally be toxic). An overburdened body manifests in various ways:<sup>1</sup>

- Headaches, nausea.
- Digestive disturbances (constipation, bloating, bad breath).
- Weight gain, blood sugar imbalances.
- Fatigue, mood changes.
- Skin conditions (rashes, acne, psoriasis).
- Allergic and atopic conditions (hives, asthma, eczema).
- Joint pain.
- Brain fog/fatigue and cognitive issues.





# TOXINS IN OUR DAILY LIVES<sup>1-21</sup>

We are increasingly exposed to toxic compounds every day in the air, water and food we consume to sustain life. But, ironically, via this consumption, toxins have become the primary drivers of disease, with increases in occurrences of conditions such as diabetes, infertility, attention deficit hyperactivity disorder (ADHD) and Alzheimer's disease (AD).<sup>1</sup>

Toxin	Sources	Toxicity Symptoms and Diseases
<b>Arsenic</b>	<ul style="list-style-type: none"><li>• Water</li><li>• Crops and food using contaminated water</li><li>• Pesticides</li><li>• Chicken</li><li>• Rice</li><li>• Tobacco</li></ul>	<ul style="list-style-type: none"><li>• Gout</li><li>• Cognitive issues</li><li>• Asthma</li><li>• Skin rashes and pigmentation</li><li>• Type 2 diabetes</li><li>• Dyslipidaemia</li></ul>
<b>Aluminum</b>	<ul style="list-style-type: none"><li>• Water</li><li>• Food (grains)</li><li>• Deodorants</li><li>• Toothpaste</li><li>• Cosmetic products</li><li>• Foil products</li></ul>	<ul style="list-style-type: none"><li>• Brain fog</li><li>• Dementia/Alzheimer's</li><li>• Depression</li><li>• Bone diseases</li><li>• Joint pain</li><li>• Inflammatory bowel diseases</li></ul>



Toxin	Sources	Toxicity Symptoms and Diseases
<b>Mercury</b>	<ul style="list-style-type: none"> <li>• Amalgam fillings</li> <li>• Fish</li> <li>• Vapor from fluorescent light bulbs</li> </ul>	<ul style="list-style-type: none"> <li>• Fatigue, muscle weakness</li> <li>• Metallic taste</li> <li>• Tremors</li> <li>• Headaches</li> <li>• Loss of memory, dementia</li> <li>• Anxiety, depression, moodiness</li> <li>• Hashimoto's disease</li> </ul>
<b>Lead</b>	<ul style="list-style-type: none"> <li>• Paint (lead-based)</li> <li>• Old buildings</li> <li>• Water</li> <li>• Batteries</li> </ul>	<ul style="list-style-type: none"> <li>• Increased inflammatory states across multiple systems</li> <li>• Loss of coordination</li> <li>• Loss of sense of touch</li> <li>• Brain fog</li> <li>• Mood disorders, irritability</li> <li>• Insomnia</li> <li>• Slurred speech</li> <li>• Hypertension</li> <li>• ADHD</li> <li>• Infertility</li> <li>• Erectile dysfunction</li> </ul>
<b>Cadmium</b>	<ul style="list-style-type: none"> <li>• Cigarettes</li> <li>• Manufacturing batteries, plastics, coatings and solar panels</li> <li>• Jewellery making</li> <li>• Smelters, mines</li> </ul>	<ul style="list-style-type: none"> <li>• Brain fog</li> <li>• Bone demineralisation</li> <li>• Infertility</li> <li>• Hypertension</li> <li>• Joint pain</li> <li>• Insulin resistance</li> <li>• Emphysema</li> <li>• Skin ulceration</li> </ul>



Toxin	Sources	Toxicity Symptoms and Diseases
<p><b>Solvents and chlorinated solvents</b></p> <p><b>(Benzene, methylbenzene, toluene, xylenes)</b></p>	<ul style="list-style-type: none"> <li>• Cigarettes</li> <li>• Petrol stations</li> <li>• Exhaust from motor vehicles</li> <li>• Industrial emissions</li> <li>• Wood finishes</li> <li>• Adhesives</li> <li>• Paint and stain removers</li> </ul>	<ul style="list-style-type: none"> <li>• Skin and eye irritations</li> <li>• Drowsiness, dizziness</li> <li>• Headaches</li> <li>• Vomiting</li> <li>• Loss of muscle control</li> <li>• Liver and renal toxicity</li> <li>• Respiratory irritation</li> <li>• Dementia/Alzheimer's</li> <li>• Erectile dysfunction</li> <li>• Rheumatoid arthritis</li> </ul>
<p><b>Plasticisers (Bisphenol A (BPA))</b></p>	<ul style="list-style-type: none"> <li>• Foods in plastic packaging and containers</li> <li>• Water bottles</li> <li>• Canned foods</li> <li>• Water pipes</li> <li>• Thermal sales receipts</li> <li>• CDs and DVDs</li> <li>• Feminine hygiene products</li> <li>• Toiletries</li> <li>• Dental filling sealants</li> </ul>	<ul style="list-style-type: none"> <li>• Allergy/atopic conditions</li> <li>• Liver dysfunction</li> <li>• Lipid and cholesterol dysfunctions</li> <li>• Polycystic ovarian syndrome (PCOS)</li> <li>• Hypertension</li> <li>• Diabetes, insulin resistance</li> <li>• Hyperactivity in children</li> <li>• Erectile dysfunction</li> <li>• Memory loss</li> <li>• Frequent infections</li> </ul>
<p><b>Polybrominated diphenyl ethers (PDBEs) and perfluorinated compounds (PFCs)</b></p>	<ul style="list-style-type: none"> <li>• Flame retardant fabrics and materials</li> <li>• Electronics</li> <li>• Non-stick cookware</li> <li>• Mattresses</li> <li>• Furniture</li> <li>• Carpets</li> <li>• Fish</li> </ul>	<ul style="list-style-type: none"> <li>• Dizziness, headaches</li> <li>• ADHD</li> <li>• Diabetes</li> <li>• Liver toxicity</li> <li>• Infertility</li> <li>• Erectile dysfunction</li> <li>• Neurotoxicity</li> </ul>



Toxin	Sources	Toxicity Symptoms and Diseases
<b>Plasticisers (phthalates)</b>	<ul style="list-style-type: none"> <li>• Food and food packaging</li> <li>• Personal care and beauty products</li> <li>• Toothbrushes</li> <li>• Automobile parts</li> <li>• Tools</li> <li>• Toys</li> <li>• Cleaning products</li> <li>• Aspirin</li> <li>• Vinyl flooring and products</li> </ul>	<ul style="list-style-type: none"> <li>• Fatigue, muscle weakness</li> <li>• Headaches</li> <li>• Diabetes, insulin resistance</li> <li>• Liver dysfunction</li> <li>• Obesity</li> <li>• Osteoporosis</li> <li>• ADHD</li> <li>• Respiratory conditions</li> </ul>
<b>Polycyclic aromatic hydrocarbons (PAHs)</b>	<ul style="list-style-type: none"> <li>• Burning of coal, oil, gas, wood, garbage and tobacco</li> <li>• Cigarettes</li> <li>• Mothballs</li> <li>• High temperature cooking</li> <li>• Charred meats/foods</li> </ul>	<ul style="list-style-type: none"> <li>• Headaches, nausea</li> <li>• Frequent infections</li> <li>• Moodiness</li> <li>• Diabetes</li> <li>• Atopy (asthma)</li> <li>• ADHD</li> <li>• Blood and liver abnormalities</li> <li>• Dyslipidaemia</li> </ul>
<b>DDT, dioxins, furans, polychlorinated biphenols (PCBs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs)</b>	<ul style="list-style-type: none"> <li>• Foods (including meat and fish)</li> <li>• Conventionally grown foods (i.e. not organic)</li> <li>• Farming (agricultural insecticides)</li> <li>• Old appliances</li> </ul>	<ul style="list-style-type: none"> <li>• Eyelid swelling</li> <li>• Fatigue</li> <li>• Nausea, vomiting</li> <li>• Developmental delays and behavioural problems in children</li> <li>• Brain fog, headaches</li> <li>• Short-term memory deficits</li> <li>• Dementia/Alzheimer's</li> <li>• Immune system effects</li> <li>• Hypertension</li> <li>• Obesity</li> <li>• Female and male infertility</li> <li>• Diabetes</li> <li>• Early menopause</li> <li>• Rheumatoid arthritis</li> <li>• Joint pain</li> </ul>

# IS YOUR JOB AFFECTING YOUR TOXIC LOAD?

Unfortunately, toxins are sometimes unavoidable, especially if they involve your work. In these instances, work with your practitioner to find ways for reducing or managing exposure.

Occupation	Toxin Exposure <sup>22-24</sup>
<ul style="list-style-type: none"><li>• Hairdressers</li></ul>	<ul style="list-style-type: none"><li>• Hair dyes</li></ul>
<ul style="list-style-type: none"><li>• Mechanics</li></ul>	<ul style="list-style-type: none"><li>• Asbestos, petrol (benzene)</li></ul>
<ul style="list-style-type: none"><li>• Construction workers</li></ul>	<ul style="list-style-type: none"><li>• Asbestos, formaldehyde, di-isocyanates, flame retardants, silica</li></ul>
<ul style="list-style-type: none"><li>• Painters</li></ul>	<ul style="list-style-type: none"><li>• Benzene, arsenic</li></ul>
<ul style="list-style-type: none"><li>• Textile workers</li></ul>	<ul style="list-style-type: none"><li>• Nylon “flock” fibres</li></ul>
<ul style="list-style-type: none"><li>• Food factory workers</li></ul>	<ul style="list-style-type: none"><li>• Hazardous flavourings such as butter flavouring used in frostings, syrups, potato chips, cake mixes, margarines</li></ul>







# WHAT IS A DETOX?

“Going on a detox” is a way to lighten the load and reduce the impact daily toxins have on the body, helping the body’s natural detoxification mechanisms to breakdown and eliminate these harmful substances.<sup>1,3</sup>

There are many types of detoxes, with varying degrees of difficulty and results. Your practitioner will guide you through the appropriate protocol for your situation.<sup>1,3</sup>

It’s important the body can cope with the release, processing and removal of stored toxins. Without optimal functioning and support of the detoxification systems, embarking on a detox is likely to cause an increase in side-effects.<sup>1,3</sup>

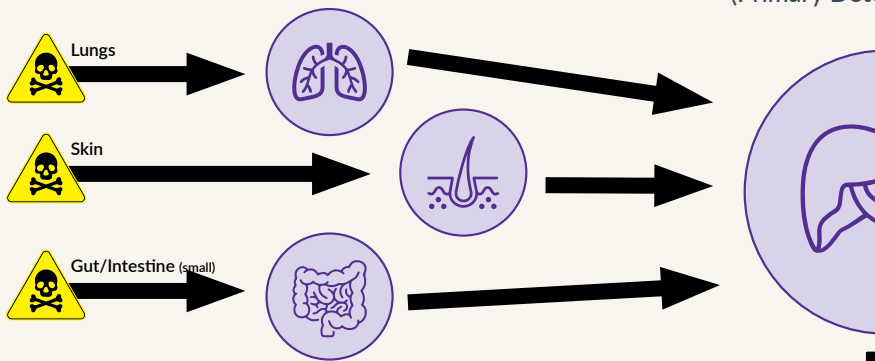
# HOW DETOXIFICATION WORKS

The liver is the main organ of detoxification and is the body's primary filtration system for converting toxins into waste products. But other vital organs that remove toxic waste from the body include the kidneys, skin, liver and digestive tract.<sup>1,3</sup>

A detox protocol supports pathways of elimination so the body can remove toxins optimally.<sup>1,3</sup>

## THE PROCESS OF DETOXIFICATION

### TOXINS ENTER THROUGH:



### Fat-Soluble Toxins

(e.g. pesticides, hormones and heavy metals)

### Have Affinity For:

Fat Cells

Bone Marrow

Liver

Central Nervous System/Brain

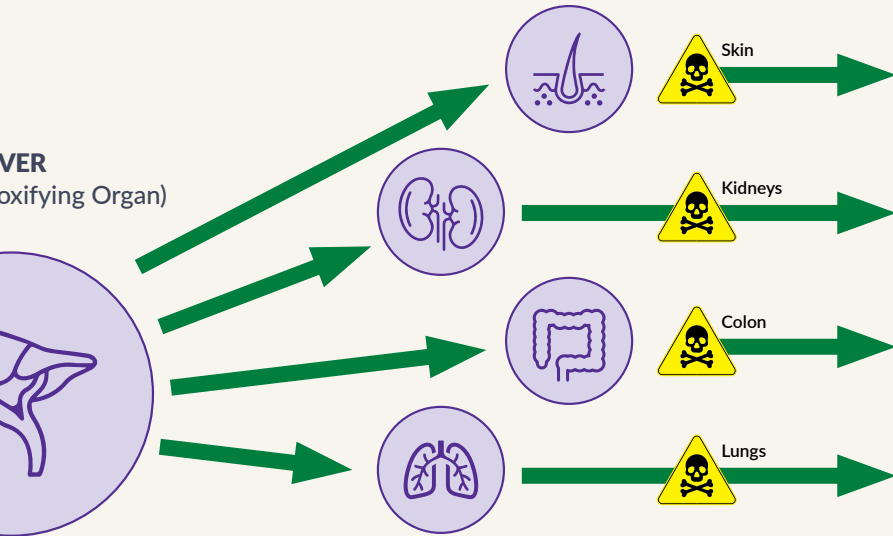
Excess Toxins

Side Effects &

Acne/skin rashes, allergies, arthritis/joint pain, autoimmune disorders, diarrhea, fibromyalgia, headaches, hormone imbalance, inflammation

# TOXIN AND ELIMINATION

## TOXINS EXIT THROUGH:



LIVER  
(Detoxifying Organ)

Get Stored In:

**Water-Soluble Toxins**  
(e.g. nicotine, vapours and other chemicals)

Have Affinity For:

Joints

Blood

Tissues

Muscles

Signs of Toxicity

...ers, cardiovascular disease, chronic fatigue, constipation, diabetes,  
...natory disorders, IBS, neurologic disorders, obesity/overweight

# GENERAL DETOX PROTOCOL

Your practitioner will individualise a detox protocol for you that may involve changes in diet, lifestyle and environment, and include supplements to assist and fine-tune the detoxification process by the body. It may look something like this:<sup>1,3</sup>

## DECREASE TOXIC LOAD

- Identify toxin exposure and remove
- Follow healthy diet and lifestyle guidelines

## PREPARE BODY FOR DETOX

The digestive system and processes of detoxification need to be working optimally to cope with the release of toxins. The amount of time for this stage is dependent on level of toxicity exposure and symptoms.

- Improve digestive function
- Support liver function
- Optimise bowel function

## DISPLACE TOXINS AND MICROBES

Now that the environmental load is reduced and digestive tract integrity is improved, the body is better equipped to deal with toxic release and excretion.

## SUPPORT DETOXIFICATION PROCESSES

Support liver function and processes of elimination and excretion.

## REPAIR AND MAINTAINS

Maintain all the hard work by continuing to reduce toxic exposures and supporting the natural detox processes of the body.





# FOOD AND DIET CONSIDERATIONS

- Drink 1-3 L of filtered/purified water.
- Avoid alcohol, coffee, soft drinks and packaged juice.
- Avoid saturated fats, refined sugars and salt.
- Limit barbecued, grilled, and charbroiled foods.
- Avoid eating processed foods with preservatives, artificial sweeteners and flavour enhancers.
  - Avoid packaged foods with numbers in the ingredients list.
- Avoid gluten-, dairy- and soy-containing food products.
- Eat sustainable wild-caught, fish (unfarmed).
- Avoid buying canned foods.
- Buy sustainably sourced, certified organic, bio-dynamic and/or non-GMO foods.
  - Organic produce is certified to be free from pesticides.
  - Wash all non-organic produce before cooking or consuming.
- Eat a diet of fresh and organic fruits, vegetables, whole grains, nuts and seeds, and lean protein.
- Eat foods that support the liver and detoxification processes:
  - High sulphur content foods – garlic, eggs, onions, legumes.
  - Cabbage family vegetables – broccoli, cabbage, brussels sprouts.
  - Artichokes, turmeric, beets, carrots, dandelion, cinnamon.
  - Antioxidants – blueberries, goji berries, raspberries, kale, spinach.
  - Water-soluble fibres – pears, apples, oat bran, legumes, guar gum.

# FASTING AND INTERMITTENT FASTING

Your health care practitioner may recommend fasting as part of a detoxification protocol. Fasting is the abstention from food and sometimes drinking for a certain period of time. Intermittent fasting involves switching between fasting and eating on a regular schedule.

Fasting is one of the oldest known therapies and a way to increase elimination of wastes and enhance healing processes.<sup>1,3</sup>

During a fast, stored toxins are released from fat cells, so supporting the body's detoxification processes is important.<sup>1,3</sup>



# LIFESTYLE AND ENVIRONMENT CONSIDERATIONS

- Avoid and minimise exposure to known toxins.

## IN THE KITCHEN<sup>25,26</sup>

- Do not buy food packaged in plastic or use plastic containers or cling film for storing food.
  - Store food in BPA free containers, such as glass or stainless steel.
  - Use bees wax wraps.
- Avoid microwaving, especially with cling film and plastic coverings.
- Avoid aluminium and Teflon cookware.
  - Use stainless steel, ceramic-coated or cast-iron cookware.

## IN THE BATHROOM<sup>25,26</sup>

- Use natural skin-care and sanitary products, without fragrance, that are low in chemicals and free of phthalates and parabens.
  - Choose paraben-free, sulphate-free and silicone-free shampoos and conditioners.
  - Use aluminium-free deodorants instead of antiperspirants.
- Swap to triclosan- and fluoride-free natural toothpastes.

## AROUND THE HOUSE<sup>25,26</sup>

- Use fragrance-free natural household cleansers, low in solvents.
- Avoid drycleaning (or use natural drycleaners) and stain and water repellants on your furniture.
- Wear natural fibres and avoid synthetic fabrics and dyes produced from petroleum.
- Use bedding materials made from natural products with no or low-release of volatile organic compounds (VOCs).
- Clean, dust and vacuum regularly.
- Reduce exposure to electric and magnetic fields (EMFs) from mobile phones, microwaves, Wi-Fi routers, computers and other appliances.
  - o Reduce/limit your screen time with electronic devices.
  - o Turn-off appliances when not in use.
- Exercise moderately every day.



## **SWEATING/SAUNA**

- The physiological process of sweating has long been regarded as a beneficial consideration for detoxification.
- It has been shown that the levels of heavy metals are lower in people who exercise regularly, i.e. increased levels and occurrence of sweat and increased elimination.<sup>27</sup>
- In those with higher toxic exposure or body burden, excretion via sweat generally exceeds plasma or urine concentrations.<sup>28</sup>
  - Arsenic, cadmium, lead and mercury are excreted from the skin via sweat (during exercise or sauna) and rates of excretion are reported to match or exceed urinary excretion in a 24-hour period.<sup>28</sup>
- Induced sweating appears to be a potential method for eliminating BPA,<sup>29</sup> as well as certain PCBs from the body.<sup>30</sup>

*\*References available on request*



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