

## Environmental Impact

Information regarding the impact of the environment on our health is highly controversial and topical. There are numerous studies being released that highlight the significant burden some environmental toxins place on our health. Some of this information is difficult to accept due to the widespread ramification of these potentials. Interesting articles, studies, and other literature continue to call out to the wider population to hear these concerns. It is important for all of us to acknowledge this impact and try to make alternatives to ensure our own future and the future for the next generations.

### The scope of the impact

The toxic environmental impact has deleterious effects to the whole planet and all living creatures. Effects can be seen to the rise in health complaints, the changes in nutritional profile of the soil and evolutionary changes to growth patterns of both flora and fauna. One only has to reflect on the impact to water.

Let's consider how if we channel toxins say by dumping plastic rubbish into our rivers, dams, and oceans what potential this will have on the wider population. So we have some fish and chips on the beach and then carelessly dump the rubbish in the local river. The food remnants will probably decompose somewhat or at least partially dissolve. The food is not the main concern here. The concern is the plastic bag, plastic container and other xenobiotic substances. These xenobiotics will first affect the life forms within this river and will then affect where this water supply is directed. So perhaps this river runs into the local dam where you collect your water? Perhaps this river supplies water to local crops? Or perhaps this is the water supply that local livestock drink from? This 'harmless' plastic bag has the potential to affect each and every stage of growth for surrounding areas. It is important to remember that our mineral supply to our food and animal life is collected by water erosion of rocks. If this water is toxic, it will still have the potential to erode the rock, however, the erosion may be compromised and/or the water may then not be able to collect sufficient mineral concentrations as it 'contains' excessive xenobiotic material.

#### Xenobiotics

Xenobiotics are technically defined as chemicals found in organisms, but not expected to be produced or present in them OR chemicals found in much higher concentrations than usual.

### The toxins

The humble plastic bag is not always the sole culprit. There are numerous environmental toxins that we are exposed to on a daily basis. These include pesticides, solvents, and heavy metals. These toxins have been shown to disrupt neurological, immunological, endocrinological function and can also cause various dermatologic, gastrointestinal, genitourinary, respiratory, musculoskeletal, and cardiological problems.

### Food sources

Testing for chemical residues on food has been routinely employed throughout the world. None of the studies has found food sources free of contamination. On the contrary, multiple contaminants are usually found.

Unfortunately, since toxic chemicals are ubiquitously used throughout the world, they move easily around the globe on the winds. Unless these pesticides are trapped in the soil, tree bark, or other stable materials, persistent volatile pesticides including DDT and toxaphene begin a wind-driven leapfrogging around the globe. As such, the more volatile the chemical, the faster it hops and the less readily it enters the fat of any plant or animal it contacts. This means it can cause negative effects to you and then 'hop' to another target just as quickly.

## Effects to the next generation

### Environmental Factors

- Environmental toxicity may cause damage to DNA and a growing embryo/foetus.
- The consumption of alcohol, cigarettes and recreational drugs is linked to higher rates of miscarriage.
- Electromagnetic pollution - This is especially relevant in cases of anovulation (lack of ovulation), low sperm count, miscarriages and malformation particularly those related to chromosome breaks such as Down's (Trisomy 21), Patau's (Trisomy 13) and Edward's Syndrome (Trisomy 18).

### Environmental (PCB exposure)

Polychlorobiphenyls (PCBs) have been shown to affect reproduction following intoxication. An interesting study highlighted that the average concentrations of PCBs and other organochlorine compounds were shown to be elevated in 120 women hospitalised for miscarriages vs. 120 full-term pregnancy controls. After full reproductive and lifestyle assessment, food consumption did not indicate that diet was the main source of PCB intake. This means that exposure was predominantly environmental!

## Hormonal effects

There are many environmental substances that can interfere with the cascade of hormones and further reduce bio-available (circulating) hormones. For example, oestrogen is a very important hormone for multiple factors in addition to its role in reproduction. Receptors for oestrogen are found in the vagina, bladder, breasts, skin, bones, arteries, heart, liver and brain thus indicating that oestrogen has a positive impact on these tissues. It has a positive effect on both men and women provided the levels are stable and within range. For example, oestrogen is required to keep the skin and vaginal tract moisturised and supple, to keep females fertile, to store calcium in the bones, to maintain a balanced body temperature, and to keep the blood vessels clear and unclogged.

Toxic exposure to xenobiotics that have hormonal activity can disrupt this cascade. Common experiences for males include reduced fertility, erectile dysfunction, 'beer-belly', premature balding and weight gain. Women commonly experience fertility or reproductive disorders of oestrogen dominance, weight gain, depression and digestive disturbances. As oestrogen is a fat soluble hormone it has a strong affinity for fatty tissue.

A common toxic exposure of a 'xenoestrogen' is from common plastics such as cling wrap and plastic containers. Within plastics is a chemical known as phthalates. These chemicals are typically added to plastics to increase their flexibility so are increased in cling wraps and malleable containers. Phthalates have been shown to have xenobiotic activity (substances foreign to an entire biological system) in the body specifically as a xenoestrogen – this means that it behaves as a rogue, distorted oestrogen-like molecule and interfere with oestrogen production and utilisation in the body. Interestingly, it has been shown that when a male or female exposes themselves to excessive quantities of phthalates their body is unable to process these foreign substances and tends to store them in fatty tissue thus contributing to obesity and weight gain.

## Strategies for change

It is prudent that we all start to take more responsibility in our homes and lifestyles to try to reduce our environmental exposure to xenobiotics. This can be achieved by encouraging some of the following treatment strategies:

- Regular detoxification regimes to support the body's ability to clear some of these toxins
- Maintaining weight within a health weight range (reducing excess body fat)
- Increasing dietary sources of green leafy green vegetables, whole-grains and cold pressed oils
- Ensuring all meat, egg and dairy sources are organic (free range is not sufficient)
- Consuming organic food as much as possible for all other food sources
- Encouraging the body's elimination processes
  - Urination – drink adequate spring water
  - Bowel movements – encourage adequate fluid (water), exercise and fibre rich foods
  - Sweating – encourage exercise, non-aluminium deodorant
  - Sleep – ensure you get enough sleep on a regular basis
- Avoiding plastic containers, cling wrap, aluminium foil, and other toxic food storage items; microwave ovens; harmful cleaning products; toxic gardening products (fertilisers, pesticides etc)
- Avoiding toxic skincare and make up products
  - Non natural makeup are common sources of heavy metal exposure
- Lifestyle strategies such as adequate exercise, sunshine exposure, friendship and laughter



**Further information**

If you're not convinced yet, please have a look at the following site which will highlight much more than this article and hopefully encourage you to make some positive changes for both your own health and the health of future generations: <http://www.ewg.org/kidsafe>

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