

## The Fact Sheet (series no.16) – Endocrines

### Endocrines

Phthalate esters (the agent that makes plastic flexible) have been linked to reductions in sperm counts in men. Flexible plastic bottles, such as those used by mineral water companies, may release phthalates into the water.

Other factors affecting declining male sperm counts: Increased ingestion, both in food and water, of oestrogenic residues resulting from the effluent from contraceptive pills, use of growth promoters in cattle, industrial chemicals and agricultural pesticides.

A Danish study by Jens Peter Bonde, February 1994, comparing organic farmers with greenhouse workers using pesticides. The average sperm count of those working and consuming produce from the organic farm was 104 million per ml. Average sperm count of those working on the pesticide using farm, and consuming that produce was 50-55 million per ml. Agricultural pesticides are commonly found in the domestic water supply. PVC has also been linked to testicular cancer in men.

Numerous compounds are oestrogenic including:

- steroids
- phyto-oestrogens
- synthetic chemicals
- PCBs

These, and others, may be contaminating your water supply.

A study, presented at 22nd Antarctic Treaty Consultative Meeting in Tromsø, June 1998, showed that 4% of the polar bear population in the Norwegian Arctic Territory of Svalbard were hermaphroditic and this was too high a percentage for a chance occurrence. The cause was suspected to be high levels of PCBs (Poly Chlorinated Biphenyls). The bears are ingesting these contaminants by eating seals which were found to be contaminated with chemicals used in everything from electrical transformer fluids to degreasing agents for nuclear submarines.

PCBs are amongst these chemicals and they are thought to mimic animal and human sex hormones. Some examples of species affected by xenobiotics in water are:

1. Fish in India
2. Frogs throughout the USA
3. Alligators in Florida
4. Polar bears in Norway.

The School of Studies in Biology in Vikram University, Ujjain, India published a study entitled "Insecticide-induced inhibition of thyroid activity in the fish *Oreochromis mossambicus* and recovery in insecticide-free water in Functional Development Morphology 1991", vol:1(4),P:15-9, ISSN 0862-8416. Here the evidence for removing pesticides from water is clear. If these creatures can be affected, so could Man.

This list of Xenoestrogens comes from Accu-Chem laboratories, a leading lab in the USA for testing levels of toxic chemicals in people: DDT, Chordecone (Keprone), Toxaphene, Dieldrin, Endosulfans, PAH's (polycyclic aromatic hydrocarbons), Triazine Herbicides, Aromatic Hydrocarbons, Heptachlor (Epoxide), Trans-Nonachlor, Methoxychlor and HCB.

Accu-Chem also regularly test for blood levels of the following list of Volatile Organic Compounds (VOCs) commonly found in drinking water: Benzene, Toluene, Ethylbenzene, Xylene, Styrene, Trimethylbenzene, Dichloromethane, Trichloroethane, Trichloroethylene & Dichlorobenzene.

**For advice call us: 020 8539 4707**