Increasing public awareness as well as more detailed research on the effects of certain chemicals on human hormones could lead to potential endocrine disruptor claims

Endocrine Disruptors

Among the most abundant and influential chemicals in the human body are the hormones, found also throughout the entire animal and plant kingdoms. Hormones are chemical substances secreted by an endocrine gland or group of endocrine cells that act to control or regulate specific physiological processes, including growth, metabolism, immunity, sleep-wake-cycle, stress response and reproduction.

Chemicals that are able to interfere with hormonal metabolism of plants, animals or humans are classified as endocrine disruptors. Results of empiric field-research and basic research strongly indicate a role of every-day substances from a wide variety of industrialised chemical processes. The evidence for adverse outcomes (infertility, cancers, malformations) from exposure to endocrine disrupting chemicals is strong, and there is mounting evidence for effects on other endocrine systems, including thyroid, neuroendocrine and insulin and glucose homeostasis.

Special research focus has been put on man-made chemicals, with unintentional hormone-like activity. These chemicals have been used for decades and were spread-out widely. Some of them are still in use:

- Agrochemicals such as DDT, vinclozolin, endosulfan, toxaphene, dieldrin, atrazine
- Industrial chemicals and by-products, such as polychlorinated biphenyls (PCBs), dioxins, Bisphenole A (BPA) and other phenols. Some of these phenols are breakdown products of surfactants, found in soaps and detergents.
- Also implicated are heavy metals, plastics, cosmetics, textiles, paints, lubricants. Sewage treatment effluent may contain a variety of natural and man-made endocrine disruptors, including natural hormones from animal and human waste.

In its 2009 statement the Endocrine Society already compiled all published evidence on endocrine disruptors: “We present the evidence that endocrine disruptors have effects on male and female reproduction, breast development and cancer, prostate cancer, neuro-endocrinology, thyroid, metabolism and obesity, and cardiovascular endocrinology.”
“The rise in the incidence in obesity,” it added, “matches the rise in the use and distribution of industrial chemicals that may be playing a role in generation of obesity.”

Singular events have spilt large quantities of endocrine disruptors into the environment (e. g. Dioxin in the 1976 Seveso accident or Corexit after the Deepwater Horizon oil-spill in 2010). Dramatic effects of endocrine disruptors may be observed in humans after such high level exposure. A direct link between human health problems and chronic low-dose endocrine disruptor intake has not been established, but concerns regarding the effect on sexual differentiation in fish or amphibians as well as impaired survival of affected offspring led to precautionary measures.

Liability exposures arise from environmental pollution and have led to successful claims for clean-up costs. The highest risk for the insurance industry emerges from the possible link between low-level endocrine disruptor exposure and bodily injury. Taking into account the environmental stability, the long term exposure and the late disease onset, bodily injury claims could result.

In general a gradually increasing public interest can be observed. Together with comprehensive legislation for the protection of the environment this may lead to claims in many parts of the world, particularly in the US, EU, Japan and Australia. Widespread use, chemical stability and accumulation over food-chain and life-span make endocrine disruptors prone to serial and cumulative losses.