

## OESTROGENICITY OF ANTI-AGEING FACE CREAMS

Breast Cancer UK commissioned a pilot study which examined whether five anti-ageing face creams demonstrated oestrogenic activity in an in vitro assay known as the E-SCREEN assay.

The research also investigated whether known endocrine disrupting chemicals were present in the face creams.

The project was led by Professor Ana Soto, from Tufts University, Boston, Massachusetts, who, along with her colleague Cheryl Michaelson, carried out E-SCREEN assays. This technique was developed by Professor Soto and colleagues in the 1990s (1).

### **Brief summary of results**

Five popular UK anti-ageing creams were tested for oestrogenicity. All creams had oestrogenic activity and contained oestrogenic compounds; some of these compounds were not included on the ingredients list.

### **Background and research findings**

Humans are currently exposed to a large number of synthetic chemicals. Many of these, known as endocrine disruptors, have hormonal activity and/or interfere with hormonal regulation. Some make their way into our bodies through food, toiletries, lawn care products, and cleaners. Epidemiological studies show that exposure to endocrine disruptors increases the risk of disease. Those that mimic the effect of the female hormone oestrogen are the most numerous. Sporadically, reports in the scientific literature link cases of feminisation of boys and men with oestrogens found in particular toiletries and personal care products. In addition to these rare high



dose exposure events, the presence of a variety of endocrine disruptors in the urine of sub-populations from the UK, US and elsewhere, suggests chronic exposure to low levels of hormonally active agents. Some endocrine disruptors are ingested, some may reach the body through air, and yet others are absorbed transdermally (through the skin).

If skin care products contain endocrine disruptors, they can reach the body through this route, thus adding to the endocrine disruptor load taken into the body through food and drink. To explore this possibility we conducted a pilot study that assessed the oestrogenicity of five anti-ageing creams chosen among those widely used in the UK; all five creams had oestrogenic activity. Chemical analysis revealed the presence of oestrogenic substances, some of them not present in the ingredients list. In conclusion, the presence of oestrogenic activity in these creams raises concern about the additive effect that could arise from the sum of various small exposures.

## **Reference**

1. Soto, A. M. et al. (1995). The E-SCREEN assay as a tool to identify estrogens: an update on estrogenic environmental pollutants. *Environmental Health Perspectives* 103(7): 113–122.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1518887/>