

Review: Dr Peter Dingle, *Dangerous Beauty: The Truth About Cosmetics and Personal Care Products*, Barker Deane Publishing, Oakleigh South, Vic, 2017

Pages: 204

Niche Topic With Major Ramifications

How many consider the many listed ingredients on personal care products (PCP) as anything but safe? Since ‘the dose makes the poison’, the thought is even if they *are* harmful, safety is not an issue. This book will change that line of thinking. Many PCP chemicals are allergens, endocrine disruptors, cause dermatitis, and carcinogenic.

Shampoos, antiperspirants, mouthwashes, toothpaste, sunscreen, cosmetics, hair dyes are all in the firing line since they’re all dangerous. Not one specific exposure, rather, the daily poisoning which after a decade may give rise to a cancerous tumour.

A required resource for any household.

Preface (pp. xi-xiv)

Anecdotally, 20% are adversely affected by personal care products (PCPs)

Common Consumer Fallacies

-I can trust in the safety of the products I use.

-The products I use do not affect my health.

-Labels are accurate and list all chemical ingredients.

-Government adequately regulates products and protects me from harmful chemicals.

-I can trust the manufacturers because they put my health before dollars and sense.

I) Introduction (pp. 15-48)

Women use 185 chemicals on average each day across 25 products, men 85.

The Hittites (c600BC) invented soap.

The skin consists of the stratum corneum (outermost epidermis), lower dermis which determines skin elasticity and tone, and subcutaneous tissue of cushioning fat.

Skin absorption can occur via lipids, damaged skin, hair follicles (e.g. the scalp), and sweat glands. The forehead, inside arms and thighs have greater absorption due to thin skin.

The liver and kidneys process the chemicals which are excreted via the lungs or bowels. Those retained are deposited in fatty tissue and organs.

Aerosols are quickly absorbed in the blood.

Very high or low pH alike increase absorption, as do solvents and terpenes.

The PCP market is worth \$40B annually.

90% of chemicals used are untested; the FDA and TGA don't require pre-market safety testing (most research is from animal studies).

Methylchloroisothiazolinine (MI) is neurotoxic, allergenic antibacterial.

A third of chemicals use ingredient aliases.

Imidazolidinyl urea releases formaldehyde.

Heavy metal absorption in the GI tract is significantly higher in infants.

Environmental estrogens like BPA, triclosan (TCS), F, parabens, and phthalates cause early menarche.

Direct chemical damage includes aging, atopic dermatitis (burning, oedema, and erythema), psoriasis, acne, and skin cancer.

Sodium Lauryl Sulphate (SLS) causes contact dermatitis.

There are over 3,700 known contact allergens.

'Fragrance' may cause wheezing, headaches, mucosal irritation, and rhinitis.

Long-term damage includes DNA damage, epigenetic, estrogenic, and carcinogenicity.

1,4-dioxane is in ~22 of products.

II) Estrogen Overload (pp. 49-88)

Endocrine Disrupting Chemicals (EDC), also "xenoestrogens" or "estrogen mimics". There are 800-1,000/

Estrogen is produced in both ovaries and testes.

EDCs: reduce penis size; lower birth weight; smaller heads; psychomotor development delay; anxiety; and poor memory.

BPA lowers testosterone.

Parabens are used as an antimicrobial. Peak urine concentration occurs after twelve hours.

54% of breast cancer tumours start in the underarm area, and almost 100% have detectable parabens.

Phthalates are plasticisers in toys, medical devices, food containers, lubricating oils, hair gel, hairsprays, and lipsticks. They hold colour, denature alcohol, and fix fragrance.

They shorten gestation, lower birth weight, change brain development, and induce obesity and insulin resistance.

90% have detectable Bisphenol A (BPA) in their blood. It crosses the placental barrier and as lipophilic is in breast milk.

BPA impairs triiodothyronine (T3), essential for brain development. It also affects epigenetics, imitates estrogen, estradiol, and promotes insulin production causing diabetes.

TCS cause allergies, birth defects, and is carcinogenic.

Benzophenones (BP) are UV filters in sunscreens.

Cyclosiloxanes are odourless and colourless and enhance conditioning and spreading.

III) The Chemicals (pp. 89-124)

SLS is a foaming agent with a hydrophilic head and hydrophobic tail. It is rapidly absorbed and accumulated in eye tissue (for up to five days) causing cataracts, brain, heart, and liver. It is used only for aesthetics.

SLS destroys the epidermis and causes hair loss.

Sodium laureth sulfates (SLES) and alkyl polyglucoside (APG) are claimed to be less reactive than SLS.

Diethanolamine (DEA) is a common emulsifier which disrupts phospholipid metabolism, membrane function, and fatty acid synthesis. It also mimics neurotransmitter choline used to control breathing, heart rate and muscles.

Nitrosodiethanolamine (NDEA) is carcinogenic.

Propylene glycol (PG) is a solvent and humectant.

Cocoamidopropyl betaine (CAPB) is a synthetic detergent/.

Formaldehyde causes nose-bleeds, insomnia, and hyperactivity.

Toluene is derived from coal tar and targets the CNS.

Benzene is found in gas fumes and cigarette smoke. It is hematotoxic and associated with leukaemia.

Methacrylates damage nerves.

Coal tar dyes are used to make 40+ colours.

IV) Metals (pp. 125-132)

V) The Products (pp. 133-186)

Surfactant ingredients remain long after product has been washed off.

Pb-acetate is a chief ingredient in hair colouring for graying hair.

Mouthwashes are 5-27%v/v ethanol. Other ingredients include chlorhexidine and TCS.

Al salts are used in deodorants to plug sweat ducts.

“Aluminium content in antiperspirants is a serious health issue. Aluminium is a well-established neurotoxin ... linked with various neurodegenerative diseases including Alzheimer’s .. Parkinsonism ... and the Gulf War Syndrome ... aluminium concentrations in the brains of patients with Alzheimer’s ... was fifty times greater.” [pp155,156]

Loss of BRCA1/2 genes function is associated with breast cancer.

Butane is used as a spray propellant.

61% of lipsticks tested positive for Pb.

Talc contaminants ($Mg_3H_2(SiO_3)_4$) contain asbestos fibres.

VI) Hygiene Products (pp. 187-190)

“Digit preference” holds round or “nice” data are preferred.

VII) Toxic Containers (pp. 191-193)

Pharmaceutical grade plastics are more stable.

VIII) Environmental Concerns (pp. 194-202)

Microbeads are found in cleansers, scrubs, soaps, and toothpaste and contain polyethylene.

Only citric and lactic acids are produced from natural fermentation processes.

The consumer has the right to safety, informed consent, and to be heard.