

## **DETOXIFICATION: UNDERSTANDING THE DIFFERENCES BETWEEN DIETITIANS AND NUTRITIONAL THERAPISTS**

This is the second in a series of briefing notes setting out the key differences between dietitians and nutritional therapists.

For dietitians the idea of aiding detoxification through nutrition is “a load of nonsense”. In January 2009 the British Dietetic Association issued a press release stating that the body has a well-developed system of the skin, gut, liver and kidneys all responding to chemical signals to constantly eliminate toxins. Proper hydration, a sensible diet and regular physical activity “really are the only ways to properly protect your health for the year ahead”.

For nutritional therapists, detoxification, which is the biotransformation of harmful molecules, is a core determinant of physical and mental health and is dependent on nutritional status. Poor conjugation and poor excretion of exo- and endo-toxins, combined with elevated toxic load, results in insidious and cumulative damage to metabolic processes and increasing susceptibility to disorders such as inflammatory joint disease, neurological impairment, atherosclerosis, allergies, chronic fatigue, and cancer.

The primary mechanism of biotransformation involves activation of cytochrome P450 enzymes for Phase I oxidative metabolism followed by Phase II conjugation to facilitate excretion. Phase I metabolism can either directly neutralise some compounds or transform them to highly reactive metabolites ready for phase II conjugation. Balanced Phase I and Phase II activity is important to avoid increased production of intermediary metabolites which, without sufficient antioxidant protection, are damaging to DNA. Common variants (including deletions) in genes encoding for Phase I and II enzymes increase genome events which mediate aging (mitochondrial decay) and the disease process. Poor nutritional status leading to inefficient biotransformation contributes to long-term adverse health outcomes.

A healthy gut ecology is also important for optimal biotransformation and therefore hormonal balance and immunity. Biotransformed compounds can be deconjugated by enzymatic products of unfriendly gut flora and reabsorbed into hepatic circulation.

Functional testing is used by nutritional therapists to target individual advice.

### **References**

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