

**TOXIN ENTRY**  
Poor diet  
Gut toxicity  
Food, water and air contamination  
Medications, alcohol, smoking  
Stored toxins - fat and bone

**ACTIVE TOXIN**

Cell membrane

**INHIBITORS**  
Milk Thistle  
Curcumin  
Green tea  
Pomegranate

**INDUCERS**  
Broccoli sprouts

**PHASE I**  
(CYP450)  
Oxidation  
Reduction  
Hydrolysis

**REQUIREMENTS**  
Iron  
B2, B3, B6, B12, folate  
Amino acids

**REACTIVE TOXIN**

**OXIDATIVE STRESS**

**ANTIOXIDANTS**  
Antioxidant vitamins and minerals  
Curcumin  
Pomegranate  
Green tea  
Milk Thistle  
Schisandra  
Broccoli sprouts  
Sesamin

**INDUCERS**  
Milk Thistle  
Curcumin  
Broccoli sprouts  
Schisandra  
Green tea

**PHASE II**  
Glycination  
Acetylation  
Methylation  
Glucuronidation  
Sulphation  
Glutathionation

**REQUIREMENTS**  
Amino acids (esp. glutathione, glycine, glutamine, cysteine, methionine, taurine)  
B6, B12, folate

**CONJUGATED TOXIN**

**INDUCERS**  
Broccoli sprouts  
Alkalisers (potassium citrate)

**PHASE III**  
Transporters:  
P-gp  
MRP  
OATP

**REQUIREMENTS**  
Glutathione (glycine, glutamine, cysteine)

**INHIBITION OF REABSORPTION**  
Milk Thistle  
Calcium d-glucarate  
Fibre

**TOXIN EXCRETION**  
Gut - faeces  
Liver - bile  
Kidney - urine