

# Metabolic Pathways of the Liver

## Modulators of Phase I (CYP450)

Vitamin C

Iron Levels

Curcumin

Broccoli SGS

Green Tea EGCG

Silymarin

## Upregulators of Phase II

### Glutathione Conjugation

- NAC
- Raw Protein
- Brassica
- Selenium
- Silymarin

### Sulfation

- Mg Sulfate
- Molybdenum
- Cysteine, Taurine
- Alpha Lipoic Acid
- Vitamin B2
- Vitamin B6 (P5P)

### Amino Acid Conjugation

- Glycine
- Taurine

### Glucuronidation

- Cal-D-Glucarate
- Bifido Probiotics
- Magnesium
- Glutamine
- EPA

### Acetylation

- Vitamin B5
- Magnesium
- Vitamin B6 (P5P)
- Vitamin C
- Acetyl Carnitine

### Methylation

- Methyl-Folate
- Vitamin B12
- Methionine
- Choline / TMG

## Compounds Requiring Metabolism

Prostaglandins  
Leukotrienes  
Alcohol  
Paracetamol  
Heavy Metals  
Petro-chems  
Mould Toxins  
Bacterial Toxins

Steroid Hormones  
(DHEA, Estro, T,  
25-OH-Vitamin D)  
Thyroxine  
Amines (Tryp, Tyr)  
Cortisol  
Epinephrine  
Melatonin

Bile Acids  
Salicylates  
Benzenes  
  
SCFAs  
MCFAs

Steroid Hormones  
(Estro, T, Prog...)  
Fat Soluble Vits  
(Vit A, D, E, K)  
Fat Soluble Toxins  
(Pesticides - DDT)  
Thyroxine  
Melatonin

Neurotransmitters  
Serotonin  
Histamine  
Choline  
Amines (Tryp, Tyr)  
Phenols  
Caffeine  
CoA

Neurotransmitters  
L-Dopa/Dopamine  
Nor/Epinephrine  
Histamine  
OH-Estrogens  
Heavy Metals  
(Hg, Pb, Cd, As)  
Morphine