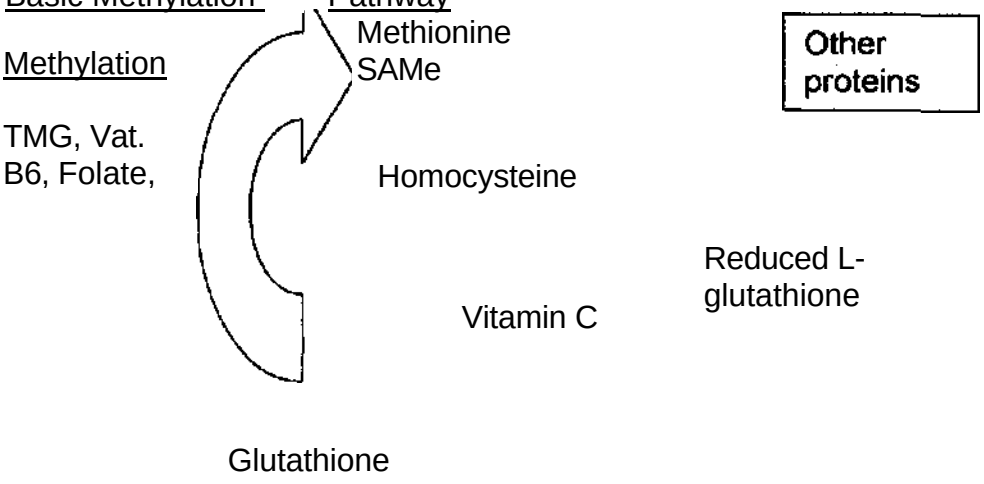
Methylation is Fun! Fast Reference Kelly Dorfman

Definitions:
Amino acid- smallest building block of protein. Two types: essential and non-essential
Anti-oxidants- donate electrons
Folic acid- an essential B vitamin that helps move methyl groups
Free radicals- unstable molecules looking for electrons
Glutathione- an anti-oxidant made up of cysteine, glutamine and glycine
Methionine-Essential sulfur containing amino acid and anti-oxidant
Methylation- the chemical process of adding a methyl group to a compound
Methyl group- CH3 (a carbon with 3 hydrogens around it.
SAMe- a compound that donates methyl groups
Taurine- a dipeptide made up of methionine and cysteine

Basic Methylation Pathway



In autism:
Methionine, homocysteine, cysteine + glutathione are all low {compared to other children

Low glutathione means:
Low ability to detoxify environmental toxins and heavy metals
Increased gut permeability
Increased auto-immune problems
Decreased anti-oxidants

Low methylation means:
Decreased regeneration of methionine
Lower phosphatidyl choline synthesis
Lower detox of arsenic
Lower neurotransmitter synthesis like dopamine
Alters gene expression