

ANTECEDENTS

The body makes glutathione
 - 5 genes are involved
 - It's made from homocysteine
 - Sufficient nutrients are needed for the body to produce glutathione (B vitamins are key)

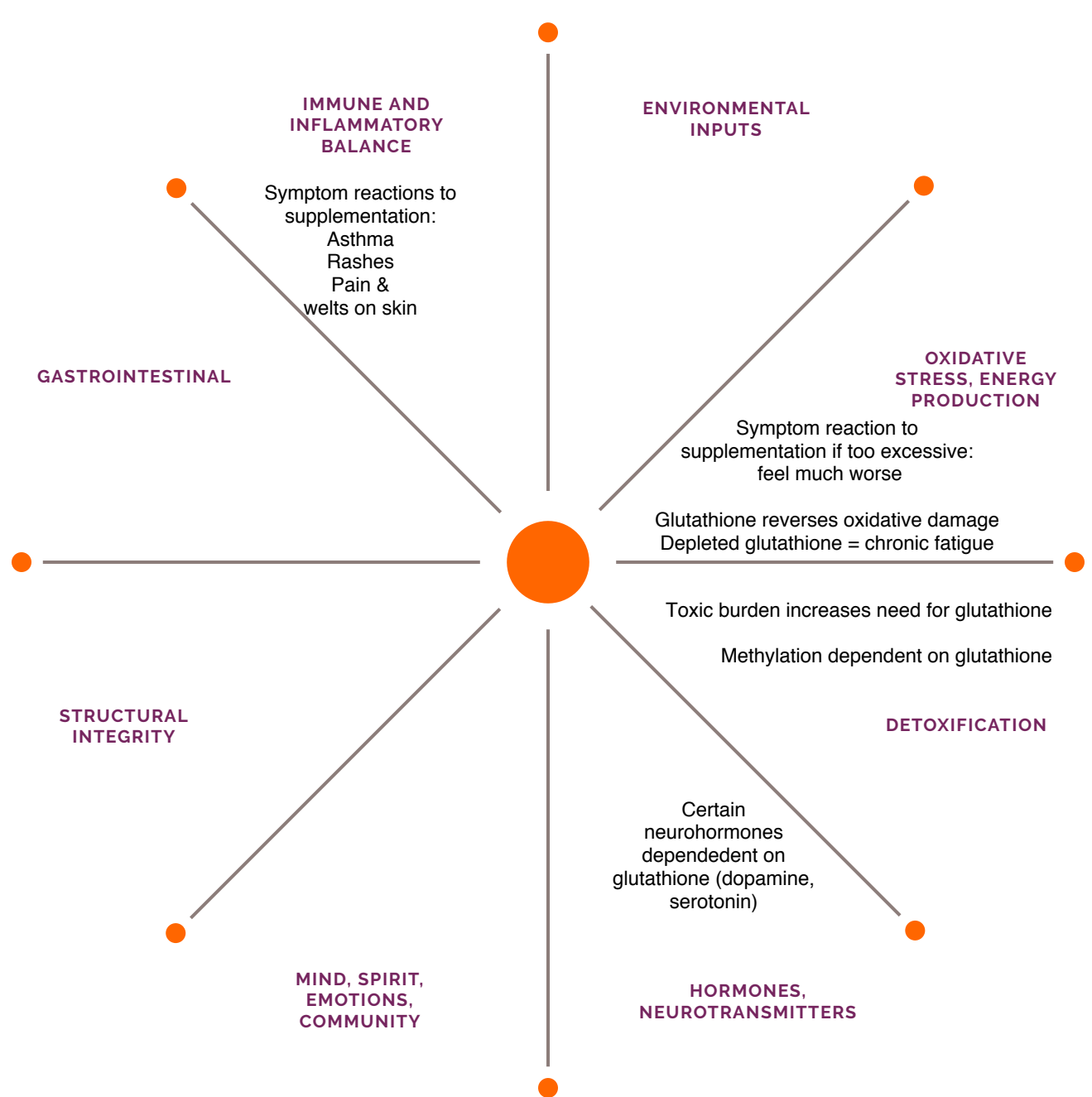
TRIGGERING EVENTS

- Nutrient deficiencies can contribute to low glutathione
 - Marker to look at on blood serum = GGT (elevated = low)
 - Markers to look at on an Organic Acids Test = Pyroglutamic Acid, 2-Hydroxybutyric Acid (elevated)

MEDIATORS

Factors that deplete:
 - Over training
 - Mold exposure/mycotoxins
 - Protein malabsorption

Supplementation can be (but not always) supportive:
 Different forms:
 - Reduced - not favored
 - S-aceyl - not favored
 - Nebulized - good for brain
 - Liposomal - favored



Adapted from The Institute for Functional Medicine

www.functionalnutritionalliance.com

SLEEP/RELAXATION

EXERCISE/MOVEMENT

overexercising can deplete natural glutathione production

NUTRITION/HYDRATION

+ food sources = cruciferous foods, sulfur containing foods, meat and eggs (stinky foods)
 - food depletions = inflammatory foods; sugars; bad fats

STRESS/RESILIENCE

physical stressors deplete and reduce glutathione production

RELATIONSHIPS/NETWORKS

best for a patient to work with a practitioner to determine right form and dosing for individual's needs