Principles of Down Syndrome Treatment

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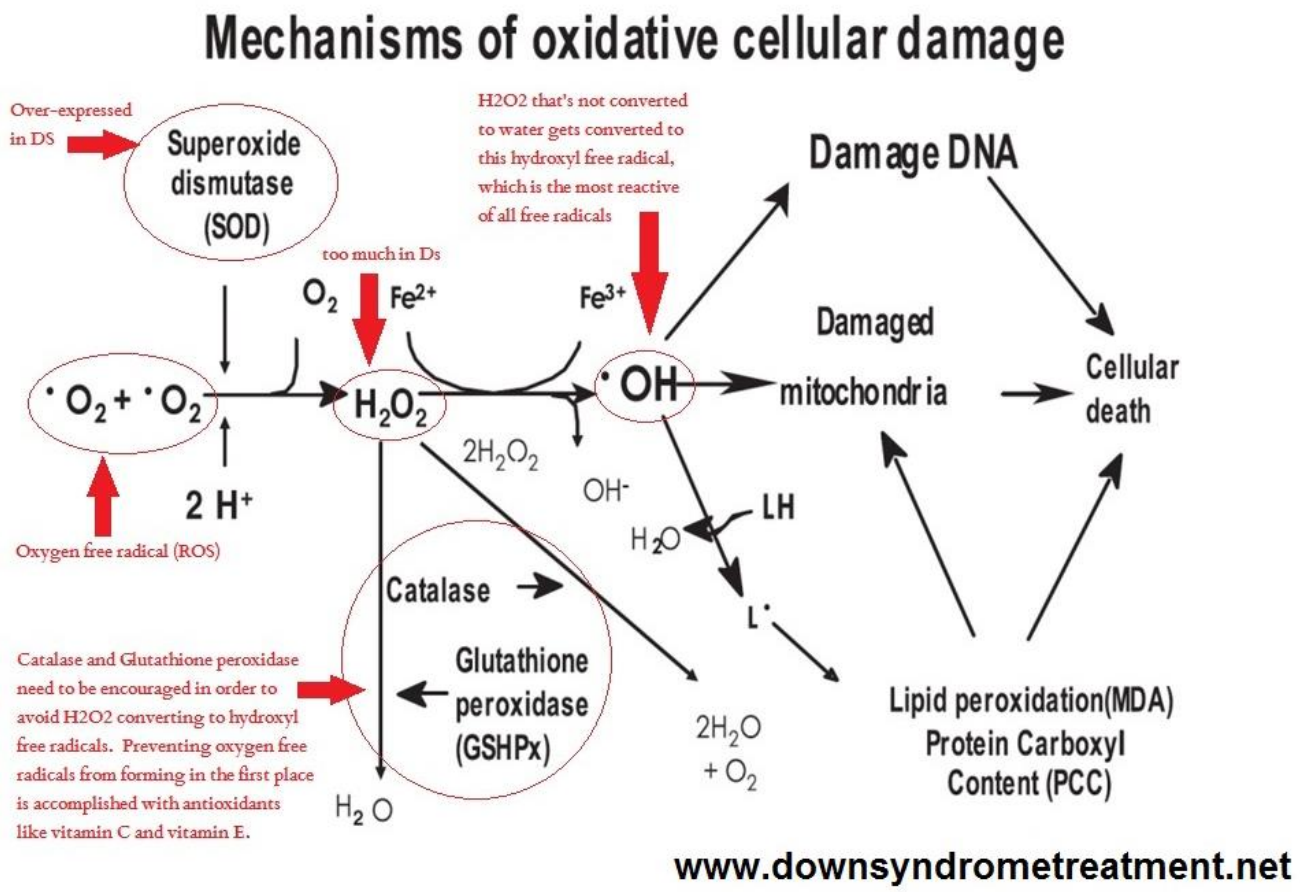
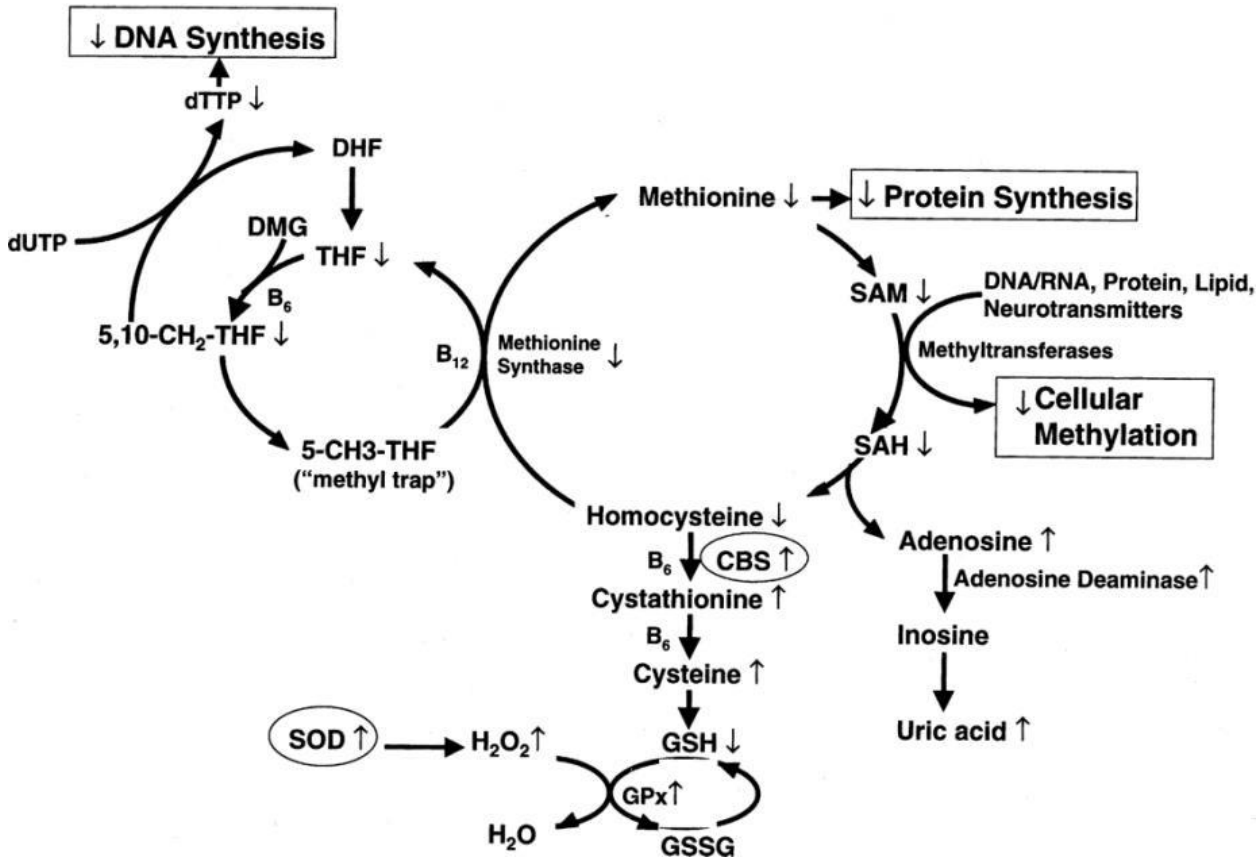
1. Address hypothyroidism
    a. Signs & Symptoms
        i. Reflux
        ii. Upper respiratory congestion, ear infections, increase adenoids and tonsils, etc
        iii. Poor feeding (choking, poor appetite)
        iv. Constipation
        v. Bloated belly/umbilical hernia (not just from constipation)
        vi. Dry skin
        vii. Thin and/or coarse hair
        viii. Brittle, pealing fingernails
        ix. Slow/No growth (feet!)
        x. Small penis
        xi. Puffy under eyes
        xii. Synophrys – unibrow (no studies, just clinical experience)
        xiii. Delayed dentition
        xiv. Open fontanel after age 2 or wide fontanel as infant
        xv. Low temp (<97.7), cold hands/feet
        xvi. Mottled skin
        xvii. Orange skin (betacarotenemia) – nose, palms of hands and soles of feet
        xviii. Strabismus/Nystagmus
        xix. Elevated triglycerides
        xx. Elevated and small platelets (sometimes small platelets)
        xxi. Elevated MCV despite B12 and folate supplementation
        xxii. Low serum iron and/or ferritin
    b. Labs
        i. TSH
        ii. Free T4
        iii. Free T3
        iv. Reverse T3 (calculate ratio of free T3: reverse T3)
        v. CBC w/ diff and platelets
        vi. Iron panel (serum iron, TIBC, % sat, ferritin)
        vii. Lipid panel
        viii. Zinc and copper
        ix. homocysteine
    c. Treatment
        i. Never Synthroid (requires 100% optimal conversion to T3)
        ii. Natural desiccated thyroid hormone (Armour or Nature Throid)
        iii. Liothyronine sodium (Cytomel) if reverse T3 is >28 or ratio is <18

2. Address Oxidative Stress
    a. Vitamin C to bowel tolerance-careful not to introduce when working on thyroid function
    b. Vitamin E – 2OO IU for infants or 400 IU for >4yo
    c. CoQ10 50-100 mg
    d. EGCG
    e. Lecithin- I prefer sunflower
    f. Consider oral glutathione (Setria glutathione or liposomal glutathione)
    g. NO TYLENOL



3. Address Methylation
    a. Methionine if homocysteine <5
        i. Eggs are highest in homocysteine (and choline)
        ii. All meat is a good source
    b. Folinic acid/methylfolate – 400-800mcg (many variables here)
    c. Methyl B12 – 1000-2500mcg depending on size of child