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 – 200 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

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Mechanisms of oxidative cellular damage

Catalase and Glutathione peroxidase need to be encouraged in order to avoid H2O2 converting to hydroxyl free radicals. Preventing oxygen free radicals from forming in the first place is accomplished with antioxidants like vitamin C and vitamin E.

www.downsyndrometreatment.net
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