

# **Prenatal Nutrition**

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***Healthy Mother = Healthy Kids***

# OUTLINE

## Health of Mother in Prevention of ASD

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- ❑ Associations of ASD with Maternal Health
  - ❑ Gut inflammation
  - ❑ Oxidative Stress
  - ❑ Optimal Nutritional Status for Mother and Baby → Prevention of Immune Dysfunction
  - ❑ Toxin Defense for baby
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# Risk Factors for ASD

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- Uterine Bleeding
  - Pre eclampsia/hypertension
  - Low Birth weight/Small for Age
  - Preterm Birth
  - Congenital Malformations
  - Induction, prolonged or precipitous labour
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# Risk Factors for ASD

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- Maternal smoking
- Maternal Age
- Low APGAR score
- Rh incompatibility

Paediatrics 2001,107:4;pe63-e69

Arch Gen Psychiatry,2004:61:p618-627

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# WHY



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Optimum Nutritional before, during and after pregnancy

- “Pollution free” womb
  - Decrease birth defects
  - Problem free pregnancy
  - Avoid nutritional deficiencies in baby
  - Super brainy baby
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# WHY



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- Optimum Nutritional in mother
    - Marginal def of Fe, B12 or Omega3 → effect memory, learning of child
    - Cellular nutrients needed for development of embryo
    - Metabolic demands on mother increased in pregnancy
    - EFA necessary for dev of nervous system, brain and IQ
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# Optimum Nutrient Supplementation

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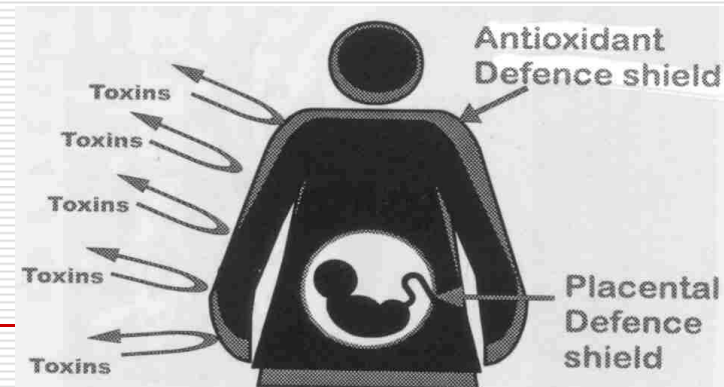
Why supplement in pregnancy?

- Normal pregnancy → ↑ cellular metabolism and lipid peroxidation.
  - Lack of nutrients can affect child's health for decades
  - Marginal deficiency of Vitamin B6 or Omega 3 → affect memory and learning of child
  - Pregnancy depletes nutrients e.g. iron, cal, mag, f.acid → growth retardation, foetal distress, still birth
  - ↓ F.acid → neural tube defects
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# Greenhouse Womb

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- ❑ Pollution free womb = best birthday present for baby
- ❑ Avoid lead, cadmium, aluminium (antacids), copper (water pipes), mercury (fillings)
- ❑ Avoid drugs e.g. alcohol, caffeine
- ❑ Stop smoking
- ❑ Eat organic





# What does Optimum Nutrition mean in mother

- ❑ General Optimum Health – Healthy Eating for Life
- ❑ HELP (Healthy Eating Life Program)
- ❑ Nutritional needs are greatest in pregnancy



## DO

- adequate protein (about 51g/day) – beans, lentils, vegetable protein, fish, eggs, cheese
- 4 servings dark green leafy root vegetables – carrots, sweet potato, broccoli, brussel sprouts, spinach
- ~~3 or 4 servings fruit~~



## DON'T

- Avoid saturated & hydrogenated fats e.g. margarine
- Avoid white refined foods (sugar)
- Avoid excess animal protein

# Gut Optimal Health

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- 70% of Immune System in digestive tract
  - Eliminate food allergens e.g. wheat, dairy
  - Treat leaky gut
    - Glutamine powder 5g/day
    - Digestive Enzymes
    - Essential fats – Omega 3
    - Minerals especially zinc, B6
    - Correct bowel flora
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- probiotics

Dr Igor Tabrizian, *Brain Foods*, NRS Publications,

# Probiotics

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- ❑ Beneficial bacteria
- ❑ Maturation of immune system
- ❑ Digest proteins
- ❑ Anatomical integrity and function of digestive tract
- ❑ Absorption of nutrients from food
- ❑ Synthesis of Vitamin K, Folic Acid, B vitamins and various amino acids

Dr Igor Tabrizian, *Brain Foods*, NRS Publications,

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# WHAT to supplement

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- Folic Acid
    - 1000mcg → 50% ↓ neural tube defects
  - Iron – formation of RBC
  - Calcium & Magnesium – prevention of heart palpitations, hypertension and pre-eclampsia
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# Antioxidants & Minerals

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- ❑ Supplement with optimal levels of A/O e.g. Betacarotene, Vit C, E, B complexes, F.Acid,
  - ❑ Supplement with optimal levels of Minerals e.g. selenium & zinc – catalysts for SOD, catalase, glutathione
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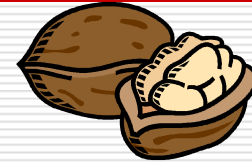
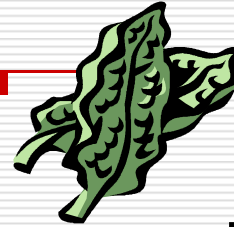
# Good Fats

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- ❑ Omega 3 and Omega 6 – PUFA
  - ❑ Essential – we cannot live without them
  - ❑ Every cell depends on them for proper function & survival
  
  - ❑ 60% of brain made up of fat i.e. AA, DHA, EPA, GLA
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## **Omega 3 FA** = Alpha Linolenic acid (ALA)

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- Dark leafy vegetables
  - Nuts and seeds (walnuts, pumpkin, sesame seeds)
  - Deep sea fish (tuna, sardines, salmon, pilchards)
  - Flaxseed oil
  - Human breast milk



Absolutely vital for normal brain and eye development

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**Omega 6** = Linoleic Acid (LA) → GLA (Gamma-Linolenic Acid)

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- Essential for immune system, hormone metabolism, inflammation control, blood clotting
- Supplement with seed and nut oils with a ratio of O3:O6 → 2:1
- Body needs MG ZC, B3, B6 and C to convert LA → GLA found in nuts, evening primrose oil, borage oil, blackcurrant seed oil





# Summary of what to supplement

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- Gut supplements
    - Digestive enzyme
    - Glutamine
    - Fibre
  - Probiotics
  - Antioxidants
  - Minerals
  - Essential fatty acids
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# How to choose a nutritional supplement?

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- Superior ingredients
  - Synergistically balanced formulas
  - Good Manufacturing Practices for Pharmaceutical grade manufacturing
  - Pharmaceutical guidelines; potency, uniformity, disintegration
  - Potency guaranteed
  - Proven efficacy
  - Bioavailability
  - Uncompromised safety
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# Dr Ladd McNamara Recommendation

	Afternoon	PM	AM
Multi-Antioxidant	1	1	1
Mineral Combination (chelated)	1	1	1
Fish oil capsules, or Flax Seed Oil	2 1tsp	1	1 1 tsp
Calcium/Magnesium Complex	1	1	2
Iron (325 - 375mg, over-the-counter)			1
<b>Optional:</b>			
Grape Seed Extract (30 or 90mg tab)	1		1
<u>Co-enzyme Q10 (30mg soft gel)</u>	1		1

# Summary of Pre-Natal Nutrition in Prevention of ASD

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Healthy cells (gut)

Eat nutrient dense foods (HELP),  
Exercise

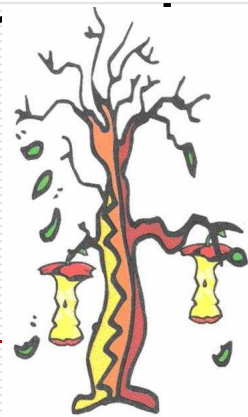
Attitude

Love, laughter

Take suppler

Healthy fats

← Lifestyle, Love  
Stress  
Management,  
avoid toxins



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← Diet, HELP, fertilisers = M, V, Enzymes,  
Probiotics, Essential Fats,