YOU ARE NOT WHAT YOU EAT – YOU ARE WHAT YOU ABSORB
Patient protocol
1. Tap cross extensor reflexes
2. Body type acetate
3. Subconscious emotions
4. ESR
5. Body clock – Now time
6. Scale of Health
7. Epigenetic Scale of Health
8. Definitive meridian
9. Biophoton acetate challenge
10. Synchronise if necessary

Patient protocol
11. Using biophoton acetate challenge eye positions.
12. 380nm challenge Neurotransmitters
SNIP > Co-Enzyme
13. Re-challenge Biophoton acetates
14. Re-challenge each eye position
15. Re-challenge with DNA polymerase
16. Re-challenge Scales

Designing Patient Protocols for
- Energy / Memory
- Infections
- Allergy
- Toxins
- Nutrition
- Hypoxia
- Joints
- Teeth
- Eyes
- Hair
- Nails
- Skin
- Sleep

CNS
Hormones
CVS
GUT
1. Scale of Health
   “If 100 is the very best you have ever been in your health, and health being all encompassing i.e. Emotional, Biochemical and Structural, your Scale of Health currently calibrates at ...........”

2. Epigenetic Scale of Health (Scale of Transcription)
   “If 100 is the very best your health could possibly be, and health being all encompassing i.e. Emotional, Biochemical and Structural, your Epigenetic Scale of Health currently calibrates at ...........”
Eyes into Distortion (EID)
Energy

<table>
<thead>
<tr>
<th>ENERGY</th>
<th>BIOMARKERS</th>
<th>INGREDIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycolysis</td>
<td>Pyruvate</td>
<td>Mg, Zinc</td>
</tr>
<tr>
<td>Pyruvate to Acetyl CoA</td>
<td>Acetyl CoA</td>
<td>Mg, B1, B2, B3, B5, Lipoic acid, Mg</td>
</tr>
<tr>
<td>Krebs cycle</td>
<td>FADH2</td>
<td>Mg, Mn, Zn, B1, B2, B3, B5, Lipoic acid</td>
</tr>
<tr>
<td>Electron transfer</td>
<td>NADH</td>
<td>Mg, Mn, Zn, B1, B2, B3, B5, Lipoic acid</td>
</tr>
<tr>
<td>Oxidative phosphorylation</td>
<td>Cytochrome c</td>
<td>CQD6, Fe, Cu, B1, B2, Omega 3, BHA, Smart Turmeric, Smart Heart (Cardiolipin)</td>
</tr>
</tbody>
</table>

Energy pathway
Glycolysis
Electron transport or Oxidative phosphorylation pathway
Citric Acid Cycle
Magnesium citrate
B-Complex
Co-Q10
Magnesium citrate 100mg
Vitamin B1 (Thiamine)
Vitamin B2 (R-5-P)
Vitamin B3 (Nicotinamide)
Vitamin B5 (Pantothenic acid)
Vitamin B6 (P-5-P)
Folic acid (5-MTHF)
Vitamin B12 (Adenosylocobalamin and Methylcobalamin)
Co-enzyme Q10 30mg

ENERGY
MEMORY

<table>
<thead>
<tr>
<th>BIOMARKERS</th>
<th>NUTRIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mg-ATP</td>
<td>Mg, Zinc</td>
</tr>
<tr>
<td>Mg-ADP</td>
<td>Mg, Zinc</td>
</tr>
<tr>
<td>Amyloid B-</td>
<td>Mg, Zinc</td>
</tr>
<tr>
<td>protein</td>
<td></td>
</tr>
<tr>
<td>APOE E4</td>
<td></td>
</tr>
<tr>
<td>Pyruvate</td>
<td>Mg, Zinc</td>
</tr>
<tr>
<td>Acetyl CoA</td>
<td>Mg, Mn, Zn, Vi B1, Bi, Bi B5, B12, Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B5, A-Lipoic acid, Co-Q10</td>
</tr>
<tr>
<td>TAH</td>
<td>Mg, Mn, Zn, Vi B1, Bi, Bi B5, B12, Vitamin B1, Vitamin B2, Vitamin B3, A-Lipoic acid</td>
</tr>
<tr>
<td>Electron transfer</td>
<td>Co-Q10, Mg, Cu, Vitamin D, Omega 3, DHA, Smart Turmeric, Smart Heart (Cardiolipin)</td>
</tr>
<tr>
<td>Oxidative phosphorylation</td>
<td>Co-Q10, Mg, Cu, Vitamin D, Omega 3, DHA, Smart Turmeric, Smart Heart (Cardiolipin)</td>
</tr>
</tbody>
</table>

Cognitive Support
Pack 90 caps
3 capsules contain
N. Acetyl Cysteine 600mg
Acetyl-L-Carnitine 500mg
SAMe 400mg
Vitamin E 200IU
5-MTHF 1mg
Methylcobalamin 1mg
The proportions of the ingredients are precise and are synergistic in their effect.
90% of our immunity is in the GUT within the biome of different probiotic bacteria.

---

Eyes into Distortion (EID) Infection

---

<table>
<thead>
<tr>
<th>INFECTIONS</th>
<th>BIOMARKERS</th>
<th>NUTRIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BACTERIA</td>
<td>Hemoglobin, Zinc, Arginine, Olive leaf</td>
<td>Ginger, ionic silver, Mannose, Thiamine / Silver, Golden seal</td>
</tr>
<tr>
<td>VIRUS</td>
<td>ACUTE VIRUS POST VIRUS</td>
<td>Iron, Zinc, Vitamin C, Echinacea, ionic silver</td>
</tr>
<tr>
<td>PARASITES</td>
<td>PROTOZOA SPORAZOA TROMATODES NEMATODES</td>
<td>Iodides, Garlic, Cumin / Cloves</td>
</tr>
<tr>
<td>FUNGUS</td>
<td>FUNGAL TOXIN</td>
<td>Zinc, Oregano, Probiotics, Sodium sulfate</td>
</tr>
</tbody>
</table>
Eyes into Distortion (EID)

Allergy

<table>
<thead>
<tr>
<th>ALLERGY</th>
<th>BIOMARKERS</th>
<th>NUTRIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOODS</td>
<td>IgA</td>
<td>Yarrow</td>
</tr>
<tr>
<td>DRINKS</td>
<td>IgE</td>
<td></td>
</tr>
<tr>
<td>TRANSDERMAL</td>
<td>IgG</td>
<td></td>
</tr>
<tr>
<td>INHALATION</td>
<td>IgM</td>
<td></td>
</tr>
<tr>
<td>PERFUMES</td>
<td>C-Reactive Protein</td>
<td></td>
</tr>
<tr>
<td>DENTAL-APPLIANCES</td>
<td>Histamine</td>
<td>Zn, Mg, Vit E, Bioflavonoids such as Quercitin, Hesperadin, Turmeric (Curcumin), Vit C, AH formula</td>
</tr>
<tr>
<td>TOOTHPASTES</td>
<td>Kinin</td>
<td>Zn, Bromelin, Hesperadin,</td>
</tr>
<tr>
<td>TAMPOONS</td>
<td>Serotonin</td>
<td>Mg, Zn, Vit C, Vit E, EPA, other Antioxidants, Turmeric, Ginger and Bromelin,</td>
</tr>
<tr>
<td>PESSARIES</td>
<td>PgE3</td>
<td>GLA, EPA, Zn, Mg, B6, Folic Acid, B3, Vit C and Vit A</td>
</tr>
<tr>
<td></td>
<td>Leuk B4</td>
<td>GLA, EPA, Vit E, Se, Glutathione, Ginger, Turmeric (Curcumin), Silymarin (Milk thistle)</td>
</tr>
</tbody>
</table>

Eyes into Distortion (EID)

Toxicity
#### Nutrient Phase 1+2

Pack 120 caps

A synergistic blend of nutrients and herbs and spices to upregulate the liver phase 1 and phase 2 detoxification pathways. Includes organic extracts of Black cumin seed, Turmeric, Kale, Beetroot, Glycine, Methionine, Taurine, N. Acetyl Cysteine + Specific nutrients to enhance the liver enzymes.

---

#### SELENIUM PHOSPHATE

Pack 60 caps

Sodium selenate, ATP +H2O

Must open capsules up and dissolve in water before ingesting.

Free selenocysteine is not incorporated into proteins. At least 25 selenoproteins have been identified. Main Selenium dependent enzymes:

1. Thyroid deiodinase (3 forms)
2. Glutathione peroxidase (5 forms)
Eyes into Distortion (EID)
Hypoxia

<table>
<thead>
<tr>
<th>Biomarkers</th>
<th>Nutrients</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₂</td>
<td>Mg, Zn, CH₂H₄Folate</td>
</tr>
<tr>
<td>ALA Glycine, Adenosylcobalamin, P-5-P</td>
<td>P-5-P, Lutein</td>
</tr>
<tr>
<td>PBG</td>
<td>F4Biopterin, Biotin, P-5-P</td>
</tr>
<tr>
<td>UPG I</td>
<td>Vit B2 (FAD)</td>
</tr>
<tr>
<td>UPG II</td>
<td>Vit B2 (FAD)</td>
</tr>
<tr>
<td>UPG III</td>
<td>Vit C, Cysteine, Fe</td>
</tr>
</tbody>
</table>

Cell membranes EFAs
### Table: CNS Biomarkers and Nutrients

<table>
<thead>
<tr>
<th>Hormones</th>
<th>Biomarkers</th>
<th>Nutrients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Thyroid</td>
<td>TSH, T1, T2, T3, T4, Reverse T3</td>
<td>Synthase, Iodine, Sal phosphate, Zn, Cu, Mn, Vit D</td>
</tr>
<tr>
<td>High Thyroid</td>
<td>TSH T4</td>
<td>Autimmune – Vit D, Allergy</td>
</tr>
<tr>
<td>Low Adrenal Cortex</td>
<td>Progesterone, Aldosterone, DHEA, DHT</td>
<td>Vit D, P-CP, Vit B2, Zn, Mg</td>
</tr>
<tr>
<td>High Adrenal Cortex</td>
<td>Progesterone, Aldosterone, DHEA</td>
<td>Vit B3, Methylcobalamin</td>
</tr>
</tbody>
</table>

### Text:

Yang points begin or end on the face.
Yin points begin or end on the trunk.

![Diagram of B and E Points](image_url)
ADRENAL SUPPORT

Wild yam
Saw palmetto
Magnesium citrate
Potassium iodide
Chromium picolinate

Helps to optimise Estradiol to Estrone ratios. High ratios of Estradiol + Estrone to Estriol have been shown in both breast and prostate cancers.

Pyridoxal-5-phosphate

Pyridoxal-5-phosphate liquid 100ml
Smart Pyridoxal-5-phosphate (with organic rice bran) caps
Pyridoxal-5-phosphate 50mg caps

Functions
1. Transamination
2. Decarboxylation
3. Neurortransmitter synthesis
4. Transulfation

Mouth ulcers
Homocysteine
Carpal tunnel
PMF
Filing nails
Depression
Morning sickness

80% used in glycogen phosphorylation
5. Protoporphyrin synthesis
6. Niacin synthesis
7. Polyamines synthesis (Growth factors, inhibition of some enzymes, stimulation of DNA / RNA synthesis, stabilization of membranes and DNA)

CARDIOVASCULAR BIOMARKERS

Hypertension
Sphygmanometer
Potassium citrate, Mag citrate, Omega 3

High Cholesterol
Cholesterol, Oxidized cholesterol, LDL, HDL, APO A, APO B
Omega 3, Phosphatidylcholine, Rice bran, Oat bran, Psyllium husk

High Homocysteine
Homocysteine
P-5-P, Vit C, Methylcobalamin, SHMT, Vit B2, Betaine, Choline, DMG, Serine

APOE
APOE4

CVA embolism
Omega 3

CVA haemorrhage
Homocysteine
P-5-P, Vit C, Methylcobalamin, SHMT, Vit B2, Betaine, Choline, DMG, Serine

High stroke
Homocysteine formula, Horse chestnut

Cold hands and feet
Raynaud’s
Vit E, Vit B3, Pycnogenol, OPCs

Interruption
Vit E, Vit R2

DVT
Omega 3
<table>
<thead>
<tr>
<th>Area</th>
<th>Symptoms</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastritis</td>
<td>Ulcers</td>
<td>PPI, Proton pump inhibitors, H2 antagonists</td>
</tr>
<tr>
<td>Hypochlorhydria</td>
<td>Campylobacter, H pylori</td>
<td>PPI, Mastic gum, PH 7.0, Vichis, Peptidase</td>
</tr>
<tr>
<td>Stomach</td>
<td>Ulcers</td>
<td>H2 antagonists</td>
</tr>
<tr>
<td>Liver</td>
<td>Ulcers</td>
<td>H2 antagonists</td>
</tr>
<tr>
<td>Pancreas</td>
<td>Ulcers</td>
<td>H2 antagonists</td>
</tr>
<tr>
<td>Small Intestine</td>
<td>Allergy, Gluten</td>
<td>Yarrow, Vit D3/K2, probiotics</td>
</tr>
<tr>
<td>Large Intestine</td>
<td>Infections, Parasites, Fungus</td>
<td>Parasites, Fungus</td>
</tr>
<tr>
<td>Bile</td>
<td>Ulcers</td>
<td>H2 antagonists, PH 7.0, Peptonase</td>
</tr>
<tr>
<td>Duodenum</td>
<td>Ulcers</td>
<td>H2 antagonists, PH 7.0, Peptonase</td>
</tr>
<tr>
<td>Lipase</td>
<td>Ulcers</td>
<td>H2 antagonists, PH 7.0, Peptonase</td>
</tr>
<tr>
<td>Allergy</td>
<td>IgA, IgE, IgG</td>
<td>Vit D3/K2, Probiotics</td>
</tr>
</tbody>
</table>

**Therapy Localisation points for GUT problems**

- **Hepatic flexure**
- **Spleenic flexure**

**Therapy Localisation point with pressure for Probiotics**

- Therapy Localisation point with pressure for Probiotics
**New Probiotic**

**Bacillus Subtilis**

50gm Miron glass Pot
- Allows the body to make Vitamin K2 by bacterial fermentation in the GUT.
- Strengthens the mucosal biofilm.
- Activates the secretion of antibodies – IgM, IgG, IgA.
- Produces various digestive enzymes such as amylase and proteases.
- Used to produce hyaluronic acid for joints and skin.

<table>
<thead>
<tr>
<th>MUSCLE/SKELETAL</th>
<th>BIOMARKERS</th>
<th>NUTRIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collagen</td>
<td>Collagen 1-5</td>
<td>Zn, Proline, Lysine, Glycine, Vit C, Hidrosoferin, Vit A, Mn., P-5-P</td>
</tr>
<tr>
<td>Adrenal</td>
<td>Cortisol, ACTH</td>
<td>Zn, Proline, Lysine, Glycine, Vit C, Hidrosoferin, Vit A, Mn., P-5-P</td>
</tr>
<tr>
<td>Synovial fluid</td>
<td>Synovial fluid</td>
<td>Glucuronic acid, N-Acetylglucosamine, phosphatidylcholine, Omega 3, B.Subtilis</td>
</tr>
<tr>
<td>Calcified deposit</td>
<td>Calcium pyrophosphate</td>
<td>Omega 3, Mg, Vit K2</td>
</tr>
<tr>
<td>Cartilage</td>
<td>Hyaline cartilage</td>
<td>Glucosamine, Mg, RAD, Vit B1, Vit B2, Vit B5, Mn, Vit C, Silica</td>
</tr>
<tr>
<td>Muscle strains</td>
<td>Catalase</td>
<td>Catalase cream</td>
</tr>
<tr>
<td>Scars</td>
<td>Koldoid</td>
<td>Vitamin E, Silica, Scar cream</td>
</tr>
</tbody>
</table>
Zinc and Vit A Inhibited by high HOMOCYSTEINE P-5-P Vit C COLLAGEN Pack 90 caps Proline Glycine Lysine Vitamin C Magnesium citrate Manganese citrate Folic acid Zinc citrate / picolinate Copper citrate NADH Collagen is the most abundant protein in the human body. It gives the shape and support to all tissues including the skin.


- Proline
- Hydroxyproline
- Endoplasmic Reticulum
- Glycine
- Lysine
- Hydroxylysine
- Proline
- Hydroxyproline
- Glycoplasted hydrxylysine
- Triple helix

Extracellular Cleavage of amino and carboxyl terminal pro-peptides

- Aminopeptidase
- Carboproteinase

Assembly of collagen fibres in quarter staggered alignment

- Oxidative deamination of amino groups of lysyl and hydroxylysyl residues to aldehydes
- Lysozyme
- Formation of intra and inter cross links via Schiff bases and aldehyde condensation products

Collagen Synthesis

Epigenetics simply impressive
GAG Formula
Pack 60 caps
Glutamine
Niacinamide
Magnesium citrate
Vitamin C
Manganese citrate
Equisetum (Horsetail)
Oat straw
Glucosamine sulfate
Chondroitin sulfate
Molybdenum

Glycosaminoglycans are large linear polysaccharides constructed of repeating disaccharide units with the primary configurations containing an amino sugar GaINAc, glucuronic acid, galactose and xylose.
Elastin is a highly elastic protein in connective tissue and allows many tissues in the body to resume their shape after stretching or contracting. Vitamin K2 deficiency leads to calcification of elastin fibres.

Other products to consider with treating arthritis:
Omega 3, Bromelain, Smart Silica, Smart Turmeric, Ginger, Smart Vit D

Glucosamine is a rich source in the adrenal and gonad endocrine glands.

Copper citrate

Sulfate

Pyridoxal-5-phosphate

MSM

Chondroitin & Glucosamine

Vitamin K2 deficiency leads to calcification of elastin fibres.

Alanine

Bilberry

Omega 3, Bromelain, Smart Silica, Smart Turmeric, Ginger, Smart Vit D

Pack 60 soft gel caps

Omega 3 fish oil is a rich source of EPA 33% DHA 22%

EPA is strongly anti-inflammatory and prevents platelet aggregation.
DHA is the richest unsaturated fatty acid in the brain especially in the frontal lobes. It forms both tails of the phospholipid structure in the cell membranes of the retinal.
Also rich in the adrenal and gonad endocrine glands.
All three macular pigments are required for optimal eye health. Beta carotene is a direct precursor to retinal which contributes to the maintenance of normal vision.
<table>
<thead>
<tr>
<th>HAIR</th>
<th>BIOMARKERS</th>
<th>NUTRIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry</td>
<td>EFAs, Fe, Vit B12, Vit A, Vit C, a-Lipoic acid, Zn</td>
<td></td>
</tr>
<tr>
<td>Greasy</td>
<td>Vit B6, Vit E</td>
<td></td>
</tr>
<tr>
<td>Brittle</td>
<td>B Vitamins, Biotin</td>
<td></td>
</tr>
<tr>
<td>Slow loss</td>
<td>SHT, Hypothyroid</td>
<td>NADH, Saw palmetto, Iodine, Sea vegetables, P-5-P, EFAs, Vit C, Vit D, Biotin, Silica</td>
</tr>
<tr>
<td>Fast loss</td>
<td>SHT, Toxins</td>
<td>saw palmetto, Iodine, sea vegetables, Yarrow, Black walnut, Lemon balm, a-Lipoic, Sel, Vit C, Coriander</td>
</tr>
<tr>
<td>Greying</td>
<td></td>
<td>Biotin, Cu</td>
</tr>
<tr>
<td>Hair loss</td>
<td></td>
<td>Omega 3, Evening primrose oil, Borage, Vit B6</td>
</tr>
<tr>
<td>Growth</td>
<td></td>
<td>Folic acid, Cysteine, Methionine, Lysine, Vit A, Mg, Sulfur, Silica, Fe</td>
</tr>
<tr>
<td>SNAILS</td>
<td>BIOMARKERS</td>
<td>NUTRIENTS</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Flaking</td>
<td>P-5-P, EFAs, Vit C, Vit D, Biotin, Silica</td>
<td></td>
</tr>
<tr>
<td>Splitting</td>
<td>Vit C, Folic acid, EFAs, Thyroid (Tyrosine, Iodine, Sel), Osteoporosis (Vit D3/VitK2), Silica</td>
<td></td>
</tr>
<tr>
<td>Vertical ridges</td>
<td>Low growth hormone, Iron, Vit B6</td>
<td></td>
</tr>
<tr>
<td>Horizontal ridges</td>
<td>Zinc</td>
<td></td>
</tr>
<tr>
<td>White spots</td>
<td>Zinc</td>
<td></td>
</tr>
<tr>
<td>Skin tags</td>
<td>P-5-P</td>
<td></td>
</tr>
<tr>
<td>No half moons</td>
<td>T4, T3</td>
<td>Thyroxine, Iodine, Sal phosph, Zn, Cu, Vit D, Black walnut tincture,</td>
</tr>
<tr>
<td>Nutrition</td>
<td>Vit A, Vit D, Calcium, Vit B12, Vit B6, Vit C, Zn, Iodine, Fe, Folic acid</td>
<td></td>
</tr>
<tr>
<td>SKIN</td>
<td>BIOMARKERS</td>
<td>NUTRIENTS</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Dry skin</td>
<td>Evening primrose oil, Borage, Blackcurrant oils, Omega 3, Zn</td>
<td></td>
</tr>
<tr>
<td>Excess sweat</td>
<td>Mg, Zn</td>
<td></td>
</tr>
<tr>
<td>Acne</td>
<td>EPO, Borage, Blackcurrant oils, Zn</td>
<td></td>
</tr>
<tr>
<td>Acne</td>
<td>Fungus</td>
<td>EPO, Borage, Blackcurrant oils, Flax oil, Zn, Vit D3/K2</td>
</tr>
<tr>
<td>Acne</td>
<td>Progesterone, Estrogens, Chemicals, Allergy</td>
<td>P-5-P, Zn, Mg, Vit D, NAC, Yarrow, Lemon balm, Yarrow</td>
</tr>
<tr>
<td>Rosacea</td>
<td>Parasites</td>
<td>Anti parasites</td>
</tr>
<tr>
<td>Dark pigments</td>
<td>Melanin, Melanin—Melanogenesis, P-5-P to stimulate dopamine pathway</td>
<td></td>
</tr>
<tr>
<td>Acne</td>
<td>EPO/Vit E, Zinc</td>
<td></td>
</tr>
</tbody>
</table>
### SLEEP BIOMARKER NUTRIENTS

<table>
<thead>
<tr>
<th>CHANNEL</th>
<th>Inspiration / Expiration</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLERGY</td>
<td>Foods / Drinks</td>
<td>Yarrow</td>
</tr>
<tr>
<td>TOXICITY</td>
<td>CHEMICAL marker</td>
<td>NAO, Yarrow, Lemon balm, Vit C</td>
</tr>
<tr>
<td>HYPOXIA</td>
<td>Oxygen</td>
<td>Glycine, Adenosylcobalamin, P-5-P, Zn, Mg, CREAT, Allopregnanolone, Bladder, Vit B2, Vit C, Cysteine, Fe</td>
</tr>
<tr>
<td>LOW MELATONIN</td>
<td></td>
<td>Vit B12, Folic, Vit B6, P - P, P, Zn, Mg, C, B1, B12, B6, B3, B5, α-lipoic acid, Asparagus</td>
</tr>
<tr>
<td>CALIFIED PISCAL</td>
<td></td>
<td>Calcium, Calcium phosphate, Vit B12, Folic, Vit B3, Fe, P-5-P, Zn, Mg, CoA, Vit B1, Vit B2, Vit B3, Vit B5, α-lipoic acid, Asparagus</td>
</tr>
</tbody>
</table>

### SLEEP BIOMARKER NUTRIENTS

<table>
<thead>
<tr>
<th>Channel</th>
<th>Biomarker</th>
<th>Nutrient</th>
<th>Food / Drink</th>
<th>Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAO</td>
<td>Yarrow</td>
<td>Selenium</td>
<td>Orange pepper, Tangerine</td>
<td>Vitamin B6</td>
</tr>
<tr>
<td>L-4</td>
<td>SAM</td>
<td>Methylfolate</td>
<td>Spinach, Pea, Thiamin</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Putative</td>
<td>Methylation</td>
<td>Orange pepper, Tangerine</td>
<td>Vitamin B6</td>
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<td>A-T</td>
<td>SAM</td>
<td>Methylfolate</td>
<td>Spinach, Pea, Thiamin</td>
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<td>H</td>
<td>Adenosyl</td>
<td>Oxidation-reduction</td>
<td>Black pepper, Folic</td>
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<td>C - T</td>
<td>SAM</td>
<td>Carboxylation</td>
<td>Spinach, Pea, Thiamin</td>
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<tr>
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<td>SAM</td>
<td>Carboxylation</td>
<td>Spinach, Pea, Thiamin</td>
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<tr>
<td>C - T</td>
<td>SAM</td>
<td>Hydrosylation</td>
<td>Broad bean, Cucumbers</td>
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<tr>
<td>A - T</td>
<td>SAM</td>
<td>Oxidation-reduction</td>
<td>Black pepper, Folic</td>
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<tr>
<td>A</td>
<td>SAM</td>
<td>Methylation</td>
<td>Green pepper, Bittern, Thiamine</td>
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</table>
Vitamin D

Sun must be higher than 45° making the shadow shorter than yourself to produce Vitamin D

Cholecalciferol
25(OH)-Cholecalciferol
1,25(OH)-Cholecalciferol
24,25(OH)-Cholecalciferol

Liver
Muscle
Fat
Diet

Calcium
Muscle and Bone health
Regulation of PTH production

Immunomodulation
Prevention of Autoimmune diseases (M.S, R.A, Type 1 Diabetes), Prevent Infections

Regulation of Cell Growth (Cancer prevention), Improve mental health, Regulation of BP, Anti-inflammatory

7-Dehydrocholesterol
UV 290nm

NADPH
Vitamin K2
Mg Iodide
Zn
Boron
BCS oil

Prostate, Testes
Brain, Skin
Breast, Colon,
Lungs
Heart
Immune cells

Stored in Liver, Muscle and Fat
25(OH)-Cholecalciferol

24,25(OH)-Cholecalciferol

Liver (25-hydroxylase CYP27A1)
Kidney (24-hydroxylase CYP24A1)
1,25(OH)-Cholecalciferol  24,25(OH)-Cholecalciferol

Calcitetrol (1α, 24, 25-Trihydroxy D3) is the hormonally active form of vitamin D with three hydroxyl groups. Hormone modulator

Menadione (K3)
(water soluble, most potent form but not found naturally)

Menaquinone- 4, 7 (K2)
(fat soluble, from animal tissue and synthesised by intestinal bacteria)

Phyloquinone (K1)
(fat soluble from plant tissue)
VITAMIN K2 MENAQUINONE

Function of K2

• Regulation of calcium
• Moves calcium into bones
• Removes calcium from arteries
• Fights osteoporosis
• Fights Coronary Heart Disease
K2 dependent enzymes

- K2 activates a protein called Osteocalcin, which attracts calcium into bones and teeth
- K2 activates a protein called matrix gla protein (MGP) which removes calcium from soft tissue like arteries and veins

K2 dependent enzymes

- K2 is the cofactor for an enzyme called vitamin K dependent carboxylase
- This enzyme when activated by K2 alters the structure of osteocalcin and MGP to allow those proteins to bind calcium

Gamma - carboxylation

- Glutamate side chain on a Vit K2 dependent protein (osteocalcin or MGP)
- Carboxylated protein now ready to bind calcium

Ca++
Sources of K2

• Diet and bacterial synthesis
• Dietary sources of pre-made K2 take the form of fat from animals who convert K1 to K2
• Modern diet compromises the amount of K2 in food, grass fed cows, free range eggs

Sources of K2

• Cheese – Gouda and Brie, egg yolks, butter, goose, chicken liver
• Whole milk from grass fed cow – 1 mcg/100ml. Cheese made from milk contains 76 mcg per 100g because of bacterial fermentation
• Good eggs more than double K2 of battery eggs – feed and outdoors

Structure of vitamin K2
Sources of K2

• K2 from dietary animal sources is MK-4
• Molecular structure has a hydrocarbon tail with 4 double bonds
• Short half life. Stays in circulation for only a few hours before blood levels drop

Sources of K2

• Natto – boiled soybeans packed in straw
• Addition of specialised K2 producing microbe – bacillus subtilis natto
• MK-7 form with a structural hydrocarbon tail containing 7 double bonds

Sources of K2

• MK-7 supplements sourced from natto
• Effective protection for heart and bones
• Longer half life so a single dose is sufficient
• Fat soluble vitamin
K2 role in defeating atherosclerosis

- Deposit of calcium, fatty substances and scar tissue in lining of arteries
- Reduce blood flow
- Arteries become fragile and rupture, leading to clots
- Blocked vessel to heart or brain

K2 role in defeating atherosclerosis

- K2 prevents tissue calcification via protein MGP
- Other K2 dependent proteins
- Growth arrest specific gene 6 (GAS6) promotes clearance of dead smooth muscle cells which can act as an anchor for circulating fats

K2 role in defeating atherosclerosis

- K2 dependent protein S encourages the immune system to gently take out the arterial debris rather than launch a full scale inflammatory response which can encourage plaque formation
K2 role in defeating atherosclerosis

- In 2004 Journal of Nutrition published Rotterdam study
- Evaluated 8000 men and women aged over 55
- High intake of dietary K2 significantly reduced the incidence of arterial calcification and death from CVD

K2 role in defeating osteoporosis

- Loss of bone mineral density and thinning of bone tissue causing bones to become porous and fragile
- Occurs when there is an imbalance between new bone formation (osteoblast) and old bone resorption (osteoclast)

K2 role in defeating osteoporosis

- Osteocalcin is secreted by osteoblasts and osteoclasts. They use the protein to draw minerals especially calcium into the bones
- Osteocalcin is activated by K2
- Without K2 the osteocalcin would be uncarboxylated
Other Conditions

• Diabetes - K2 causes pancreas to secrete more insulin and increases sensitivity to insulin in cells
• Male fertility - the secretion of osteocalcin from bones in males helps regulate testosterone production

Other Conditions

• Varicose veins – smooth tissue cells from varicose veins show increased calcium deposition
• Wrinkles – elastic fibres of skin become calcified
• Dental cavities
• Dental arch development

K2 & Cancer Prevention

• 2010 The European Prospective Investigation into Cancer and Nutrition
• High K2 associated with a reduced risk of developing cancer and overall death from cancer, 30%
• 24,000 aged 35-64 for 10 years
• Consumption of cheese
<table>
<thead>
<tr>
<th>K2 &amp; Cancer Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prostate cancer – fastest growing body of evidence of K2 benefits</td>
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<tr>
<td>• K2 suppresses growth in all types of lung carcinoma</td>
</tr>
<tr>
<td>• In leukemia K2 induces apoptosis, encourages white blood cells to self destruct</td>
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</table>

<table>
<thead>
<tr>
<th>K2 &amp; Cancer Prevention</th>
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<tbody>
<tr>
<td>• K2 shown to induce death of liver tumour cells</td>
</tr>
<tr>
<td>• Beneficial for cirrhosis</td>
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<tbody>
<tr>
<td>• Many tumours including breast and prostate have been found to produce MGP</td>
</tr>
<tr>
<td>• Suggests that uncarboxylated MGP is bad for cancer prognosis</td>
</tr>
<tr>
<td>• Requires K2 &amp; D3 to activate</td>
</tr>
<tr>
<td>• Maybe malignant tissue contains the solution</td>
</tr>
</tbody>
</table>
K2 Research

• Professor Traber from Linus Pauling Institute September 2015
• Low K2 is a key factor in prostate cancer as opposed to low vitamin E. Similar structures. More research was required
• “Vitamin K is huge in the brain but nobody is researching it”

Dr Mercola October 2015

• Tissue renewal and cell growth
• Helps prevent inflammation by inhibiting proinflammatory markers produced by white blood cells
• Neurological deficiencies, including dementia
• Leukemia, cancer of lung, prostate and liver

Dr Mercola October 2015

• Infectious diseases such as pneumonia
• Reduce risk for non-Hodgkin lymphoma due to ability to inhibit inflammatory cytokines
• 2012 study saw an improvement in rheumatoid arthritis
Dr Mercola October 2015

- Mitochondrial electron carrier, therefore maintaining normal ATP in mitochondrial dysfunction, eg Parkinsons
- Structural similarity to CoQ10
- Macular degeneration
- Dr Holick – anti-inflammatory, anti-oxidative and anti-carcinogenic

Anti Coagulant Treatment

- Studies found association between OAC and reduced bone density
- Increased serum levels of under carboxylated osteocalcin
- Probably effect of warfarin interference with K recycling
- OAC often linked to high levels of soft tissue calcification

Dr Mercola October 2015

- Statins may deplete Vitamin K2
- Journal of American College of Cardiology suggests that statins may increase arterial calcification
- Other research show that statins deplete K2
- In addition to CoQ10, consider K2
Fat Soluble Vitamins work together

• Vitamin D increases the absorption of calcium from the intestines and stores it in the liver and kidney
• Vitamin D activates osteoblasts
• Vitamin A activates osteoclasts

Fat Soluble Vitamins work together

• Vitamin A and D together regulate the activity of genes that cause cells to produce proteins to which calcium will bind
• Vitamin D increases the production of K2 dependent proteins
• Vitamin A reduces the production of K2 dependent proteins

Fat Soluble Vitamins work together

• Vitamin K2 activates the proteins that transport calcium to appropriate place in body
• Too much Vitamin D may lead to inappropriate calcification without sufficient amounts of K2
• Increasing Vitamin D can increase the need for K2
K2 Products

- B Subtilis
- Vitamin K2 from Natto
- Smart K2 oil
- Smart D3 oil
- Smart D3 and K2 oil
- Vitamin D3 Cream

*ORGANIC BLACK CUMIN SEED OIL