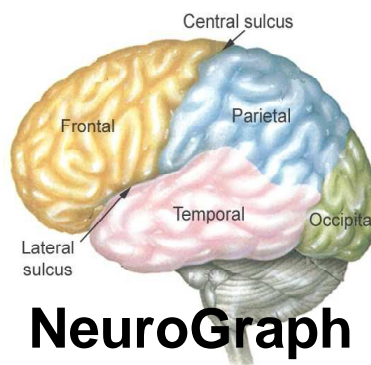


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Fri 3 Dec '10



**NeuroGraph**  
**Neurotransmitter  
Analysis**

**Mr. Bill Smith**

**HealthQuest**

## NeuroGraph - Mood Disorder Analysis

( the higher the score, the higher the priority for treatment)

**Mr. Bill Smith**

Fri, 3 Dec 10

Tx	Neurotransmitter	Low Prty	Medium Prty	High Prty	VH Prty
1	Serotonin	426			VHP
	Melatonin	73		M	
1	Dopamine	125			H
	Noradrenaline	109		M	
	Adrenaline	75		M	
	Histamine - Low	118		M	
	Histamine - High	105		M	
	Opioids	117		M	
	Phenylethylamine	148			H
1	GABA	180			H
1	Acetylcholine	175			H
		Reduction factor - 55 % ... Reduced total - 709 ... Actual total - 1546			

### Recommendations

Zinc Taste

MTHFR

- ... 5-HTP, 1 cap before breakfast ... 1 cap before dinner
- ... PreDOP, 2 caps, 1/2 hour before evening meal with water or juice
- ... PreGABA, 2 caps, 1/2 hour before evening meal with water or juice
- ... PARACHOL Plus- 1 tablet, 2 times daily at start of breakfast and evening meal

#### FOUNDATION Nutrition

- ... Activated B3 - 1 cap, 2 times daily at start of meals
- ... Nordic ProOmega - 1 cap, 2 times daily
- ... Cognisense - 1 teasp, 2 times daily in water, at start of meals

# Serotonin

## Serotonin plays a Major Role in Behaviour and Mood

Serotonin, a major inhibitory neurotransmitter, is involved in the control of numerous central nervous system functions, including mood, sleep and eating behaviours. Serotonin conversion is dependent on adequate brain levels of both L-tryptophan or 5 hydroxy-tryptophan and vitamin B6. Serotonin levels can also be affected by low levels of minerals such as zinc, magnesium, folic acid, iron and calcium.

And above all else, plenty of energy must be produced within the mitochondria in all areas of the brain to ensure that the production of neurotransmitters takes place in the amounts required. Activated B3 is an essential part of the process.

### Major Importance -

- No appetite, unable to eat
- Anxiety, performance anxiety
- Panic attacks or severe anxiety
- Currently taking anti-depressants
- Feeling depressed, down or hopeless
- Suffer from migraines or cluster headaches
- Feeling more depressed and down in the winter months
- Have trouble falling or staying asleep, or sleeping too much
- Feel anxious - have performance anxiety - feel tense - worry a lot
- Have impulsive tendencies, make decisions on spur of the moment
- Feel angry, aggressive - short emotional fuse - aggressive with alcohol
- Diagnosed with major depression, bipolar disorder / manic depression
- Unexpected weight loss/ gain more than 5% of body weight in a month
- Mental and/ or physical slowing down ... Agitation and/ or restlessness
- Little interest or pleasure in doing things, no motivation, can't get going
- Thoughts that you would be better off dead, or of hurting yourself some way
- Feeling bad about yourself, that you are a failure, have let yourself or family down

### Moderate Importance -

- Feel tired all the time, have little energy
- Crave high carbohydrate or sugary foods or binge eat or overeat
- Have a short attention span, find it difficult to think or concentrate
- Feel nervous when in public places or where there's lots of people
- Repetition of actions such as hand washing, checking the door is locked
- Find yourself repeating certain actions constantly e.g. -
  - Hand washing, checking that the door is locked
- Negative reaction to stress, dwelling for extended time over major life event, e.g.
  - Relationship problems or breakup, family problems, financial worries,
  - stress at work or in the home

### Minor Importance -

- Constantly worry about body size
- Sensitive to pain, low pain tolerance
- Frequent and / or long term constipation

**Note: In children, failure to make expected weight gains without having a specific medical disorder may be a sign of depression.**

Understanding the underlying metabolic pathways involved in the production of serotonin can help to identify nutritional requirements for synthesis of this important neurotransmitter.

Tryptophan is an essential amino acid precursor to serotonin that cannot be synthesized by humans therefore it must be consumed through the diet.

Most dietary protein contains more amino acids such as tyrosine, valine, leucine, and phenylalanine than tryptophan. These amino acids compete for a carrier molecule for transport through the blood-brain barrier, therefore it is best to take supplemental tryptophan away from protein meals.

Carbohydrates induce the release of insulin which stimulates the uptake of most amino acids other than tryptophan into muscle cells. Therefore there is less receptor competition which leads to an increased brain influx of tryptophan and elevated neuronal serotonin. Those with low serotonin levels could be more prone to crave carbohydrate meals.

Tryptophan is converted to 5-HTP and then to serotonin (5-HT). This conversion needs to occur within the brain to affect brain chemistry. The delivery of tryptophan into the brain is also depends on the level of free tryptophan that is circulating in the blood.

Factors such as stress, elevated cortisol and low B vitamins lead to increased activity of enzymes which increase the conversion of tryptophan to kynurenine. Therefore there is less free circulating tryptophan in the blood. In addition, elevated kynurenine blocks the entry of tryptophan into the brain.

### **5-Hydroxytryptophan (5HTP)**

5-HTP is the direct precursor to Serotonin (5-Hydroxytryptamine). 5-HTP crosses the blood brain barrier quite easily and therefore **increases serotonin levels more readily than tryptophan** as it also bypasses conversion steps that can be faulty.

### **Cofactors involved in the conversion of 5-Hydroxytryptophan to Serotonin**

- Pyridoxal-5-Phosphate - is the active form of vitamin B6 that is involved in the stimulation of the enzyme that is needed to convert 5-HTP to serotonin.
- Vitamin C, Zinc, Magnesium are other cofactors involved in the production of serotonin.
- You can use extra Activated B6, Folate and B12 to further enhance the conversion in more difficult cases.

According to Dr Wayne Drevets from the University of Pittsburgh Medical School, in many people with depression, they not only have abnormalities with the function of the brain, but also with the structure of the brain.

**In many depressed people, the left prefrontal cortex is up to 40% smaller than in healthy persons.** The prefrontal cortex is important in that it helps to keep negative emotions under control. Glial cells supply the brain neurons with nourishment from the bloodstream. In depressed people there are fewer Glia. In other words, the brains in these people are literally Low on Energy & Power and depression strikes!

### **Activated B3**

NAD or Activated B3 helps to boost brain energy through the Krebs or energy cycle. Activated B3 also helps to boost the production of Serotonin, Dopamine and Noradrenalin.

## Dopamine

**Dopamine Balance Influences Depression, Memory and Motivation** Dopamine is a chemical messenger or neurotransmitter that controls movement, emotional response and ability to experience pleasure and pain. It also plays an important role in cardiovascular, renal, hormonal and central nervous system regulation. Dopamine is an immediate precursor to nor-adrenaline. A number of pathological conditions have been linked to low dopamine levels such as Parkinson's disease, Attention deficit disorder and Alzheimer's disease.

Both norepinephrine (noradrenalin) and epinephrine (adrenalin) are manufactured from dopamine.

### Major Importance -

- Misplace objects frequently
- Low sex drive, problems with arousal and orgasm
- Use Uppers, eg - Red Bull (caffeine) ...
  - Coffee, Nicotine, Diet soft drinks, NutriSweet
- Trouble with remembering the details of what happened at yesterday
- Crave or engage in behaviour such as -
  - Frequent and / or excess alcohol use, recreational drug use
  - Gambling, extreme sportss

### Moderate Importance -

- Have difficulty learning something new
- Feel there is significantly high stress in your life
- Having a negative reaction to, or dwell over stressful situation
- Little interest or pleasure in doing things, no motivation, can't get goings

### Minor Importance -

- Muscles constantly feel tight
- Having plain or non-vivid dreams
- Legs jump when falling to sleep or when asleep

## Tyrosine

The Amino Acid Precursor for Dopamine, Norepinephrine & Epinephrine (Catecholamines) Catecholamines are a group of neurotransmitters that contain catechol. Optimal levels of tyrosine are required for the production and release of catecholamines. Tyrosine can be produced from phenylalanine and is the amino acid precursor for dopamine. Tyrosine competes with tryptophan for transport across the blood brain barrier, therefore it is important to take supplemental tyrosine away from tryptophan. As a precursor to dopamine, tyrosine is also involved in the production of norepinephrine and epinephrine.

## Magnesium and Vitamin B6

Essential cofactors for Dopamine synthesis

Vitamin B6, zinc and magnesium are essential cofactors for the synthesis of dopamine from tyrosine. Other important nutrients and cofactors involved in the synthesis of catecholamine include phenylalanine, folic acid, vitamin C, B3, B12, iron and copper.

### **Activated B3**

The body's usage of B3 increases during times of physical or emotional stress, but it also increases during times of neurological stress. Particularly in Parkinson's disease and Alzheimer's disease or in Panic/Anxiety attacks. Using the activated form of the B3 (NAD) saves having to use the extra energy that is normally required to convert the Nicotinamide or Nicotinic Acid form of B3 into NAD. This is important within the brain, where research has shown that low energy in certain areas of the brain is one of the main factors in depression.

With the active form vitamin B3 you have a form that is immediately available for use. It goes into the cell and is able to do its work straight away. When you take the Niacin or the Nicotinamide form of B3, you need much higher dosages to have the same effect as the NAD, and they have to be converted to the active form of B3.

NAD plays a role in immune function, which it can improve by stimulating the immune system's energy production, boosting its ability to deal with any bad bugs within your body.

In the brain, NAD stimulates the production of Dopamine and Noradrenalin, which are very important neurotransmitters or nervous system chemical messengers. There is scientific evidence to suggest that it works very well in Alzheimer's disease. That's not surprising when you realise that it's involved in neurotransmitter production and the production of energy within the brain itself.

**Iron** - DVPI

**Vit C** - DVPI

**Pre DOP** - DVPI

**Activated B3** - Dr Vera's

# GABA

## Low GABA Levels are Linked to Sleep Problems, Anxiety, Panic Attacks and Seizures

GABA is an inhibitory neurotransmitter involved in reducing excitatory states such as seizures and anxiety. Three primary GABA receptors have been identified: GABAA, GABAB and GABAC. When GABA binds to a GABA receptors in the brain, it causes a reduction in the ability of that neuron to conduct neural impulses. Thus GABA, has the ability to 'shut down' nerve cells throughout the central nervous system.

Because of this inhibitory effect in the brain, any disruption of the of the ability of GABA to inhibit and control nerve firing, has the potential to result in seizures. So, the most common disorder in which GABA is involved with is epilepsy. However, it is also involved in spasticity, stiff-person's syndrome, anxiety disorders, schizophrenia and premenstrual dysphoric disorder. Physiologically, it also plays a role in sleep disorders and drug and alcohol addiction.

## Possible Signs and Symptoms of Low GABA levels -

### Major Importance

- Have panic attacks or severe anxiety
- Feel tense, anxious and worried a lot
- Experience manic episodes all feelings of Mania
- Craving for alcohol, excess alcohol consumption
- Having been diagnosed with epilepsy or suffer seizures.
- Have a negative reaction to, or dwell over stressful situations
- Problems with insomnia, including frequent and/or long standing
- Feel nervous or worry about doing something you have never done before

### Moderate Importance

- Feel angry or aggressive, short emotional fuse
- Feel nervous when having to go to public places

### Minor Importance -

- Smoke more than one packet of cigarettes per day

## The Role of Glutamine in GABA Production

Glutamine is the amino acid precursor to GABA. The intermediate step in the conversion of glutamine to GABA is the production of glutamic acid (glutamate). Both GABA and glutamic acid do not readily cross the blood brain barrier however glutamine can. Therefore glutamine has the potential to increase brain levels of both GABA and glutamic acid..

Unlike GABA, Glutamic Acid is an excitatory neurotransmitter; excess levels of glutamic acid are considered excitotoxic and have been associated with convulsions, Alzheimer 's disease, Parkinson's disease and stroke. Therefore caution should be taken with high dose supplementation of glutamine, particularly if it is given without cofactors such as vitamin B6.

## **Vitamin B6 plays an essential role in the conversion of glutamic acid to GABA**

The vitamin B6-dependent enzyme glutamate decarboxylase is involved in the production of GABA from glutamic acid. Vitamin B6 deficiency is known to be associated with seizures and convulsions. Studies have indicated that there may also be problems in the pathway of conversion from pyridoxine to pyridoxal phosphate (the active form of vitamin B6) which may be linked to a glutamic acid decarboxylase abnormality .

Therefore supplementation with additional pyridoxine-5-phosphate may be advantageous. Taurine has also been shown to increase the activity of the enzyme glutamate decarboxylase that converts glutamic acid to GABA.

L-theanine is involved in the formation and release of the inhibitory neurotransmitter, gamma amino butyric acid (GABA). GABA influences the levels of two other neurotransmitters, dopamine and serotonin, producing the key relaxation effect.

**PreGABA - DVPI**

**Ultra Theanine - Dr Vera's**

**Activated B6 - Orthoplex**

## **References**

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- 2 Marrosu F et al. Correlation between GABA (A) receptor density and vagus nerve stimulation in individuals with drug resistant partial epilepsy. *Epilepsy Res,* 2003 Jun;55(1-2):59-70
- 3 Brandon N, Jovanovic J, Moss S. Multiple roles of protein kinases in the modulation of gamma-aminobutyric acid (A) receptor function and cell surface expression. *Pharmacologic Ther.* 2002 Apr-May;94(1-2):113-22
- 4 Millan MJ. The neurobiology and control of anxious states. *Prog Neurobiol.*2003 Jun;70(2):83-244.



# Acetylcholine

## **Acetylcholine plays a vital role in learning, concentration, memory & co-ordination.**

Acetylcholine is the most abundant neurotransmitter in the brain and is also the most widespread neurotransmitter in the body. Acetylcholine controls the parasympathetic nervous system and is responsible for stimulating muscles to move. The body's synthesis of acetylcholine is vital because of the neurotransmitter's role in motor behaviours and memory.

Low levels of acetylcholine can contribute to lack of concentration and forgetfulness and may cause light sleep. Acetylcholine helps control muscle tone, learning, and primitive drives and emotions. It also controls the release of the pituitary hormone vasopressin, which is involved in learning and in the regulation of urine output. Tardive Dyskinesia, Myesthesia Gravis and Huntington's disease are all neuromuscular ailments associated with involuntary muscular contractions that can be linked to Acetylcholine dysfunction. Other conditions may include; Alzheimer's disease and dementia.

## **Signs and Symptoms of Low Acetylcholine Levels ... Acetylcholine is essential for parasympathetic control**

### **Major Importance -**

- Difficulty learning something new
- Poor concentration, short attention span
- Problems with rapidly processing new information
- Difficulty with remembering what happened yesterday
- Diagnosed with
  - ALS, Multiple Sclerosis, Dementia, Alzheimer's, Tardive dyskinesia
  - Parkinson's, Huntington's, Myasthenia gravis

### **Moderate Importance -**

- Long-term constipation
- Long-term memory problems
- Poor co-ordination or balance
- Light sleeper, wake frequently at night
- Increased digestive symptoms or discomfort with ageing

### **Minor Importance -**

- Difficulty in making decisions
- Manic episodes or feelings of mania

## **Factors Increasing Demand For Choline**

- Alcohol
- Liver disease
- Memory deficit
- Low protein diets
- Excessive caffeine intakes
- Heavy metal toxicity e.g.aluminium,mercury (interferes with synthesis)

## **Choline Is Essential For Acetylcholine Synthesis**

Choline is the physiological precursor of acetylcholine. Acetylcholine is formed in the presynaptic terminal of the neuron by the reversible reaction between choline and acetyl CoA.

Intake of large amounts of acetylcholine precursors increases the neuronal concentration and release of the neurotransmitter. Supplementation with choline may help with the enhancement of cognitive ability and memory

### **Parachol - Orthoplex**

**Thiamine (B1)** is an important cofactor for acetylcholine synthesis; thiamine is involved in the release of acetylcholine from nerve endings. **Pantothenic acid (B5)** is involved in the synthesis of acetyl-CoA an essential substrate for acetylcholine synthesis . Pantothenic acid is also useful for burning feet, excessive sweating and co-ordination. **Magnesium** deficiency has been linked to a decrease in whole brain acetylcholine content.

### **Phosphotidylserine - Phospholipid Complex - DVPI**

- Improves learning behaviour
- Improves cell to cell communication
- Improves brain glucose metabolism
- Maintains flexibility of cell membranes
- Improves dopamine release from neurons
- Inhibits the release of tumour necrosing factor
- Stabilizes cognitive decline associated with aging
- Maintains ATPase enzyme activity of cellular membranes
- Improves and normalises age related receptor abnormalities
- Improves the number and alignment of receptor sites in the brain
- Improves the effectiveness of acetyl choline on nerve transmission
- Boosts brain alpha rhythm by 15-20%, indicative increase acetyl choline (cholinergic) activity.
- Stimulates the sproduction of nerve growth factor (NGF) as well as reducing the loss of NGF receptors associated with aging.

### **Acetyl L Carnitine**

- Improves neuronal bio-energetics
- Promotes the cellular uptake of choline
- Promotes the release and production of acetylcholine
- Lowers blood ammonia and reduces ammonia toxicity
- Contributes to the production of acetylcholine in the brain
- Protects dopaminergic neurons from the neurotoxic MPTP
- Lowers or prevents the accumulation of toxic free fatty acids
- Improves age related change of dopamine receptors i.e. improves the binding and release of dopamine from its receptor

## **Drug /Nutrient Interactions**

**Use with extreme caution or monitor closely with the following medications:**

### **Tricyclic Antidepressants**

(Refer to MIMS - blocks acetylcholine receptors))

Tryptanol

Deptran, Dothep, Endep

Sinequan, Surmontil, Tofranil

Melipramine, Placil, Prothiaden

Allegron, Anafranil, Clomipramine

### **Anticholinergics**

(Blocks action of acetylcholine ... used in Parkinson 's Disease)

Atropine injection

Hyoscine injection

Pro-Banthine, Setacol

Akineton, Artane, Atrobel

Benztrop, Botox, Buscopan

Cogentin, Ditropan, Donnalix

Donnatab, Dysport, Merbentyl

### **Cholinergic - anticholinesterase drugs**

(Increases acetylcholine.Used in Al zheimer 's disease)

Aricept, Atropine, Exelon

Mestinon, Reminyl

Neostigmine injection

Physostigmine salicylate injection

### **NOTE: These drug/nutrient interaction lists provide guidelines only**

... Please check with a doctor or pharmacist if you are uncertain about the possibility of a drug / nutrient interaction.

## **Cofactors**

### **Cofactors are Necessary for Production of all Neuro-Transmitters**

In addition to the main active ingredients in each of the supplements used for treating mood disorders, there are cofactors that are essential for the production of the required neuro-transmitters. Many manufacturers have only the main ingredient and leave out the cofactors. As a result the production of the neurotransmitters is compromised in many cases.

### **Cofactors for Serotonin production**

Pyridoxal-5-Phosphate - is the active form of vitamin B6 that is involved in the stimulation of the enzyme that is needed to convert 5-Hydroxytryptophan to serotonin. Vitamin C, Zinc, Magnesium are other cofactors involved in the production of serotonin.

### **Cofactors for Dopamine production**

Vitamin B6, zinc and magnesium are essential cofactors for the synthesis of dopamine from tyrosine. Other important nutrients and cofactors involved in the synthesis of catecholamine include phenylalanine, folic acid, vitamin C, B3, B12, iron and copper.

### **Cofactors for Histamine production**

Vitamin B6 is one of the essential cofactors required for many metabolic processes, such as synthesis of histamine from histidine. It is also important for the synthesis of the neurotransmitters dopamine, noradrenalin and serotonin.

### **Cofactors for Opioid production**

Vitamin B1 plays an important role in nerve conduction. Zinc is a major cofactor for the enzyme alcohol dehydrogenase which is responsible for the degradation of alcohol in the liver. Activated B6 (pyridoxal-5-phosphate) and magnesium are essential cofactors for neurotransmitter production.

### **Cofactors for GABA production**

The vitamin B6-dependent enzyme glutamate decarboxylase is involved in the production of GABA from glutamic acid. Vitamin B6 deficiency is known to be associated with seizures and convulsions. Studies have indicated that there may also be problems in the pathway of conversion from pyridoxine to pyridoxal phosphate (the active form of vitamin B6) which may be linked to a glutamic acid decarboxylase abnormality. Therefore supplementation with additional pyridoxine-5-phosphate might be of an advantage. Taurine has also been shown to increase the activity of the enzyme glutamate decarboxylase that converts glutamic acid to GABA.

### **Cofactors for Acetyl Choline Production**

Thiamine (B1) is an important cofactor for acetylcholine synthesis; thiamine is involved in the release of acetylcholine from nerve endings. Pantothenic acid (B5) is involved in the synthesis of acetyl-CoA an essential substrate for acetylcholine synthesis. Pantothenic acid is also useful for burning feet, excessive sweating and co-ordination. Magnesium deficiency has been linked to a decrease in whole brain acetylcholine content.

# The NeuroGraph Scoring & Interpretation System

The following pages lets you see how the patient answered their questionnaire and how the HealthQuest NeuroGraph automatically –

- Interprets and scores the questions.
- Assigns each question to the correct neurotransmitter or neurotransmitters.
- Sorts them into their order of priority within the associated neurotransmitters.

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>Serotonin</b>	426			VHP
Total Score:	426			<a href="#">More Information &gt;&gt;&gt;</a>

### Serotonin Deficiency

Severity Frequency

#### Major Importance

( ÷ 2)

<input checked="" type="radio"/> No appetite, unable to eat .....	2	+	4
<input type="radio"/> Currently taking antidepressants .....			
<input checked="" type="radio"/> Feel down, depressed or hopeless .....	4	+	3
<input checked="" type="radio"/> Have panic attacks or severe anxiety .....	3	+	3
<input type="radio"/> Headaches - cluster headaches - migraines .....		+	
<input checked="" type="radio"/> Feel more down or depressed during winter months .....	4		
<input checked="" type="radio"/> Suffer from insomnia, trouble falling or staying asleep .....	2	+	4
<input checked="" type="radio"/> Needing more than 8 hours sleep, sleeping too much .....	4		
<input checked="" type="radio"/> Feel anxious - feel tense - worry a lot - have performance anxiety .....	3	+	4
<input type="radio"/> Have impulsive tendencies, make decisions on spur of the moment .....		+	
<input checked="" type="radio"/> Unexpected weight loss/ gain more than 5% of body weight in a month.....	4		
<input checked="" type="radio"/> Little interest or pleasure in doing things, no motivation, can't get going .....	3	+	4
<input checked="" type="radio"/> Feel angry, aggressive - short emotional fuse - aggressive with alcohol .....	1	+	1
<input checked="" type="radio"/> Diagnosed with major depression, bipolar disorder / manic depression .....	4		
<input checked="" type="radio"/> Feeling bad about yourself, are a failure, have let yourself or family down .....	3	+	3
<input checked="" type="radio"/> Thoughts that you would be better off dead, or hurting yourself some way .....	3	+	3
<input checked="" type="radio"/> Mental and/ or physical slowing down - or - Agitation and/ or restlessness .....	3		

#### Moderate Importance

<input type="radio"/> Feel tired all the time, have little energy .....	4		
<input checked="" type="radio"/> Find yourself repeating certain actions constantly e.g. - Hand washing, checking that the door is locked .....	1	+	3
<input checked="" type="radio"/> Have a short attention span, trouble concentrating, reading, watching TV .....	2	+	4
<input type="radio"/> Crave high carbohydrate or sugary foods or binge eat or overeat .....		+	
<input checked="" type="radio"/> Feel nervous when in public places or where there's lots of people .....	3	+	4
<input checked="" type="radio"/> Do you have a negative reaction to stressful situations ... Worry or dwell over things for an extended period e.g. - - Family problems, financial problems - Stress at work or home, things you haven't done before - Relationship problems with partner, relationship breakup .....	4	+	4

Serotonin Cont.

Minor Importance

- Constantly worry about your body size .....  ..+
- More sensitive to pain than others (low pain tolerance) .....  +
- Suffer from constipation, including frequent and/or long term .....  +

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>Melatonin</b>	73 H			
Total Score:	73			<a href="#">More Information &gt;&gt;&gt;</a>

**Melatonin Deficiency**

Severity Frequency

Major Importance

- Have high blood pressure .....  ( ÷ 2 )
- Headaches - cluster headaches - migraines .....  +
- Suffer from insomnia, trouble falling or staying asleep .....  +
- Diagnosed with - ALS, Multiple Sclerosis, Dementia, Alzheimer's, Parkinson's, Huntington's, Myasthenia gravis, Tardive dyskinesia .....  +

Moderate Importance

- Suffer from chronic pain .....  ..+
- Personal or family history of breast or prostate cancer .....  +
- Prostate enlargement, benign prostatic hypertrophy (BPH) .....  +

Minor Importance

- Feel anxious - feel tense - worry a lot .....  +

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>Dopamine</b>	125			VHP
Total Score:	125		<a href="#">More Information &gt;&gt;&gt;</a>	

## Dopamine Deficiency

Severity Frequency

### Major Importance

( ÷ 2)

- Misplace objects frequently .....  ..
- Have a low sex drive, problems with arousal, orgasm .....  ..
- Use Uppers, eg - Red Bull (caffeine) ...  
- Coffee, Nicotine, Diet soft drinks, NutriSweet .....  ..
- Have trouble remembering details of what happened yesterday .....  +
- Crave or engage in behaviour such as -  
- Frequent and / or excess alcohol use, recreational drug use  
- Gambling, extreme sports .....  ..

### Moderate Importance

- Have difficulty learning something new .....  +
- Feel there is significantly high stress in your life .....  +
- Do you have a negative reaction to stressful situations ...  
Worry or dwell over things for an extended period e.g. -  
- Family problems, financial problems  
- Stress at work or home, things you haven't done before  
- Relationship problems with partner, relationship breakup .....  +
- Little interest or pleasure in doing things, no motivation, can't get going .....  +

### Minor Importance

- Your muscles constantly feel tight .....  +
- Have dreams that are vague and plain .....  +
- Your legs jump when you are going to, or when you are asleep .....  +



Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>Nor-adrenaline</b>	109			VHP
Total Score:	109			<a href="#">More Information &gt;&gt;&gt;</a>

## Noradrenaline Deficiency

Severity Frequency

### Major Importance

( ÷ 2 )

- Currently taking antidepressants .....
- Feel down, depressed or hopeless .....  +
- Previously used large amounts of stimulants .....
- Suffered from chronic stress in the past together with fatigue .....
- Have a short attention span, trouble concentrating, reading, watching TV .....  +

### Moderate Importance

- Suffer from chronic pain .....  +
- Feel tired all the time, have little energy .....
- Suffer from stress induced urinary incontinence .....  +
- Put on weight easily and find it difficult to lose weight .....  +
- Find it difficult to remember what happened a long time ago .....  +

### Minor Importance

- Engage in physical activity less than twice per week .....

Treatment Priority	Graph Total	Low Prty	Medium Prty	High Prty	VH Prty
<b>Adrenalin</b>	75	H			
		<a href="#">More Information &gt;&gt;&gt;</a>			

## Adrenaline Deficiency

Severity Frequency

### Major Importance

( ÷ 2 )

- Have low blood pressure - hypotension .....
- Have low blood sugar problems - hypoglycaemia .....
- Currently suffer from chronic stress together with fatigue .....  +
- Suffered from chronic stress in the past together with fatigue .....

Adrenalin Cont.

Moderate Importance

- Feel mentally fatigued, mentally exhausted .....  +
- Food sensitivities, allergies, seasonal allergies .....  +
- More sensitive to pain than others (low pain tolerance) .....
- Have a short attention span, trouble concentrating, watching TV, reading .....  +

Minor Importance

- Feel tired all the time, have little energy .....  +

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>Histamine Deficiency</b>	118			VHP
Total Score:	118		<a href="#">More Information &gt;&gt;&gt;</a>	

Low Histamine - Histapenia

Severity Frequency

Major Importance

( ÷ 2 )

- Suffer from phobias .....
- Experience paranoia .....
- Diagnosed with Schizophrenia .....
- Indigestion, low stomach acidity .....  +
- Have Mercury based dental fillings .....
- Low tolerance to medication, drugs .....
- Have a relatively high tolerance to pain .....
- Experience manic episodes or feelings of mania .....
- Crave high carbohydrate or sugary foods or binge eat or overeat .....  +
- Feel anxious - feel tense - worry a lot - have performance anxiety .....  +
- Crave alcohol and / or excess alcohol consumption, binge drinking .....  +

Moderate Importance

- Difficulty with waking in the morning .....
- Low sex drive, problems with arousal .....
- Feel tired all the time, have little energy .....
- Needing more than 8 hours sleep, sleeping too much .....
- Experience hallucinations or see things that are not there .....

## Low Histamine Cont.

### Minor Importance

- Hyperactive tendencies .....  +
- Heavy growth of body hair .....  +
- Cuts and sores take a while to heal .....  +
- Have a short attention span, trouble concentrating, watching TV, reading .....  +

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>Histamine Excess</b>	105			VHP
Total Score:	105			<a href="#">More Information &gt;&gt;&gt;</a>

## High Histamine - Histadelia

Severity Frequency

### Major Importance

( ÷ 2 )

- Diagnosed with Schizophrenia .....  +
- Feel down, depressed or hopeless .....  +
- High tolerance to medication, drugs .....  +
- Dermatitis, eczema, urticaria, asthma .....  +
- Headaches - cluster headaches - migraines .....  +
- Sensitive to pain, have a low pain tolerance .....  +
- Experience phobias, obsessions, compulsions .....  +
- Food sensitivities, allergies , seasonal allergies .....  +
- Highly motivated, hard-driving - Type A personality .....  +
- Crave or engage in behaviour such as -  
Frequent and / or excess alcohol use, recreational drug use,  
gambling, extreme sports .....  +
- Feel anxious - feel tense - worry a lot - have performance anxiety .....  +
- Thoughts that you would be better off dead, or hurting yourself some way.....  +

### Moderate Importance

- Get mouth ulcers .....  +
- High libido, easily orgasmic .....  +
- Need only 5 - 7 hours sleep per night .....  +
- Have Crohns disease, ulcerative colitis .....  +
- Experience bouts of colic, flatulence, and diarrhea .....  +
- Produce tears and saliva easily, never a dry mouth .....  +
- Suffer from insomnia, trouble falling or staying asleep .....  +
- Painful periods, dysmenorrhea, menstrual headaches .....  +
- Experience hallucinations or see things that are not there .....  +

## High Histamine Cont.

### Minor Importance

- Have a lean build .....
- Have very little body hair .....

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>PEA</b>	148	VHP		
Total Score:	148	<a href="#">More Information &gt;&gt;&gt;</a>		

## Phenylethylamine Deficiency (PEA)

Severity Frequency

### Major Importance

- Currently taking antidepressants .....
- Feel down, depressed or hopeless .....  +
- Have a low sex drive, problems with arousal, orgasm .....
- Attention deficit disorder, attention deficit hyperactive disorder .....

### Moderate Importance

- Have a short attention span, trouble concentrating, reading, watching TV.....  +

### Minor Importance

- Feel tired all the time, have little energy .....  +

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>GABA</b>	180			VHP
Total Score:	180		<a href="#">More Information &gt;&gt;&gt;</a>	

## GABA Deficiency (Gamma Amino Buteric Acid)

Severity Frequency

### Major Importance

( ÷ 2 )

- |  |                                |   |                                |
|--|--------------------------------|---|--------------------------------|
| <input checked="" type="radio"/> Have panic attacks or severe anxiety .....                          | <input type="text" value="3"/> |   | <input type="text" value=""/>  |
| <input type="radio"/> Been diagnosed with epilepsy or suffer seizures .....                          | <input type="text" value=""/>  |   | <input type="text" value=""/>  |
| <input checked="" type="radio"/> Experience manic episodes or feelings of mania .....                | <input type="text" value="4"/> |   | <input type="text" value=""/>  |
| <input checked="" type="radio"/> Suffer from insomnia, trouble falling or staying asleep .....       | <input type="text" value="2"/> | + | <input type="text" value="4"/> |
| <input checked="" type="radio"/> Feel anxious - feel tense - worry a lot - performance anxiety ..... | <input type="text" value="3"/> | + | <input type="text" value="4"/> |
| <input type="radio"/> Crave alcohol and / or excess alcohol consumption, binge drinking .....        | <input type="text" value=""/>  | + | <input type="text" value=""/>  |
| <input checked="" type="radio"/>   |                                |   |                                |

+

### Moderate Importance

- |   |                                |   |                                |
|---|--------------------------------|---|--------------------------------|
| <input checked="" type="radio"/> Feel anxious when in public places or where there's lots of people .....       | <input type="text" value="3"/> | + | <input type="text" value="4"/> |
| <input checked="" type="radio"/> Feel angry, aggressive - short emotional fuse or aggressive with alcohol ..... | <input type="text" value="1"/> | + | <input type="text" value="1"/> |

### Minor Importance

- |  |                               |  |                               |
|--|-------------------------------|--|-------------------------------|
| <input type="radio"/> Smoke more than one packet of cigarettes per day ..... | <input type="text" value=""/> |  | <input type="text" value=""/> |
|--|-------------------------------|--|-------------------------------|

Treatment Priority	Low Prty	Medium Prty	High Prty	VH Prty
<b>Acetyl Choline</b>	175			VHP
Total Score:	175		<a href="#">More Information &gt;&gt;&gt;</a>	

## Acetylcholine Deficiency

Severity Frequency

### Major Importance

( ÷ 2 )

- |                                  |   |                                |   |                                |
|----------------------------------|---|--------------------------------|---|--------------------------------|
| <input type="radio"/>            | Have difficulty learning something new .....  | <input type="text" value=""/>  | + | <input type="text" value=""/>  |
| <input checked="" type="radio"/> | Difficulty with rapidly processing new information .....  | <input type="text" value="2"/> | + | <input type="text" value="3"/> |
| <input checked="" type="radio"/> | Have trouble remembering details of what happened yesterday .....   | <input type="text" value="3"/> | + | <input type="text" value="3"/> |
| <input checked="" type="radio"/> | Have a short attention span, trouble concentrating, reading, watching TV .....  | <input type="text" value="2"/> | + | <input type="text" value="4"/> |
| <input type="radio"/>            | Diagnosed with - ALS, Multiple Sclerosis, Dementia, Alzheimer's, Parkinson's, Huntington's, Myasthenia gravis, Tardive dyskinesia ..... | <input type="text" value=""/>  |   | <input type="text" value=""/>  |

### Moderate Importance

- |                                  |   |                                |   |                                |
|----------------------------------|---|--------------------------------|---|--------------------------------|
| <input type="radio"/>            | Have poor coordination or balance .....                               | <input type="text" value=""/>  | + | <input type="text" value=""/>  |
| <input checked="" type="radio"/> | Suffer from insomnia, trouble falling or staying asleep .....         | <input type="text" value="2"/> | + | <input type="text" value="4"/> |
| <input type="radio"/>            | Find it difficult to remember what happened a long time ago .....     | <input type="text" value=""/>  | + | <input type="text" value=""/>  |
| <input type="radio"/>            | Problems with constipation, including frequent and/or long term ..... | <input type="text" value=""/>  | + | <input type="text" value=""/>  |
| <input checked="" type="radio"/> | Developed more digestive symptoms, discomfort, as you have aged ..... | <input type="text" value="4"/> |   | <input type="text" value=""/>  |

### Minor Importance

- |                                  |  |                                |   |                                |
|----------------------------------|--|--------------------------------|---|--------------------------------|
| <input checked="" type="radio"/> | Find it difficult to make decisions .....            | <input type="text" value="3"/> | + | <input type="text" value="4"/> |
| <input checked="" type="radio"/> | Experience manic episodes or feelings of mania ..... | <input type="text" value="4"/> |   | <input type="text" value=""/>  |