



## TUGUN PRIMER 25mg OR 50mg OR 75mg (with Manganese or Manganese Free)

### Description

The Tugun Primer is a unique combination of vitamins and minerals focusing on zinc and vitamin B<sub>6</sub> supplementation. The purpose of this formulation is very broad and is not specific to one patient group. It can be used to 'prime' a patient in preparation for other treatments, to wean a patient off a higher dose supplement, and may also be prescribed for 'stress' dosing, allowing a patient to increase their zinc and B<sub>6</sub> supplementation during times of illness or stress.

Tugun Primer may be used by itself or in combination with the Tugun Promoter II formula.

Tugun Primer comes in three strengths. The Zinc 25mg and Zinc 50mg formulas only differ in the amount of zinc and all other ingredients are the same. The third formulation contains per dose (2 capsules) 75mg of zinc and twice the strength of the 25/50mg formulas for all other ingredients.

### Ingredients

#### 25mg or 50mg

Each vege capsule contains:

Vitamin B <sub>6</sub>	50mg
Pyridoxal-5-Phosphate	25mg
Vitamin C	250mg
Vitamin E (as succinate)	100IU
Magnesium (as Oxide)	22mg
Zinc (as Picolinate)	25mg <i>or</i> 50mg
Manganese (as gluconate) - optional	7.5mg

#### 75mg

Each dose (2 vege capsules) contains:

Vitamin B <sub>6</sub>	100mg
Pyridoxal-5-Phosphate	50mg
Vitamin C	500mg
Vitamin E (as succinate)	200IU
Magnesium (as Oxide)	44mg
Zinc (as Picolinate)	75mg

Tugun Primer is usually taken once daily, most commonly in the morning with or without food. The capsule(s) can be opened to mix the powder contents with food or drinks.

#### Ascorbic acid (vitamin C)

Vitamin C is a water-soluble vitamin that is an important augmenting nutrient essential for many of the body's systems to function properly. It is also a powerful antioxidant that helps to neutralise free radicals encountered in the body and protect cells from their damaging effects.

#### Vitamin B<sub>6</sub> (Pyridoxine) & Pyridoxal-5-Phosphate

Pyridoxine functions as a coenzyme in over 100 enzymatic reactions involved in the metabolism of amino acids, carbohydrates and lipids.

B<sub>6</sub> is required for efficient synthesis of three critically important neurotransmitters – serotonin, dopamine and GABA. Severe deficiency of B<sub>6</sub> can lead to depressed levels of these neurotransmitters and has been associated with depression, obsessive-compulsive disorder (OCD), irritability, poor short-term memory, attention deficit hyperactivity disorder (ADHD), anxiety, and sleep disorders. Once absorbed, B<sub>6</sub> is converted to pyridoxal-5-phosphate (P5P or PLP) in the liver, which is then distributed throughout the bloodstream and brain. The concentrations of B<sub>6</sub> in the brain are about 100 times higher than levels in the bloodstream.

Tugun Primer contains a combination of B<sub>6</sub> and P5P. Dr. Carl Pfeiffer and Dr. William Walsh found, in their extensive clinical experience, that certain patients responded better to the standard form of B<sub>6</sub> while others responded to P5P. They found a combination of B<sub>6</sub> and P5P appeared to benefit nearly all patient types with B<sub>6</sub> deficiency.

## Zinc

Zinc is a micromineral that is essential to all forms of life and is very important for your overall physical and mental health. There are more than 100 zinc-dependent enzymes in the body. Zinc is required for immune, gastrointestinal and neurological functions as well as cell growth, repair and protection from oxidative stress. In addition, zinc provides structure to proteins and cell membranes protecting them from oxidative stress and impaired function.

Zinc is a potent inducer of Metallothionein, a family of proteins involved in copper metabolism, zinc transport, recycling of a reduced functional form of glutathione, protection from heavy metal toxicity, and pruning during development and learning.

Zinc has many important roles in brain function, which include the following:

- Zinc metallothionein is a key component of the blood-brain barrier that prevents harmful chemicals from entering the brain;
- Zinc proteins in the brain combat oxidative free radicals that could destroy brain cells, harm the myelin sheath, and alter neurotransmitter levels;
- Zinc is required for the efficient conversion of dietary B<sub>6</sub> into PLP, which is needed for efficient synthesis of serotonin, dopamine, GABA, and other neurotransmitters;
- Zinc deficiency can cause copper overloads that can alter brain levels of dopamine and norepinephrine;
- Zinc deficiency results in altered brain levels of GABA;
- Zinc is a neurotransmitter that is stored in vesicles and ejected into synapses;
- Zinc has a special role in the activation and inhibition of NMDA receptors.

*Source: Nutrient Power. William J. Walsh, PhD. 2012 Skyhorse Publishing Pg. 23.*

Generally, in healthy individuals, sufficient zinc is obtained from their diet. However, in certain populations, zinc deficiency is a commonly observed imbalance. Dr. Walsh reports that more than 90% of persons diagnosed with depression, behaviour disorders, ADHD, autism and schizophrenia exhibit depleted plasma zinc levels that range from low-normal to severe deficiency.

Zinc deficiency has been observed with:

- Dermal and immune systems – psoriasis, acne, eczema, white spots on the nails, poor wound healing, and poor sensitivity to taste (hypogeusia);
- Endocrine and gastrointestinal system – decreased appetite, diarrhea, stunted growth, and delayed maturation;
- Brain function – poor memory, irritability, temper control problems, depression, and learning problems.

## Vitamin E

Vitamin E is a fat-soluble vitamin that plays an important role as an antioxidant. It is required for the proper function of many organs, enzymatic activities, immune system and neurological processes.

## Magnesium

Magnesium is a cofactor that binds to and activates many enzymes. It is involved in the activation of over 300 enzymes in the body.

## **Precautions**

Before taking Tugun Primer, tell your doctor or compounding pharmacist if you have a sensitivity or allergy to any of the ingredients.

Are you taking any other supplements? Especially supplements containing B6 or P5P or even food such as cereals fortified with B6.

Refer to Peripheral Neuropathy

## **Gastrointestinal upset:**

This formulation is generally well tolerated. However, some individuals may experience gastrointestinal upset or nausea. This side effect should be transient and resolve over a short time.

Strategies that may help overcome gastrointestinal side effects:

- Take with or immediately after food. For example, take with breakfast or the first meal of the day;
- Mix half or full dose (if tolerated) with a drink or a small meal (e.g. smoothies, yoghurt or juice);
- Start with a lower dose and gradually increase to the full dose with tolerance. For example, open the capsule carefully and mix half the dose with a breakfast drink. You may wish to mix the second half with lunch. After 1 – 2 weeks, you should be able to increase to the full dose.

If any side effects persist, please contact your doctor or compounding pharmacy. In almost all cases, a solution can easily be found without a need to cease the treatment.

#### **Peripheral Neuropathy:**

It is very important to **stop dosing and immediately advise your doctor or compounding pharmacist** if you experience:

- Loss of sensation in the extremities;
- Feeling of burning pain, 'electric shock' or tingling in the lower legs, feet or fingers.

Commonly, this effect only occurs in a small number of individuals, is temporary and can be reversed by reducing or stopping the dose of B<sub>6</sub>.

Since B<sub>6</sub> deficiency is often the result of epigenetics, very high doses may be required over an extended period. Incidentally, most cases of peripheral neuropathy are associated with high doses of B<sub>6</sub> over extended periods.

Many nutritional supplements, sports drinks and fortified foods available from pharmacies, health food stores and grocery outlets may contain vitamin B<sub>6</sub>. Let your doctor or compounding pharmacist know if you are taking any other source of vitamin B<sub>6</sub>. Do not take any other supplements without your doctor's advice.

#### **Sleep Disturbance:**

B<sub>6</sub> at high doses has been associated with vivid dreams. It is recommended that this formula be taken earlier in the day to avoid sleep disturbance.

#### **Caution in individuals exhibiting serious overloads of toxic metals:**

Gradual introduction of dosing is required for toxic metals or copper imbalances.

Increasing blood levels of zinc may result in higher production of metallothionein (MT) and zinc bearing proteins that drive toxins out of the body. Sudden and aggressive detoxification hinders compliance with treatment.

Special caution must be taken in the case of cadmium overload since rapid removal can damage kidney tubules.

#### **Pregnancy, breastfeeding:**

Although some nutrients are beneficial during pregnancy and breastfeeding, caution is still required. Your doctor must be informed if you become, or intend to become, pregnant.

#### **Supplier**

TUGUN PRIMER 25MG OR 50MG OR 75mg  
(with Manganese or Manganese Free)

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#### **References**

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Richard Stuckey, MBBS DRCOG; William Walsh PhD; Brent Lambert. *The Effectiveness of Targeted Nutrient Therapy in Treatment of Mental Illness*

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Mustafa Vakur Bor et.al. "Plasma vitamin B<sub>6</sub> vitamers before and after oral vitamin B<sub>6</sub> treatment: A randomized placebo-controlled study", *Clinical Chemistry* 49:1, 155-161 (2003).

Rohitha Moudgal ET.AL., Vitamin B6 Toxicity Revisited, *Neurology*, April 25, 2018.

*Australian Advanced Drug Reaction Bulletin*, Vol 27, no 4.

#### **Label Warning:**

**Warning:** Stop taking this medication if you experience tingling, burning or numbness and see your healthcare practitioner as soon as possible. Contains vitamin B<sub>6</sub>.