

**MULTIVITAMINS + LYSINE**  
**MACROBEE™ with LYSINE**  
Syrup

Rx

**Multivitamins**

**FORMULATION:**

Each 5 mL (1 teaspoonful) contains:

Retinol Palmitate (Vit. A).....	2500 iu
Cholecalciferol (Vit. D).....	500 iu
Thiamine Hydrochloride (Vit. B1).....	2.5 mg
Riboflavin 5' Phosphate (Vit. B2).....	2.5 mg
Pyridoxine Hydrochloride (Vit. B6).....	2.5 mg
Cyanocobalamin (Vit. B12) .....	4 mcg
Ascorbic Acid (Vit. C).....	60 mg
Nicotinamide .....	20 mg
Calcium Pantothenate .....	5 mg
Folic Acid.....	250 mcg
L-Lysine Monohydrochloride.....	200 mg

**PRODUCT DESCRIPTION:**

Macrobee™ with Lysine syrup is a slightly turbid yellow in color with a lemon-orange flavor.

This comprehensive formulation of Multivitamins + Lysine (Macrobee™ with Lysine syrup) is a preparation of essential vitamins and other vital nutrients designed to reinforce the nutritional quality of the daily diets of children in all age groups. The major vitamins in the syrup deliver metabolic support in optimizing absorption and utilization of vital food nutrients to achieve the child's maximum genetic potential for growth and development.

**PHARMACODYNAMICS AND PHARMACOKINETICS:**

The quality and adequacy of a child's nourishment is fundamental to his good health, his mental and emotional development, as well as for optimum gains in his height and weight. A weak, underweight, irritable child who fails to show normal growth and mental alertness is often suffering from varying degrees of avitaminosis and other forms of nutritional deficiencies.

Poor eating habits and errors in food preferences are often the culprits in deficient and inadequate nutrient intake. Thus, the task of selecting a reliable nutritional support formulation must be anchored on its ability to provide a wide range of vital nutrients which sufficiently meet the daily dietary requirements. Benefits of adequate nourishment include: sense of well-being, vitality, appropriate weight gain and increase in height, healthy gums and strong teeth, smooth skin and firm muscles, clear and bright eyes, lustrous hair, good attention span, and good appetite.

The formulation of Multivitamins + Lysine (Macrobee™ with Lysine syrup) provides Vitamins D and A. Vitamin D is essential for the growth and development of strong bones and teeth as it promotes calcium absorption in the intestinal mucosa. Vitamin A is required in the formation and maturation of epithelial tissues. Vitamin A is important in maintaining healthy eyes, skin and the lining of the respiratory tract and other mucous membranes thereby protecting the child against skin and respiratory infections. Vitamin A is readily absorbed from the gastrointestinal tract but absorption may be reduced in the presence of fat malabsorption, low protein intake, or impaired liver or pancreatic function. Vitamin A does not readily diffuse across the

placenta but is present in breast milk. Vitamin D is well absorbed from the gastrointestinal tract. Absorption may be decreased in patients with decreased fat absorption. Cholecalciferol is hydroxylated by the liver enzyme vitamin D 25-hydroxylase to form 25-hydroxycholecalciferol. Vitamin D compounds and their metabolites are excreted mainly in the bile and feces with only small amounts appearing in urine.

Multivitamins + Lysine (Macrobee™ with Lysine syrup) supplies water soluble B vitamins: B1 (Thiamine), B2 (Riboflavin), B6 (Pyridoxine), B12 (Cyanocobalamin), B3 (Nicotinamide), B5 (Calcium Pantothenate) and B9 (Folic Acid) which must be provided on a regular daily basis. Water soluble vitamins are not stored in the body, so children are most likely to develop deficiencies. Moreover, antibiotics and other drugs may interfere with the utilization of B vitamins, therefore daily supplementation is necessary. In addition, B vitamins stimulate the various metabolic events involved in growth and energy production in the body. Thiamine hydrochloride (Vitamin B1) is well absorbed from the gastrointestinal tract after oral doses. Thiamine is widely distributed to most body tissues, and appears in breast milk. Thiamine is not stored to any appreciable extent in the body and amounts in excess of the body's requirements are excreted in the urine unchanged or as metabolites. Riboflavin (Vitamin B2) is readily absorbed from the gastrointestinal tract. It is widely distributed to body tissues however little is stored in the body. Riboflavin crosses the placenta and is distributed into breast milk. Pyridoxine (Vitamin B6) is readily absorbed from the gastrointestinal tract after oral doses and converted to the active forms: pyridoxal phosphate and pyridoxamine phosphate. Pyridoxine crosses the placenta and is distributed into the breast milk. Cyanocobalamin (Vitamin B12) binds to intrinsic factor, a glycoprotein secreted by the gastric mucosa and is then actively absorbed from the gastrointestinal tract. Absorption is impaired in patients with an absence of intrinsic factor, with a malabsorption syndrome or with disease or abnormality of the gut, or after gastrectomy. Vitamin B12 diffuses across the placenta and also appears in breast milk. Vitamin B2 is readily absorbed from the gastrointestinal tract after oral doses and widely distributed in the body tissues. Nicotinic acid appears in breast milk. Small amounts of Vitamin B2 are excreted unchanged in urine after therapeutic doses. Vitamin B5 is readily absorbed from the gastrointestinal tract after oral doses. It is widely distributed in the body tissues and appears in breast milk. About 70% of Vitamin B5 is excreted unchanged in the urine and about 30% in the feces. Folic acid is rapidly absorbed from the gastrointestinal tract, mainly from the duodenum and jejunum. Folate metabolites are eliminated in the urine and amount in excess is excreted unchanged in the urine. Folate is distributed into the breast milk.

Multivitamins + Lysine (Macrobee™ with Lysine syrup) has adequate amounts of Vitamin C, another water-soluble vitamin with powerful immune enhancing and antioxidant properties. This vitamin enhances the body's immune response and strengthens resistance to infections. It also acts as a co-factor in the synthesis of collagen, the intercellular cement substance that supports the tissues of the bones, tendons, ligaments and blood vessel walls. Moreover, Vitamin C supplementation prevents easy bruising and bleeding gums. Ascorbic acid (Vitamin C) is readily absorbed from the gastrointestinal tract and is widely distributed in the body tissues. Amount in excess is excreted in the urine.

This multivitamin formulation is also reinforced with the growth promoter, Lysine. Lysine, an essential amino acid, contributes to growth and weight gain as amino acids are building blocks of proteins which are the structural components of body tissues and regulatory compounds. Lysine is required in the production of enzymes, hormones and antibodies needed for fighting diseases. Lysine must be regularly provided in the diet because the body cells cannot manufacture lysine in adequate

amounts. Lysine deficiency may result in poor body development, reduced energy, decreased resistance to infection and recurrent illnesses.

**INDICATIONS:**

- Improves appetite and promotes normal weight gain.
- Helps fortify body resistance against common illnesses.
- Overcomes the causes or complications of illnesses due to frank vitamin deficiencies.
- Supplements restrictive or deficient diet.

**DOSAGE AND ADMINISTRATION:**

1 - 2 years old: 2.5 - 5.0 mL (1/2 to 1 teaspoonful) daily

3 - 6 years old: 5.0 - 10 mL (1- 2 teaspoonfuls) daily

7 - 12 years old: 10 - 15 mL (2 - 3 teaspoonfuls) daily

Or as prescribed by the physician.

**CONTRAINDICATIONS/PRECAUTIONS/WARNINGS:**

Contraindicated to patients with history of hypersensitivity to any of the components.

Do not take more than the recommended or prescribed dose.

Multivitamins + Lysine (Macrobee™ with Lysine syrup) contains vitamin B12 and if possible, it should not be given to patients with suspected vitamin B12 deficiency without first confirming the diagnosis. Use of cyanocobalamin in doses greater than 10mcg daily may produce a hematological response in patients with folate deficiency. Indiscriminate use may mask the precise diagnosis. Conversely, folate may mask vitamin B12 deficiency. Regular monitoring of blood is advisable.

Large doses of ascorbic acid may cause diarrhea and other gastrointestinal disturbances. It may also result in hyperoxaluria and the formation of renal calcium oxalate calculi, therefore it should be given with care to patients with hyperoxaluria. It also should not be given to patients with G6PD deficiency.

**PREGANANCY AND LACTATION:**

It can be given safely for pregnant and lactating women. Though some have expressed concern over inhibition of breast milk secretion by pyridoxine, others have cautioned that pyridoxine deficiency may cause seizure in the neonate. Case reports also of large doses of Vitamin A at 10 times the recommended dietary allowance have shown increased risk of birth defects.

**ADVERSE DRUG REACTION:**

Hypersensitivity reactions have occurred rarely with the use of cyanocobalamin, these include skin reactions such as rash, itching and anaphylaxis.

Other adverse effects reported with cyanocobalamin includes gastrointestinal disturbances, fever, chills, hot flushing, dizziness, malaise, acneiform and bullous eruptions and tremor.

Cyanocobalamin should not be used for Leber's disease or tobacco amblyopia since these optic neuropathies may degenerate further.

Macrobee™ with Lysine syrup contains riboflavin (Vitamin B2) which cause bright yellow discoloration in the urine when taken in large doses and it may interfere with certain laboratory tests.

**DRUG INTERACTIONS:**

Drugs that increase the requirements for pyridoxine include hydralazine, isoniazid, penicillamine and oral contraceptives. Pyridoxine reduces the activity of altretamine and decreases serum concentrations of phenobarbital and phenytoin.

Omeprazole may affect the bioavailability of ascorbic acid and reduce the absorption of cyanocobalamin. Absorption of cyanocobalamin in gastrointestinal tract may also be reduced by neomycin, amino-salicylic acid, histamine-2 receptor antagonists, colchicine and cholestyramine.

Vitamin D given with thiazide diuretics, calcium or phosphate may cause an increased risk of hypercalcemia. Plasma calcium concentrations should be monitored.

Antiepileptics such as carbamazepine, phenobarbital, phenytoin and primidone may increase the vitamin D requirement.

Rifampicin, isoniazid and corticosteroids may interact with the effect of vitamin D.

**OVERDOSE AND TREATMENT:**

There have been no reports of overdosage with the use of Macrobee™ with Lysine Syrup. However, if the child experiences any signs and symptoms while using this product, you should immediately consult or tell the physician.

**AVAILABILITY:**

Amber Bottle x 120 mL

**CAUTION:**

Foods, Drugs, Devices and Cosmetics Act prohibits dispensing without prescription.

DR-XY9459

**STORE AT TEMPERATURES NOT EXCEEDING 30°C.  
PROTECT FROM LIGHT.**

“For suspected adverse drug reaction, report to the FDA: [www.fda.gov.ph](http://www.fda.gov.ph)”

Manufactured for:

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