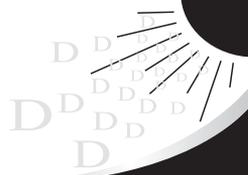


# MaxD 1000

Vitamin D<sub>3</sub> 1000 IU



**Composition: MaxD 1000 IU Tablet:** Each Film coated tablet contains Vitamin D<sub>3</sub> (Cholecalciferol) Powder BP 1000 IU (equivalent to 25 mcg).

**Descriptions:** Vitamin D<sub>3</sub> is the only vitamin the body can manufacture from sunlight (UVB). Yet, with today's indoor living and extensive use of sunscreens due to concern about skin cancer, we are now a society with millions of individuals deficient in life-sustaining bone building and immune modulating 1,25-dihydroxy Vitamin D<sub>3</sub>.

Vitamin D<sub>3</sub> is essential for normal bone growth and development and to maintain bone density. It is also necessary for utilization of both Calcium and Phosphorus. Vitamin D<sub>3</sub> acts as a hormone and increases reabsorption of Calcium and Phosphorus by the kidneys and increases bone turnover.

Vitamin D<sub>3</sub> is not just for bone health, but also plays a critical role in the health of the muscle, brain and nervous systems, cardiovascular and immune systems. It also supports the health of mother and child during pregnancy and lactation.

Vitamin D<sub>3</sub> reduces the incidence & severity of bacterial infections; improves lung function, especially in former smokers; reduces the risk of cancer (breast, colorectal and others); inhibits skin cell growth associated with psoriasis and other skin conditions; helps to maintain adequate insulin levels for people with type 2 diabetes.

Vitamin D<sub>3</sub> is produced when sunlight converts cholesterol in the skin into a form of Vitamin D<sub>3</sub> called Calcidiol. Then the liver hydroxylates Calcidiol into a form called Calcidiol (25-hydroxy Vitamin D<sub>3</sub>). The kidneys then hydroxylate Calcidiol into the active form of Vitamin D<sub>3</sub> called Calcitriol (1,25-dihydroxy Vitamin D<sub>3</sub>), which acts as a hormone.

Calcidiol, the inactive form of Vitamin D<sub>3</sub> is circulated and stored in the body. Virtually every cell in the human body has receptors for Vitamin D<sub>3</sub> because it is not just a Vitamin, but also a hormone. As a hormone, it controls phosphorus, calcium, and bone metabolism and neuromuscular function. Ultimately it regulates cellular production of important proteins and peptides. Vitamin D<sub>3</sub> also affects the expression of many genes, including ones that are key factors in the development of cancer.

**Pharmacology:** The active form of Vitamin D<sub>3</sub>, Calcitriol, exerts its effect by binding to the Vitamin D receptors (VDRs) which are widely distributed through many body tissues. Vitamin D<sub>3</sub> has a half life of about two weeks. Vitamin D<sub>3</sub> is absorbed in the small intestine and bound to specific  $\alpha$ -globulins and transported to the liver where it is metabolised to 25-hydroxy Vitamin D<sub>3</sub> (Calcidiol). A second hydroxylation to 1,25-dihydroxy Vitamin D<sub>3</sub> (Calcitriol) occurs in the kidney. This metabolite is responsible for the vitamin's ability to increase the absorption of calcium. Non-metabolised Vitamin D<sub>3</sub> is stored in tissues such as fat and muscle. Vitamin D<sub>3</sub> is eliminated via faeces and urine.

**Indications:** Vitamin D<sub>3</sub> deficiency can occur in people whose exposure to sunlight is limited and in those whose diet is deficient in vitamin D<sub>3</sub>. Vitamin D<sub>3</sub> is essential for the effective calcium and phosphate absorption required for healthy bones and teeth, preventing rickets, osteomalacia and osteoporosis. Vitamin D<sub>3</sub> is important during pregnancy and breast-feeding, an essential nutrient for a growing infant. It is also essential to prevent pre-eclampsia during pregnancy.

**Dosage and administration:** 1000 IU (1 tablet) daily, or as directed by physician. Swallow the tablets with a full glass of water. Take the medicine with food or within 1 hour after a meal.

Patients receiving doses of Vitamin D<sub>3</sub> should have their plasma-calcium concentration checked at intervals (initially once or twice weekly) and whenever nausea or vomiting occur.

**Use in Pregnancy:** During pregnancy Vitamin D<sub>3</sub> needs are increased. Vitamin D<sub>3</sub> deficiency during pregnancy can affect bone development and immune function from birth through adulthood. Low Vitamin D<sub>3</sub> levels are common among those taking a standard prenatal multivitamin, which usually contains 400 IU, but is inadequate for pregnant women. Even 800 IU of Vitamin D<sub>3</sub> per day didn't permit most pregnant women to reach a normal Vitamin D<sub>3</sub> level. A recently completed study funded by the National Institutes of Health tested the safety and effectiveness of 4000 IU Vitamin D<sub>3</sub> per day in pregnant women. The researchers reported that this dose was safe and effective in achieving normal Vitamin D<sub>3</sub> levels and resulted in fewer pregnancy complications (infections, preterm labor, and birth) when compared with 400 IU Vitamin D<sub>3</sub> per day. A deficiency of Vitamin D<sub>3</sub> has also been linked to a greater risk of pregnancy complications, including pre-eclampsia.

**Use in Lactation:** It should be assumed that exogenous Vitamin D<sub>3</sub> passes into the breast milk. In view of the potential for hypercalcaemia in the mother and for adverse reactions from Vitamin D<sub>3</sub> in nursing infants, mothers may breastfeed while taking Vitamin D<sub>3</sub>, provided that the serum Calcium levels of the mother and infant are monitored. The American Academy of Pediatrics (AAP) currently recommends that breastfed infants receiving a supplement of Vitamin D<sub>3</sub> every day prevent Vitamin D<sub>3</sub> deficiency and rickets. This is because the Vitamin D<sub>3</sub> content of breast milk is related to the mothers Vitamin D<sub>3</sub> level, and most lactating mothers' Vitamin D<sub>3</sub> stores are not adequate to provide their baby with enough Vitamin D<sub>3</sub> through breast milk alone.

**Side effects:** Symptoms rarely include anorexia, lassitude, nausea & vomiting, diarrhea, constipation, weight loss, polyuria, sweating, headache, thirst, vertigo, and raised concentrations of calcium and phosphate in plasma and urine.

**Precautions:** Plasma-calcium concentration should be monitored at intervals in patients receiving high doses of Vitamin D<sub>3</sub>, in renal impairment, and during pregnancy & lactation. People using Digoxin and Thiazide Diuretics should consult a health care practitioner before supplementing with Vitamin D<sub>3</sub>. People with liver or kidney disease, primary hyperthyroidism, lymphoma, tuberculosis and granulomatous disease should consult a health care practitioner before supplementing with Vitamin D<sub>3</sub>.

**Contraindications:** Vitamin D<sub>3</sub> is contraindicated in all diseases associated with hypercalcaemia. It is also contraindicated in patients with known hypersensitivity to Vitamin D<sub>3</sub> (or medicines of the same class) and any of the excipients. It is contraindicated if there is evidence of Vitamin D<sub>3</sub> toxicity.

**Drug Interactions:** Antacids (Magnesium-containing), Phenytoin, Phenobarbital, Cholestyramine, Cholestipol, Digoxin, Thiazide Diuretics. Many drugs cause Vitamin D<sub>3</sub> deficiencies because they interfere with the absorption and metabolism of Vitamin D<sub>3</sub>, and includes Cholestyramine, Cholestipol, Phenytoin, Phenobarbital, Orlistat, and Mineral Oil. Also, Corticosteroids, such as Prednisolone increase the need for Vitamin D<sub>3</sub>.

**Storage:** Store in a cool and dry place, protect from light.

**Packaging: MaxD 1000 IU Tablet:** Each box contains 5x10's tablet in Alu-Alu blister pack.

Manufactured by



**Ziska Pharmaceuticals Ltd.**  
Kaliakoir, Gazipur, Bangladesh