BON DVIT®

بون ڈی وٹ

(Vitamin D_3 400 IU/Drop)

۱۰ ملی لیٹر اورل ڈراپس

Oral Drops

BONDVIT
COMPOSITION:
Each Drop Contains:
Vitamin D_3 (USP) . . . . . 400 IU
(Cholecalciferol 10mcg)
approx. 300 Drops/10ml
(Manufacturer Specs.)

DESCRIPTION:
BON DVIT contains Vitamin D_3 400IU which is essential nutrient for children as it plays a crucial role in their growth, development, and overall health specially maintaining healthy bones, teeth and supporting a healthy immune system.

VITAMIN D_3:
Vitamin D_3 (cholecalciferol) is a fat-soluble vitamin. It regulates calcium and phosphorus levels in the body, which are essential for bone health and mineralization. It enhances the absorption of calcium from the intestines, promotes its reabsorption from the kidneys, and regulates its release from the bones. By maintaining optimal calcium levels, vitamin D_3 supports proper bone growth, development, and maintenance, preventing conditions such as rickets in children.

Pharmacokinetics:
Absorption; vitamin D_3 is a lipid-soluble molecule that is absorbed into the lacteals in the gastrointestinal tract through chylomicrons. It is then transported via the lymphatic system and subsequently into the blood stream (Charoenngam et al. 2021). *Distribution;* the bound phase of circulating vitamin D_3 is around 60%, and the free phase is quickly eliminated into the muscle, and adipose tissue due to the action of lipoprotein lipase (Haddad et al. 1993). *Metabolism;* metabolism of this vitamin takes place in the liver to (25(OH)D). 25(OH)D is metabolized by 25-hydroxyvitamin D-1α-hydroxylase (CYP27B1) in the kidneys into the active metabolite 1,25-dihydroxyvitamin D (1,25$(OH)_2$D). *Excretion;* vitamin D_3 is mainly excreted through the bile into the feces. As part of the absorbed vitamin D is diluted in the adipose tissue, obese individuals have high risk of vitamin D deficiency.

HEALTH BENEFITS OF VITAMIN D_3
Calcium absorption and bone health: Vitamin D_3 is to aid in the absorption of calcium and phosphorus from the intestines. These minerals are essential for proper bone development and growth in children. Vitamin D_3 helps regulate calcium levels in the blood, which is necessary for building and maintaining strong bones.
Bone growth and mineralization: Vitamin D_3 promotes bone mineralization, which involves the deposition of calcium and other minerals into the developing bones. Adequate levels of vitamin D_3 are crucial during childhood as bones are actively growing and mineralizing. Healthy bone development in infants and children requires adequate amounts of vitamin D_3. 1,25$(OH)_2$D increases calcium and phosphate serum concentrations by stimulating calcium and phosphate absorption in the small intestine, by mobilizing calcium from bone, and by reabsorption of calcium by distal renal tubules. Increased calcium and vitamin D_3 concentrations lead to decreased PTH production. Inadequate amounts lead to the development of rickets and osteomalacia.
Immune system function: Vitamin D_3 plays a role in modulating the immune system, including both the innate and adaptive immune responses. It helps support the immune system's ability to defend against infections and diseases. Vitamin D_3 deficiency has been associated with an increased risk of respiratory infections and autoimmune disorders in children.
Muscle function: Vitamin D_3 is involved in maintaining muscle function and strength. It helps regulate muscle contractions and may contribute to muscle development and performance in children.
Overall growth and development: Adequate levels of vitamin D_3 are important for normal growth and development in children. It is involved in cell growth, differentiation, and various metabolic processes that support overall health.
Prevention of rickets: Severe vitamin D_3 deficiency can lead to a condition called rickets, which is characterized by weak and soft bones. Rickets can cause skeletal deformities, delayed growth, muscle weakness, and other complications. Sufficient vitamin D_3 intake and sun exposure help prevent rickets in children.
Mental health: Emerging research suggests a potential link between vitamin D_3 deficiency and mental health conditions such as depression and anxiety in children. While the exact mechanisms are still being investigated, maintaining adequate vitamin D_3 levels may have a positive impact on mental well-being.

DOSAGE
Infants (upto 12 months): The American Academy of Pediatrics (AAP) recommends that exclusively breastfed infants receive a daily vitamin D supplement of 400 (IU).
Children (1-18 years): The AAP recommends a daily vitamin D intake of 600 IU for children and adolescents.

However, some experts suggest that higher doses, such as 1,000-2,000 IU, may be appropriate for children who have risk factors for vitamin D deficiency or have limited sun exposure.

SIDE EFFECTS:
When taken within the recommended dosage guidelines, vitamin D_3 is generally safe for children. However, excessive intake of vitamin D_3 in children can also lead to hypervitaminosis D, which can cause side effects. Here are some potential side effects of excessive vitamin D_3 intake in children:
Hypercalcemia: Elevated levels of calcium in the blood, known as hypercalcemia, can occur with excessive vitamin D_3 intake. Symptoms of hypercalcemia in children may include nausea, vomiting, poor appetite, constipation, abdominal pain, excessive thirst, frequent urination, weakness, and confusion.
Growth and developmental issues: Prolonged and excessive intake of vitamin D_3 can affect the balance of calcium and other minerals in the body, potentially impacting growth and development in children.
Kidney damage: Excessive vitamin D_3 intake can lead to the accumulation of calcium in the kidneys, increasing the risk of kidney damage or the formation of kidney stones.

It's important to note that these side effects are rare and more likely to occur with extremely high doses of vitamin D_3, significantly above the recommended daily intake.

DRUG INTERACTION:
Vitamin D_3 generally has few drug interactions in children. However, it's important to be aware of potential interactions when combining vitamin D_3 supplementation with other medications. Here are a few examples:
Anticonvulsant medications: Certain anticonvulsant drugs, such as phenytoin, phenobarbital, and carbamazepine, can interfere with the metabolism of vitamin D_3. This can potentially lead to lower vitamin D levels in the body.
Corticosteroids: Long-term use of corticosteroid medications, such as prednisone or cortisone, can impact calcium absorption and decrease the effectiveness of vitamin D_3.
Mineral oil: Mineral oil can reduce the absorption of fat-soluble vitamins, including vitamin D_3, it's generally recommended to separate its use from vitamin D_3 supplementation to ensure adequate absorption.

PRECAUTIONS AND WARNINGS
Vitamin D_3 is safe in children when taken by mouth in recommended amounts. But it is possibly unsafe to take vitamin D_3 in higher doses for long-term. Infants from upto 6 months should not take more than 1000 IU (25 mcg) daily. Infants aged 6-12 months should not take more than 1500 IU (37.5 mcg) daily. Children aged 1-3 years should not take more than 2500 IU (62.5 mcg) daily. Children aged 4-8 years should not take more than 3000 IU (75 mcg) daily. Children aged 9 years and older should not take more than 4000 IU (100 mcg) daily.

INSTRUCTIONS:
Protect from light, heat and moisture.
Store below 30°C.
Keep out of the reach of children.

HOW SUPPLIED:
BON DVIT oral drops available in pack of 10ml.

خوراک وہدایات:
ڈاکٹر کے مشورے کے مطابق استعمال کریں۔
روشنی، گرمی اور نمی سے محفوظ 30 ڈگری سینٹی گریڈ
سے کم درجہ حرارت پر رکھیں۔ بچوں کی پہنچ سے دور رکھیں۔

Manufacturer's Enlistment No. 0078
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Manufactured by:
Nutrimed
Laboratories
Plot No. B-42, S.I.T.E.
Super Highway, Phase-1,
Karachi, Pakistan.

Marketed by:
CENRJY
Pharmaceuticals
Karachi