NUTRITIONAL
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Vitamin A: Retinol

Why Take Vitamin A:

- Conversion from Beta-Carotene Is Poor
- Dietary Sources Are Insufficient
- Essential for Bone Health
- Necessary for a Healthy Pregnancy
- Required for Children's Health
- Supports the Safety of Vitamin D

BETA CAROTENE CONVERSION

MANY PEOPLE DO NOT ADEQUATELY CONVERT BETA-CAROTENE INTO VITAMIN A

Vitamin A (retinol) is an essential vitamin, meaning that you must have it to stay alive. It is required for the health of the eyes, lungs, skin, bones, intestines, and immune system, and for red blood cell production. Beta-carotene, which converts at low rates to vitamin A in the body, is not an essential nutrient and is not required for life. While it is commonly assumed that beta-carotene always converts to vitamin A as needed, published studies indicate that almost half (45%) of normally healthy people cannot absorb or convert beta-carotene into vitamin A adequately.[1,2,3] Hypothyroid women, who make up about 40% of women over 40 years of age, have a problem converting beta-carotene to vitamin A because thyroid hormone is required for the conversion.[4] Therefore, beta-carotene cannot substitute for vitamin A (retinol) for millions of people.

DIETARY VITAMIN A

MANY PEOPLE DO NOT GET THE DAILY VALUE OF VITAMIN A (RETINOL) FROM DIET

Dietary vitamin A (retinol) comes from animal products like fish, eggs and dairy, not from vegetables or fruits, which supply beta-carotene. Vitamin A (retinol), in SuperNutrition formulas is manufactured and is not derived from animal products. Scientists agree that if you obtain the Daily Value (DV) of vitamin A from diet, you do not need supplemental vitamin A. However, according to data from "What We Eat in America," the dietary intake interview component of the National Health and Nutrition Examination Survey provided by the United States Department of Agriculture Community Nutrition Map, only 45.7% of Americans get enough vitamin A.[5] Many people need to take a multivitamin with vitamin A (retinol) to reduce the risk of a vitamin A deficiency.

VITAMIN A AND IRON

VITAMIN A (RETINOL) REDUCES ANEMIA AND IS REQUIRED FOR IRON EXCRETION

Vitamin A is critically involved in the production of red blood cells[6] and mobilization of iron.[7,8] In an 8-week, double-blind, placebo-controlled study of 251 anemic pregnant women, iron alone eliminated anemia in 68% of the women, while iron combined with 5,000 international units (IU) of vitamin A eliminated anemia in 97%.[9] Vitamin A deficiency impairs mobilization of iron, allowing it to accumulate in the liver and spleen,[7,8] so vitamin A deficiency should also be considered if iron storage is in excess (as shown by high serum ferritin).

HEALTHY PREGNANCY, HEALTHY KIDS

VITAMIN A IS REQUIRED FOR HEALTHY PREGNANCY AND CHILDREN'S HEALTH

The World Health Organization recommends vitamin A (retinol) supplementation for a healthy pregnancy. Viamin A-deficient pregnant women are more likely to be anemic, which may result in preterm or low-birth-weight babies.[10] Viamin A-deficient preterm babies are more likely to have chronic lung disease.[11] Viamin A-deficient children are four times more likely to have asthma.[12] They are also more likely to have vision problems,[13,14,15] hearing loss,[16] anemia,[17] measles,[18] pneumonia,[19] diarrhea[20] and stunted growth.[21] The Daily Value (DV) of vitamin A from a combination of diet and supplementation is 5,000 IU.[22] While this dose is the recommended total daily vitamin A amount for healthy pregnancy, vitamin A is known to be safe for pregnancy up to a supplemental daily dose of 10,000 IU. The World Health Organization says, "There is no...risk [of birth defects] from preformed vitamin A supplements of 10,000 IU."[23]

DEFICIENCY IN CHILDREN

RECOMMENDATIONS FOR VITAMIN A-DEFICIENT CHILDREN

The International Vitamin A Consultative Group (IVACG), in collaboration with the World Health Organization, recommends that physicians give children likely to be vitamin A-deficient three 50,000 IU doses of vitamin A concurrently with infant vaccines during the first 6 months of life.[24] This dose has been shown to reduce all causes of infant death over the first year by 64% and symptoms of pneumonia, a leading cause of child death, by 50%.[25] This dose is considered to be safe and is necessary to maintain the baby's vitamin A stores, even when the lactating mother

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is also given 200,000 IU twice within the first 6 weeks after delivery.[26] Note: These recommendations are for physician-administered vitamin A for vitamin A-deficient populations; they are not recommendations for routine administration. However, while routine high-dose vitamin A was formerly only given to children in developing countries, some physicians in the United States are now giving it to ensure optimal status in children.

BONE HEALTH

VITAMIN A IS ESSENTIAL FOR OPTIMAL BONE HEALTH

Vitamin A is required for bone health. In 2002, two studies raised questions about the potential of vitamin A to cause bone loss in some people.[27, 28] However, when this notion was tested in a precisely controlled study that looked at vitamin A blood levels, vitamin A was shown to cause no problem with bone and to actually improve bone density and reduce the risk of fracture in senior women.[29]

INCREASED RISK OF DEFICIENCY FOR VEGANS

VEGANS MAY BE AT AN INCREASED RISK OF BONE FRACTURE FROM VITAMIN A DEFICIENCY

Because vegans have no source of vitamin A (retinol) in their diets and conversion of beta-carotene to vitamin A may be poor, they have an increased risk of bone fracture due to vitamin A deficiency.[30] For these people, vitamin A supplementation can provide essential insurance for bone health.

VITAMIN A PARTNERS WITH VITAMIN D AND VITAMIN K2 FOR HEALTHY ARTERIES AND HEALTHY BONES

Vitamin D stimulates the production of two proteins required for artery and bone health. They are osteocalcin, which pulls calcium into bones and teeth, and matrix GLA protein (MGP), which guides calcium away from soft tissues such as arteries. Vitamin A has an important role in moderating their vitamin D-stimulated production.[31] Vitamin K2 is required to activate (carboxylate) osteocalcin and MGP for their optimal function. Therefore, when these three nutrients are combined at optimal potencies, they support arterial health and bone and tooth health.

VITAMIN A NEUTRALIZES VITAMIN D TOXICITY

Vitamin A (retinol, not beta carotene) neutralizes vitamin D's potential for toxicity at high doses, and vice versa. Vitamins A and D are partners for the optimal health of bones and arteries, while they neutralize each other's potential for toxicity when each is provided in optimal doses.[32, 33]

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This paper summarizes SuperNutrition's in-depth look at Vitamin A. To read the full 19-page report ask for Fact Vs Fiction #6: Vitamin A (Retinol) and Beta-Carotene.

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