

# Molybdenum

## Facts:

- ◆ Molybdenum is an essential trace mineral for both humans and animals. The highest concentrations of molybdenum are found in the liver, kidney, adrenal gland, and bone.
- ◆ Molybdenum is absorbed from the gastrointestinal tract and is excreted in the urine.

## Functions:

- ◆ Molybdenum is a component of a number of enzymes including: sulfite oxidase, which is involved in the metabolism of sulfur amino acids; xanthine oxidase, which is involved in the production of uric acid and in mobilizing iron from the liver reserves; and aldehyde oxidase, which is necessary for the oxidation of fats.<sup>1,2</sup>
- ◆ Molybdenum is a factor in copper metabolism.<sup>1</sup>

## Requirements:

The estimated safe and adequate intakes daily dietary intake (ESADDI) of molybdenum are as follows<sup>3</sup>:

Category and Age:	ESADDI (micrograms):
Infants:0-6 mos.	15-30 mcg
6 - 12 mos.	20 -40 mcg
1-3 yrs.	25-50 mcg
4-6	30-75 mcg
7-10	50-150 mcg
Adults 19+	75-250

## Signs of Deficiency:

Molybdenum deficiency can occur in cases of prolonged parenteral nutrition.<sup>3</sup> According to *Nutrition Almanac*, a molybdenum deficiency may also occur due to the numerous refining and processing techniques employed in virtually every area of food production today.<sup>1</sup>

## Safety:

Molybdenum is contraindicated in those who are sensitive to molybdenum-containing products. Pregnant women and nursing mothers should not take supplemental doses of molybdenum greater than the RDA (75 mcg.).

## Signs of Toxicity:

Symptoms include: diarrhea, anemia, reduced growth rate, gout (reported with intakes at 10 to 15 mg/day).<sup>1,2</sup>

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### Current Research:

General: Molybdenum may play a role in the prevention of anemia. Tooth enamel also contains this element and, as such, some studies have found it to play an important role in the prevention of tooth decay. Some research has also borne out that intakes of this element are associated with decreased rates of esophageal cancer.<sup>1</sup>

### References:

1. Dunne, L.J. (1990). In: *Nutrition Almanac* (3<sup>rd</sup> ed., pp. 81-82). New York, NY: McGraw-Hill Publishing Company.
2. Serfass R., Turnlund, J. Molybdenum. American Society for Nutrition. Retrieved from:  
<http://www.jn.nutrition.org/nutinfo/content/moly.shtml>.
3. Medical Economics Company. Manganese. In: *Physicians' Desk Reference* (1<sup>st</sup> Ed., pp. 308-11). Montvale, NJ: Medical Economics Company.