**Nutrient Interactions**

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| **Nutrient** | **Nutrient** | **Interaction** |
| Vitamin A | Vitamin E  Vitamin C | -Enhances the absorption, utilization and storage of vitamin A.  -Reduces vitamin A toxicity |
| Vitamin D | Calcium | -Low calcium stimulates the activation of Vitamin D |
| Vitamin K | Vitamin E  Calcium | -Reduces K absorption at >1200mg/day  -High doses of calcium impair vitamin K |
| Vitamin E | Copper & Iron | -High doses increase the need for vitamin E |
| Vitamin B2 - Thiamine | Folate  Magnesium  Vitamin C | -Folate deficiency reduces absorption  -Deficiency impairs conversion of thiamine to TPP  -Protects thiamine from deactivation in the GI |
| Vitamin B3 - Niacin | Riboflavin & B6  Tryptophan | -Cofactors in niacin synthesis from tryptophan  -Precursor for niacin synthesis |
| Vitamin B6 - Pyridoxine | Zinc & Niacin | -Involved in activation of B6 |
| Vitamin B9 - Folate | Niacin  B12  Vitamin C | -Deficiency reduces activation of folate  -Deficiency impairs folate metabolism  -Reduces urinary excretion of folate |
| Vitamin B12 - Cobalamin | Folate  Potassium | -Large doses hide RBC signs of deficiency  -Reduces B12 absorption |
| Vitamin C - Ascorbic acid | Iron | -Large doses reduce C due to oxidative stress |
| Zinc | Vitamin E, A & B6  Calcium  Iron, copper & folate  Histidine & cysteine | -Deficiency reduces blood zinc levels  -High doses decrease absorption  -Reduce zinc absorption  -Enhances zinc absorption |
| Calcium | Vitamin D  Magnesium  Sodium, protein & phosphorus | -Improves calcium absorption and decreases urinary excretion  -High doses reduce calcium absorption & deficiency = hypocalcemia  -High intake increases urinary excretion |
| Chromium | Iron  Calcium | -Deficiency enhances chromium absorption  -High doses reduce chromium absorption |
| Selenium | Vitamin E  Vitamin C | -Deficiency increases the need for selenium  -Deficiency inhibits utilization |
| Magnesium | Manganese & Iron  Calcium | -Reduces magnesium absorption  -High doses reduce magnesium absorption |
| Potassium | Magnesium | -Deficiency increases urinary excretion |
| Iron | Vitamin C  Calcium  Copper  Vitamin A  Manganese | -Increases absorption  -Reduces absorption  -High doses reduce absorption  -Deficiency impairs utilization of iron, blood levels may decrease  -Reduces absorption |

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