

DIABETES

Vitamin B12

Deficiency common in diabetics because metformin depletes B12.^{1,2}

Vitamin B3

Preserves B-cell function in type 1 diabetics; Part of GTF (glucose tolerance factor) which facilitates insulin binding.^{3,4,5}

Vitamin D

Lowers risk of type 1 and 2 diabetes; Suppresses inflammation of pancreatic B-cells; Vitamin D receptor gene linked to diabetes.^{6,7,8}

Vitamin E

Confers protection against diabetes by protecting pancreatic B-cells from oxidative stress induced damage; May prevent progression of type 1 diabetes.^{6,9}

Vitamin C

Lowers glycosylated hemoglobin (HbA1c) and fasting and post-meal glucose levels and in type 2 diabetics.^{10,11,12}

Inositol

Evidence suggests that inositol may be effective in treating diabetic neuropathy.^{13,14}

Carnitine

Reduces and even prevents pain from diabetic neuropathy; Improves insulin sensitivity by increasing glucose uptake and storage.^{15,16,17,18}

Glutamine

Stimulates a hormone called GLP-1 (glucagon-like peptide 1) that regulates insulin secretion after meals; Improves insulin signaling and sensitivity.^{19,20}

Coenzyme Q10

Protects kidney from diabetes related damage; Improves glycemic control in type 2 diabetics.^{21,22}

Glutathione & Cysteine

Glutathione-containing enzymes protect B-cells which are particularly sensitive to oxidative stress; Type 2 diabetics have abnormal antioxidant status; Supplementation with the glutathione precursor cysteine restores antioxidant status.^{23,24,25}

Lipoic Acid

Enhances glucose uptake in skeletal muscle tissue; Improves glucose tolerance in type 2 diabetics; Very effective treatment for diabetic neuropathy.^{26,27,28}

Zinc

Needed in the synthesis, storage and secretion of insulin; Protects pancreatic B-cells from damage; Affects the expression of genes linked to diabetes.^{29,30}

Magnesium

Deficiency reduces insulin sensitivity; Low magnesium exacerbates foot ulcers in diabetics.^{31,32}

Biotin

Stimulates glucose-induced insulin secretion in pancreatic B-cells; High dose biotin can improve glycemic control in diabetics.^{33,34,35}

Chromium

Helps insulin attach to cell's receptors increasing glucose uptake into cell; Deficiency can cause insulin resistance; Supplementation trials show dose-dependent benefits for type 2 diabetics.^{36,37,38}

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