Supplements for Wound Care, Post-Op Patients and Yourself

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Vitamin D

Molecular Action:

- Vitamin D binds to the vitamin D receptor (VDR), a nuclear receptor that modulates gene expression

Pathophysiology:

- Enhances intestinal calcium absorption by upregulating calcium-binding proteins, preventing osteoporosis

Omega – 3 Fatty Acids (EPA and DHA)

Molecular Action:

- Incorporate into cell membrane phospholipids, altering membrane fluidity and redeptor function

Pathophysiology:

- Reduce production of proinflammatory eicosanoids (e.g., prostaglandins, leukotrienes) derived from arachidonic acid, thus dampening chronic inflammation

Magnesium

Molecular Action:

- Acts as a cofactor for over 300 enzymatic reactions

Pathophysiology:

- Stabilizes cell membranepotentials, reducing excitotoxicity

Vitamin C

Molecular Action:

- Acts as a reducing agent, donating electrons to neutralize reactive oxygen species (ROS)

Pathophysiology:

- Protects cells from oxidative damage

Vitamin B12

Molecular Action:

- Serves as a cofactor for methionine synthase

Pathophysiology:

- Deficiency leads to elevated homocysteine

Zinc

Molecular Action:

- Acts as a cofactor for numerous enzymes

Pathophysiology:

- Zinc deficiency impairs immune call function, increases oxidative stress, and delays wound healing

Tumeric (Curcumin)

Molecular Action:

- Binds to various signaling molecules, inhibiting NF0kB and MAPK pathways

Pathophysiology:

- Suppresses inflammatory cytokine production (e.g., IL-1, IL-6)
- Reduces COX-2 and iNOS activity

Coenzyme Q10 (CoQ10)

Molecular Action:

- Part of the electron transport chain in mitochondria

Pathophysiology:

- Enhances mitochondrial efficiency

Multivitamins

Molecular Action:

- Provide essential vitamins and minerals that serve as cofactors or coenzymes in diverse metabolic pathways

Pathophysiology:

- Correct micronutrient deficiencies that impair cellular function