Important Facts About Parenteral Selenium (Selenious Acid)

Who needs selenium in their parenteral nutrition (PN)?
ASPEN recommends that selenium be routinely added to PN formulations, either in a multiple trace element (TE) product (if available) or as a separate entity.1 Selenium is not included in any pediatric or neonatal multiple TE products currently available in the U.S. Specifically, use with patients on PN who are NPO and/or cannot ingest or absorb nutrients via their GI tract.

Which products include parenteral selenium?
• Adult multi-trace element products
• Selenious acid injection

How much selenium do patients receiving PN need?

What is the role/function of selenium?
Selenium is an essential nutrient that serves important functions including antioxidative defense through actions of glutathione peroxidase, an enzyme that catalyzes the breakdown of hydroperoxides and has metabolic interrelationships with vitamin E, an antioxidant. It also participates in enzymatic conversion of thyroxine to its more active metabolite, triiodothyronine and is a cofactor for protein and DNA synthesis.1

What does a selenium deficiency look like?
Signs and symptoms of selenium deficiency include cardiomyopathy, myalgias, myositis, anemia, hemolysis, and impaired cellular immunity. Keshan disease is an endemic cardiomyopathy associated with selenium deficiency in China.1-4

Recommendations
It is not recommended to decrease or exclude the dose of selenious acid in PN due to cost or access to the product such as reducing the nutrient to only three times per week.

Monitor trace element levels in long term parenteral nutrition patients.

References