### pentec<sub>0</sub> health

RENAL

# How IDPN & IPN therapy can benefit your patients.

#### Our unique, weight-based formulations are designed to replenish protein loss while minimizing fluid and dextrose content.



**Protein Provision** 

Ample protein is provided in weightbased formulations to optimize protein repletion critical to improving nutrition status.



**Minimized Volume** 

Final formula volume is minimized by using concentrated base solutions for amino acids and dextrose.



#### Low Dextrose

Formulas are designed to provide dextrose in an amount sufficient to allow amino acids to be utilized for protein synthesis while decreasing risk of increased blood glucose levels (compared to historical IDPN formulations).

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#### Nutrition therapy can help alleviate the many concerns you have when treating your dialysis patients, including:



#### **Hospitalization**



# **Treating PEW**

The biochemical marker serum albumin as a component of Protein Energy Wasting (PEW) in CKD-5D has consistently been shown to be a strong independent marker of outcomes over the past several decades. One recent large scale observational study (n=135,545) utilizing USRDS data to examine factors associated with hospitalization for infection among Medicare beneficiaries starting HD between 2005-2008, determined that compared to a reference group of patients with albumin > or equal to 4.0 g/dL, patients with albumin of 3.0-3.5 g/dL at dialysis initiation had more than 20% increase in the rate of infection-related hospitalization compared to patients with albumin levels > or equal to 4.0 g/dL. (1) Another recent study (n=349) was reviewed to identify factors predictive of a 30-day re-hospitalization in HD patients. In this study, patients with an albumin < 3.3 g/dL were associated with higher readmission rates compared to those patients with albumin levels > 3.3 g/dL. (2) According to the 2017 USRDS data report, hospitalization represents a significant societal and financial burden, accounting for approximately 33% of total Medicare expenditures for dialysis patients. (3) Additionally, 35% of dialysis patients have an unplanned re-hospitalization within 30 days of discharge and re-hospitalization rates for dialysis patients are more than double that of older Medicare beneficiaries without a diagnosis of kidney disease (35.4% vs. 15.3%).

Regardless of the reason for low albumin, studies addressing prevention and treatment of low albumin remain paramount due to strong association with outcomes such as mortality, hospitalization, re-hospitalization and their associated costs. Studies have demonstrated in both HD and Peritoneal Dialysis (PD) patient populations that small incremental increases of albumin are associated with better outcomes. (4, 5) Expert key opinion leaders in renal nutrition research have developed an algorithm inclusive of oral nutrition supplements and enteral and parenteral therapies (inclusive of Intradialytic Parenteral Nutrition (IDPN) and Intraperitoneal Nutrition (IPN). (6) These therapies have demonstrated to be effective in increasing albumin and promoting positive nitrogen balance and protein synthesis. (7-15) The CMO's of the largest dialysis chains in the U.S. have also proposed an algorithm, similar to the one proposed by renal nutrition research experts, which addresses malnutrition, and offers support for the use of IDPN therapy. This can be found in literature published by other large organizations which are recognized as having expertise in both renal and nutrition support. (16-18)

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