



**IV Nutrient Therapy for the Physician 101 –
Why, What and How to Use this Incredible
Modality.**

with

Dr. Paul Anderson

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- Site director of “US Site-1” for the CUSIOS Oncology study.
- Featured lecturer at many continuing medical education groups and conferences.



Dr. Paul Anderson

Anderson Medical Group & Sanoviv Hospital

- AMT Medical Clinic (Seattle, Washington) – CEO
- Sanoviv Hospital (Rosarito, Mexico) – Medical Advisor
- Online CME service (via ConsultDrA.com)
- Focus on providing excellent care for patients with cancer and chronic illnesses.



Today's Agenda

Part I: Why IV Nutrients in the outpatient setting?

- Efficacy
- Safety
- History

Part II: What are the most common nutrient IV additives and their indications?

- Vitamins
- Minerals
- Antioxidant boosters
- Custom rehydration

Part III: How do I implement this modality in my practice?

- Logistics regarding the space and equipment required
- Formulas available in your EMR
- Basic patient management



How did you get into IV nutritional and other therapies?

My medical career started 40 years ago in 1976 as a laboratory person and took many twists and turns. One twist was being a professor of Biochemistry and Pharmacology.

About 25 years ago, I returned to medical school and finished my training, and I was exposed to IV therapy as most of us are in the hospital setting and in the ER.

In my practice, I saw a big need in the chronically ill population for IV therapies to help with cellular nutrition, recovery, disease treatment and many other targets.

I was in a unique position having had the lab, biochemistry and pharmacology experience combined with medical training to begin to formulate IV therapies using nutrients, natural and synthetic drugs to try to aid this population.

The past 20 plus years have been devoted to refining these IV therapies for the chronically ill, and more recently (the past 10 years) have also involved NIH and other funded research in the use of these therapies in chronic illness and cancer.

How did you get into IV nutritional and other therapies?

The therapies we all used 20-30 years ago were the “state of the art” and owed their genesis to scientists and physicians such as Pauling, Klenner, Myers, Wright, Gaby and others. We were all learning. Refinement at the patient “bedside” as it were, caused constant innovation and change for those decades and continues to this day while I add in newer nutrigenomic and pharmacogenomic knowledge. What we did 20-30 years ago was good for the time, but we are so much more advanced in knowledge and experience that it would be a shame not to evolve this significant modality. So, the formulas, protocols and sequences I come up with now are thankfully informed by this vast prior knowledge, patient experience and research base.





PART I

WHY IV NUTRIENTS IN THE OUTPATIENT SETTING?

Clinical Thinking: IV Therapy in Chronic Illness

The purpose of an IV approach to nutritional or botanical therapies is:

**To gain
access to the
cells without
GI interference**

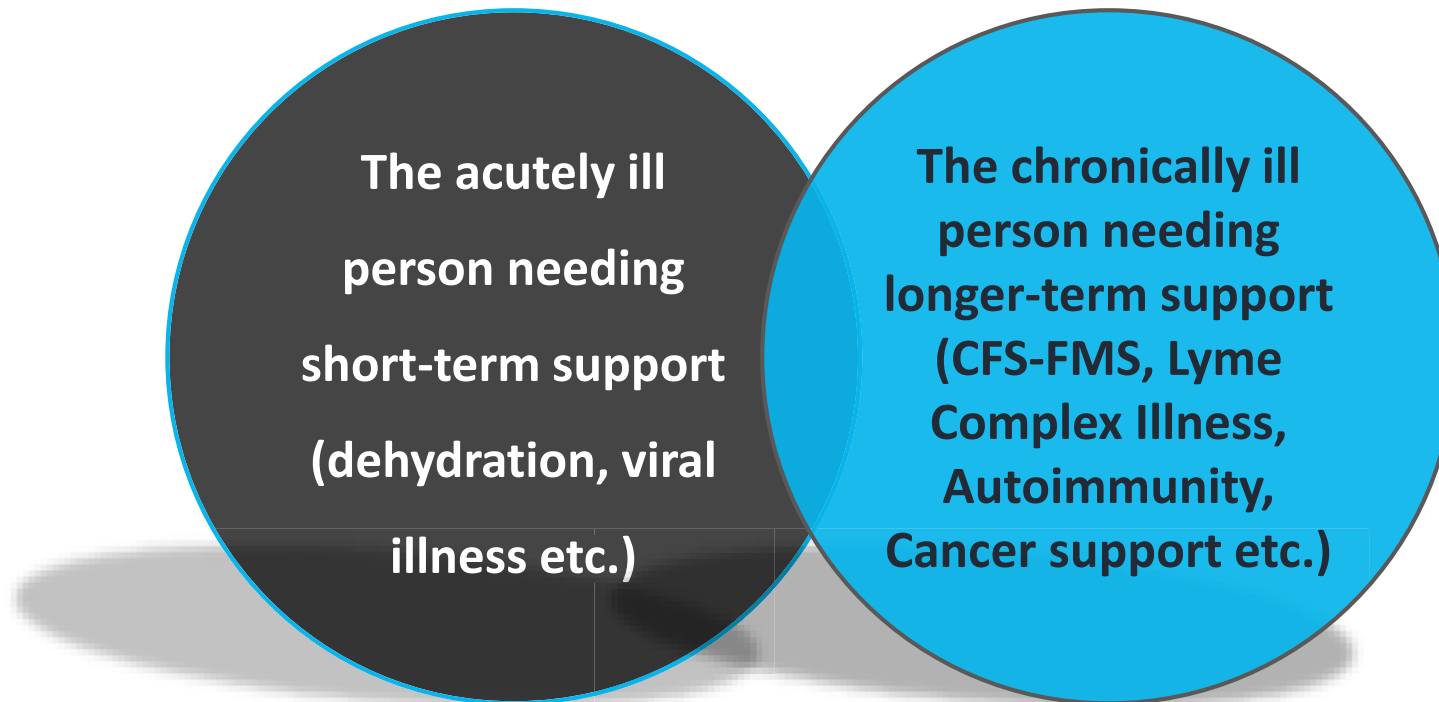
**To infuse
generally
larger
quantities of
material than
can be taken
PO**

**To assist with
repletion in
significant
disease states**

**To cause
disease
modification &
many others**

Efficacy and Safety

In clinical practice, the use of IV nutritional therapies has proven to be both safe and efficacious if basic screening and application guidelines are followed. I personally find that the two most useful arenas for IV therapy are:



History

- IV Therapy has been a part of medicine for a century.
- The use of IV Nutrient Therapy started in the 1940s and was promoted by Dr. Klenner and others, and then was expanded on by early pioneers including Dr. Myers and Cathcart, then Wright and Gaby and many others.
- Research (such as ours at BIORC and other locations) has updated our knowledge of implementation and best practices greatly over the past 25 years.





PART 2

WHAT ARE THE MOST COMMON NUTRIENT IV ADDITIVES & THEIR INDICATIONS?

Vitamins and Minerals

- Vitamins (water soluble are normally used in IV Nutrient therapies – fat soluble parenterals require special handling and mixing).
- Minerals including trace elements.
- Recall they work together in enzyme pathways as organic (vitamin) and inorganic (mineral) cofactors.
- Also recall that all cardio-active minerals need to be balanced.



Antioxidant Boosters

Glutathione

NAC

ALA

Poly-MVA

**Support
Nutrients**

Custom Rehydration

- More than NS or LR
- Formulas in your P2P EMR are designed to hydrate while providing basic broad-based nutrition.
- Very useful in chemotherapy nausea, pregnancy, other NPO status.



Main Mechanisms of Common IV Therapies

Redox Support Agents

Glutathione

Nutrients

LAMC

Phospholipids

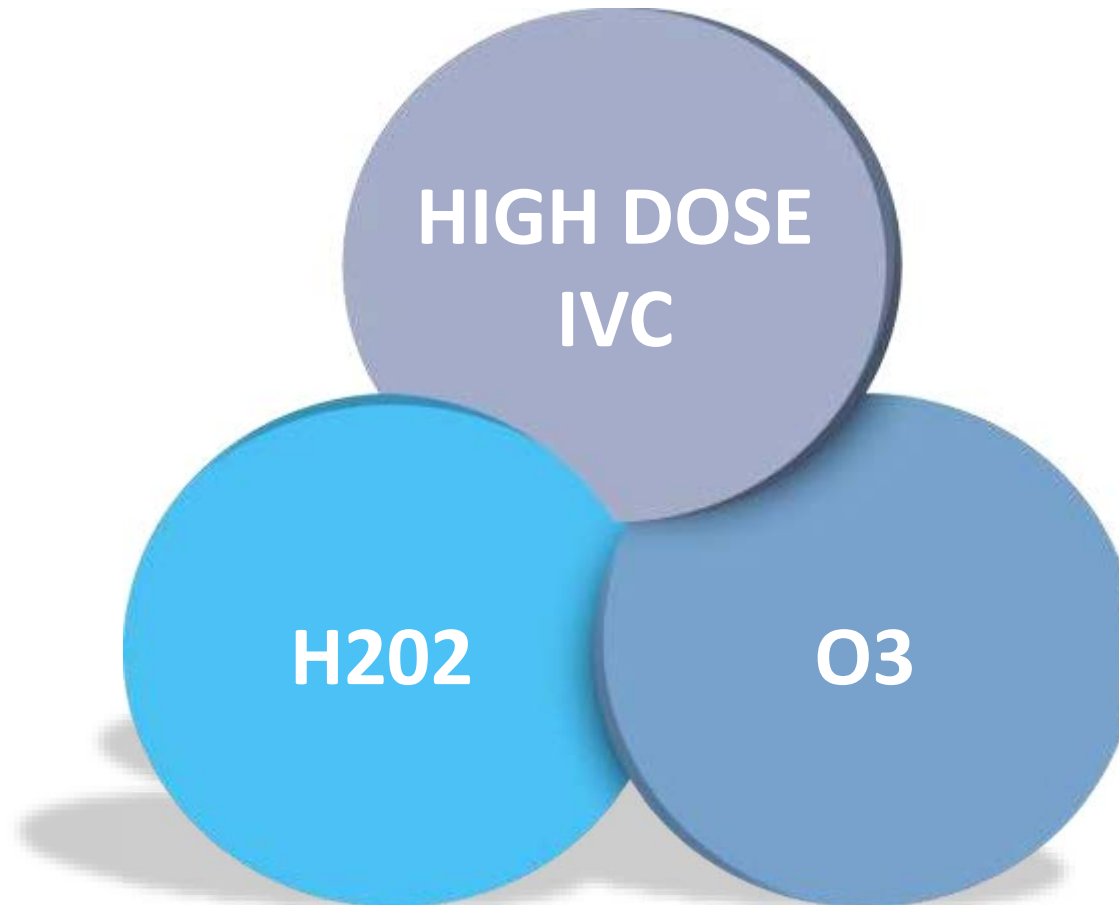
Low dose IVC

ALA

Chelation - Detox

Main Mechanisms of Common IV Therapies

Oxidative IVs



Main Mechanisms of Common IV Therapies

Cell Membrane and Mitochondrial Support

- › All Redox support agents generally
- › Specifically:

LAMC (Poly-MVA)

Low dose IVC

ALA

Amino Acid or like compounds (Taurine, Carnitine)

Detoxification (chelation, curcumin...)

Phospholipids

Amino Acids

Iron (if needed)

Formula Customization

Thought Process:

- What does the patient need?
- What nutrients or protocols may help?
 - › What schedule might work best?
- What testing is appropriate for work-up and follow-up?



Work-up & Testing

Same as what what you would normally provide in the course of good medical management:

- Just because a patient is getting (or needs) IV therapy does not mean you forget a proper work-up.
- Because of the possibility of electrolyte shifts and other co-morbidities, one should have appropriate foundational labs.



Medical Work-up

Comorbidities

**Concurrent /
Prior Treatment**

**Prior Response
to IV Therapy**

Screening Labs



Medical Work-up

Comorbidities

**Concurrent /
Prior Treatment**

**Prior Response
to IV Therapy**

Screening Labs

For IV Tx the most important involve:

- Cardiovascular**
- Renal**
- Immune**



Medical Work-up

Comorbidities

Concurrent /
Prior Treatment

Prior Response
to IV Therapy

Screening Labs

Concurrent / Prior Treatment: Other IV Tx
Chemo



Medical Work-up

Comorbidities

**Concurrent /
Prior Treatment**

**Prior Response
to IV Therapy**

Screening Labs

Prior Response to IV Therapy:

**Anxiety
Reactions / Allergy
Access Issues**



Medical Work-up

Comorbidities

Concurrent /
Prior Treatment

Prior Response
to IV Therapy

Screening Labs

Screening Labs - Minimum:

- > CBC + Diff _ PLT
- > CMP / Chem 14 (ALB/T.Prot/BUN/CRE/AlkPhos > Glucos/T.Bili/K/Ca/Cl/CO2/Na/ALT/AST)
- > G6PD *Oxidative Therapies
- > Any other labs required to follow patient and comorbidities



General dose and administration guidelines as well as conversions between estimated oral and parenteral doses.

Unpublished guideline Paul S. Anderson, NMD – © 2013: Posted on the IV Nutrient Therapy Yahoo Chat Group July 2013

- Oral versus IV Nutrient dosing and GFR Dose adjustment
- Dosing of oral nutrients can be limited by GI effects and absorption (i.e. diarrhea from too much Magnesium or Vitamin C) whereas the IV route can be a way of course around this limitation. While this presents a benefit of the IV route over oral dosing it can also lead to either overdosing or underutilization of the IV nutrient

IV dosing of nutrients should consider
(at least) the following 5 factors:

General dose and administration guidelines as well as conversions between estimated oral and parenteral doses.

Unpublished guideline Paul S. Anderson, NMD – © 2013: Posted on the IV Nutrient Therapy Yahoo Chat Group July 2013



DEFICIENCY STATE

In a true deficiency state, the patient may tolerate a larger IV dose of a nutrient, yet administration of cardio-active nutrients (Na, K, Ca, Mg...) should be given at accepted safe rate and doses regardless of need.

Slight adjustments to this are often tolerated such as a person with low Mg tolerating a greater infusion dose of Mg – to their tolerance.

General dose and administration guidelines as well as conversions between estimated oral and parenteral doses.

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TOLERABLE IV DOSE OF THE NUTRIENT / PATIENT TOLERANCE

In your course materials from IV classes, you generally will find data on “common IV doses” as well as “upper limits of dosing” based on some research. Often, the upper limits are not needed for therapeutic use but give some comfort to the prescriber in ordering a lesser dose. As an example the IV dose tolerated of Taurine is many times over the typical or necessary dose given in IVMT. Most common IV formulas are well within these limits.

General dose and administration guidelines as well as conversions between estimated oral and parenteral doses.

Unpublished guideline Paul S. Anderson, NMD – © 2013: Posted on the IV Nutrient Therapy Yahoo Chat Group July 2013

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FREQUENCY OF IVs

This is important especially in the case of buildup of nutrients – as an example, one can give quite high Mg doses on one day but overdose the patient the next day with the same dose tolerated on day 1, simply due to the distribution kinetics of Mg (see your IV class notes for the reason for this).

Also, trace minerals can be given less frequently or in a finite series of IVs at a high dose (i.e. Zn can be given in a series in a deficient person at over 25 mg per IV – but would never be given in long term repeated IVs at that dose without constant monitoring of levels.)

General dose and administration guidelines as well as conversions between estimated oral and parenteral doses.

Unpublished guideline Paul S. Anderson, NMD – © 2013: Posted on the IV Nutrient Therapy Yahoo Chat Group July 2013

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NEED FOR PHARMACOLOGIC DOES OF A NUTRIENT

Again, breaking from the above if tolerated, a particular nutrient can be given at pharmacologic dosing for a particular outcome (high dose IVC, Magnesium, certain amino acids etc.)

General dose and administration guidelines as well as conversions between estimated oral and parenteral doses.

Unpublished guideline Paul S. Anderson, NMD – © 2013: Posted on the IV Nutrient Therapy Yahoo Chat Group July 2013

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GFR DOES ADJUSTMENTS FOR IV NUTRIENTS

This is often completely relative to the nutrient in question and the volume of fluid used.

Most water soluble nutrients (the basis of most IVMT) are a strain on the kidney, but only at a lower level unless dosed quite high as a pharmacologic dose.

General dose and administration guidelines as well as conversions between estimated oral and parenteral doses.

Unpublished guideline Paul S. Anderson, NMD – © 2013: Posted on the IV Nutrient Therapy Yahoo Chat Group July 2013

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GFR DOES ADJUSTMENTS FOR IV NUTRIENTS (continued)

Some nutrients at very high dose (i.e. HDIVC) carry with them a high Na load (again, see your IV class notes), so they have to be adjusted down if the GFR is compromised. Additionally, if one has a low GFR they may not tolerate the typical volume of a high or isotonic IV fluid (see 'fluid overload' in your notes).

So, one may for instance give a patient with CHF or Low GFR a typical dose of B-Vitamins and Mg, but in a lower fluid volume.

Some considerations for IV additives:

Common lab indicators for specific nutrients:

› Elevated GGT

- Glutathione and Magnesium augmentation

› Elevated AST/ALT

- B-6 and Magnesium

› Elevated HCYS / MCV

- Methylation support, B-6, Mg, Trace elements

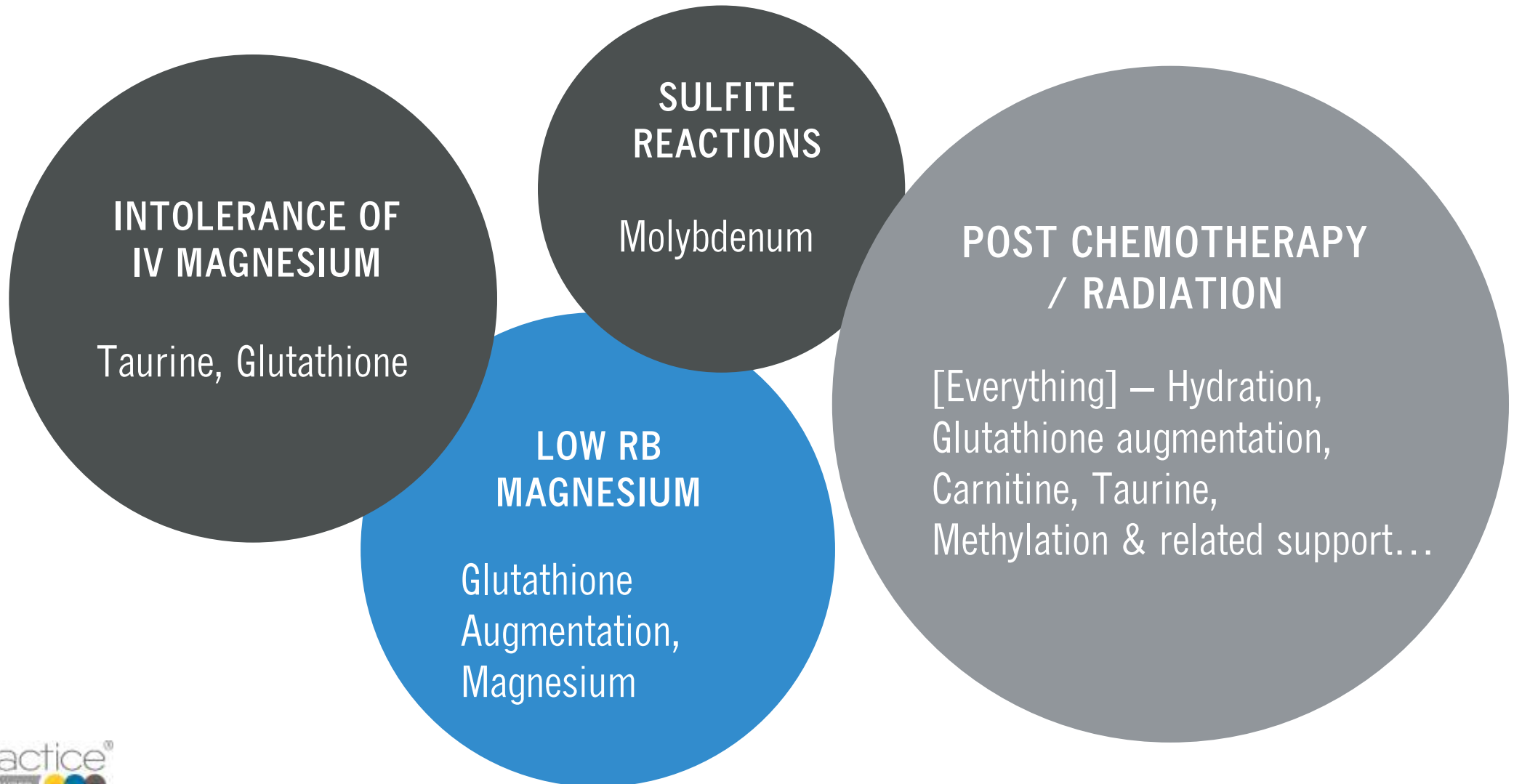
› Decreased WBC

- Zinc, Germanium, Methyl support, Mg, Trace elements

› Decreased PLT

- Phosphatidylcholine

Some considerations for IV additives:



Some considerations for IV additives:

Underlying arrhythmias (especially atrial)

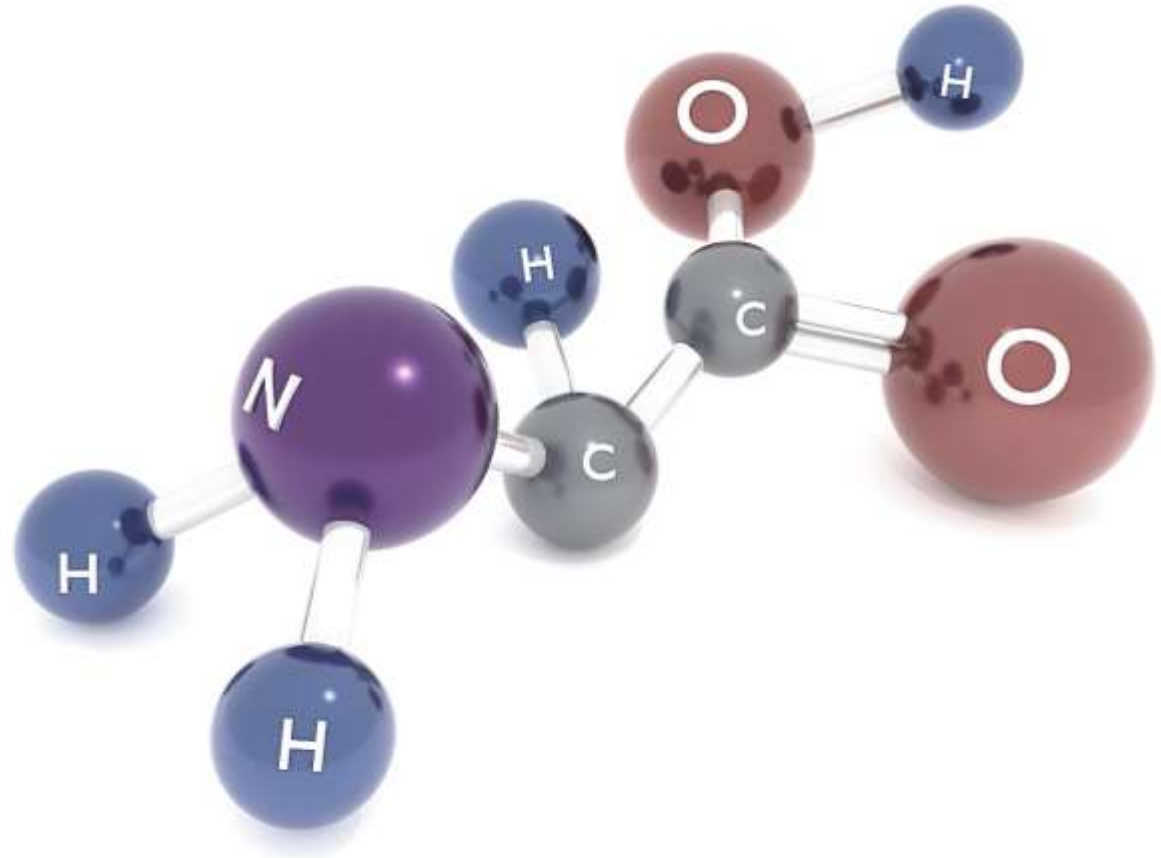
- › Assure minerals (if available) are in chloride salt forms and balanced ratios.
- › Ca/Mg can range from 1:1 to 1:3
- › Unless indicated, K should be added only at a rate of 1-2 mEq / 250 mL base solution.
(Many exceptions, but this is a safe peripheral parenteral dose.)



Some considerations for IV additives:

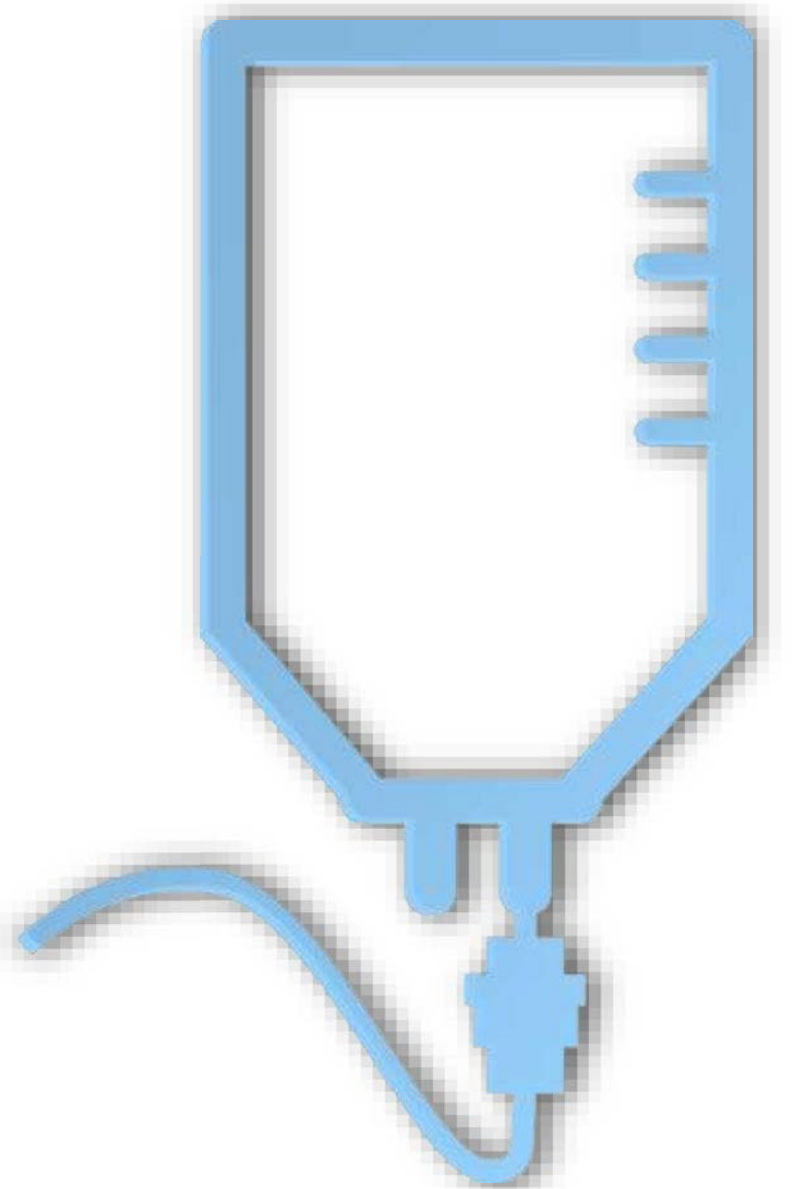
Inflammatory Bowel Diseases

- › Mixed amino acid formulas
- › Glutathione augmentation
- › Broad-based nutrients
- › Iron (where indicated)



Some considerations for IV additives:

- If the patient has never had a nutrient IV, then always start with a low-dose formula and watch for tolerance.
- If the solution is hyperosmolar and the patient cannot (or will not) orally hydrate, they may require 250-500 mL NS to hydrate them after an IV (to avoid dehydration side effects).
- Remember: Once it's in the vein, you can't take it back out!





PART 3

HOW DO I IMPLEMENT THIS MODALITY IN MY PRACTICE?

Logistics regarding the space and equipment required:

- This is very dependent on your practice and volume.
- Dedicated space is required during the IV block times.
- A small clean space is needed (most clinics do not need a full “cleanroom” – see next slide).
- If starting new, remember to buy small quantities of product to avoid waste.

How do I comply?

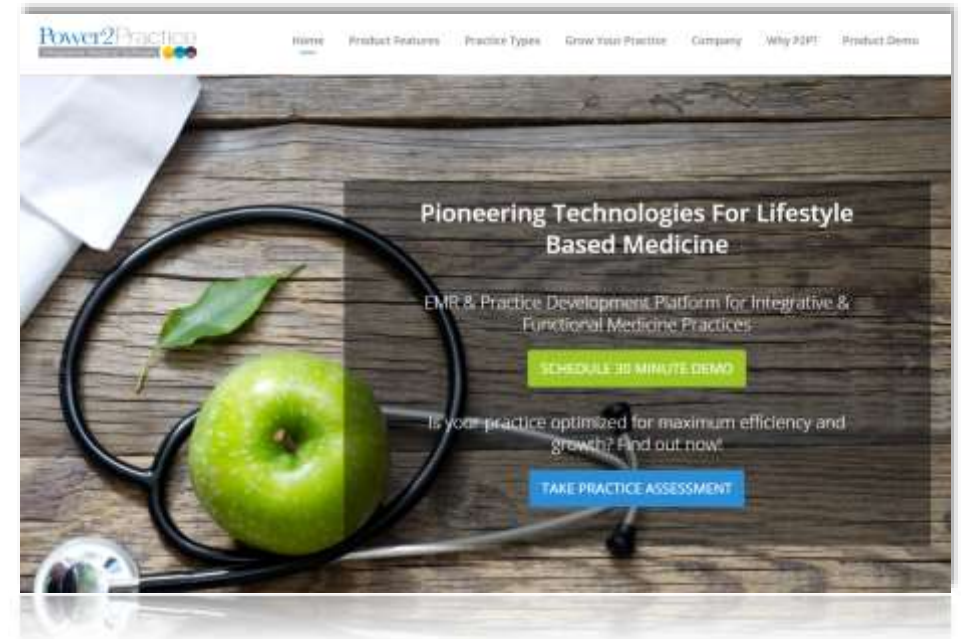
- The permutations of compliance with 797 / 503(a) are many and they cannot be answered quickly.
- The OANP has an excellent webinar (3 hours with Q&A) which they produced to answer as many of these issues as possible:



<https://www.consultdranderson.com/product/oanp-web-call/>

Formulas available in your EMR:

- In the Power2Practice platform you have access to customized “tried and true” formulas by myself and Dr. Mitch Ghen.
- These formulas are known to work well in most practice settings and be safe for patient use.
- Where appropriate, notes on lab requirements and cautions or contraindications are listed.



Basic Patient Management

- Procedure Alternative Risk Questions (PARQ) on every patient.
- Handouts work very well regarding: what to expect, what if my IV site bruises, should I eat or drink during the IV, hydration etc.
 - › Hydration (pre and post) prevents most headaches and other “odd feelings.”
 - › Having patients bring a snack to eat during the IV is wise.



Basic Patient Management

Give patients realistic information regarding time required and number of treatments until reassessment.

- › Aside from acute situations, most chronic conditions require multiple treatments before assessment.
- › On average, we normally try for 2 IVs a week for 4 weeks and 1 a week for 8 weeks, then reassess.
- › In a cancer patient, you may do 2 a week for 6-8 weeks.
- › In a healthier patient (nutrient + hydration in pregnancy, teenagers recovering from mono...) you may only need 1-2 a week for 2-4 weeks.



IV Training for Practitioners

Myself, Virginia Osborne and others provide 2- and 4-day IV trainings for clinicians. We have run these seminars for almost 20 years and have fundamentals level (with lab) and many specialty trainings available.

General website:

www.ivnutritionaltherapy.com

Seminars page (updates regularly):

http://ivnutritionaltherapy.com/?page_id=19



The screenshot shows the homepage of the International IV Nutritional Therapy website. The header features a logo with a globe and the text "International IV Nutritional Therapy Teaching IV Nutrition Worldwide". A navigation bar includes links for Home, Seminars, About Us, Sponsors, Patients, Publications, and Resources & Links. The main content area has a heading "Learn the Applications and Benefits of Intravenous Nutrient Therapy and Chelation Therapy: Amino Acids, Minerals, Vitamins, Botanical Extracts, Hydrogen Peroxide, DMSO, MSM, Phosphatidylcholine, Alpha Lipoic Acid, EDTA, DMPS." Below this, it states "Our seminars are designed for Naturopathic Doctors, Medical Doctors, Osteopathic Doctors, Registered Nurses, Medical Students and other medical professionals." and "For questions regarding CE and CME credits please [contact us](#)." There is a "Newsletter Signup" section with a form for Email, First Name, and Last Name, and a "Submit" button. To the right, there is a "Connect With Us" section with a "View our profile on facebook." button. Below that is a "Testimonials" section with a quote from a satisfied attendee and a "Read more" link. At the bottom right is the "McGUFF Company, Inc." logo.

Dr. Anderson has a CME site available at www.ConsultDrAnderson.com



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