

MARCH

2004

ADULT PARENTERAL NUTRITION ORDER FORM – EFFECTIVE MARCH 2004

This section explains that all new patients will have an initial consult by the Nutritional Support Services. The consult will address the nutritional needs and the appropriateness of Total Parenteral Nutrition [TPN] based on indications. Note that the Adult Parenteral Nutrition Orders are to be ordered and then received by the Pharmacy by 1300.

Most TPNs are given as a continuous infusion, thus only the Continuous Rate section is at the top of the form.

The **Standard TPN Formula** section is reformatted but contains the same information as the old form. Additional information includes the caloric content of both 1L and 2L. The calories are not an exact doubling because both 1L and 2L contains the same amount of fat emulsion. The only additions allowed in this section are for Famotidine or Insulin. If further modifications are needed, the Non-Standard TPN Formula section must be filled out.

Non-Standard TPN Formula section allows custom tailoring of the solution to the patients needs. The grams/liter of both Amino Acids and Dextrose and the volume of Fat Emulsion must be specified. Either a volume or the box NONE must be checked for Fats. The mEq or mM per liter of electrolytes must be written in. If none is desired, 0 [zero] should be entered. The ratio of Chloride to Acetate should be checked. Calculations are on the back of the form. The values will print on the TPN label. The volumes of the vitamins and trace elements must be listed. For those patients who either need additional trace elements or need to have one or more left out a special section is provided to order them individually. If a volume for the trace element additive is written in and a value for an individual trace element is listed, both will be added to the bag. Thus if an additional 5mg of Zinc is needed, enter 1mL for the trace element additive and 5 for Zinc.

The **Orders** section is new, and provides for the laboratory orders necessary to monitor a patient, start times, inadvertent stoppage, late orders, patient weights, etc. Any order that is not desired may be excluded by writing the order number in the blank in order 9 "Disregard order #: _".

The **Cyclic Schedule** section helps to calculate the total number of hours and the total volume to order to be included at the top of the form. To complete this section: 1.) Determine the total number of hours, subtract the starting and finishing hours [1 hr x 2], which leaves the In-between hours. 2.) Fill out the rest of the section by filling out the rates for the first hour, In-between hours, and the Last Hour. Multiply the hours x rates for each part, then add up the volumes to determine the Total Volume to be ordered.

| | | |
|---|--|--|
| THE UNIVERSITY OF KANSAS HOSPITAL <small>3901 Rainbow Blvd. Kansas City, Kansas 66160</small> | | <input checked="" type="checkbox"/> |
| ADULT PARENTERAL NUTRITION (PN) ORDERS Order by 1300 (DIRECTIONS / ADDITIONAL INFORMATION ON BACK) | | |
| NUTRITIONAL SUPPORT SERVICES(NSS) All new patients on PN will receive an initial consult [Pager 917-1870 or call 588-7681 or enter on SMS] Additional Services: <input type="checkbox"/> Management of Parenteral/Enteral Nutrition (NSS WILL Write Orders with Medical Director Oversight) <input type="checkbox"/> Patient Monitoring with Recommendations Only (NSS will NOT Write Orders) <input type="checkbox"/> No Further Services Requested | | |
| ADMINISTRATION BY CENTRAL LINE ONLY | | |
| Continuous Rate _____ mL/hour x 24 hrs = _____ mL/24 hours OR Cyclic Schedule <input type="checkbox"/> See Below | | |
| <input type="checkbox"/> Standard TPN Formula [no modifications or additions allowed except for famotidine or insulin in this box] Amino Acids 42.5 g/L Dextrose 150 g/L Fat Emulsion 20% 200mL/day (1080 kcal/L 1760 kcal/2L) Na – 51 mEq/L Mg – 5 mEq/L Phosphorus – 12 mM/L MVI 10mL/day Famotidine _____ mg/day K – 30 mEq/L Chloride:Acetate 3:1 Trace Elements 1mL/day Insulin [Regular] _____ units/day Ca – 4.5 mEq/L | | |
| <input type="checkbox"/> Non-Standard TPN Formula <small>[select concentrations of both Amino Acids and Dextrose, order the volume of Fat Emulsion, then order Electrolytes and other additives below]</small> | | |
| Amino Acids _____ g/L (4 kcal/g) | Dextrose _____ g/L (3.4 kcal/g) | Fat Emulsion 20% All-in-One Daily _____ mL <input type="checkbox"/> None (2 kcal/mL) |
| Additives | | |
| <small>Per Liter Additives</small> Sodium _____ mEq/L Potassium _____ mEq/L Calcium _____ mEq/L Magnesium _____ mEq/L Phosphorus _____ mM/L Chloride:Acetate _____ <input type="checkbox"/> All Chloride <input type="checkbox"/> 3:1 <input type="checkbox"/> 2:1 <input type="checkbox"/> 1:1 <input type="checkbox"/> 1:2 <input type="checkbox"/> 1:3 <input type="checkbox"/> All Acetate | <small>Daily Additives</small> Famotidine _____ mg/day Multivitamins Adult _____ mL/day Trace Elements Additive* _____ mL/day Ascorbic Acid _____ mg/day Insulin [Regular] _____ units/day Other _____ | <small>* Trace Elements Additive Contains in 1 mL = Zinc 5 mg, Copper 1 mg, Manganese 0.5 mg, Chromium 10 mcg, Selenium 60 mcg</small> |
| Trace Element Modifications [Used in special situations only. For routine Trace Elements see above] Zinc** _____ mg/day Copper** _____ mg/day Manganese** _____ mg/day Chromium** _____ mcg/day Selenium** _____ mcg/day <small>**Individual orders for components of Trace Elements will be in addition to any that are ordered as the Trace Elements Additive</small> | | |
| Orders: 1. TPN Catheters are to be used only for TPN infusions unless specifically ordered by the physician. 2. 24-hour infusions will begin at 2030. The previous solution should be removed at that time regardless of the amount remaining. 3. Cyclic infusions will be removed after the specified time period followed by appropriate catheter care. 4. If the TPN runs out early for any reason before next TPN is available or if the TPN is ordered after the cutoff time, infuse D10W at the rate ordered for the TPN. (Call Central Pharmacy if not in Pyxis.) 5. If the central line malfunctions, start peripheral line and infuse D10W at the rate ordered for the TPN. 6. Patient weights on Monday, Wednesday, and Friday. 7. Routine laboratory tests: (in some patients more frequent monitoring may be necessary, do not duplicate labs already ordered). a. Blood sugars; every six hours until infusion rate is unchanged for 36 hours (diabetic patients may require more frequent monitoring) b. Comprehensive Metabolic Panel, phosphorus, triglycerides, pre-albumin, magnesium in morning following TPN initiation, then every Monday and Thursday. c. Metabolic Panel on Tuesday, Wednesday, Friday, Saturday, and Sunday. 8. Metabolic cart analysis to be performed by Respiratory Therapist weekly on _____ 9. Disregard order #: _____ | | |
| Cyclic Schedule First Hour (1 hr) @ _____ mL/hr = _____ mL In-between _____ hrs @ _____ mL/hr = _____ mL Last Hour (1 hr) @ _____ mL/hr = _____ mL Total hours _____ hr Total Volume _____ mL/bag | | Special Instructions: _____ _____ |
| Date/Time: _____ | Patient: _____ | Physician: _____ Pager: _____ |
| ADULT PARENTERAL NUTRITION ORDERS | | |
| <small>Rev 01/2004</small> | | |

The **Directions** section covers general use of this form. Highlights include: Orders need to be written and sent to the Pharmacy by 1300. Orders received after this time will be processed with the next day's orders and hung at 2030 the following day. The standard hang time for TPNs will be 2030 [previously it was 2000]. Peripheral Parenteral Nutrition is discouraged, see #5. Other hints for using the form are included.

The **Vitamins and Composition of Amino Acid Solutions** list general information about these products. If additional information is needed, call the Pharmacy.

Suggested Monitoring Parameters section lists recommended parameters to follow. They are consistent with the order section on the front page.

Estimation of Chloride and Acetate Quantities when using a Ratio section. Absolute quantities of chloride per bag is no longer an option when ordering the TPN. A ratio is now to be used to balance the cations. This section may be used to estimate what those absolute numbers would be. For an existing bag, the absolute amounts per liter for both chloride and acetate are listed on the label. Referring to the existing bag may be easier than doing these calculations.

The **Estimated Adult Requirement** gives an estimate of the caloric needs of the patient. The ideal is to have a metabolic cart assessment to measure what the energy needs for the patient are when their individual stresses are taken into account. The metabolic cart can be ordered in the order section #8.

The **Nutrients and Other Caloric Sources** section lists the calories from a variety of sources.

Nutritional Support Resources lists a variety contact numbers for assistance.

| <p>DIRECTIONS:</p> <ol style="list-style-type: none"> 1. New or change orders must be received by 1300. Orders received after this time will be processed with the following day's orders and hung at the standard time that day. 2. If no change, please write continuation orders on regular physician's order sheet. 3. Solutions will be made up in a 24-hour bag. Standard TPN hang time is at 2030. 4. Indicate rate per hour, number of hours, and total volume or complete the Cyclic Schedule section. 5. Peripheral Parenteral Nutrition is usually not indicated in adults due to its inability to provide adequate nutrition and the hazards to the veins. 6. To use Standard TPN Formula, check the box. All additives are pre-selected and may NOT be changed. Fentanyl and Regular Insulin may be added if desired. 7. For non-standard formulations: <ol style="list-style-type: none"> a. Enter the grams/L of amino acids. Enter the grams/L of dextrose. Enter the daily volume in mL of Fat Emulsion 20%. b. Enter the mEq/L of each electrolyte. Enter 0 (zero) if none is desired. c. Check the box for the Chloride: Acetate ratio. d. Enter the amounts of daily additives needed. e. When entering individual components of Trace Elements, the amounts ordered will be in addition to any that are ordered as the Trace Elements Additive. | <p>VITAMINS Multivitamin Adult contains vitamins: fat soluble (A, D, E, K), water soluble (C, pyridoxine, thiamine, riboflavin, niacinamide, dexpantenol, biotin, folic acid, cyanocobalamin)</p> <p>COMPOSITION OF AMINO ACID SOLUTIONS Amino Acids 15% Amino Acids 150g/liter Nitrogen 0.158 g/g amino acid Acetate 0.85 mEq/g amino acid 1357mOsm/L</p> | | | | | | | | | | | | | | | | | | |
|--|--|--|------------|------------------|-----------|-----------|---------|------------------|----------|-------------|--|----------|-------|-----------------------|------------------|--|---|--|--|
| <p>ESTIMATED ADULT REQUIREMENT</p> <p>Basal Energy Expenditure x Activity Factor x Injury factor = Total Calories</p> <p>Use Harris-Benedict Equation to calculate Basal Energy Expenditure (BEE) Males: BEE = 66.47 + (13.75 x W) + (5.00 x H) - (6.76 x A) Females: BEE = 655.10 + (9.56 x W) + (1.85 x H) - (4.68 x A) W = weight in kg H = height in cm A = age in years</p> <p>25 kcal/kg/day with increased kcal in septic or trauma patients 0.8 g/kg/day - Normal protein RDA for adults 1.3-1.5 g/kg/day - Protein for Stressed patients with adequate renal function</p> | <p>SUGGESTED MONITORING PARAMETERS After baseline, then monitor the following:</p> <table border="1"> <thead> <tr> <th></th> <th>First week</th> <th>Subsequent Weeks</th> </tr> </thead> <tbody> <tr> <td>1. Weight</td> <td>3x/week</td> <td>3x/week</td> </tr> <tr> <td>2. Intake-Output</td> <td>daily</td> <td>daily</td> </tr> <tr> <td>3. Multistix</td> <td>2-4x dly</td> <td>daily</td> </tr> <tr> <td>4. Fingersick Glucose</td> <td>Q6H until stable</td> <td></td> </tr> <tr> <td>5. Labs: see Orders on front side of this order</td> <td></td> <td></td> </tr> </tbody> </table> | | First week | Subsequent Weeks | 1. Weight | 3x/week | 3x/week | 2. Intake-Output | daily | daily | 3. Multistix | 2-4x dly | daily | 4. Fingersick Glucose | Q6H until stable | | 5. Labs: see Orders on front side of this order | | |
| | First week | Subsequent Weeks | | | | | | | | | | | | | | | | | |
| 1. Weight | 3x/week | 3x/week | | | | | | | | | | | | | | | | | |
| 2. Intake-Output | daily | daily | | | | | | | | | | | | | | | | | |
| 3. Multistix | 2-4x dly | daily | | | | | | | | | | | | | | | | | |
| 4. Fingersick Glucose | Q6H until stable | | | | | | | | | | | | | | | | | | |
| 5. Labs: see Orders on front side of this order | | | | | | | | | | | | | | | | | | | |
| <p>NUTRIENTS and OTHER CALORIC SOURCES</p> <table border="1"> <tr> <td>Carbohydrate</td> <td>3.4 kcal/g Dextrose in parenteral solutions.</td> </tr> <tr> <td>Protein</td> <td>4 kcal/g</td> </tr> <tr> <td>Fat 20%</td> <td>2 kcal/mL</td> </tr> </table> <p>50 - 60% of kcal may be given as carbohydrate and s30% of total calories as fat.</p> <table border="1"> <tr> <td>D5W</td> <td>170 kcal/L</td> </tr> <tr> <td>Propofol</td> <td>1.1 kcal/mL</td> </tr> </table> | Carbohydrate | 3.4 kcal/g Dextrose in parenteral solutions. | Protein | 4 kcal/g | Fat 20% | 2 kcal/mL | D5W | 170 kcal/L | Propofol | 1.1 kcal/mL | <p>ESTIMATION OF CHLORIDE AND ACETATE QUANTITIES WHEN USING A RATIO Enter the values from front of order sheet: Sodium (Na) _____ mEq/L Phosphorus (PO4) _____ mEq/L Potassium (K) _____ mEq/L Chloride:Acetate (Cl:Ac) Ratio: _____</p> <ol style="list-style-type: none"> 1. Add up the Single Valence Anions: Na _____ mEq/L + K _____ mEq/L = _____ Total Cations 2. Convert PO4 mEq/L to Single Valence Anion Equivalent PO4 _____ mEq/L x 1.47 = _____ mEq/L Anion Equivalent 3. Calculate Net Available Cations Total Cations - Single Valence Anion Equivalent = _____ mEq/L - _____ mEq/L = _____ Available Cations 4. Convert Ratio to Fraction Add the Cl:Ac Ratio together to get Total Parts Cl Fraction: $\frac{Cl}{Cl+Ac}$ from Ratio = _____ Ac Fraction: $\frac{Ac}{Cl+Ac}$ from Ratio = _____ Total Parts _____ 5. Calculate approximate mEq/L of Chloride and Acetate Available Cations _____ mEq/L x Cl Fraction _____ = _____ mEq/L of Cl Available Cations _____ mEq/L x Ac Fraction _____ = _____ mEq/L of Ac | | | | | | | | |
| Carbohydrate | 3.4 kcal/g Dextrose in parenteral solutions. | | | | | | | | | | | | | | | | | | |
| Protein | 4 kcal/g | | | | | | | | | | | | | | | | | | |
| Fat 20% | 2 kcal/mL | | | | | | | | | | | | | | | | | | |
| D5W | 170 kcal/L | | | | | | | | | | | | | | | | | | |
| Propofol | 1.1 kcal/mL | | | | | | | | | | | | | | | | | | |
| <p>NUTRITIONAL SUPPORT RESOURCES 1. IV Team Ext:8-5394</p> | <p>EXAMPLE Enter the values from front of order sheet: Sodium (Na) 80 mEq/L Phosphorus (PO4) 12 mEq/L Potassium (K) 30 mEq/L Chloride:Acetate (Cl:Ac) Ratio: 2:1</p> <ol style="list-style-type: none"> 1. Add up the Single Valence Anions: Na 80 mEq/L + K 30 mEq/L = 110 Total Cations 2. Convert PO4 mEq/L to Single Valence Anion Equivalent PO4 12 mEq/L x 1.47 = 17.6 mEq/L Anion Equivalent 3. Calculate Net Available Cations Total Cations - Single Valence Anion Equivalent = Available Net Cations 110 mEq/L - 17.6 mEq/L = 92.4 Available Cations 4. Convert Ratio to Fraction Add the Cl:Ac Ratio together to get Total Parts (i.e. Cl:Ac 2:1 = 3) Cl Fraction: $\frac{Cl}{Cl+Ac}$ from Ratio = $\frac{2}{3}$ Ac Fraction: $\frac{Ac}{Cl+Ac}$ from Ratio = $\frac{1}{3}$ Total Parts 3 5. Calculate approximate mEq/L of Cl and Ac | | | | | | | | | | | | | | | | | | |

This form will be issued to the nursing units starting in early March with the exception of the Pediatric Unit. They will continue to use the old form until their newly redesigned form is completed.

PARENTERAL NUTRITIONAL ORDER CUT OFF TIME

The P&T Nutrition Support Subcommittee, P&T Committee, and Medical Executive Committee have approved a modification to the Department of Pharmacy policy related to the adult TPN "cut-off" time. The previous policy required a pharmacist to contact the prescribing physician to discuss whether an adult TPN order received after the 1300 "cut-off" time could wait until the next day. The modified policy states that any adult TPN orders received in the pharmacy after the 1300 "cut-off" time will be processed for administration on the subsequent day. For example, an order for a new or revised TPN received at 1800 on March 12th will be sent to the nursing unit to be administered at the standard hang time on March 13th.

The primary reason for this change is to enhance the safety of the TPN compounding process. Enforcing a "cut-off" time ensures that each TPN will be prepared by a technician and/or pharmacist who is competent at TPN preparation and has the time for this complicated process built into their workday. Medication preparation outside of standardized processes has been shown to be associated with greater risk of error.

Strict adherence to a TPN "cut-off" time is the standard of practice as determined by a recent survey of large, university-affiliated medical centers. Twenty-seven out of 35 respondents (77%) indicated that they 'rarely' or 'almost never' process TPN orders that arrive after their "cut-off" time. This policy will go into effect March 1, 2004.

FORMULARY ADDITIONS

Zonisamide (Zonegran®) 100 mg capsules

Zonisamide is indicated as adjunctive therapy in the treatment of partial seizures in adults with epilepsy. Zonisamide is an antiseizure medication chemically classified as a sulfonamide and is unrelated to other antiseizure agents. The precise mechanism(s) by which zonisamide exerts its antiseizure effect is unknown. Zonisamide may produce effects through action at sodium and calcium channels and does not appear to potentiate the synaptic activity of GABA. Additionally, significant weight loss has been seen as an adverse effect of zonisamide in short-term epilepsy trials; however, it is not currently marketed or indicated for this use.

DRUG AND FOOD INTERACTIONS

The manufacturer's prescribing information lists no food/drug interactions.

DOSAGE AND ADMINISTRATION

The recommended initial dose of zonisamide is 100 mg daily. After 2 weeks, the dose may be increased to 200 mg/day for at least 2 weeks. It can be further increased to 300 mg/day followed by 400 mg/day with the dose stable for at least 2 weeks to achieve steady state at each level. Zonisamide should be given once or twice daily, except for the daily dose of 100 mg at the initiation of therapy. Capsules should be swallowed whole.

Mivacurium (Mivacron®) 2 mg/mL – 5 mL, 10 mL, 20 mL, 50 mL vials

Mivacurium is a short-acting nondepolarizing neuromuscular blocking agent. Like other nondepolarizing drugs, mivacurium antagonizes acetylcholine by competitively binding to cholinergic sites on motor end-plates in skeletal muscle. This inhibits contractile activity in skeletal muscle, leading to muscle paralysis. This effect is reversible with cholinesterase inhibitors such as edrophonium, neostigmine, and physostigmine.

Maximal neuromuscular blockade occurs 2 to 6 minutes after intravenous injection of mivacurium in both adults and children. The time to onset of maximal block with mivacurium is dose-dependent; in adults, doses of 0.05 mg/kg produce maximum blockade in approximately 5 to 7 minutes, while increasing the dose to 0.15 mg/kg reduces the time to maximum block to approximately 2 to 3 minutes. The duration of action of mivacurium is approximately one-third to one-half that of vecuronium, and one-third that of atracurium. Its short duration of action may be desirable in brief surgical procedures or for continuous neuromuscular blockade where rapid recovery is desired.

DRUG AND FOOD INTERACTIONS

The manufacturer's prescribing information lists no food/drug interactions.

DOSAGE AND ADMINISTRATION

The recommended adult dose of mivacurium for facilitation of tracheal intubation is 0.15 mg/kg administered over 5 to 15 seconds.

Continuous infusion may be used to maintain neuromuscular blockade with an initial rate of 9 to 10 mcg/kg/min. On average an infusion rate of 6 to 7 mcg/kg/min will maintain neuromuscular block within the 89% to 99% range.

BCNU Wafers (Gliadel®)
7.7 mg wafer

BCNU wafer is indicated as an adjunct to surgery and radiation in newly diagnosed high-grade malignant glioma patients and in recurrent glioblastoma multiforme patients as an adjunct to surgery.

DRUG AND FOOD INTERACTIONS

The manufacturer's prescribing information lists no food/drug interactions.

DOSAGE AND ADMINISTRATION

It is recommended that 8 wafers be placed in the resection cavity if the size and shape of the cavity allows. Should the size and shape not accommodate 8 wafers, the maximum number of wafers allowed should be used. After placement of the wafers, the resection cavity should be irrigated and the dura closed in a water-tight fashion.

Risperidone Long-Acting Injection (Risperdal Consta®)
25 mg, 37.5 mg, 50 mg injection

Risperidone long-acting injection is indicated for the treatment of schizophrenia. The long-acting injectable formulation is an aqueous suspension that contains risperidone in a matrix of glycolic acid-lactate copolymer poly(d,l-lactide-co-glycolide). The risperidone is distributed homogeneously in 25 to 150 micrometer microspheres. After intramuscular administration, the copolymer is gradually hydrolyzed at the injection site resulting in release of risperidone over several weeks. A small amount of risperidone (3.5% or less) on the microsphere surface is released within 24 hours after administration, followed by a latent period of 3 weeks and the main release between 4 and 6 weeks. The copolymer is broken down to lactic and glycolic acids; the end-product of the copolymer hydrolysis is carbon dioxide and water.

DRUG AND FOOD INTERACTIONS

The manufacturer's prescribing information lists no food/drug interactions.

DOSAGE AND ADMINISTRATION

Risperidone injection should be administered every 2 weeks by deep intramuscular injection into the upper-outer quadrant of the gluteal area. Injections should alternate between the two buttocks. The recommended dose is 25 mg every 2 weeks. Some patients not responding to 25 mg may benefit from an increase in dose to 37.5 mg or 50 mg. The maximum dose should not exceed 50 mg every 2 weeks; higher doses were not associated with additional therapeutic benefit but were associated with an increased incidence of adverse effects. The interval between dosage increases should be at least 4 weeks. Oral risperidone must be continued for at least 3 weeks during the initial titration. Due to microspheres formulations, vials cannot be split in half (i.e. 12.5 mg from a 25 mg vial)

Guidelines for Use: Inpatients who meet one of the following criteria are eligible to receive risperidone long-acting injection: 1) Patients who are currently being maintained on risperidone long-acting injection as an outpatient or 2) A documented response to oral risperidone monotherapy and a documented history of noncompliance.

Product Preparation and Stability: Refrigeration of the long-acting injection product is required (unrefrigerated products have a stability of 7 days). Once reconstituted, risperidone long-acting injection must be used within 6 hours. Product should be resuspended prior to use if settling has occurred.

LEARN THE INGREDIENTS OF THE VITAMINS ADMINISTERED TO PATIENTS

Pediatric Vitamin Ingredients

| | ORAL LIQUID | Tri-Vitamin Infant Drops | Polyvitamin Infant Drops | Polyvitamin Infant Drops with Iron | Polyvitamin Drops with Fluoride | ADEKs Pediatric Drops | ORAL SOLID | Dixon's Children's Chewable Multivitamin | INJECTABLE | Infuvite Pediatric, Multiple Vitamins for Infusion |
|-----------------------|-------------------|--------------------------|--------------------------|------------------------------------|---------------------------------|-----------------------|------------|--|------------|--|
| | 1 mL (dropperful) | 1 mL (dropperful) | 1 mL (dropperful) | 1 mL (dropperful) | 1 mL (dropperful) | | 1 tablet | | | 5 mL |
| Vitamin A (I.U.) | 1,500 | 1,500 | 1,500 | 1,500 | 3,170 | | 2,500 | | | 2,300 |
| Vitamin B1 (mg) | | 0.5 | 0.5 | 0.5 | 0.5 | | 1.05 | | | 1.2 |
| Vitamin B2 (mg) | | 0.6 | 0.6 | 0.6 | 0.6 | | 1.2 | | | 1.4 |
| Vitamin B6 (mg) | | 0.4 | 0.4 | 0.4 | 0.6 | | 1.05 | | | 1 |
| Vitamin B12 (mcg) | | 2 | | 2 | 4 | | 4,500 | | | 1 |
| Vitamin C (mg) | 35 | 35 | 35 | 35 | 45 | | 60 | | | 80 |
| Vitamin D (I.U.) | 400 | 400 | 400 | 400 | 400 | | 400 | | | 400 |
| Vitamin E (I.U.) | | 5 | 5 | 5 | 40 | | 15 | | | 7 |
| Vitamin K (mcg) | | | | | 100 | | | | | 200 |
| Biotin (mcg) | | | | | 15 | | | | | 20 |
| Dexpanthenol (mg) | | | | | | | | | | 5 |
| Fluoride (mg) | | | | 0.25 | | | | | | |
| Folic Acid (mg) | | | | | | | 0.3 | | | 0.14 |
| Iron (mg) | | | 10 | | 6 | | | | | |
| Niacinamide (mg) | | 8 | 8 | 8 | 6 | | 13.5 | | | 17 |
| Pantothenic Acid (mg) | | | | | 3 | | | | | |
| Zinc (mg) | | | | | 5 | | | | | |

Adult Vitamin Ingredients

| | ORAL LIQUID | Thera-Plus Liquid | ORAL SOLID | Therapeutic Multivitamin | Stress Formula | NephPlex RX | ADEKs | Prenatal Z - New Advanced Formula | INJECTABLE | Infuvite Adult, Multiple Vitamins for Infusion |
|-----------------------|-------------|-------------------|------------|--------------------------|----------------|-------------|----------|-----------------------------------|------------|--|
| | 5 mL | | 1 capsule | 1 tablet | 1 tablet | 1 tablet | 1 tablet | 1 tablet | | 10 mL |
| Vitamin A (I.U.) | 5,000 | | 5,000 | | | | 9,000 | 3,000 | | 3,300 |
| Vitamin B1 (mg) | 10 | | 2.5 | 10 | 1.5 | 1.2 | 1.5 | | | 6 |
| Vitamin B2 (mg) | 10 | | 2.5 | 10 | 1.7 | 1.3 | 1.6 | | | 3.6 |
| Vitamin B6 (mg) | 4.1 | | 0.5 | 5 | 10 | 1.5 | 2.2 | | | 6 |
| Vitamin B12 (mcg) | 5 | | 2 | 12 | 6 | 12 | 2.2 | | | 5 |
| Vitamin C (mg) | 200 | | 50 | 500 | 60 | 60 | 70 | | | 200 |
| Vitamin D (I.U.) | 400 | | 400 | | | 400 | 400 | | | 200 |
| Vitamin E (I.U.) | | | 10 | 30 | | 150 | 10 | | | 10 |
| Vitamin K (mcg) | | | | | | 150 | | | | 150 |
| Calcium (mg) | | | 5 | 67 | | | 200 | | | |
| Biotin (mcg) | | | | 45 | 300 | 50 | | | | 60 |
| Dexpanthenol (mg) | | | | | | | | | | 15 |
| Folic Acid (mg) | | | | 0.4 | 1 | 0.2 | 1 | | | 0.6 |
| Iodine (mcg) | | | | | | | 175 | | | |
| Iron (mg) | | | | | | | 65 | | | |
| Magnesium (mg) | | | | | | | 100 | | | |
| Niacinamide (mg) | 100 | | 20 | 100 | 20 | 10 | 17 | | | 40 |
| Pantothenic Acid (mg) | 21.4 | | | 20 | 10 | 10 | | | | |
| Zinc (mg) | | | | | 12.5 | 7.5 | 15 | | | |

Formulary Additions and Deletions (July 1, 2003 - Present)

| Generic Name | Trade Name | Therapeutic Class | Action | Date | Comments |
|------------------------------------|-------------------------|--------------------------------|--------------|----------------|---------------------------------|
| Aprepitant | EMEND | Antiemetic | Added | 12/25/03 | See guidelines for use |
| Attapulgitte | Kaopectate | Antidiarrheal | Deleted | 7/16/03 | Removed from market |
| BCNU Wafers | Gliadel | Chemotherapeutic | Added | 2/26/04 | |
| Bivalirudin | Angiomax | Anticoagulant | Added | 11/27/03 | |
| Carbamazepine | Carbatrol | Anticonvulsant | Added | 9/9/03 | |
| Ciprofloxacin | Ciloxan | Topical Antibiotic | Deleted | 9/25/03 | Ophthalmic solution only |
| Clemastine | Tavist | Antihistamine | Deleted | 8/27/03 | |
| Clemastine/ Phenylpropanolamine | Tavist-D | Antihistamine/ Decongestant | Deleted | 8/27/03 | |
| Docusate/ Casanthranol | Peri-Colace | Stool Softener | Deleted | 12/16/03 | Discontinued by manufacturer |
| Ezetimibe | Zetia | Antilipemic | Added | 8/28/03 | |
| Flurandrenolide | Cordran | Corticosteroid | Deleted | 10/8/03 | Discontinued by manufacturer |
| Gemtuzumab Ozogamicin | Mylotarg | Antineoplastic | Added | 12/25/03 | |
| Guaifenesin/ Codeine | N/A | Expectorant | Added | 1/22/04 | |
| Lidocaine 5% | Lidoderm | Local Anesthetic | Added | 8/28/03 | |
| Mivacurium | Mivacron | Neuromuscular Blocker | Added | 2/26/04 | |
| Moxifloxacin | Vigamox | Topical Antibiotic | Added | 9/25/03 | Ophthalmic solution |
| Oxybutynin | Oxytrol | Urinary Antispasmodic | Added | 8/28/03 | |
| Risperidone Long-Acting | Risperdal Consta | Antipsychotic | Added | 2/26/04 | See guidelines for use |
| Zonisamide | Zonegran | Antiepileptic | Added | 2/26/04 | |