# Intravenous Therapy

## Intent

To advise Registrants of the requirements to perform Intravenous Therapy safely, ethically, and competently.

Administering substances by Intravenous Therapy is a component of the controlled act: "Administering a substance by injection or inhalation" *(Regulated Health Professions Act, 1991, S.O. 1991, CHAPTER 18, s. 27).*

Registrants are authorized to perform Intravenous Therapy under the *Naturopathy Act, 2007, S.O. 2007, CHAPTER 10, Sched. P, s. 4.1.*

## Definitions

Prescribed Substance: For the purposes of this standard, is anything referred to in Table 2 (Appendix I) of the *General Regulation*.

Intravenous Therapy: Initiating, administering, and terminating the application of prescribed substances for therapeutic benefit intravenously.

## STANDARD 1

*The Registrant who administers prescribed substances by intravenous injection within the context of their naturopathic practice has acquired and maintains the knowledge, skill and judgment necessary to perform the procedure safely, ethically, and competently.*

The Registrant demonstrates the standard by:

- meeting the College's requirements for administering the prescribed substances in Table 2 of the *General Regulation* by intravenous injection through successful completion of the College approved:
    - prescribing and therapeutics course and examination, and
    - IVIT course and examination.
- maintaining competency for performing the procedure by engaging in continuing education, incorporating administering prescribed substances by intravenous injection as a regular part of their practice,
- ensuring that they are appropriately trained and competent in relevant emergency procedures and have appropriate risk management processes in place to manage any adverse reactions or complications resulting from administering a prescribed substance by intravenous injection, and
- ensuring that IV procedures are only conducted in a premises that has been registered with the College, inspected and deemed to have met all of the safety requirements for the provision of IV.

## STANDARD 2

*The Registrant minimizes the risk to the patient, self and others that are associated with the administration of a prescribed substance by intravenous injection before, during and after the procedure.*

*The Registrant conducts an assessment and formulates a working diagnosis based on subjective and/or objective findings, prior to performing IV. The Registrant ensures appropriate administration of a prescribed substance by IV. The Registrant ensures timely reassessment of the patient's progress and response to treatment.*

A Registrant demonstrates the standard by:

- only administering prescribed substances by intravenous injection in accordance with the limitation listed on Table 2,
- only intravenously administering a prescribed substance within the context of a naturopathic doctor-patient relationship,
- considering the patient's condition, the risks and benefits and any other relevant circumstances specific to intravenously administering a prescribed substance,
- assessing the patient for contraindications to the intravenous administration of a prescribed substance,
- only performing intravenous administration of a prescribed substance on pediatric patients when they have the specific knowledge, skill, and judgment to do so,
- ensuring that necessary resources are available to manage potential adverse reactions to intravenous administration of a prescribed substance,
- obtaining and documenting informed consent for the course of treatment,
- complying with the *Standard of Practice for Compounding*, where applicable, when reconstituting, diluting, mixing, preparing, packaging or labeling two or more prescribed substances listed in Tables 2 and 5 (Appendix II) of the *General Regulation* for the purpose of intravenously administering a customized therapeutic product to a patient,
- applying current evidence-based infection control protocols to minimize risk factors for infection and/or contamination when administering a prescribed substance by IV,
- using safety-engineered needles when intravenously administering a prescribed substance,
- intravenously administering prescribed substance for a therapeutic purpose when it is clinically indicated,
- intravenously administering a prescribed substance at a dosage determined by the Registrant to be clinically effective and safe,
- administering an emergency prescribed substance listed in Table 2 of the *General Regulation* only when necessary and only to stabilize the patient until emergency personnel can attend to the patient, and
- ensuring documentation in the patient record in accordance with the *Standard of Practice for Record Keeping*.

## STANDARD 3

*The Registrant ensures that all equipment and supplies used for administering a prescribed substance by IV are stored safely and securely, and appropriately maintained.*

A Registrant demonstrates the standard by:

- ensuring that all IV supplies are current with regard to their expiry date,
- ensuring that all prescribed substances administered by injection that require refrigeration are stored in a dedicated refrigerator that only contains injectable prescribed substances and non-prescription substances,
- ensuring that all prescribed substances, syringes, administration sets, IV bags, etc. are stored appropriately according to the manufacturer's specifications when applicable,
- ensuring that all prescribed substances for IV are stored in a low traffic, controlled access location,
- ensuring that prescribed substances are labeled to indicate the date the seal was broken, and
- ensuring that expired or contaminated prescribed substances, and damaged or open materials are discarded appropriately.

## STANDARD 4

*The Registrant ensures that all required information is included with all prescribed substances that are administered by IV.*

A Registrant demonstrates the standard by:

- ensuring that the following information is included with all prescribed substances that are administered by IV. This information may be included on a label affixed to the iv bag, or where space is limited, information may be provided on an accompanying sheet:
    - Registrant's name, title, address and telephone number,
    - name of the person who compounded the IV bag, and the address and telephone number of the place where the bag was compounded, if different from above,
    - patient's name or an identification number,
    - name and strength of the prescribed substances or non-prescription substances, and any other ingredients used in the compounding, and manufacturer where applicable,
    - date the IV bag was prepared,
    - date the IV bag was administered to the patient,
    - amount or percentage of each of the prescribed substances, non-prescription substances, and any other ingredients used to make the compounded product, and the total quantity of the compounded product in the container,
    - expiration date of the IV bag,
    - directions for storage of the IV bag,
    - directions for the proper use of the IV bag, including dose, frequency, route of administration and any special instructions, and
    - any cautionary information about the prescribed substance or non-prescription substance.

## STANDARD 5

*The Registrant makes specific notations in the patient record regarding intravenous therapy.*

A Registrant demonstrates this standard by recording in the patient file:

- drip rate,
- name and strength of all prescribed substances/non-prescription substances administered,
- formula of the IV bag,
- dosage and frequency,
- date of administration,
- infusion site,
- catheter size,
- osmolarity,
- start time,
- end time,
- vital signs - blood pressure, heart rate, respiratory rate or pulse oximeter reading and temperature (when applicable); before, during and after treatment,
- monitoring of patient during IV in addition to vitals,
- how treatment was tolerated,
- any adverse reactions to the IV and follow up to reactions as needed, and
- post-treatment instructions for the patient (when applicable)

## APPENDIX 1

### TABLE 2
### PRESCRIBED SUBSTANCES THAT MAY BE ADMINISTERED BY INJECTION

| Substance | Route of Administration | Limitation |
|---|---|---|
| Acetylcysteine | Intravenous | Must be in combination with other amino acids. |
| Adenosine triphosphate | Intravenous | No limitation specified. |
| Alanine | Intravenous | Must be in combination with other amino acids. |
| Alpha Lipoic Acid | Intravenous | Maximum daily dose of 600 mg for racemic form or 300 mg for R form. |
| Arginine | Intravenous | Must be in combination with other amino acids. |
| Aspartic Acid | Intravenous | Must be in combination with other amino acids. |
| Atropine | Intravenous | Administered to a patient by the member in his or her office only in emergency circumstances. In an emergency, administer 0.5-1 mg q3-5 min. Dose must be 0.5 mg or higher but must not exceed 2 mg. |
| Biotin | Intravenous | No limitation specified. |
| Calcium Chloride | Intravenous | No limitation specified. |
| Calcium Gluconate | Intravenous | No limitation specified. |
| Calcium Glycerophosphate | Intravenous | No limitation specified. |
| Carbohydrates in sodium chloride solution | Intravenous | No limitation specified. |
| Chromium | Intravenous | No limitation specified. |
| Copper Sulfate | Intravenous | No limitation specified. |
| Cupric Chloride | Intravenous | No limitation specified. |
| Dextrose Injection | Intravenous | No limitation specified. |
| Diphenhydramine Hydrochloride | Intravenous, Intramuscular | Administered to a patient by the member in his or her office only in emergency circumstances with a maximum dose of 100 mg. |
| Epinephrine Hydrochloride | Intramuscular | Administered to a patient by the member in his or her office only in emergency |

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| | | circumstances with a maximum dose of 1.5 mg. |
| Ferrous Sulphate | Intramuscular | Must be administered by z-track only. |
| Folic Acid | Intravenous, Intramuscular | No limitation specified. |
| Glutamine | Intravenous | Must be in combination with other amino acids. |
| Glutamic Acid | Intravenous | Must be in combination with other amino acids. |
| Glycine | Intravenous | Must be in combination with other amino acids. |
| Glutathione | Intravenous, Intramuscular | No limitation specified. |
| Histidine | Intravenous | Must be in combination with other amino acids. |
| Hydrochloric Acid | Intravenous | In ratio of 1:1000 or 1:500. |
| Isoleucine | Intravenous | Must be in combination with other amino acids. |
| L-Tryptophan | Intravenous | No limitation specified. |
| Lactated Ringer's Solution | Intravenous | No limitation specified. |
| Leucine | Intravenous | Must be in combination with other amino acids. |
| Levocarnitine and its salts | Intravenous | No limitation specified. |
| Lysine | Intravenous | Must be in combination with other amino acids. |
| Magnesium Sulfate | Intravenous, Intramuscular | Must never be administered by the member for the treatment of eclampsia or pre-eclampsia. |
| Magnesium Chloride | Intravenous, Intramuscular | Must never be administered by the member for the treatment of eclampsia or pre-eclampsia. |
| Manganese | Intravenous | No limitation specified. |
| Methionine | Intravenous | Must be in combination with other amino acids. |
| Molybdenum | Intravenous | No limitation specified. |
| Ornithine | Intravenous | Must be in combination with other amino acids. |
| Phenylalanine | Intravenous | Must be in combination with other amino acids. |
| Potassium Chloride | Intravenous | In dosage form not more than 0.3 mEq/kg/hr. Must never |

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| | | be administered as a single agent or by intravenous push. |
| Potassium Phosphate | Intravenous | In dosage form not more than 0.3 mEq/kg/hr. Must never be administered as a single agent or by intravenous push. |
| Proline | Intravenous | Must be in combination with other amino acids. |
| Ringer's Solution (sodium, chloride, potassium and calcium) | Intravenous | No limitation specified. |
| Saline Solution | Intravenous, Intramuscular | No limitation specified. |
| Selenium | Intravenous | No limitation specified. |
| Serine | Intravenous | Must be in combination with other amino acids. |
| Sodium Bicarbonate | Intravenous | No limitation specified. |
| Sodium Iodide | Intravenous | Must be in combination with other minerals. |
| Sterile Water | Intravenous, Intramuscular | Must be in combination with other substances. |
| Strontium and its salts | Intravenous | No limitation specified. |
| Taurine | Intravenous | No limitation specified. |
| Threonine | Intravenous | Must be in combination with other amino acids. |
| Tyrosine (L-tyrosine) | Intravenous | Must be in combination with other amino acids. |
| Vanadium | Intravenous | Must be in combination with other minerals. |
| Viscum Album | Intravenous, Subcutaneous | No limitation specified. |
| Vitamin A | Intravenous | Maximum daily dose of 10,000 International Units. |
| Vitamin B1 | Intravenous, Intramuscular | No limitation specified. |
| Vitamin B2 | Intravenous, Intramuscular | No limitation specified. |
| Vitamin B3 | Intravenous, Intramuscular | No limitation specified. |
| Vitamin B5 | Intravenous, Intramuscular | No limitation specified. |
| Vitamin B6 | Intravenous, Intramuscular, Subcutaneous | No limitation specified. |
| Vitamin B12 | Intravenous, Intramuscular | No limitation specified. |
| Vitamin C | Intravenous | Must administer no more than 15 g per day when patient's G6PD is deficient. |
| Vitamin D | Intravenous, Intramuscular | No limitation specified. |

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| Vitamin E | Intravenous | No limitation specified. |
| Vitamin K1 | Intramuscular | No limitation specified. |
| Zinc Chloride | Intravenous | No limitation specified. |
| Zinc Sulphate | Intravenous | No limitation specified. |

## APPENDIX II

### TABLE 5
### DRUGS THAT MAY BE COMPOUNDED

| Drug | Limitations, routes of administration, dosages. |
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| Adenosine triphosphate | Only if compounded for intravenous injection. |
| Colchicine | Must not be compounded unless the drug is botanical colchicine compounded from the corm of colchicum autumnale. |
| Dextrose Injection | Only if compounded when in concentrated solution for intravenous injection. |
| Digitalis Purpurea and its glycosides | Only if compounded in conjunction with monitoring of the patient's serum levels by the member. |
| Estrogen (bioidentical) | Only if compounded in topical or suppository form. |
| Folic Acid | Only if compounded in oral dosage containing more than 1.0 mg of folic acid per dosage or, where the largest daily dosage would, if consumed by a patient, result in the daily intake by that patient of more than 1.0 mg of folic acid. |
| L-Tryptophan | Only if compounded for patient's use in oral dosage form at a concentration of more than 220 mg per dosage unit or per daily dose. Recommended daily dose must not exceed 12g and must be provided in 3 to 4 equally divided doses.<br>May also be compounded as a single ingredient intended for intravenous injection. |
| Levocarnitine and its Salts | Only if compounded for the treatment of primary or secondary levocarnitine deficiency. |
| Pancreatin | Only if compounded in a dosage that provides more than 20,000 USP units of lipase activity per dosage unit or for the treatment of pancreatic exocrine insufficiency. |
| Pancrelipase | Only if compounded in a dosage that provides more than 20,000 USP units of lipase activity per dosage unit or for the treatment of pancreatic exocrine insufficiency. |
| Pilocarpine and its salts | Must not be compounded unless, 1. the drug is botanical pilocarpine, compounded from the leaves of pilocarpus microphyllus, 2. the member monitors his or her patient's serum levels during treatment with the drug and, 3. the drug is never compounded to treat a patient with glaucoma. |

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| Podophyllotoxin | Must not be compounded unless, 1. the drug is botanical podophyllotoxin, compounded from podophyllum peltatum and, 2. the drug is never compounded to treat a patient with rheumatoid arthritis. |
| Progesterone (bioidentical ) | Only if compounded in topical or suppository form. |
| Rauwolfia | No limitation, etc., specified. |
| Thyroid | No limitation, etc., specified. |
| Vitamin A | Only if compounded in oral dosage containing more than 10,000 International Units of Vitamin A per dosage or, where the largest daily dosage would, if consumed by a patient, result in the daily intake by that patient of more than 10,000 International Units of Vitamin A. |
| Vitamin D | Only if compounded in oral dosage form containing more than 2,500 International Units of Vitamin D per dosage form or where the largest recommended daily dosage shown on the label would result in the daily intake by that patient of more than 2,500 International Units of Vitamin D. |
| Vitamin K1 | Only if compounded in oral dosage where the maximum daily dose is more than 0.120 mg. |
| Vitamin K2 | Only if compounded in oral dosage where the maximum daily dose is more than 0.120 mg. |
| Yohimbine and its salts | Must not be compounded unless the drug is botanical yohimbine, compounded from the bark of pausinystalia yohimbine. |