Home Immunoglobulin 2023

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LEARNING GOALS

By the end of this module, nurse learners will be able to:

- Apply knowledge of Immunoglobulin therapy to daily nursing practice including indications, considerations, risks, side effects, storage and handling.
- Identify appropriate NurseLink resources (nurse education, patient education, annual updates, infusion and enteral videos, infusion and enteral teaching guides, pump administration brochure, FAQs, administration of emergency medications video, policies and procedures),for home infusion patients to promote effective learning to safely administer home infusion therapy.
- Apply best practice in administration IV and SC Immunoglobulins.

Access to Nurse Link

To login, follow the link below and click "*Login to Nurse Link*."

https://carepathrxllc.com/nurselink-welcome/

Password: email nursingsupport@homeinfusion.com

Be sure to bookmark this URL and save your password for future use.

NL Patient Site:
https://carepathrxllc.com/nurselink-patient/

Patient teaching Videos	Patient Written Instructions	Nursing P & P	Links to RN virtual training	Nurse Videos	Home Infusion Society links	CarepathRX in the News

CarepathRx On Call

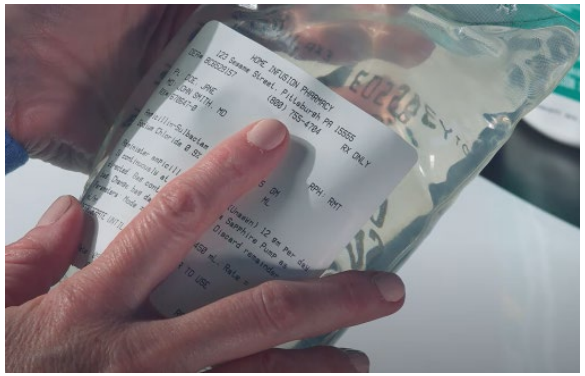
24 / 7 Access to the Clinical Pharmacy team

For after-hours, weekend and holiday support, troubleshooting, and delivery needs:

- CarepathRx Pharmacist
- Local pharmacy support varies by pharmacy.
- Dietitians

  1-877-ENTERAL
- Nurses
- Delivery

Contact the pharmacy by calling the phone number at the top of the medication label.



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Therapy Education

- Remind patients pumps must be returned to your pharmacy when therapy is completed.
  - Pumps are not disposable
- Supply reordering
  - Patients must speak to a pharmacy assistant to reorder supplies and schedule delivery
- Will need for re-deliveries:
  - List of supplies, medications and formula needed.
  - Complete inventory of supplies, medications and formula in the home.
  - Patient's response to therapy.
  - Script for order changes & when next doctor appointment is.

Pharmacy Remote Patient Monitoring

Before each delivery the pharmacist, or pharmacy representative, will assess patient standard assessment questions.

1. Is the infusion being infused safely and with appropriate technique?
2. Is the patient experiencing side effects?
3. Is the patient experiencing ware-off effects?
4. Obtain an accurate inventory of medication and supplies in the home (and what is needed).

The pharmacist may delivery multiple does in the same delivery, depending on dosing schedule.

Side effects and wear-off symptoms will be reported to the physician with order change suggestion.

These types of communication may in some cases delay your delivery.

Delivery Slip

- Review to make sure all items have been delivered
- Use to communicate to patient which supplies require reordering during pre-delivery phone call with the pharmacy.

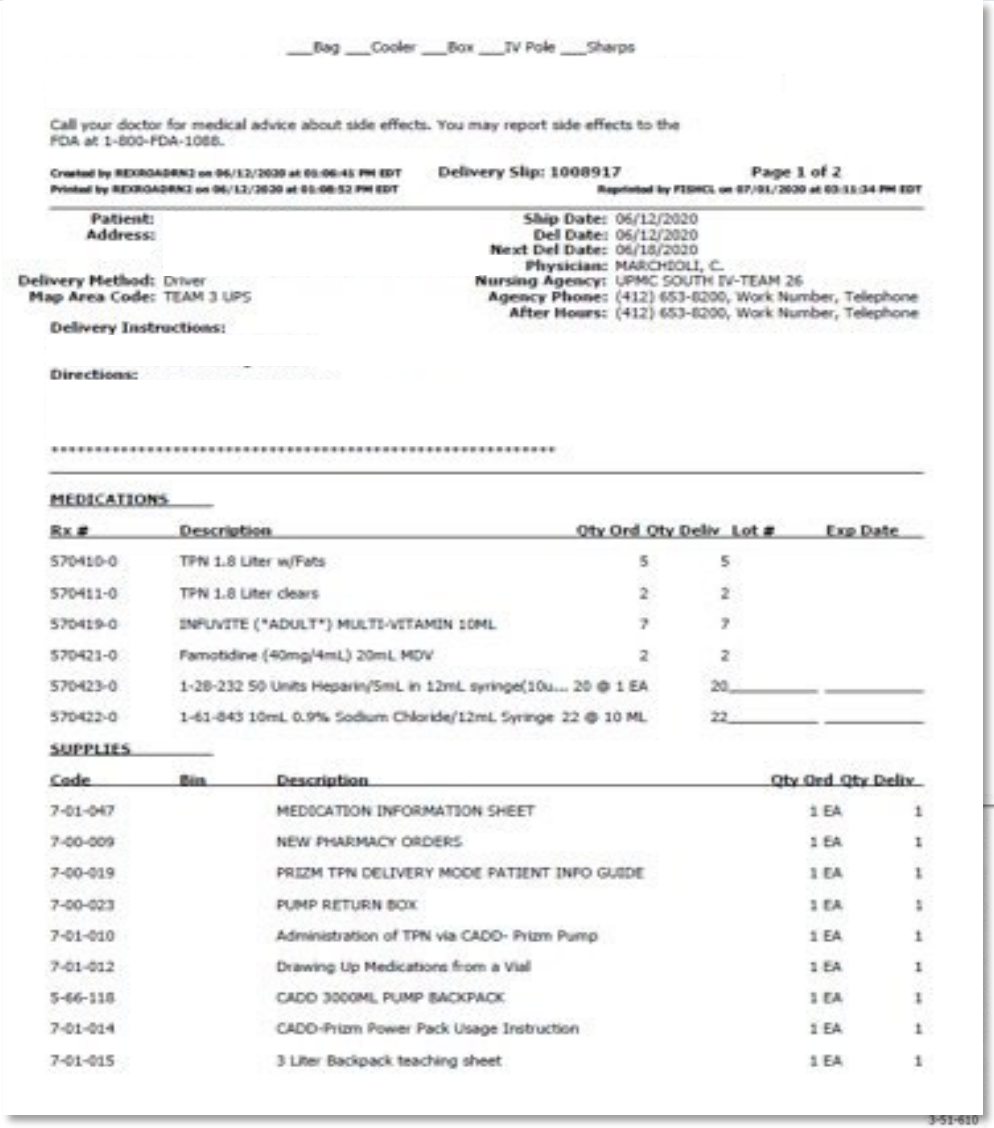
Pharmacy information

Patient information

Medications and flushes

Supply items

DME items



___Bag ___Cooler ___Box ___IV Pole ___Sharps

Call your doctor for medical advice about side effects. You may report side effects to the FDA at 1-800-FDA-1088.

Created by REXROADRN2 on 06/12/2020 at 01:06:41 PM EDT
Printed by REXROADRN2 on 06/12/2020 at 01:08:52 PM EDT

Delivery Slip: 1008917 Page 1 of 2

Reprinted by FISHCL on 07/01/2020 at 03:11:34 PM EDT

Patient:
Address:

Ship Date: 06/12/2020
Del Date: 06/12/2020
Next Del Date: 06/18/2020
Physician: MARCHIOLI, C.
Nursing Agency: UPMC SOUTH IV-TEAM 26
Agency Phone: (412) 653-8200, Work Number, Telephone
After Hours: (412) 653-8200, Work Number, Telephone

Delivery Method: Driver
Map Area Code: TEAM 3 UPS

Delivery Instructions:

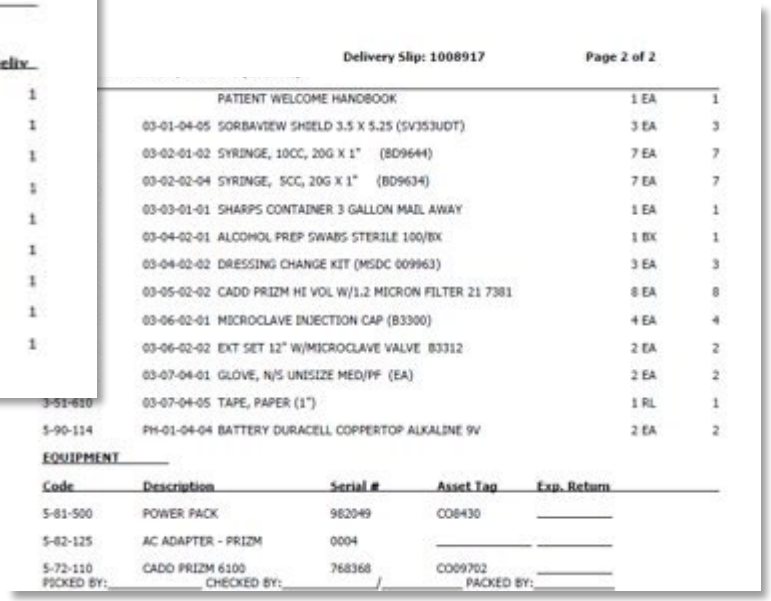
Directions:

MEDICATIONS

Rx #	Description	Qty Ord	Qty Deliv	Lot #	Exp Date
570410-0	TPN 1.8 Liter w/Fats	5	5		
570411-0	TPN 1.8 Liter clears	2	2		
570419-0	INFUVITE (*ADULT*) MULTI-VITAMIN 10ML	7	7		
570421-0	Famotidine (40mg/4mL) 20mL MDV	2	2		
570423-0	1-28-232 50 Units Heparin/5mL in 12mL syringe(10u...	20 @ 1 EA	20		
570422-0	1-61-843 10mL 0.9% Sodium Chloride/12mL Syringe	22 @ 10 ML	22		

SUPPLIES

Code	Bin	Description	Qty Ord	Qty Deliv
7-01-047		MEDICATION INFORMATION SHEET	1 EA	1
7-00-009		NEW PHARMACY ORDERS	1 EA	1
7-00-019		PRIZM TPN DELIVERY MODE PATIENT INFO GUIDE	1 EA	1
7-00-023		PUMP RETURN BOX	1 EA	1
7-01-010		Administration of TPN via CADD- Prizm Pump	1 EA	1
7-01-012		Drawing Up Medications from a Vial	1 EA	1
5-66-118		CADD 3000ML PUMP BACKPACK	1 EA	1
7-01-014		CADD-Prizm Power Pack Usage Instruction	1 EA	1
7-01-015		3 Liter Backpack teaching sheet	1 EA	1



Delivery Slip: 1008917 **Page 2 of 2**

	PATIENT WELCOME HANDBOOK	1 EA	1
03-01-04-05	SORBAVIEW SHIELD 3.5 X 5.25 (SV353UDT)	3 EA	3
03-02-01-02	SYRINGE, 10CC, 20G X 1" (BD9644)	7 EA	7
03-02-02-04	SYRINGE, 5CC, 20G X 1" (BD9634)	7 EA	7
03-03-01-01	SHARPS CONTAINER 3 GALLON MAIL AWAY	1 EA	1
03-04-02-01	ALCOHOL PREP SWABS STERILE 100/BX	1 BX	1
03-04-02-02	DRESSING CHANGE KIT (MSDC 009963)	3 EA	3
03-05-02-02	CADD PRIZM HI VOL W/1.2 MICRON FILTER 21 7381	8 EA	8
03-06-02-01	MICROCLAVE INJECTION CAP (B3300)	4 EA	4
03-06-02-02	EXT SET 12" W/MICROCLAVE VALVE B3312	2 EA	2
03-07-04-01	GLOVE, N/S UNISIZE MED/PF (EA)	2 EA	2
3-51-610	03-07-04-05 TAPE, PAPER (1")	1 RL	1
5-90-114	PH-01-04-04 BATTERY DURACELL COPPERTOP ALKALINE 9V	2 EA	2

EQUIPMENT

Code	Description	Serial #	Asset Tag	Exp. Return
5-81-500	POWER PACK	982049	CO8430	
5-82-125	AC ADAPTER - PRIZM	0004		
5-72-110	CADD PRIZM 6100	768368	CO09702	

PICKED BY: _____ CHECKED BY: _____ / _____ PACKED BY: _____

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Pump Returns

CAREPATHRX WILL CONTACT THE PATIENT & ARRANGE PUMP PICK UP BY UPS.

- The pharmacy will print an UPS shipping label when pick up is arranged.
- The patient does not need to be home for the UPS driver to pick up the box.
- There is no fee to the patient for this service.

Nurses are NOT to remove pumps from patients' homes.

(exceptions may apply)

Contact Carepathrx for equipment return.

What is Immunoglobulin?

Immunoglobulin (Ig) is

- Derived from the plasma of screened, paid, and volunteer donors.
    - Plasma from thousands of donors are combined and used to manufacture each batch of an Ig product (from 1,000 – 60,000 donors per batch)
    - The FDA now requires at least two independent and complementary viral reduction steps for all Ig products
- A component of the blood that is responsible for transporting nutrients, hormones, and proteins throughout the body.
- Different types of Ig molecules play different roles within the immune system. The body depends on these molecules to act as antibodies to fight against foreign substances (also known as antigens).
- The primary component of Ig products is immunoglobulin G (IgG).

Ig therapy is used for replacement therapy in immunodeficiency diseases and for immunomodulatory effects in autoimmune and inflammatory disorders.

Immunoglobulin Indications

Primary Immunodeficiency (PID)

Secondary Immunodeficiency (SID)

- Inborn Errors of immunity affecting antibodies.
- Chronic lymphocytic leukemia (CLL)
- Reduced immune function after stem cell transplant

Chronic inflammatory demyelinating polyneuropathy (CIDP)

Myasthenia gravis

Gillian-Barre syndrome

Immune thrombocytopenia (ITP)

Autoimmune-hemolytic-anemia (AIHA)

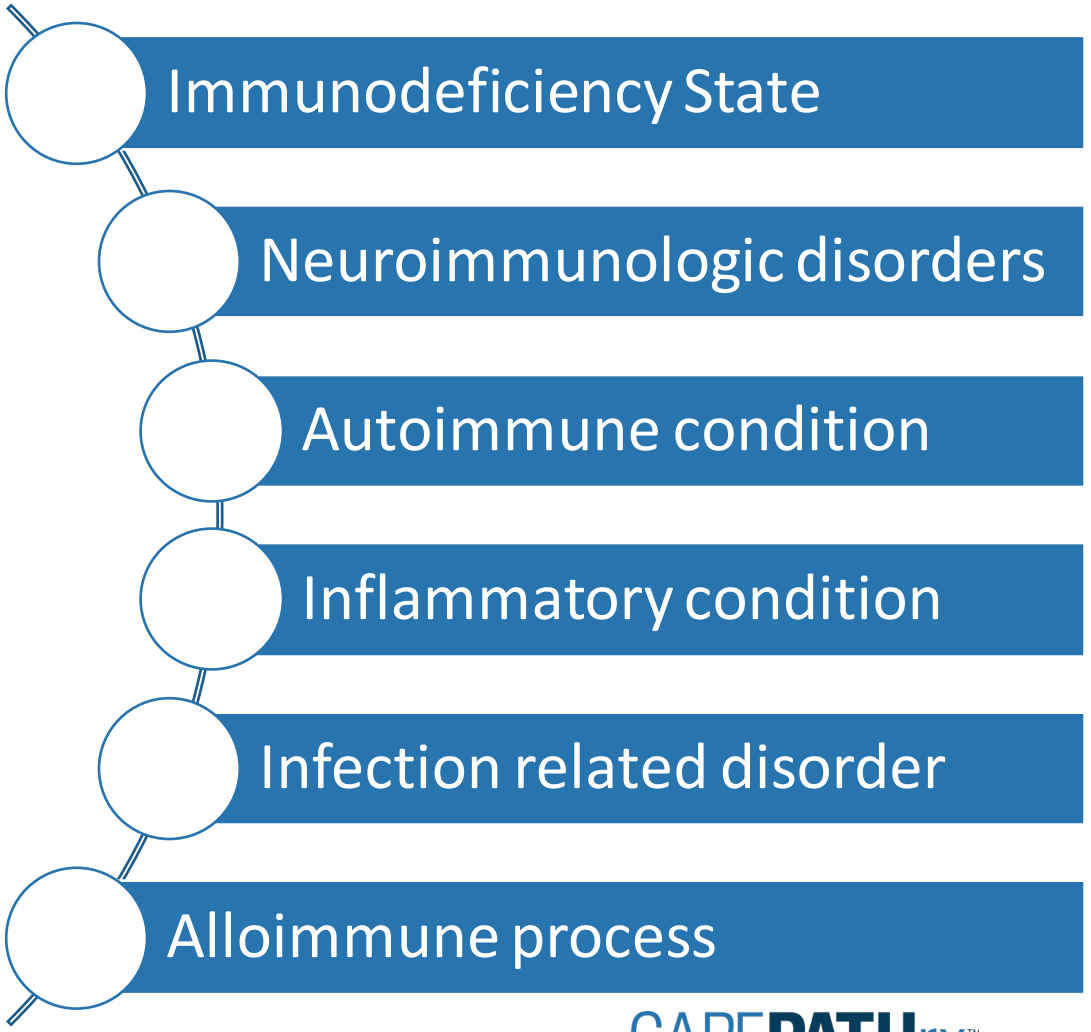
Kawasaki-disease

Toxic shock syndrome

Measles postexposure prophylaxis

Hemolytic disease of the fetus & newborn (HDFN)

Antibody mediated organ transplant rejection



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Primary Immunodeficiency Disorders (PID)

Primary immunodeficiency disorders — also called primary immune disorders or primary immunodeficiency — weaken the immune system, allowing infections and other health problems to occur more easily.

Many people with primary immunodeficiency are born missing some of the body's immune defenses or with the immune system not working properly, which leaves them more susceptible to germs that can cause infections

Researchers have identified more than 300 forms of primary immunodeficiency disorders.

Signs

One of the most common signs of primary immunodeficiency is having infections that are more frequent, longer lasting or harder to treat than are the infections of someone with a typical immune system. You may also get infections that a person with a healthy immune system likely wouldn't get (opportunistic infections).

Signs and symptoms of primary immunodeficiency can include:

- Frequent and recurrent pneumonia, bronchitis, sinus infections, ear infections, meningitis or skin infections
- Inflammation and infection of internal organs
- Blood disorders, such as low platelet count or anemia
- Digestive problems, such as cramping, loss of appetite, nausea and diarrhea
- Delayed growth and development
- Autoimmune disorders, such as lupus, rheumatoid arthritis or type 1 diabetes

Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)

Chronic inflammatory demyelinating polyneuropathy (**CIDP**) is an acquired autoimmune disease of the peripheral nervous system characterized by progressive weakness and impaired sensory function in the legs and arms. It involves the nerve roots and is considered an autoimmune disorder destroying myelin, the protective covering of the nerves.

Symptoms

- Typical early symptoms are "tingling" (sort of electrified vibration or paresthesia) or numbness in the extremities, difficulty walking
- Frequent (night) leg cramps
- Loss of reflexes (in knees)
- Muscle fasciculations
- “Vibration" feelings
- Loss of balance
- General muscle cramping
- Nerve pain or burning pain in extremities
- Diminished or absent deep-tendon reflexes
- Muscle weakness

IVIG and SCIG Preparations Approved for Use in the United States

Product	Route	Manufacturer	Indications
Asceniv 10%	IV	ADMA Biologics, Inc.	Primary humoral immunodeficiency
Flebogamma DIF 5%, 10%	IV	Grifols	Primary humoral immunodeficiency
Gammagard S/D 5%, 10% (once reconstituted)	IV	Takeda	Primary humoral immunodeficiency B-cell chronic lymphocytic leukemia Immune thrombocytopenic purpura Kawasaki syndrome
Gammaplex 5%, 10%	IV	Bio Products Laboratory	Primary humoral immunodeficiency Chronic Immune thrombocytopenic purpura
Octagam 5%, 10%	IV	Octapharma Pharmazeutika Octapharma USA	Primary humoral immunodeficiency (5%) Chronic immune thrombocytopenic purpura (10%)
Panzyga 10%	IV	Octapharma Pharmazeutika Octapharma USA	Primary humoral immunodeficiency Chronic Immune thrombocytopenia
Privigen 10%	IV	CSL Behring	Primary humoral immunodeficiency Chronic immune thrombocytopenic purpura Chronic inflammatory demyelinating polyneuropathy

Different brands of IgG are NOT interchangeable due to their unique formulations.
The patient can only receive the ordered brand of immunoglobulin.
Other brands may cause side effects or not be indicated for the patient's disease process.

Product	Route	Manufacturer	Indications
Cutaquig 16.5%	SC	Octapharma Pharmazeutika Octapharma USA	Primary humoral immunodeficiency
Cuvitru 20%	SC	Takeda	Primary humoral immunodeficiency
Hizentra 20%	SC	CSL Behring	Primary humoral immunodeficiency Chronic inflammatory demyelinating polyneuropathy
HyQvia 10%	SC	Takeda	Primary humoral immunodeficiency
Xembify	SC	Grifols	Primary humoral immunodeficiency

Product	Route	Manufacturer	Indications
Gammagard Liquid 10%	IV/SC	Takeda	Primary humoral immunodeficiency (IV/SC) Multifocal motor neuropathy (IV)
Gammaked 10%	IV/SC	Kedrion Biopharma	Primary humoral immunodeficiency (IV/SC) Idiopathic thrombocytopenic purpura (IV) Chronic inflammatory demyelinating polyneuropathy (IV)
Gamunex-C 10%	IV/SC	Grifols	Primary humoral immunodeficiency (IV/SC) Idiopathic thrombocytopenic purpura (IV) Chronic inflammatory demyelinating polyneuropathy (IV)

IG PRODUCT CONSIDERATIONS

GENERAL CONSIDERATIONS

Patient risk factors such as renal impairment, reduced cardiac and pulmonary function, history of clotting, fluid restriction, and even blood type need to be evaluated to determine the Ig product(s) that may be safely used in individual patients.

VOLUME

IVIG brands are available as 5% and/or 10% solutions.

One brand is currently available as a lyophilized powder and can be reconstituted to a 5% or 10% solution using sterile water. The additional volume of a 5% solution compared to a 10% may or may not be desirable. The extra volume could be beneficial in those patients who do not orally hydrate sufficiently and could help minimize adverse drug reactions(ADRs). Conversely, the extra volume could worsen underlying clinical conditions such as congestive heart failure, hypertension, and renal dysfunction, and it could take longer to infuse.

IG PRODUCT CONSIDERATIONS (CONTINUED)

SCIG products are available as 10% and 20% solutions. The administered volume of a 10% solution is twice that of a 20% solution, and while it may be better tolerated in some patients, the greater volume necessitates more SC infusion sites or more frequent administration. Rate of infusion and volume per site varies among SCIG products, and patient tolerability should always be taken into consideration.

DIABETIC CONSIDERATIONS

Stabilizers are used in the purification process of viral inactivation of Ig to avoid the formation of Ig aggregates. Stabilizers used include sugars (eg, sucrose, maltose, and glucose) and polyols (eg, sorbitol).

Ig products containing glucose should be avoided in diabetic patients when feasible, as they can potentially raise serum glucose levels. Additionally, products containing maltose as a stabilizer should be used carefully in diabetic patients.

Some blood glucose monitoring systems (BGMSs),lack specificity for detecting glucose and may detect maltose, galactose and xylose as glucose giving a falsely elevated glucose level which could lead to the administration of insulin, resulting in hypoglycemia

IG PRODUCT CONSIDERATIONS (CONTINUED)

HYDRATION

Hydration, administered either orally or intravenously, is commonly employed in patients (if the additional fluid is not contraindicated), as it can help reduce many common mild or moderate ADRs. For oral hydration, 1 to 2 L in the 23 hours prior to infusing, as well as additional hydration during the infusion, are recommended. Post infusion oral hydration is also recommended. For intravenous hydration, 5% dextrose (D5W) or 0.9% sodium chloride (NS) is most commonly administered prior to and/or during the infusion of IVIG. Some brands of IVIG are not compatible with certain IV fluids, in which case those fluids should not be administered concurrently with Ig products through the same IV line. Additionally, if IV hydration with an incompatible solution is given prior to an IVIG infusion, the line should be flushed with a compatible solution prior to administering IVIG.

IgA CONTENT

IVIG products contain IgA in varying amounts.

Rare but severe anaphylactic reactions to Ig products were most likely to occur in patients who were severely deficient in IgA (< 1.2 mg/dL) and had anti-IgA antibodies of the IgE type.

IG PRODUCT CONSIDERATIONS (CONTINUED)

OSMOLALITY/OSMOLARITY

Normal blood osmolality ranges between 275 and 295 mOsm/kg. Hypo- and hyperosmolar IVIG products may be associated with hemodynamic changes and an increased risk of vein irritation. Additionally, hyperosmolar IVIG products could increase ADRs such as thromboembolic events and aseptic meningitis and are of concern in patients with a history of renal dysfunction, elevated blood pressure, or heart failure.

RECOMBINANT HUMAN HYALURONIDASE

IGHy uses recombinant human hyaluronidase to transiently increase the permeability of the SC tissue, allowing up to 600 mL of the Ig (10% solution) to be administered per infusion site. If IGHy is being utilized, it is important that the recombinant human hyaluronidase be administered first and the Ig product be started within approximately 10 minutes.

Immunoglobulin Side Effects

- Headache
- Fever
- Fatigue
- Chills
- Flushing
- Dizziness
- Hives
- Wheezing
- Myalgias and arthralgias
- Chest tightness
- Nausea
- Vomiting
- Rigors
- Back pain
- Chest pain
- Muscle cramps
- Changes in blood pressure
- Urticaria, pruritus, rash

Most Common Infusion Site Reactions:

infusion site erythema (redness), infusion site pain, infusion site swelling (puffiness), infusion site bruising, infusion site nodule, infusion site pruritus (itching), infusion site induration (firmness), infusion site scab, infusion site edema

Side Effect Prevention

Slowing or stopping the infusion
- Symptoms resolve quickly
- Restarting at a lower rate after symptoms have resolved

Pre-medications administered 30 to 60 minutes prior to infusion

Hydration
- IV & PO

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RISKS ASSOCIATED WITH Ig THERAPY

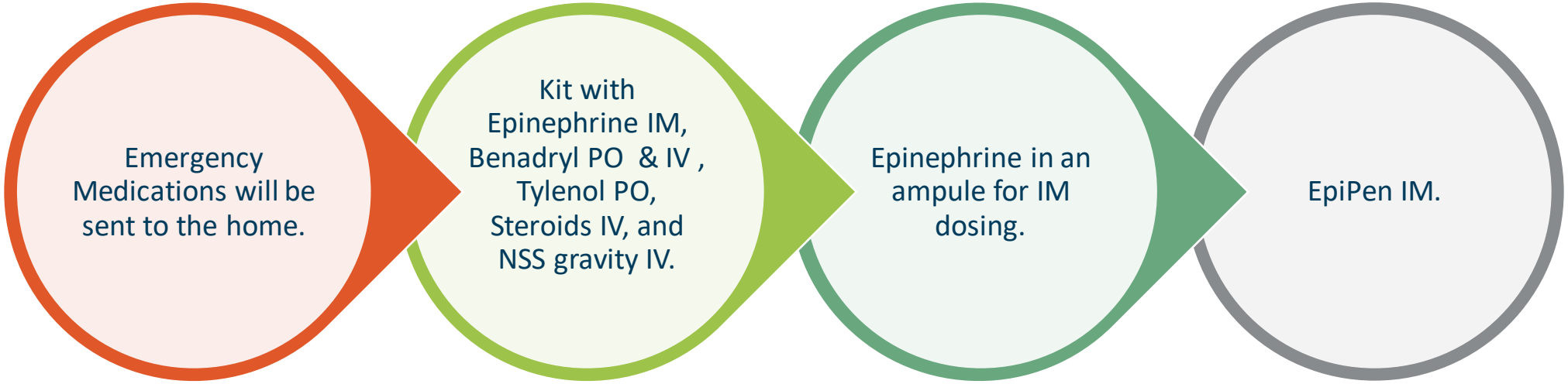
- Risk of Renal Dysfunction and Acute Renal Failure
- Risk of Thromboembolic Events
- Risk of Anaphylaxis—IgA Content
- Risk of Viral Transmission (very low risk)
- Systemic Reactions
- Anaphylactic Reactions
- Headache and/or Hypotension/Hypertension During the Infusion
- Hemolysis/Hemolytic Anemia

Intolerance & Hypersensitivity Reactions

Hypersensitivity and anaphylactic reactions are rare.

Each batch of Ig product is pooled from a different set of donors, and therefore different plasma makes up the product.

- Reactions can occur with any infusion, even with no previous symptoms.



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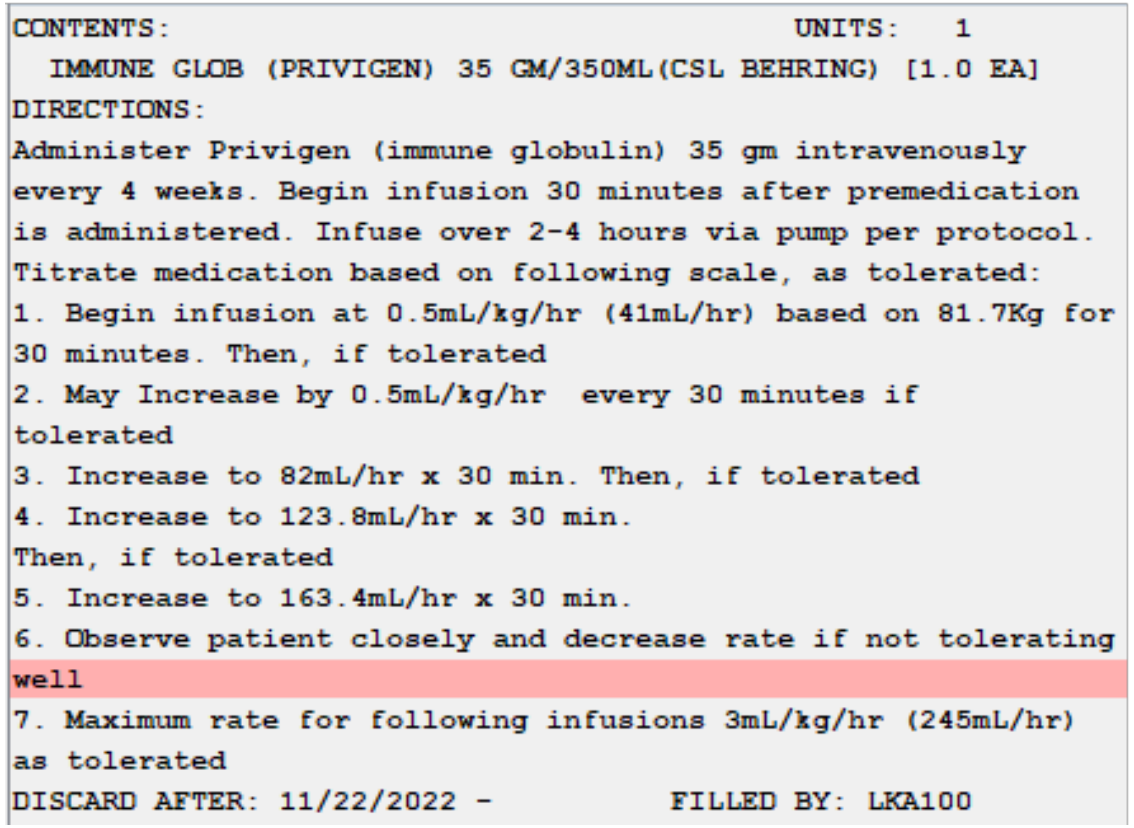
Product Label

Product label to be reviewed with each dose or bag change.

Pump settings to be reviewed on the pump with each dose or bag change.

Product label components to review:

- Patient name
- Medication name
  - Amount in bag/cassette
  - Diluent name and volume
  - Can calculate concentration
- Administration instructions
  - Plan language instructions
  - Pump parameters
    - To be verified on pump with each bag change.
  - How often to change the bag if continuous
- Storage instructions
  - Including how long to warm to room temperature if refrigerated.
- Expiration date


CONTENTS: UNITS: 1
IMMUNE GLOB (PRIVIGEN) 35 GM/350ML(CSL BEHRING) [1.0 EA]
DIRECTIONS:
Administer Privigen (immune globulin) 35 gm intravenously every 4 weeks. Begin infusion 30 minutes after premedication is administered. Infuse over 2-4 hours via pump per protocol. Titrate medication based on following scale, as tolerated:
1. Begin infusion at 0.5mL/kg/hr (41mL/hr) based on 81.7Kg for 30 minutes. Then, if tolerated
2. May Increase by 0.5mL/kg/hr every 30 minutes if tolerated
3. Increase to 82mL/hr x 30 min. Then, if tolerated
4. Increase to 123.8mL/hr x 30 min.
Then, if tolerated
5. Increase to 163.4mL/hr x 30 min.
6. Observe patient closely and decrease rate if not tolerating well
7. Maximum rate for following infusions 3mL/kg/hr (245mL/hr) as tolerated
DISCARD AFTER: 11/22/2022 - FILLED BY: LKA100

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Immunoglobulin Storage & Handling

Most immunoglobulin products for administration come as a liquid, only one product comes in a lyophilized powder (Gammagard S/D).

The medication should be stored according to instructions on the accompanying product label. (Room temperature </= 77 degrees F); (Refrigerated 36-46 degrees F). Ig products should never be frozen. If refrigerated, Ig products should be brought to room temperature prior to infusion.

Do not microwave or heat the medication, as this may cause the immunoglobulin protein to become compromised.

Be sure to avoid any vigorous mixing or shaking of the vial. Extra foam can damage the product.

If your medication comes as the powder, it will need to be mixed with sterile water for injection per product label.

Supplemental Product Labels

Pharmacy Name
Pharmacy Address
Pharmacy Phone Number

RX#: 15-0 FILL DATE: 11/22/2021

PRESCRIBER: Ordering Provider Name

Patient Name
Patient Address

WV 26169

CONTENTS: UNITS: 10
SODIUM CHLORIDE 0.9% 10ML SYRINGE (BD) 10 ML
DIRECTIONS:
FLUSH WITH 3ML 0.9% SODIUM CHLORIDE BEFORE AND AFTER IV DOSE ADMINISTRATION.
STORE AT ROOM TEMPERATURE.
^NO LAB DRAW FROM LINE UNLESS APPROVED BY PHYSICIAN~
DISCARD AFTER: 11/22/2022 FILLED BY: LKA100
FEDERAL LAW PROHIBITS THE TRANSFER OF THIS DRUG TO ANY PERSON OTHER THAN THE PRESCRIBED PATIENT.

CONTENTS: UNITS: 1
SOLU-MEDROL (PFIZER) 62.5 MG
ACETAMINOPHEN 325 MG TABLET (MAJOR) 650 MG
DIPHENHYDRAMINE 25MG CAPSULE (MAJOR) 50 MG
DIRECTIONS:
Administer acetaminophen 650mg orally prior to PRIVIGEN administration as premed.
Activate and infuse Methylprednisolone 62.5mg IV over 3-5 minutes prior to PRIVIGEN administration as premed.
Administer diphenhydramine 50mg capsule orally prior to PRIVIGEN administration as premed.
STORE AT ROOM TEMPERATURE.
^NO LAB DRAW FROM LINE UNLESS APPROVED BY PHYSICIAN~
DISCARD AFTER: 11/22/2022 FILLED BY: LKA100
FEDERAL LAW PROHIBITS THE TRANSFER OF THIS DRUG TO ANY PERSON OTHER THAN THE PRESCRIBED PATIENT.

CONTENTS:MAB-EMERGENCY MEDS UNITS:1
DIRECTIONS:
IN CASE OF ADVERSE DRUG REACTION:
Administer Acetaminophen 650mg ONCE. Administer Diphenhydramine 50mg (1ml) IV over 2-5 minutes ONCE or diphenhydramine 50mg capsule by mouth ONCE and activate and administer hydrocortisone 100mg IV ONCE. Epinephrine 0.5mg/0.5ml IM and may repeat ONCE in 5-15 minutes. If symptoms are rapidly progressing or continue NOTIFY PHYSICIAN

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Intravenous Immunoglobulin (IVIG)

Typically require pre-medications.

Rate starts at a slower infusion rate & is titrated up every 30 minutes to the max rate as tolerated without symptoms.

Nurse will closely monitor vital signs before, during and after infusion.

Must be administer by a RN.

- RN must remain in the home for the entire infusion and for a 30 minute post infusion observation period.

Rate	Volume	Duration
30 ml/hr	15 ml	30 min
60 ml/hr	30 ml	30 min
120 ml/hr	60 ml	30 min
240 ml/hr	120 ml	30 min
325 ml/hr **max dose	125 ml **remainder of the bag	22 min

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SUBCUTANEOUS INFUSION THERAPY

Subcutaneous infusion therapy is a technique whereby fluids or medications are infused into the subcutaneous tissue via small gauge needles inserted into the abdomen, arms, back or thighs.

The subcutaneous route may be used to infuse isotonic solutions for treatment of dehydration, continuous opioid infusions for pain management, non-vesicant neoplastic agents, certain antibiotics, diuretics, antiemetics, immunoglobins, endocrine medications, gastrointestinal medications, monoclonal antibodies, and other therapies/medications as prescribed.

Subcutaneous infusion offers several advantages over intravenous infusion, including ease of administration, lower cost, and lack of potential serious complications.

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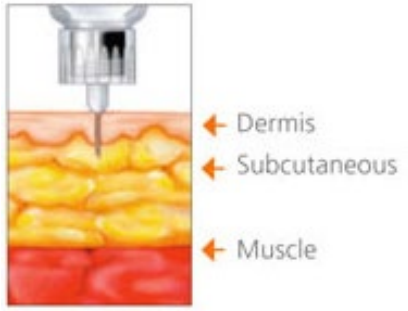
Subcutaneous Needle Selection

Length

- 4mm
- 6mm
- 9mm
- 12mm
- 14mm



A longer needle may be needed if there is leakage at the puncture site.

Needle must be long enough to be seated in the subcutaneous tissue, but not long enough to reach the muscle.

Infusion into the muscle or skin tissue will cause pain and irritation.

Bifurcations

- 1 needle
- 2 needles
- 3 needles
- 4 needles
- 5 needles
- 6 needles
- 8 needles

The volume of medication/solution to be infused determines the number of infusion sites required.

Volume per site is based on patient weight and product. Pediatric and low BMI patients have lower volume limits.

SUBCUTANEOUS SITE SELECTION

CONSIDER PATIENT'S MOBILITY, COMFORT AND SITE PREFERENCE

Select areas with intact skin and adequate subcutaneous tissue

Abdomen (at least 2 inches from umbilicus)

Deltoid

Flank

Hips

Thighs

Benefits of Subcutaneously administered IG.

- Premedication is usually not required with SCIG.
- Patients self-administer SCIG after they are taught.
- SCIG administration causes few serious systemic adverse events.
    - SCIG is also tolerated by most patients who had previous serious systemic reactions .
    - Systemic reactions occur in less than 3% of SCIG patients.
- SCIG given weekly (or more frequently) provides more even, physiologic serum IgG levels and avoids the low trough levels occurring near the end of the three- or four-week dosing period of IVIG.
    - Fatigue, myalgias, and arthralgias (sometimes called "wear-off" effects) are not usually reported with traditional SCIG.

Continued Benefits of Subcutaneously administered IG.

- The ability to self-administer SCIG at home improves the patient's sense of autonomy and frees him/her from trips to a medical facility.
    - Reduces exposure to nosocomial infections.
- SCIG infusions may be particularly useful in patients for whom venous access is problematic and circumvents the need for implantable venous access devices

First Dosing in the Home

Considered safe with the below criteria:

- Previous infusion of IVIG without severe systemic reaction
- Absence of severe or multiple medication allergies
- Baseline CBC and CMP within normal limits

Special consideration for first dosing in the home with a documented history of:

- Renal disease or complications
- Thromboembolic events
- Cardiovascular disease
- Multiple, complex comorbidities
- Anti-neutrophil antibodies and migraines
- Pulmonary edema
- IG naïve (No previous IVIG or SCIG)

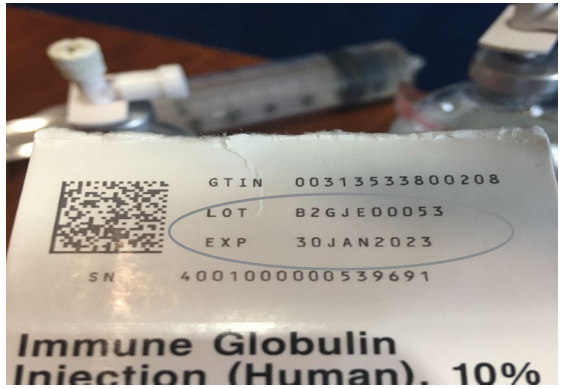
First dosing should occur in the **clinic** in the presence of:

- IgA or anti-IgA antibodies
- Thrombocytopenia
- Bleeding disorders, including hemophilia
- Skin disorders or acute irritation/injury
- BMI < 18.5 (low percent body fat or malnourished)
- Patient or provider prefers first dose in clinic

SCIG Product Preparation in the Home

Compound in the home.

- **Compound immediately prior to infusing dose.**
  - Has a very short half-life, stability is short.



- Withdraw all vials into syringe (or bag) for infusion.
- When inverted, the Mini transfer device vent will allow air to fill the glass bottle.
- No need to inject air into the vial.

Always document the lot number and expiration date located on the top of the medication box.

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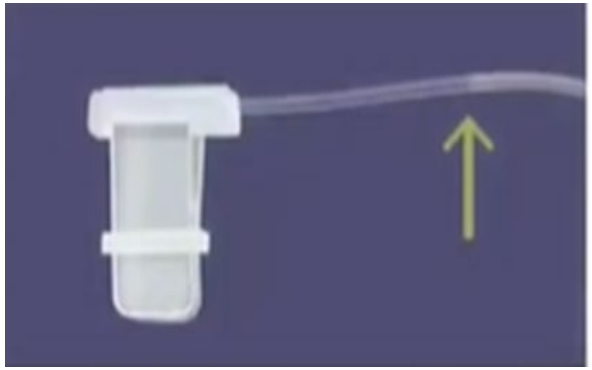
SCIG Needle Placement & Site Selection

- Subcutaneous locations as previously noted.
- 2-inchs between sites and from umbilicus.
- Rotate sites with each infusion.
- Dry prime to prevent skin irritation and leakage (SCIGand IGHy only).
- Prime with immunoglobulin product.
- For IGHy, sites are limited to the middle or upper abdomen and front of upper thighs.
- For SCIG, up to 8 sites (review individual product labeling) can be used simultaneously for SCIG infusions (at least 2 inches apart).
- For IGHy, up to 2 sites.
- For SCIG, the 2016 INS Infusion Therapy Standards of Practice state: “Aspirate the SC infusion access device to confirm the absence of a blood return prior to medication and fluid administration.” Despite this standard, two SCIG manufacturers no longer requires aspiration for blood return in the product labeling.
- Check needle placement **if indicated** on the package insert by gently pulling back on the plunger of the attached syringe and monitor for any blood return in the tubing.
- If blood is seen in the tubing, remove and discard the needle. Prepare a new infusion site and insert a new subcutaneous needle.



Special Considerations

- Colostomy
  - Less sites available for rotation
  - Insertion site contamination/infection
- Thin / low BMI
  - Less sites to rotate
  - Shorter needles
- Leakage or bleeding
  - Limit moving during infusions
  - Leave needle in longer after infusion complete
- Blood thinners
  - Leave in longer after infusion complete
  - Leave band aid on longer than an hour after the infusion is complete.
  - Reduce moving during infusion.

When infusion sites are limited, you may need to contact the Pharmacist to determine if the SCIG dose is safe to infuse with less infusion sites.

Freedom60 Pump

- Syringe pump
- Rate is controlled by Tubing – identified on both packaging and tubing clamp
  - F30 = 30ml/hr
  - F45 = 45ml/hr
  - F60 = 60ml/hr

Rate and tubing size will be determined by the pharmacist

- **Disc on tubing secures the syringe into the pump**
  - Do not confuse with IV extension tubing

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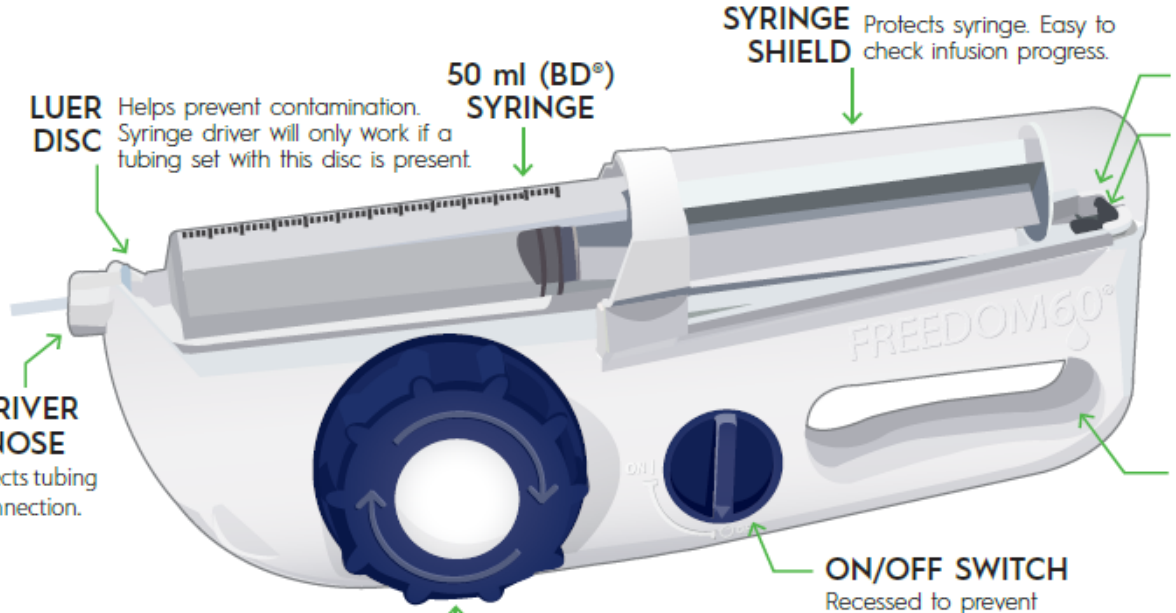
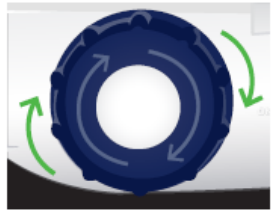
FREEDOM60®
Syringe Infusion System

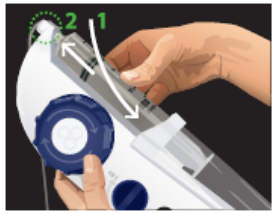


1 Wind



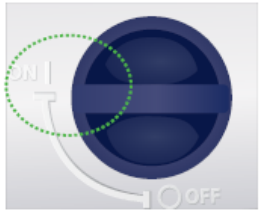
Wind knob until black tab is at end of its track.

2 Load



Load prepared syringe.

3 Go



Switch ON and go!

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SCIG Infusion Completion

- Turn pump off
- Leave needles in skin for additional 5 minutes, to permit additional absorption time.
  - Reduces leakage & irritation
  - Less bleeding
  - Less pain
- After removing needles, place band aid or gauze over puncture sites.
  - Leave covered for 1 hour after infusion
- Dispose of needles in sharps container

Infusion Site Information

Instruct patient to call the pharmacist if site irritation or leakage occurs during multiple infusions.

Patients should be assessed after each infusion for leakage or irritation at site.

- Throughout treatment patient needs will change.
  - Weight changes may require longer or shorter needle lengths.
  - Over time needle length may need changed, without weight loss or gain.
    - Instruct patient to call their pharmacy if site irritation or leakage occurs for more than 1 infusion.
    - It is normal to need to change needle length after a year or several years of therapy.

Redness, irritation and itchiness at infusion site.

- Advise the patient to not scratch
- Topical Benadryl cream (thin layer)
- Pre-medicate with antihistamine
  - Physician order required

Lump or soreness at infusion site

- Cool compress will help absorption of SCIG product.
  - May need to repeat a few times

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Thank you for participating!

Please reach out with questions or for information on additional training opportunities.