Choosing the route of administration for immunoglobulin G (IgG) therapy

A guide for healthcare professionals to help their patients make an informed choice

You play an important role in patient IgG treatment choice

Proactively discuss with your patients which route of administration and dosing format best suit their needs

Potential discussion points to have with your patient:

- Would you prefer a treatment that can fit into your schedule (i.e., you choose when to take it)?
- Do you want flexibility regarding where you can receive treatment (i.e., at home or away vs. at an infusion clinic)?
- *If your patient is currently on IVIG therapy:* Has your infusion nurse had prior issues with venous access?
- Would you be comfortable performing a subcutaneous injection after adequate training?

IgG=immunoglobulin G; IVIG=intravenous immunoglobulin.

The route of IgG administration impacts its pharmacokinetics in 3 key ways:

1

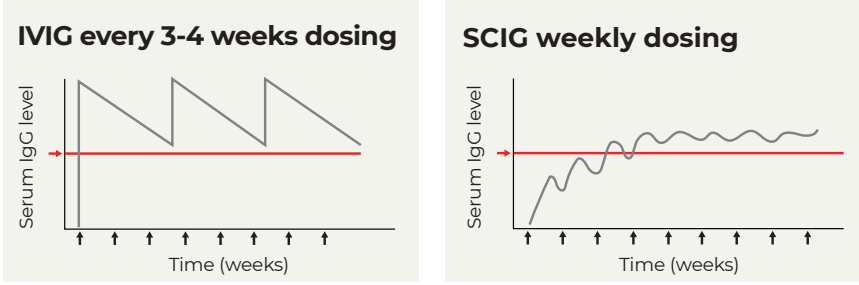
IgG absorption is slower with SCIG (subcutaneous immunoglobulin), reaching a peak serum concentration **2 to 4 days** after infusion[2]

- IVIG infusions typically cause a rapid increase in serum IgG, with a sharp drop-off over the next 48 hours and a linear decline thereafter[2]

2

With SCIG, more frequent dosing (daily, weekly, multiple times a week, or every other week*) leads to a **more consistent (steady-state) level** of IgG vs. IVIG[3-5]

- With IVIG, a longer interval between doses (every 3-4 weeks) may cause peaks and troughs
  - For IVIG, peak may be >3x the concentration of the trough[4]
- There may be a "wear-off" effect at the end of the IVIG 3-to-4-week interval, which is avoided with most SCIG dosing regimens[5]



Adapted from the IDF Guide to Ig Therapy 2018[3]

3

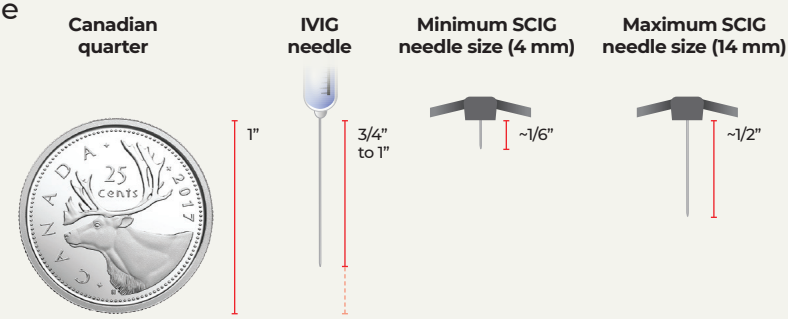
Route of administration impacts the type of **adverse reactions**

IVIG	SCIG
AEs in patients undergoing IVIG therapy tend to be systemic in nature and are observed more commonly in treatment naïve patients.[6]	Advantage of fewer systemic AEs, but more likely to experience local site reactions.[6]

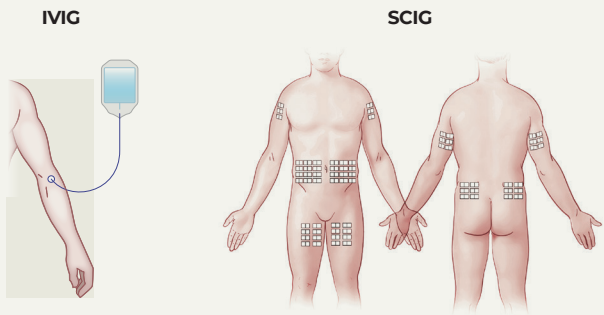
* Follow the dosing prescribed by the patient's HCP.
IgG=immunoglobulin G; IVIG=intravenous immunoglobulin.

Key considerations when choosing between SCIG and IVIG

1 Needle sizes

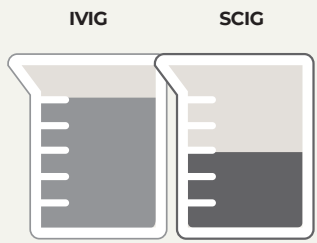


2 Administration sites



3 Infusion volumes

More concentrated SCIG products reduce treatment volume and infusion time.



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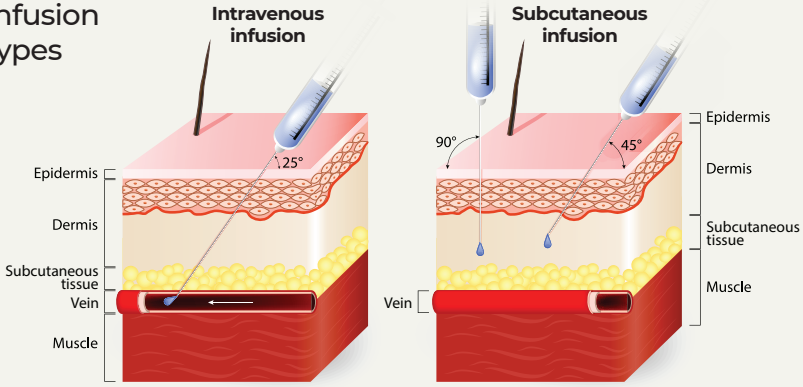
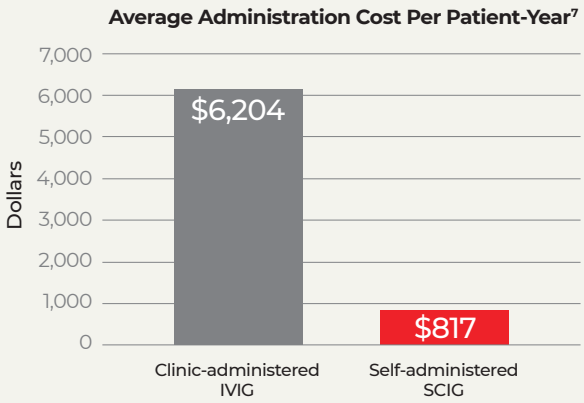
4 Infusion types



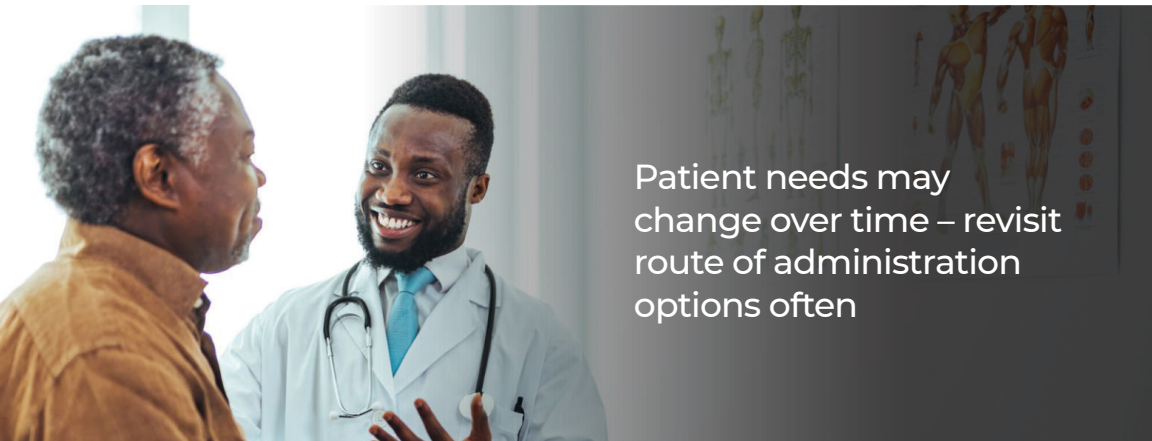
5 Cost

Self-administered SCIG may lessen nursing burden and is substantially less costly from a healthcare payer perspective.



Adapted from Ritchie B, *et al*., 2022.[8] A retrospective, population-based cohort study was performed using administrative data from Alberta and involving 7,890 patients treated with IgG between April 1, 2012 and March 31, 2019. Costs for medical laboratory staff, nursing time, and ambulatory care visits were considered. Univariate generalized linear model regression with gamma distribution and log link was used to compare cost ($CDN 2020) between SCIG and IVIG administration.

SCIG=subcutaneous immunoglobulin; IVIG=intravenous immunoglobulin.



SCIG offers patients convenience and flexibility

Clinical factors:

- SCIG does not require venous access.[8]
- Smaller doses may be preferred by some patients.[9]
- Lower infusion volumes and rates may be used with the 20% SCIG formulation vs. 10% IVIG.[9]
- A **pre-filled syringe** involves fewer steps than using a vial, which may be more convenient for some patients.

Lifestyle factors:

- Patients can avoid additional trips to the hospital, saving them time and the need for travel.[8]
- May help a patient to manage their own IgG administration, possibly without the need for nurse oversight.
- Possibility to go about daily activities of living with minimal interruption.

SCIG=subcutaneous immunoglobulin; IVIG=intravenous immunoglobulin; IgG=immunoglobulin G.

Summary of factors to consider when discussing IgG options with your patients[2,3]

	IVIG	SCIG (including the pre-filled syringe)
Concentration	5% or 10% IV solutions	10% or 16.5% or 20% SC solutions
Administration	• Infused intravenously through a vein • IVIG = intravenous infusion	• Infused into the layer of fatty tissue under the skin • Self-administered or administered by a caregiver (e.g., parent or guardian) after training • SCIG = manual push or pump infusion
Schedule	At booked time	At patient's chosen time
Frequency	Every 3-4 weeks	Flexible schedule from daily to every other week
Duration	2-6 hours	5 minutes to 2 hours
Location	Hospital-based infusion settings	Home or on the go (travel)

IgG=immunoglobulin G; IVIG=intravenous immunoglobulin; SCIG=subcutaneous immunoglobulin; IV=intravenous; SC=subcutaneous.

When counselling your patients with PID, SID or CIDP on their choice of IgG route of administration, discuss how this impacts their treatment.

PID=primary immunodeficiency; SID=secondary immunodeficiency; CIDP=chronic inflammatory demyelinating polyneuropathy; IgG=immunoglobulin G.

References: 1. Wasserman RL. Personalized therapy: immunoglobulin replacement for antibody deficiency. *Immunol Allergy Clin N Am.* 2019;39:95-111. **2.** Kobrynski L. Subcutaneous immunoglobulin therapy: a new option for patients with primary immunodeficiency diseases. *Biol: Targets and Ther.* 2012;6:277-287. **3.** Immune Deficiency Foundation, USA: IDF guide to Ig therapy. 2018. **4.** Berger M. Adverse effects of Ig therapy. *J Allergy Clin Immunol Pract.* 2013;1(6):558-566. **5.** Misbah S, *et al.* Subcutaneous immunoglobulin: opportunities and outlook. *Clin Exper Immunol.* 2009;158(Suppl 1):51-59. **6.** Ness S. Differentiating characteristics and evaluating intravenous and subcutaneous immunoglobulin. Am J Manag Care 2019;25:S98-S104. **7.** Ritchie B, *et al.* Economic impact of self-administered subcutaneous versus clinic-administered intravenous immunoglobulin G therapy in Alberta, Canada: a population-based cohort study. *Allergy Asthma Clin Immunol.* 2022;18:99. **8.** Epland K, *et al.* A clinician's guide for administration of high-concentration and facilitated subcutaneous immunoglobulin replacement therapy in patients with primary immunodeficiency diseases. *Allergy Asthma Clin Immunol.* 2022;18(1):87. **9.** Perez EE, *et al.* Update on the use of immunoglobulin in human disease: A review of evidence. *J Allergy Clin Immunol.* 2017;139:S1-S46.

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