IgG Levels and Wear Off Reflect Administration and Outcome
‘Wear-off’ of treatment effect towards the end of the dosing cycle

- Patients with primary immunodeficiencies have been treated with IVIG since the early 1980s
- Mechanisms of IVIG action reflect competition between therapeutic IgG and pathologic autoantibodies
- Towards the end of the dosing cycle, patients with primary immunodeficiency are more susceptible to infection and their quality of life decreases
- IVIG trough levels may be associated with wear-off effects

**Wear-off:** “cyclic or periodic occurrence of clinical deterioration at an interval following an IVIG infusion”


IVIG improves and maintains functionality in patients with CIDP\textsuperscript{1,2}

Disability rated according to adjusted INCAT score\textsuperscript{3}

- IVIG is FDA approved for CIDP and MMN\textsuperscript{†4}
- IVIG is effective in improving and maintaining functionality in these patients\textsuperscript{3,5}

\textsuperscript{*}Patients had previously received IVIG. Error bars represent the standard error of the mean.
\textsuperscript{†}Privigen, Gamunex and Gammaked are approved for CIDP, Gammagard Liquid is approved for MMN.


3. This work is a derivative of “Mean adjusted INCAT score over time by IVIG-pretreatment” by Léger J-M \textit{et al.} J Peripher Nerv Syst. 2013;18(2):130–140. This figure is licensed under CC BY 3.0 by CSL Behring.
A close relationship exists between the frequency of dosing and functional capability in some patients²

IgG: immunoglobulin G, IVIG: intravenous immunoglobulin, PK: Pharmacokinetics


Figure "Cyclic response to IVIG from CIDP patient superimposed on typical pharmacokinetic curve of IVIG" by Berger M and Allen JA. Muscle Nerve 2015;51:315–326 is licensed under CC BY-NC-ND 4.0. Reprinted from Immunol Allergy Clin North Am, Vol. 28, Bonilla FA. "Pharmacokinetics of Immunoglobulin Administered via Intravenous or Subcutaneous Routes", pp.803–819, Copyright (2008), with permission from Elsevier.

Individually optimized therapy may include more frequent dosing

Patients who experience wear-off may do better when the IVIG dosing interval is less than the expected half-life of IgG¹

*Final or lowest dose per course

IgG, immunoglobulin G

Serum IgG levels vary with administration route

It is possible to achieve near constant steady-state serum IgG levels with frequent SCIG administration

IgG: immunoglobulin G, IVIG: intravenous immunoglobulin, SCIG: subcutaneous immunoglobulin


Randomized, double-blinded, placebo-controlled trial of the effect of SCIG on muscular performance in 30 patients with CIDP\textsuperscript{1,2}

CIDP: chronic inflammatory demyelinating polyneuropathy, IVIG: intravenous immunoglobulin

SCIG in patients with CIDP

SCIG significantly increases plasma IgG levels and improves muscle strength, walking performance and disability score as compared with treatment with placebo.


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Mechanisms of IVIG action reflect competition between therapeutic IgG and pathologic autoantibodies$^{1,2}$

Insufficient levels of therapeutic IgG just prior to repeat IVIG treatments may lead to wear-off and loss of peripheral nerve function$^{1,2}$

Wear-off may be avoided by shortening the dosing interval or by switching from IVIG to SCIG$^{1,2}$

EFNS: European Federation of Neurological Societies, IVIG: intravenous immunoglobulin, PNS: Peripheral Nerve Society