



**President** : Dr Enslin Uys / **Secretary** : Dr Linett du Toit / **Treasurer** : Dr Jonel Steffen  
**Email:** [savrssecretary@gmail.com](mailto:savrssecretary@gmail.com)

## [SAVRS Clinical Practice Guidelines for Intravitreal Injections \(IVI\).](#)

This is a revised Clinical Practice Guideline – Reviewed June 2024 (Dr Robyn Rautenbach).

### Main changes:

- Update in standard operating procedure for intravitreal injections (IVI).
- Reformatting of article in accordance with new OSSA guidelines for society document publications.

### Key points:

- Pre-injection considerations.
- Intravitreal injection procedure.
- Post-injection management.

### Scope and purpose:

- To provide evidence-based procedure guidelines for intravitreal injections (IVI).
- The guideline applies to health professionals and funders.

### Stakeholder involvement:

- The guideline development group includes individuals from the SAVRS Academic Advisory Committee (AAC).
- The AAC includes ophthalmologists from both the public and private sector.

### Editorial independence:

- No funding or sponsorship was received for the publication of this clinical guideline.
- The views of medical aids, government bodies and manufacturers of therapeutic agents have not influenced the content of this guideline.
- No competing interests from guideline development group members were present.

### Adoption of recommendations from other guidelines:

- Recommendations were adopted from the following existing international guidelines
  - 2018 Update on Intravitreal Injections: **Euretina Expert Consensus Recommendations**.<sup>1</sup>
  - **The Royal College of Ophthalmologists** – Ophthalmic Service Guidance: Intravitreal injection therapy 2018.<sup>2</sup>
  - **American Society of Retinal Specialists** – Clinical Practice Guidelines – Intravitreal injection therapy: Current Techniques and Supplemental Services 2021.<sup>3</sup>

### Evidence-based methods:

- A systematic internet search for recommendations regarding intravitreal injections was performed.
- Evidence was selected based on peer reviewed publications and guidelines from international ophthalmology groups: There is an explicit link between the recommendations and the supporting evidence.
- The guideline has been externally reviewed by the SAVRS Academic Advisory Committee
- Suggested future complete document revision: 2029.

## CLINICAL ASPECTS and KEY RECOMMENDATIONS

### Introduction to intravitreal injections (IVI)

- Intravitreal injections (IVI) are widely used in the treatment of a variety of conditions, including age-related macular degeneration, diabetic macular oedema, proliferative diabetic retinopathy, retinal vein occlusion, pathological myopia, uveitis, and many more.<sup>1</sup>
- It is essential that:
  - Any substance injected into the eye is sterile and remains sterile when it enters the vitreous cavity.
  - That the environment and equipment are safe and suitable.
  - That staff are trained and up to date in delivering the procedure and know how to manage complications and adverse events.<sup>2</sup>

### Clinical setting of care for intravitreal injections (IVI)

- The recent literature confirms that both office-based and operating room/theatre-based injections have a very low incidence of endophthalmitis.<sup>1</sup>
- An operating theatre and/or a dedicated clean room in an out-patient or in-office setting (with full sterile precautions) are recommended for IVI.<sup>1,2</sup>

### Hand decontamination and masks

- The injector's hands should undergo surgical disinfection with soap and water and/or alcohol rub.<sup>2</sup>
- There is no significant evidence that the use of sterile gloves reduces endophthalmitis rates or adverse events (prospective randomized controlled trials are lacking). Wearing gloves (sterile or nonsterile) is however recommended for IVI, and gloves should be removed/replaced between each injection.<sup>1,2</sup>
- The use of face masks by the injector and/or minimising speaking during the IVI procedure is recommended to minimize oropharyngeal droplet transmission and possible injection site contamination.<sup>1,2,3</sup>

### Pre-injection assessment

- A pre-procedure verification process should be conducted to ensure that the correct drug is being injected into the correct eye of the correct patient.<sup>2,3</sup>

### Pre-injection preparation

- Topical anaesthesia with/without supplemental subconjunctival local anaesthetic (1ml of 1% lignocaine without adrenaline) in the area of planned IVI is recommended.<sup>1,2,3</sup>
- An anaesthetist need not be present for IVI under topical/local anaesthesia. In exceptional circumstances, such as an infant with retinopathy of prematurity (ROP) or a disorientated and/or unco-operative patient, a specialist anaesthetist may be required to administer systemic sedation and/or anaesthesia.
- Pupillary dilatation is not mandatory and can be done at the discretion of the injector.<sup>1,2</sup>
- Pre-injection eyelid scrubs/washes are not recommended.<sup>1</sup>
- Pre-injection antiseptic preparation of the skin & ocular surface (conjunctiva) with 5% povidone iodine (minimum contact time of 3 minutes) is recommended. Chlorhexidine gluconate (0.1%) is an alternative in patients who are allergic to or cannot tolerate povidone iodine (minimum contact time of 3-5 minutes).<sup>1,2,3</sup>

### Injection administration

- The use of a sterile ophthalmic drape is recommended but not mandatory.<sup>1,2</sup>
- Any effective way of ensuring that the eyelid margins are kept away from the injection site during the procedure is justified and recommended – sterile eyelid speculum and/or sterile adhesive dressing.<sup>1,2,3</sup>
- Sterile callipers are used to measure and mark the injection site at the pars plana - between 3 - 4 mm from the limbus (depending on the patient's lens status).<sup>1,2,3</sup> There is no agreement on the exact location or quadrant for IVI.<sup>1</sup>
- Small bore injection needles of appropriate length (12-16mm) – 30/31-gauge needles for non-colloidal clear solutions, and 27-gauge needles for particulate preparations (e.g. triamcinolone).<sup>1,2,3</sup>

- An appropriate volume (maximum 0.1ml) of therapeutic agent should be injected slowly and carefully avoiding contact between the needle shaft and the eyelid margin.<sup>2,3</sup>
- After removal of the needle, a sterile cotton-tipped applicator may be used to prevent reflux and steady the eye.<sup>2</sup>
- If bilateral injections are planned at the same session it is recommended to treat each eye sequentially – each eye must be prepared separately, a different batch of instruments must be used for each eye, and a separate batch of medication is advised for each eye.<sup>1,2</sup>

### Post-injection management

- The use of peri-injection antibiotics cannot be considered the standard of care and is not recommended. There is no evidence that their use reduces the risk of post-operative endophthalmitis, but there is evidence that their use can contribute to the emergence of drug-resistant pathogenic bacteria.<sup>1,2</sup>
- A transient, volume-related rise in intraocular pressure (IOP) is common following injection. There is no evidence to suggest that prophylactic IOP-lowering agents are effective in preventing this IOP spike and their use is not recommended.<sup>1,2</sup>
- Post-injection intraocular pressure (IOP) should be measured in patients where there is a clinical concern (e.g. pre-existing glaucoma), those with injection volumes > 0.05ml, and in all cases where patients experience pain or reduced vision immediately following injection.<sup>2</sup>
- Should non-perfusion of the central retinal artery occur (indicated by no perception of light vision in the treated eye) due to high IOP, immediate anterior chamber paracentesis or acetazolamide and digital massage is indicated.<sup>2,3</sup>

**Table 1.** Expert consensus recommendations on intravitreal injections (IVI)

| Subject                             | Recommendations   |
|-------------------------------------|---|
| Clinical setting for IVI            | Operating theater, adequate room or in-office setting   |
| Anesthetics                         | Topical anesthesia<br>No recommendation for a specific substance or technique   |
| Topical antiseptics                 | Topical administrations of 5% povidone-iodine over at least 30 s into the conjunctival sac. Chlorhexidine for patients with local irritation due to povidone-iodine |
| Perioperative antibiotics           | Not recommended   |
| Pupil dilation                      | No concluding recommendation, but it might be advisable for beginners in order to be able to immediately examine the retinal vessel perfusion after IVI             |
| Globe softening                     | No recommendation<br>Might be considered in vulnerable eyes   |
| Lid speculum                        | Sterile speculum is recommended   |
| Needle gauge and length             | 30-gauge or thinner needles are recommended for liquid injections whereas larger needles should be used when necessary  |
| Injection location                  | Inject through the pars plana, between 3.5 and 4 mm from the limbus<br>Switch injection sites if patients receive repeated IVI                                      |
| Feasibility of bilateral injections | Handle each injection as separate procedure   |
| Gloves/draping                      | Gloves are recommended<br>Draping may not be essential  |
| Use of facial masks                 | Face masks recommended  |

**Table 1. 2018 Update on Intravitreal Injections: Euretina Expert Consensus Recommendations<sup>1</sup>**

## REFERENCES:

1. **2018 Update on Intravitreal Injections: Euretina Expert Consensus Recommendations.** Grzybowski A, Told R, Sacu S, Bandello F, Moisseiev E, Loewenstein A, Schmidt-Erfurth U; Euretina Board. *Ophthalmologica*. 2018;239(4):181-193. doi: 10.1159/000486145. Epub 2018 Feb 1. PMID: 29393226
2. **Ophthalmic Service Guidance: Intravitreal injection therapy.** May 2018 Revised August 2018. The Royal College of Ophthalmologists. 18 Stephenson Way, London, NW1 2HD T. 020 7935 070 contact@rcophth.ac.uk rcophth.ac.uk @RCOphth
3. **Intravitreal Injection Therapy: Current Techniques and Supplemental Services.** Lam LA, Mehta S, Lad EM, Emerson GG, Jumper JM, Awh CC; Task Force on Intravitreal Injection Supplemental Services. *J Vitreoretin Dis*. 2021 Jul 22;5(5):438-447. doi: 10.1177/24741264211028441. eCollection 2021 Sep-Oct. PMID: 37008713