

VISION ACADEMY VIEWPOINT

The Vision Academy is a partnership between Bayer and ophthalmic specialists, established with the aim of addressing key clinical challenges in the field of retinal diseases: www.visionacademy.org.

Guidance for Anti-VEGF Intravitreal Injections During the COVID-19 Pandemic

Background

The World Health Organization designated the outbreak of the novel coronavirus, COVID-19, as a pandemic on March 11, 2020, after its rapid spread to countries throughout the world.¹ There is a strong need to support the ophthalmic community to help guide decision-making during these unprecedented times, where infection control is of utmost concern and disruption to regular clinical practice is highly likely. This is particularly important for patients with retinal diseases who are receiving intravitreal injections of anti-vascular endothelial growth factor (VEGF) agents.

Older age (≥ 65 years), living in a care facility or nursing home, and having an underlying health condition are key risk factors for developing severe illness following infection with COVID-19, and are also common among patients with retinal disease. Health conditions including chronic lung disease or moderate-to-severe asthma, serious cardiovascular conditions, diabetes, being immunocompromised, severe obesity, liver disease, and chronic kidney disease requiring dialysis are considered particularly high risk, especially when they are not well-controlled.²

Several organizations have produced general guidance for ophthalmologists on managing patients during the pandemic.³⁻¹² The Vision Academy Steering Committee convened in March 2020 to review these relevant guidelines and documents, discuss key challenges, and develop recommendations specifically for managing patients receiving intravitreal injections of anti-VEGF agents during the COVID-19 pandemic. Recommendations were systematically refined before being voted on by the Steering Committee for consensus.¹³

Developed by the
Vision Academy Steering Committee
in April 2020.



Full consensus



Variations in opinion

Viewpoint

1. General guidance

- The safety of patients and healthcare staff is of paramount importance in all decision-making
- Medical/healthcare staff should be regularly monitored for signs of infection, swabbed, and quarantined according to national/institutional guidelines
- Staff should receive regular training on proper use of personal protective equipment (PPE) and other safety practices to reduce the spread of COVID-19, and these practices should be implemented consistently throughout the patient journey¹⁴
- It is essential that personal, facility, and instrument hygiene/disinfection rules are followed meticulously, as per local guidelines
- Patients should wear a mask at all times to reduce the potential transmission of COVID-19 to healthcare staff or other patients¹⁵
- Defer appointments of COVID-19-positive/suspect patients until total resolution of symptoms or risk, except for cases requiring emergency intervention or surgery due to imminent danger of severe vision loss; such cases should be treated in an adequate facility with appropriate PPE
 - Suspect cases may have mild symptoms of COVID-19 including cough, headache, fever, fatigue, muscle pain, anorexia, malaise, sore throat, dyspnea, nasal congestion, or in rarer cases, nausea, vomiting, and diarrhea¹⁶
- Postpone non-urgent appointments where there is capacity to reschedule within a reasonable time period



Vision Academy Viewpoints are intended to raise awareness of a clinical challenge within ophthalmology and provide an expert opinion to engage in further discussion.

They can be downloaded from <https://www.visionacademy.org/resource-zone/resources/all>

The Vision Academy is sponsored by Bayer. This document was prepared on behalf of the Vision Academy by Jean-François Korobelnik, Anat Loewenstein, Bora Eldem, Antonia M. Joussem, Adrian Koh, Paolo Lanzetta, Xiaoxin Li, Monica Lövestam-Adrian, Rafael Navarro, Annabelle A. Okada, Ian Pearce, Francisco J. Rodríguez, David T. Wong, and Lihteh Wu.

Always refer to local treatment guidelines and relevant prescribing information.
The views represented in this document do not necessarily reflect those of Bayer.

April 2020 | MA-PFM-OPHT-ALL-0159-1

2. Prioritizing patients according to medical need

- Diabetic and elderly patients are at a high risk for COVID-19 complications² and should not be exposed to avoidable risk; however, to avoid irreversible vision loss, it is important to ensure continuation of care wherever possible 
- Patients with neovascular age-related macular degeneration (particularly if they are in the first 2 years of treatment), new patients with significant vision loss, new central retinal vein occlusion cases, neovascular glaucoma, and monocular or quasi-monocular patients (only one eye >20/40) should generally be prioritized and their treatment schedules maintained
- Patients with diabetic macular edema (DME) and branch retinal vein occlusion are less likely to suffer irreversible vision loss in the short term^{17,18}
 - Consider postponement of appointments for non-monocular patients (except patients with significant vision loss from recent DME and patients in the acute phase of retinal vein occlusion)
 - Avoid prolonged treatment postponement (>4–6 months) and reassess the situation within 2–3 months
 - Carefully consider the medico-legal issues associated with advising such patients that, in most cases, vision will not be significantly adversely affected by interrupted/postponed treatment
- These considerations should be thoroughly discussed (remotely) with the patient, taking into account the local legal/regulatory environment, status of the epidemic, and the capacity of each practice to reschedule postponed procedures

3. Reducing exposure during the patient visit

- Pre-screen patients by phone to identify symptomatic or suspected COVID-19-positive patients and direct them to an appropriate setting, e.g. a designated section of the clinic or hospital with enhanced protection/disinfection measures and PPE 
- Prior to the appointment, provide patients with a “Dear Patient” letter¹⁹ detailing safety and hygiene measures such as the importance of physical distancing by 1 or 2 meters^{20,21} and the potential benefits of wearing a mask¹⁵
- Staff must wear PPE (including masks, gloves, goggles, and suits) for patients who are COVID-19-positive or suspected to be positive, or for all patients, as directed by local authorities and institutions
 - An N95 or FFP2 mask is preferred²²; where these are not available, a surgical mask should be worn by both the clinician and patient. The selection of appropriate PPE should be determined by local risk assessment and national authority guidance
- Good ventilation is recommended in all rooms to reduce any potential viral vector load
- Limit potential exposure in waiting rooms by enforcing 1- or 2-meter physical distancing^{20,21} as per local guidelines, spacing out appointments, allowing only one accompanying adult (if absolutely necessary), and promoting queuing outside the waiting room
- Consider implementing physical distancing measures between patients and staff, and keep the examination as brief as possible
- Avoid thorough visual acuity testing of all patients; a simple self-performed test such as a near-reading chart may be sufficient. Brief visual acuity testing (e.g. starting at the smallest-achievable line) should be considered if an important vision change is noted
- Limit the use of optical coherence tomography examinations and special instruments (e.g. tonometer/fundus camera/angiograph) unless they are critical to decision-making
- Thoroughly disinfect hands and equipment, including keyboards, between patients
- Patients and clinicians should consider wearing a face mask during slit lamp examination and large plastic/plexiglass shields should be affixed to slit lamps

4. Intravitreal anti-VEGF treatment regimens

- Treatment regimens and regimen changes that require frequent monitoring to adjust dosing intervals should generally be avoided at this time, and treatment visits should be preserved over monitoring visits wherever possible 
 - Avoid switching treatment regimen unless there is a clear lack of response
 - Avoid changing treatment intervals in patients with neovascular age-related macular degeneration who are responding to a fixed-dose regimen
 - To minimize the need for monitoring in patients with age-related macular degeneration receiving variable-interval treatment regimens (treat-and-extend and *pro re nata* [as needed]), consider reverting to the last effective treatment interval and use this for fixed dosing
 - If possible, for new patients, maintain the loading phase schedule and select longer-acting therapies
 - In patients with DME/retinal vein occlusion who are already on dexamethasone implants, consider reimplantation only if they are responding well and have a history of normal intraocular pressure under treatment
- Telemedicine consultations can be useful to help physicians assess which patients should attend the clinic in person. They could also be particularly useful for monitoring patients who are at less risk of irreversible vision loss and can therefore be deprioritized as described in section 2
 - In such patients, it may be acceptable in the short term (<4–6 months) to monitor the disease on function only
- Inform patients on how to self-monitor their vision (e.g. with Amsler grids or by reading texts with various font sizes) and, where feasible, implement the use of home monitoring technologies such as smartphone apps²³

5. Treatment facility organization

- If feasible, consider offering home care, particularly for patients under lockdown; home injections may be acceptable in some countries 
- For symptomatic, confirmed, or COVID-19-suspected patients:
 - Emergency surgery/intervention due to imminent danger of severe vision loss should take place in an adequate facility with appropriate PPE, as per local guidelines
- For asymptomatic/non-COVID-19-suspect patients who need treatment:
 - Consider referral to a non-hospital-based clinic or ambulatory surgical center, particularly in cases with high infection rates/medical facility shortage

6. Reassuring patients

- It is important that there is clear communication and advice for patients receiving intravitreal injections to ensure they feel supported and reassured that their vision is being appropriately managed 
 - Provide support via an emergency contact number manned by a senior ophthalmologist for consistent patient-triaging advice
 - Provide advice and instructions for patients, e.g. a letter addressed to all patients¹⁹
 - Reassure patients who are used to an individualized treatment approach that fixed-dosed anti-VEGF regimens are an effective way of delivering treatment^{18,24,25}
- Risk–benefits must be carefully considered, discussed with the patient, and documented, taking into considering the local legal and regulatory environment

Further considerations

The applicability of these considerations will depend on the current state of the pandemic in each individual country and the resources available. In general, management strategies for patients with retinal disease during the COVID-19 pandemic should focus on minimizing the risk of exposure to COVID-19 for both the patient and healthcare staff, while providing essential care to prevent irreversible vision loss. In many centers, treatment prioritization for those with the greatest medical need may be necessary to limit exposure and free up resources, and the legal and regulatory environment should be carefully considered when making these decisions. Ophthalmologists should consider preserving treatment visits over monitoring visits where possible and simplifying treatment regimens for those receiving intravitreal injections to reduce the need for frequent monitoring. Adjustments to regular clinical practice should be continually reassessed as each country progresses through the pandemic and with the release of further guidance from ophthalmological societies.



References

- World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. Available at: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>. Accessed April 2020.
- Centers for Disease Control and Prevention. People who are at higher risk for severe illness. Available at: <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html>. Accessed March 2020.
- American Academy of Ophthalmology. Important coronavirus updates for ophthalmologists. Available at: <https://www.aao.org/headline/alert-important-coronavirus-context>. Accessed March 2020.
- Société Française d'Ophthalmologie. Quelle conduite à tenir adopter vis à vis des injections intravitréennes (IVT) dans cette période d'épidémie au Covid-19 - SARS-CoV-2 ? Available at: https://www.sfo.asso.fr/files/files/FPHUNG/epidemie_aucovid-19_-_ivt.pdf. Accessed March 2020.
- Deutsche Ophthalmologische Gesellschaft. Coronavirus COVID-19. Available at: <https://www.dog.org/?cat=288>. Accessed March 2020.
- The Royal College of Ophthalmologists. Medical retinal management plans during COVID-19. Available at: <https://www.rcophth.ac.uk/wp-content/uploads/2020/03/Medical-Retinal-Management-Plan-during-COVID-19-UPDATED-300320-1-2.pdf>. Accessed April 2020.
- The Royal College of Ophthalmologists. COVID-19 clinical guidance for ophthalmologists. Available at: <https://www.rcophth.ac.uk/2020/03/covid-19-update-and-resources-for-ophthalmologists/>. Accessed March 2020.
- Japanese Ophthalmological Society. Guidance for ophthalmology-related healthcare workers regarding COVID-19. Available at: <http://www.nichigan.or.jp/news/065.pdf>. Accessed March 2020.
- American Society of Retina Specialists. COVID-19: updates and resources. Available at: <https://www.asrs.org/practice/asrs-member-alert-regarding-covid-19-pandemic>. Accessed March 2020.
- The Royal Australian and New Zealand College of Ophthalmologists. Corona virus (COVID-19) guideline. Available at: https://ranzco.edu/wp-content/uploads/2020/03/RANZCO-Coronavirus-COVID-19-Guideline_01042020.pdf. Accessed March 2020.
- The Royal Australian and New Zealand College of Ophthalmologists. RANZCO triage guidelines for fellows and other health professionals. Available at: https://ranzco.edu/wp-content/uploads/2020/04/RANZCO-COVID-19-Triage-Guidelines-2020_4_1.pdf. Accessed March 2020.
- Canadian Ophthalmological Society. Canadian Retina Society (CRS) position statement on intravitreal injections and the management of retinal diseases during the COVID-19 crisis. Available at: <https://www.crsrca.ca/files/CRS-Position-Statement-on-Intravitreal-Injection-Treatments-Mar-19-2020.pdf>. Accessed April 2020.
- Korobelnik JF, Loewenstein A, Eldem B *et al*. Guidance for anti-VEGF intravitreal injections during the COVID-19 pandemic. *Graefes Arch Clin Exp Ophthalmol* 2020 [in press].
- Yen MY, Schwartz J, Chen SY *et al*. Interrupting COVID-19 transmission by implementing enhanced traffic control bundling: implications for global prevention and control efforts. *J Microbiol Immunol Infect* 2020 [epub ahead of print].
- Feng S, Shen C, Xia N *et al*. Rational use of face masks in the COVID-19 pandemic. *Lancet Respir Med* 2020 [epub ahead of print].
- World Health Organization. Home care for patients with COVID-19 presenting with mild symptoms and management of their contacts. Available at: [https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-\(ncov\)-infection-presenting-with-mild-symptoms-and-management-of-contacts](https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts). Accessed March 2020.
- Bressler NM, Beaulieu WT, Glassman AR *et al*. Persistent macular thickening following intravitreal aflibercept, bevacizumab, or ranibizumab for central-involved diabetic macular edema with vision impairment: a secondary analysis of a randomized clinical trial. *JAMA Ophthalmol* 2018; 136 (3): 257–269.
- Schmidt-Erfurth U, Lang GE, Holz FG *et al*. Three-year outcomes of individualized ranibizumab treatment in patients with diabetic macular edema: the RESTORE extension study. *Ophthalmology* 2014; 121 (5): 1045–1053.
- Korobelnik JF, Loewenstein A, on behalf of the Vision Academy. Communicating with patients with nAMD and their families during the COVID-19 pandemic. *Graefes Arch Clin Exp Ophthalmol* 2020 [in press].
- World Health Organization. Coronavirus disease (COVID-19) advice for the public. Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>. Accessed March 2020.
- Public Health England. Guidance on social distancing for everyone in the UK. Available at: <https://www.gov.uk/government/publications/covid-19-guidance-on-social-distancing-and-for-vulnerable-people/guidance-on-social-distancing-for-everyone-in-the-uk-and-protecting-older-people-and-vulnerable-adults>. Accessed March 2020.
- World Health Organization. Advice on the use of masks in the context of COVID-19. Available at: https://apps.who.int/iris/bitstream/handle/10665/331693/WHO-2019-nCov-IPC_Masks-2020.3-eng.pdf?sequence=1&isAllowed=y. Accessed April 2020.
- Wong TY, Lanzetta P, Bandello F *et al*. Current concepts and modalities for monitoring the fellow eye in neovascular age-related macular degeneration: an expert panel consensus. *Retina* 2020; 40 (4): 599–611.
- Rosenfeld PJ, Brown DM, Heier JS *et al*. Ranibizumab for neovascular age-related macular degeneration. *N Engl J Med* 2006; 355 (14): 1419–1431.
- Brown DM, Kaiser PK, Michels M *et al*. Ranibizumab versus verteporfin for neovascular age-related macular degeneration. *N Engl J Med* 2006; 355 (14): 1432–1444.

Vision Academy Viewpoints are intended to raise awareness of a clinical challenge within ophthalmology and provide an expert opinion to engage in further discussion.

They can be downloaded from <https://www.visionacademy.org/resource-zone/resources/all>

The Vision Academy is sponsored by Bayer. This document was prepared on behalf of the Vision Academy by Jean-François Korobelnik, Anat Loewenstein, Bora Eldem, Antonia M. Joussea, Adrian Koh, Paolo Lanzetta, Xiaoxin Li, Monica Lövestam-Adrian, Rafael Navarro, Annabelle A. Okada, Ian Pearce, Francisco J. Rodriguez, David T. Wong, and Lihteh Wu.

Always refer to local treatment guidelines and relevant prescribing information.
The views represented in this document do not necessarily reflect those of Bayer.

April 2020 | MA-PFM-OPHT-ALL-0159-1