

## OCULAR CHANGES FOLLOWING DIFFERENT TYPES OF COVID-19 VACCINES - A LITERATURE REVIEW

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Author – Lahiruni rajapaksha<sup>1</sup>, fathima Mufriza<sup>1</sup>

<sup>1</sup>Vision Care Optical Services Pvt Ltd, Sri Lanka [ludayarajapaksha@gmail.com](mailto:ludayarajapaksha@gmail.com)

### **Abstract**

#### **Introduction**

COVID-19 vaccines, though highly effective and generally safe, have been associated with rare ocular complications. Reported effects include anterior segment, retinal, and uveal involvement, though causal links remain unclear. This study reviews existing literature on ocular changes observed post-vaccination to assess their clinical relevance.

#### **Objective**

Objective of this review was to analyze ocular effects associated with COVID-19 vaccination, focusing on their clinical features, management, and outcomes, while categorizing manifestations by anatomical region, comparing across vaccine types, and identifying gaps for future research.

#### **Methods**

In this narrative review, the reported ocular changes after COVID-19 vaccination were analyzed using PubMed, Google Scholar, ScienceDirect, and Medline using keywords such as 'COVID-19 vaccine', 'ocular manifestations', 'adverse effects post-vaccination', 'adnexa', 'manifestations in the posterior segment', 'mRNA vaccine', 'viral vector vaccine', and 'inactivated coronavirus vaccine'. Peer-reviewed articles published since 2020 were included, while non-English, non-peer-reviewed sources and insufficient case reports were excluded. A total of 31 studies met inclusion criteria out of the 51 case studies and publications that were analyzed. Data on vaccine type, ocular effects, demographics, symptom onset, management, and outcomes were extracted, categorized by anatomical region and vaccine type, and summarized descriptively.

#### **Results**

The most frequently reported ocular manifestation across vaccine types was anterior uveitis, particularly with Pfizer (BNT162b2), AstraZeneca (ChAdOx1nCoV-19), and Sinopharm (BBIBP-CorV). Other notable findings included acute macular neuroretinopathy, Vogt-Koyanagi-Harada (VKH) disease, and central serous chorioretinopathy (CSCR). Distinct associations were noted, such as acute zonal occult outer retinopathy (AZOOR) with Moderna and hemorrhagic central

retinal vein occlusion (CRVO) with Pfizer. Most cases were reported to be managed successfully with standard therapies and had favorable outcomes.

### **Conclusion**

Ocular complications after COVID-19 vaccination are rare but clinically relevant, with anterior uveitis being most common and posterior segment or vascular events less frequent yet significant. Early recognition and management are essential, and further large-scale, region-specific studies are needed to strengthen evidence and guide patient care.

**Access Online:** <https://journal.vcacademy.lk/articles/variation-of-macular-pigment-optical-density-mpod-with-body-mass-index-bmi-in-young-adults>.