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*Title* **Intraocular Lens (IOL) Implantation Hydrophilic Acrylic Versus Hydrophobic Acrylic**

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*Reference* Health Technology Assessment Report, MOH/P/PAK/193.09/ (TR).
www.moh.gov.my/health_assesments/59

## Aim

To assess the safety of commonly used foldable IOLs (hydrophilic acrylic and hydrophobic acrylic IOL implants)

## Conclusions and results

Poor- to fair-level evidence suggested that the incidence of IOL opacification affecting vision was reported only with hydrophilic acrylic IOL and not with hydrophobic acrylic IOL. IOL opacification of hydrophilic acrylic IOL was caused by deposition of calcium and phosphate on the IOL surface, or within the optic material, or both (on the surface and within the IOL material) depending on the designs of the hydrophilic acrylic IOL. The pathophysiology of the causes of such complications has not been fully described. Diabetic patients appeared to be affected more often and more severely by IOL opacification.

## Recommendations

Based on the above review, we recommend the use of hydrophobic acrylic IOLs. Patients who had hydrophilic acrylic IOLs implantation need longer and more frequent follow-up, particularly in the presence of predisposing factors such as diabetes. In view of the absence of a Medical Device Act in Malaysia, an incident-reporting mechanism for IOL opacification, irrespective of materials and designs, needs to be established to provide more information on IOL opacification locally.

## Methods

Electronic databases were searched, eg, MEDLINE, PubMed, EBM Reviews-Cochrane Database of Systematic Reviews, EBM Reviews-Cochrane Central Register of Controlled Trials, EBM Reviews-HTA databases, FDA website, and MHRA. No limitations were placed on the search. All relevant literature was appraised using the Critical Appraisal Skills Programme (CASP), and evidence was graded based on guidelines from US/Canadian Preventive Services Task Force. Nineteen full-text articles were included (6 cross-sectional studies, 6 case series, 5 case reports, 1 laboratory experimental study, and US FDA approval for premarketing of hydrophilic and hydrophobic IOLs). The search did not yield any health technology assessment reports, systematic reviews, or RCTs related to the safety of hydrophilic and hydrophobic IOLs.

## Further research/reviews required

Incident reporting for IOL opacification irrespective of materials and designs.

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