

## Is Hormone Replacement Therapy Associated with Age-Related Macular Degeneration? A Systematic Review and Meta-Analysis

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**Abstract :** Background: A few studies have found evidence that exposure to endogenous or postmenopausal exogenous estrogens may be associated with a lower prevalence of age-related macular degeneration (AMD), but dispute over this association is ongoing due to inconsistent results reported by different studies. Objectives: To conduct a systematic review and meta-analysis to investigate the association between hormone replacement therapy (HRT) use and AMD. Methods: Relevant studies that assessed the association between HRT and AMD were searched through four databases (PubMed, Web of Science, Cochrane Library, EMBASE) and reference lists of retrieved studies. Study selection, data extraction and quality assessment were conducted by three independent reviewers. The fixed-effect meta-analyses were performed to estimate the association between HRT ever-use and AMD by pooling risk ratio (RR) or odds ratio (OR) across studies. Results: The review identified 2 prospective and 7 cross-sectional studies with 93992 female participants that reported an estimate of the association between HRT ever-use and presence of early AMD or late AMD. Meta-analyses showed that there were no statistically significant associations between HRT ever-use and early AMD (pooled RR for cohort studies was 1.04, 95% CI 0.86 - 1.24; pooled OR for cross-sectional studies was 0.91, 95% CI 0.82 - 1.01). The pooled results from cross-sectional studies also showed no statistically significant association between HRT ever-use and late AMD (OR 1.01; 95% CI 0.89 - 1.15). Conclusions: The pooled effects from observational studies published to date indicate that HRT use is associated with neither early nor late AMD. Exposure to HRT may not protect women from developing AMD.

**Keywords :** hormone replacement therapy, age-related macular degeneration, meta-analysis, systematic review

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