

Safety of Repeated Low-level Red-light Therapy for Myopia

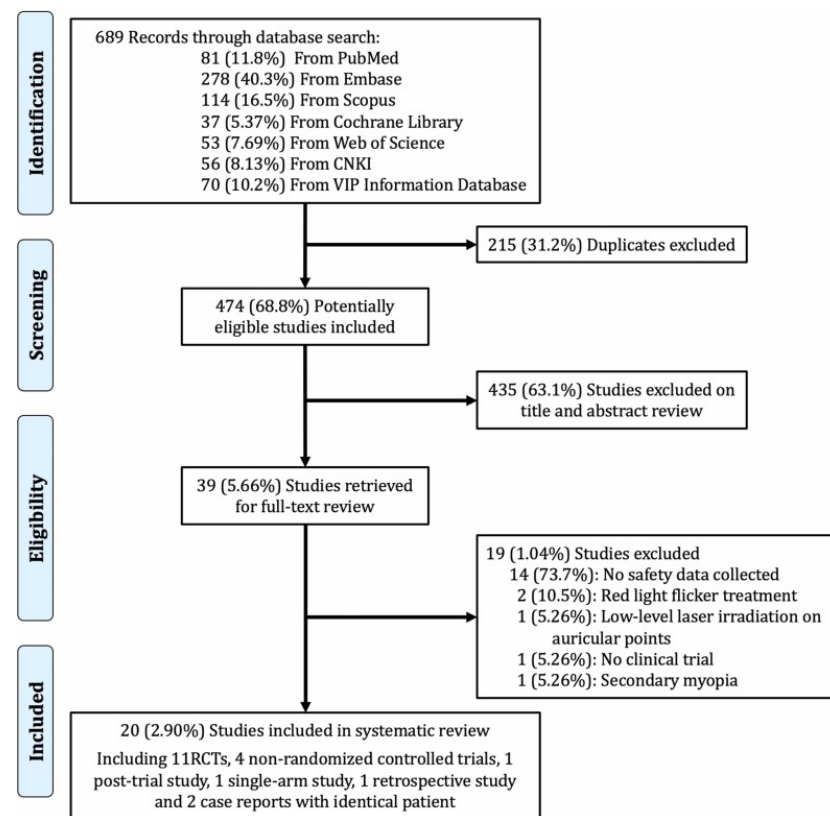
A Systematic Review

Yanping Chen | Ruilin Xiong | Shaopeng Yang | Ziyu Zhu | Huangdong Li | Kaidi Xiang | Nathan Congdon | Wei Wang | Mingguang He

Purpose:

To establish the safety of repeated low-level red-light therapy (RLRL) prior to its widespread clinical implementation

Method:



Results:

20 studies were analyzed encompassing 2380 participants, 1436 of which were on RLRL.

624/625 children (99.8%) with OCT data identified no structural damage.

The only adverse event reported were two case reports of an identical patient with reversible decline in VA and OCT which resolved 4 months after treatment cessation, with **no cases of permanent vision loss reported.**

Temporary afterimage was the most common side effect reported.

In terms of risk-benefit analysis, the number needed to harm outweighed the number needed to treat by **12.7-21.4.**

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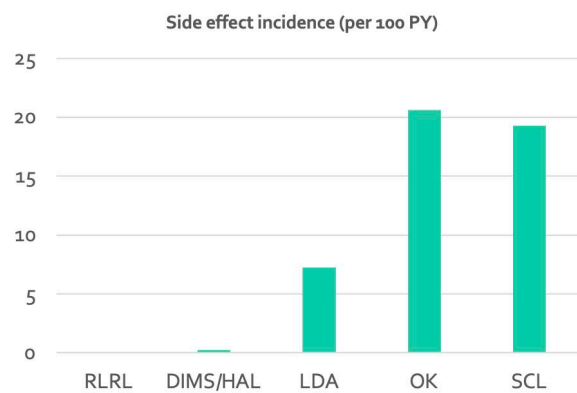
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Results:

The incidence of side effects from RLRL was the lowest of all myopia treatments at **0.088 per 100 patient years**, significantly lower than low-dose atropine (7.32), orthokeratology (20.6) and other anti-myopia contact lenses (19.3).

Interventions	Baseline age criteria (years)	Number of participants	Person-years	Ocular adverse events	Ocular adverse events per 100 patient-years	95% CI*
RLRL ^{8, 9, 10, 11, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48}	3-18	1436	1139.8	1	0.088	0.02-0.50
Low-dose atropine ^{60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78}	4-16	2736	5368	393	7.32	6.65-8.05
Orthokeratology ^{76, 79, 80, 81, 82, 83, 84}	6-12	231	364.5	75	20.6	16.7-25.0
Anti-myopia contact lens ^{85, 86, 87, 88, 89, 90}	7-15	697	1899	366	19.3	17.6-21.1
Spectacles designed for myopia reduction ^{49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59}	6-16	1247	2299	5	0.22	0.09-0.51



Discussion:

The study concluded **no irreversible visual function loss or ocular structural damage with RLRL**, although noted that meticulous monitoring and follow-up while on RLRL is appropriate and further adequately powered studies of longer duration would be needed for long-term safety evaluation.



To find out more about the Repeated Low-Level Red-Light Therapy available via Eyerising, get in touch with your local Eyerising International team today.