

**The CRF would like to thank Dr. Katie Bales for her time and work to create this valuable information for our members and those with CHM.*

Exercise & Lifestyle

Note: Patients should consult with physician before beginning a new exercise or wellness program.

1. Exercise:

What is it?

Vision-related studies monitoring the effects of exercise performed in animal models as well as patients have revealed supportive evidence for increased retinal health and function.

Provide CDC recommendations on exercise based on age; in 2018 CDC physical activity guidelines <https://health.gov/paguidelines>

Collectively, studies have shown exercise to have a protective association in regards to management of retinal disease and suggest that exercise benefits the visual system and may protect against injury, dysfunction, and degeneration in the aging eye.

Animal studies

- photoreceptor degeneration, rd10: Voluntary running exercises in mice, rd10 active group exhibited significant preservation of visual acuity, cone nuclei, and total photoreceptor nuclei number.

<https://iovs.arvojournals.org/article.aspx?articleid=2466800>

- photoreceptor degeneration: Light induced retinal damage (LIRD): aerobic exercise in mice, exercised mice exposed to bright light had 2 times greater retinal function and photoreceptor nuclei than inactive mice exposed to bright light.

<http://www.jneurosci.org/content/34/7/2406.long>

-Glaucoma: study performed in mice; exercised by swimming for 60 min/d, 5 d/wk for 6 weeks, found that exercise almost completely reversed age-related vulnerability of the optic nerve to injury such that exercised aged

mice had a similar functional response to injury as non-exercised young (3-month-old) mice.

<https://www.sciencedirect.com.ezproxy3.lhl.uab.edu/science/article/pii/S0197458014000360>

-Diabetic retinopathy: rat model of diabetes, ran on a treadmill for 30 min/day, 5 times a week, over the course of 6 weeks, positive results suggest that treadmill exercise represents an effective strategy to delay or prevent the onset of ocular complications in diabetic patients.

<https://www.spandidos-publications.com/mmr/7/6/1745>

Clinical studies

- Age-related macular degeneration (AMD): meta-analysis of 9 studies; 3 hours of moderate-to-low-intensity physical activity per week in patients. Physical activity was found to have a protective association with both early AMD (8 studies, n = 38 112, odds ratio (OR) 0.92, 95% confidence interval [CI] 0.86–0.98) and late AMD (7 studies, n = 28 854, OR 0.59, 95% CI 0.49–0.72).

<https://www.clinicalkey.com/-/content/playContent/1-s2.0-S0002939417302180?returnurl=https:%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0002939417302180%3Fshowall=true&referrer=https:%2F%2Fwww.ncbi.nlm.nih.gov%2F&scrollTo=%23bib29>

-Glaucoma: aerobic exercise such as jogging, cycling and walking, found to reduce IOP in patients.

<https://www.ncbi.nlm.nih.gov/pubmed/30562241>

YouTube link for easy at home exercises:

<https://www.youtube.com/watch?v=oEfqzETvkJg>

<https://www.youtube.com/watch?v=bZDX7FMqt7U>