

Optometry in Space: How Microgravity effects vision and Eye health

Poulami Gope^a, Arpita Chatterjee^a

^a Department of Optometry, Dr. B C Roy Academy of Professional Courses, Durgapur, West Bengal, India-713206

Abstract-

Aim: The study aims to see how microgravity effects vision and eye health.

Methods: According to the topic there were 12 significant article from Google scholar, PubMed and other sources from where 6 articles are relevant.

Discussion: Studies shows that when astronauts travel in space there are some changes in our eyes, which includes optic disc edema, optic nerve sheath distension, globe flattening, reduction in near visual acuity from long duration travel. It is also hypothesized that there may be changes related to shift of body fluid leading to elevated Intra Cranial Pressure (ICP) and Intra Ocular Pressure (IOP).

There is also hyperopic shift of refraction, alteration in choroid & retinal tissue, and Optic Disc Swelling caused by redistribution of body fluid to upper part of the body.

The scientist identified the microgravity induced changes to the human and named it as Spaceflight-Associated Neuro-Ocular Syndrome, or SANS.

Conclusion: According to all the articles taken it shows that there is major risk to optic disc edema, hyperopic shift and shifting of fluid in the upper part of our body leading to increase in ICP and IOP. Though structural changes may be permanent but the shifting of fluid and hyperopic changes may decrease over time post flight.