

# Light and Myopia

- Proposed factors contributing to myopia progression:
  - Genetics
  - Near Work
  - Diet
  - Blur
  - Light Exposure

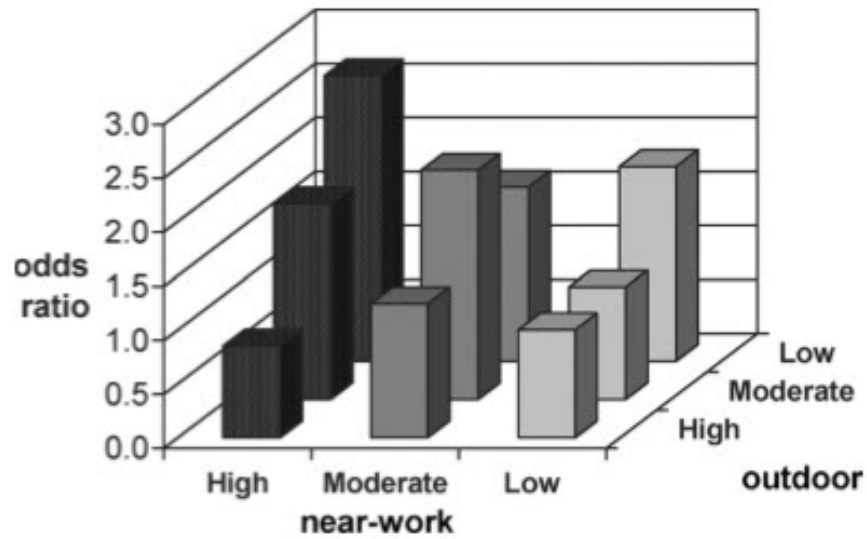
# Physiological Theories

- May be associated with increased dopaminergic activity in the retina
- May involve ipRGC's (also dopamine-related).
- Lot's of research, especially in Asia.

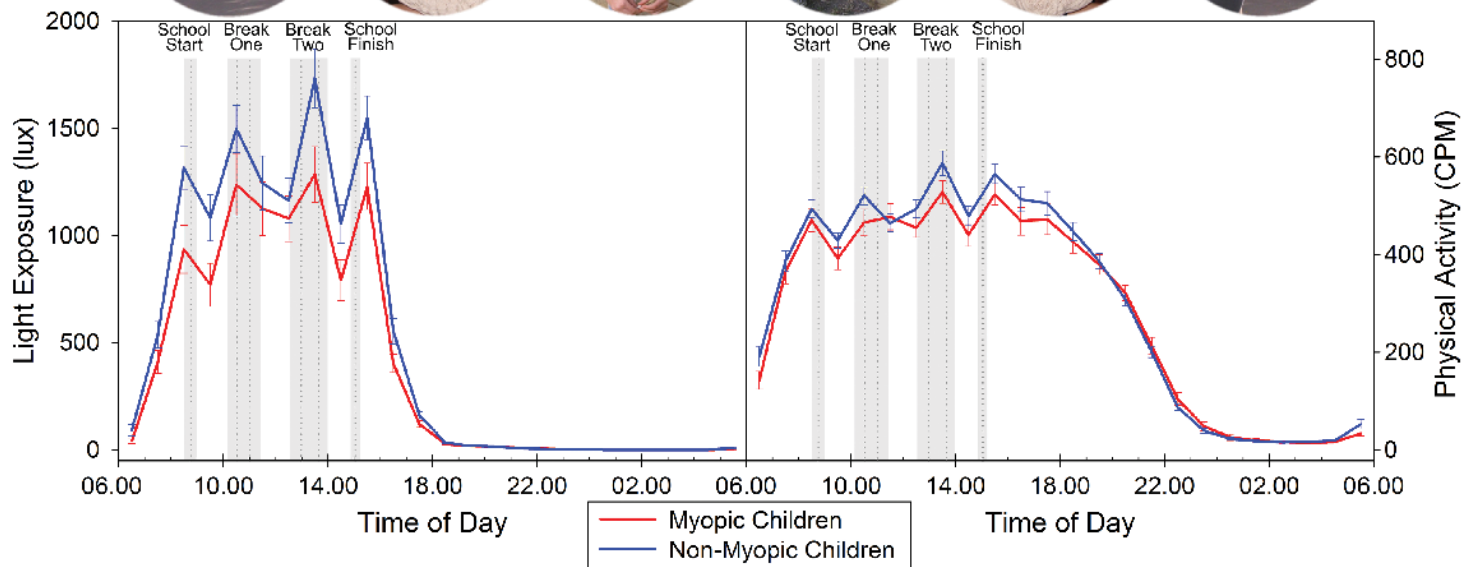
# Australian Studies

- Rose, Morgan et al  
Amer. Acad. Ophthal. 2008  
1700 6 year olds / 2367 12 year olds  
Data gathered by questionnaires
- Read, Collins, & Vincent  
IOVS 2015  
101 Children 10-15 years old  
Measured axial length  
Data gathered by Actiwatch (photic sensor)

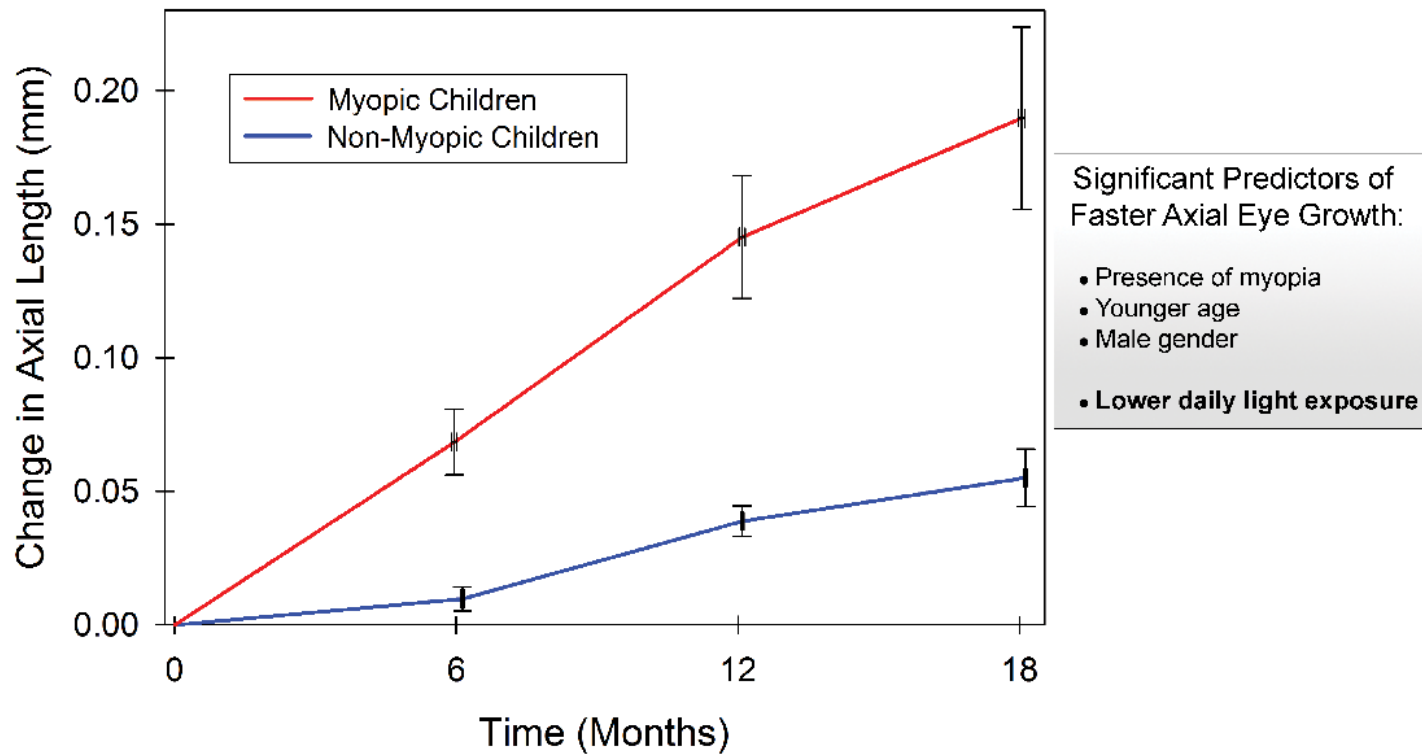
# Rose, Morgan et al 2008



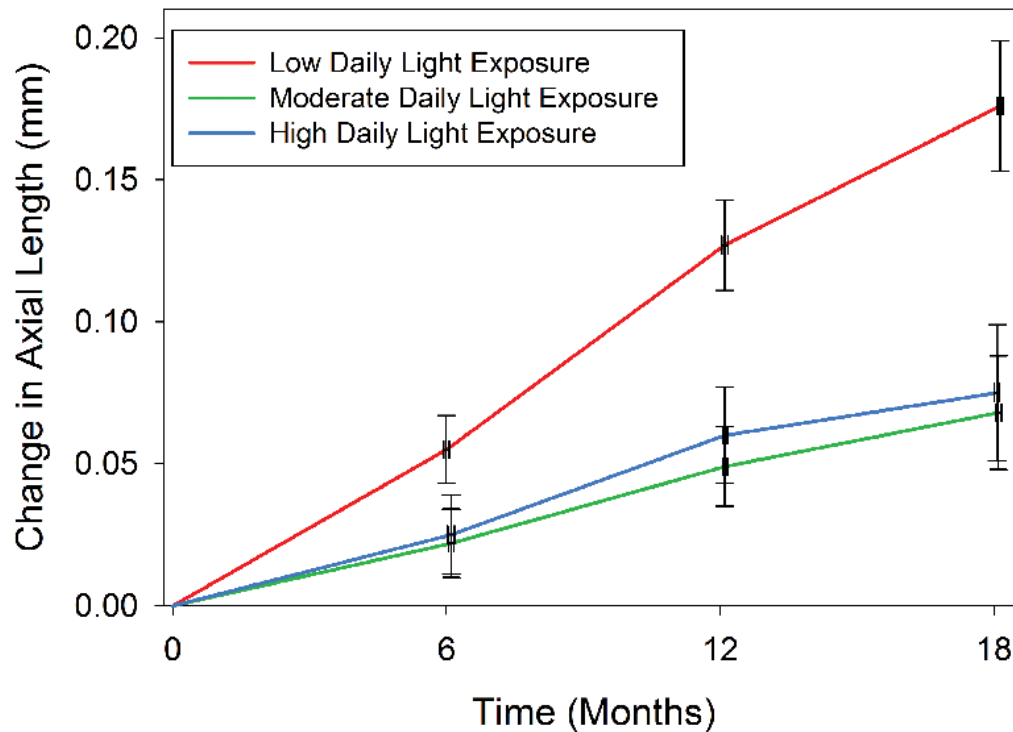
# Outdoor Exposure



# Axial Length vs Time



# Axial Length vs Time (Exposure)

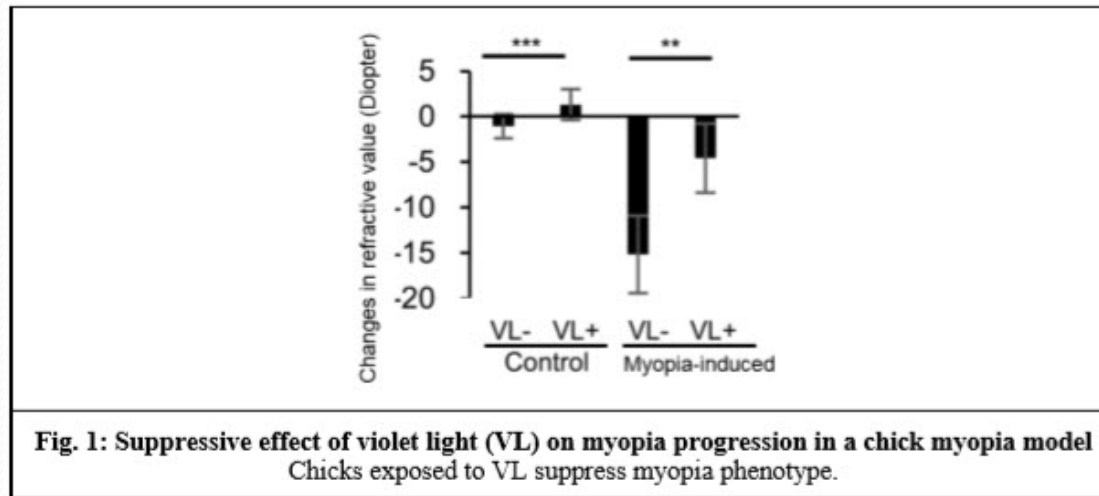


Average Daily Bright Light Exposure (>1000 lux):

High Daily Light: 137 min/day  
Moderate Daily Light: 90 min/day  
Low Daily Light: 56 min/day

# Violet (360-400 nm) Light Effects?

- Tsubota & Kurihara (Keio University) 2018





# Violet Light in Humans

