The Impact of Blue Light on *Drosophila melanogaster* Reproduction and Physiology

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Artificial blue light is ubiquitous thanks to its widespread use in light emitting diode (LED) devices. Prolonged blue light exposure has been linked to disrupted circadian rhythms and damage to human’s eye retinal cells, and it is suspected to also have other long-term effects on health. To experimentally explore the consequences of blue light exposure many studies have used fruit flies, *Drosophila melanogaster* as a model. To date such studies have reported increased mortality, faster aging, and neurodegeneration in blue light exposed flies, and have speculated this damage is due to excess mitochondrial reactive oxygen species (ROS). In my study I exposed flies to blue light or white light for extended periods of time and placed them into reproductive assays where I could monitor their behaviour, reproductive success, and offspring production. I found that blue light flies and white light flies behaved differently from each other in these choice assays and these effects were different between the sexes. I discuss these results in the context of what they reveal about blue light, and concerns about its long-term effects on the behaviour and fitness of living organisms.