

## Frequently Asked Questions

# Neonatal Intensive Care Areas & Fluorescent Lighting

### *Should I avoid using fluorescent lighting in neonatal care areas?*

Recently there have been questions relating to whether light below about 500 nm, i.e., the violet and blue content, should be filtered from fluorescent lighting in neonatal care areas. The suggestion is that blue light is the cause of Retinopathy of Prematurity (ROP), a condition that may cause blindness in infants. This is an issue that must be evaluated by the medical community and not by the lighting industry.

As background information, the suggested relation between blue light and ROP was made in the 1980's. A 1990 medical review, "Treatment of Retinopathy of Prematurity" (J. Eichenbaum et al., Yearbook Medical Publishers, 1990), included a discussion on possible causes of ROP with expert opinion ranging from "no effect due to light" through "light may be one factor influencing ROP." The blue aspect of light was not mentioned.

A review of all lighting related issues, "Lighting for Neonatal Intensive Care Units: Some Critical Information for Design" (J. Bullough and M. Rea, Lighting Research & Technology, 28:189, 1996), found no basis to specifically control the blue light content of illumination.

At the present, there are no regulations or standards on the blue content of the lighting for neonatal care units in relation to ROP. There are recommendations or standards in various countries for the color quality (correlated color temperature and color rendering indices) of light used in medical facilities based on the needs of clinical observation. Generally, these could not be achieved if the blue end of the visible spectrum were absent.

There are standards for safe exposure limits to nonionizing radiation including light. Normal, well designed lighting systems will be well below these accepted criteria.

Since the causes of ROP are not definitively known, future research might find a relation between some aspect of light and ROP. Consequently, there are important questions to ask when a suggestion is made to modifying current lighting practice. Have regulatory agencies or radiation protection organizations established quantifiable standards that should be followed? Has a basis for new recommendations been established in the refereed scientific literature?

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