Lighting for Schools

Early years of a person's life is the most important for growth and development. Brain development and memory formation occurs during sleep, and more specifically during stages 3 and 4 of sleep. It is recommended that all pre-teens as well as teens should sleep between 8.25-9.25 hours of sleep a night, however polls have shown that 13 year olds get ~7.75 hours on average, and 19 year olds average ~7 hours per night. On average, the typical human circadian system cycles on a 24.2 hour schedule, however circadian cycles in adolescents tend to increase. This can be a result of hormonal changes, which causes adolescents to have the tendency to fall asleep later (~11pm). This can be classified as delayed sleep phase disorder (DSPD) which can ultimately reduce the total hours of sleep each night. It is been shown that adolescents are more sensitive to light at night compared to middle-aged adults, and the use of electronic devices in the evening hours, especailly before bed have also been shown to be bright enough to stimulate the circadian systen and delay slow wave sleep, which further causes delay of bedtime. When occuring for long periods of time, reduction in amount of sleep increases the risk of depression, substance use such as drugs and alcohol, behavioral issues, and poor performance in school. Advancing the timing of an adolescents circadian clock to promote an earlier bedtime can be achieved by the use of a high CS morning light and reducing light exposure at night. The collaboration between school administrators, teachers, and parents must be created to assure a 24-hour lighting schedule is achieved. Even if morning light doses are achieved, it can be undone if exposed to high light levels at night. Encouraging your teen to minimize the use of screens at night and reducing the brightness on their phones, tablets, and computers when they are in use can promote better sleep habits.