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The blue light is everywhere, do you see it? It illuminates the screen of your smartphone, your computer, your TV and your digital tablet. It is she who lights you at work, at home, on the road, at the sports center. Its low energy consumption and long life make it an economical and ecological choice.

"The trend in architecture is to opt for colder lights, containing more blue, in indoor environments," says Alexandre Sasseville, a neurobiology researcher at the Université Laval Research Center. This light is added to that already present in electronic devices."We are increasing the proportion of blue that we are exposed to every day. It is assumed that in the long term there could be damage, but it is not yet known. "

1 WHAT IS BLUE LIGHT?

The light that is perceived white is actually a mixture of colors that are declined in a continuum going from red to purple, going through orange, yellow, green and blue, such as the colors of the arc -in sky. Beyond what is visible to us, there are ultraviolet and X-rays and, at the other end of the spectrum, infrared and microwaves.

"Visible light is probably the least harmful to the eye," says Nicolas Fontaine, assistant professor at the School of Optometry at the Université de Montréal. But the closer you go to violet, the shorter the wavelength and the higher the energy intensity, hence the potential impact on the ocular surfaces. The violet has a wavelength of about 380 nanometers (nm), while red has a wavelength of 780 nm. And the blue? Around 440 nm.

1 EYE HEALTH

"Studies show that blue light (around 440 nm) produces molecular changes in the retina, the lens and the cornea," says Nicolas Fontaine. It turns some molecules into free radicals, creating premature aging of the structures of the eye, while other molecules become phototoxic and create potential damage to the tissues. "

If the extent of long-term damage remains to be confirmed, it is assumed that prolonged exposure to blue light may precipitate and aggravate age-related macular degeneration and cause premature cataracts. On the other hand, the effects of ultraviolet rays would be much greater.

In the short term, the possible effects are clearer: for example, there is discomfort and visual fatigue. "In the presence of artificial blue light, one tends to squint the eyes, it creates a visual tension. There is a feeling of dry eye and it can cause headaches. Visual performance is also affected. The blue light is diffuse and creates a glare, it is difficult to see details and contrasts. "

With protective lenses specially designed to block blue light, discomfort is reduced by half, says Nicolas Fontaine, who conducted a study on the subject. However, the effect on ocular performance is not significant.

1 THE TROUBLED SLEEP

"Our biological clock is very sensitive to blue light," says Alexandre Sasseville. We know that inadequate exposure, especially in the evening, can have short-term impacts on sleep. Using a touch screen in the evening would disturb sleep and circadian rhythms. Blue light, which acts as morning natural light, inhibits the production of melatonin, it delays and makes it difficult to fall asleep.

Disturbed sleep causes a lot of complications: fatigue, concentration and memory impairment, increased risk of obesity and metabolic diseases, increased risk of depression, etc.

1 BREAST CANCER

The action of tamoxifen, used against breast cancer, may be reduced in women who are significantly exposed to blue light in the evening. American researchers believe that this is due to the disruption of circadian rhythms induced by this exposure. A two-hour exposure to blue light at night can result in a 20% decrease in melatonin production. The effect is also noted in women who do not enjoy total darkness to sleep.

Source: Le Point.fr

1 MORE SENSITIVE TO BLUE LIGHT:

> Children, because their eyes are more sensitive to light.

> People without crystalline lenses or with artificial lens.

> Consumers of photosensitizing drugs.

> People with eye disease.

> People who spend eight hours a day in front of a screen, who work with light (eg lighting engineer, etc.)

Source: National Agency for Food, Environmental and Occupational Health Safety (Anses, France)

1 SCREENS IN NUMBERS

21 HOURS

Nearly 1 in 5 Canadians (19%) spend 21 or more hours a week in front of the television, according to Statistics Canada (2007).

8 HOURS

Owners of a smartphone spend 8 hours each day (in their spare time) in front of one of the screens they own, according to an Ipsos survey (2013).

7 HOURS

Young people spend more than 7 hours a day in front of all screens, according to Jeunes en Forme Canada (2012). The recommendation of the Canadian Society for Exercise Physiology? No more than 2 hours!