
How to take care of your eye fatigue!

Many modern people suffer from eye fatigue. Eye fatigue also cause headache and stiff neck and shoulders. . In this issue, we will introduce why our eyes get tired and tips to care eyes.

◆◆ Why our eyes get tired?

When we look at objects, the crystalline lens in our eyes which work like the lens of a camera adjust and focus for them. When focusing on distant objects, the crystalline lens become thin. When focusing on nearby objects, they become thick. The ciliary muscle works to change the thickness of the crystalline lens. It is located around the crystalline lens like a circle.

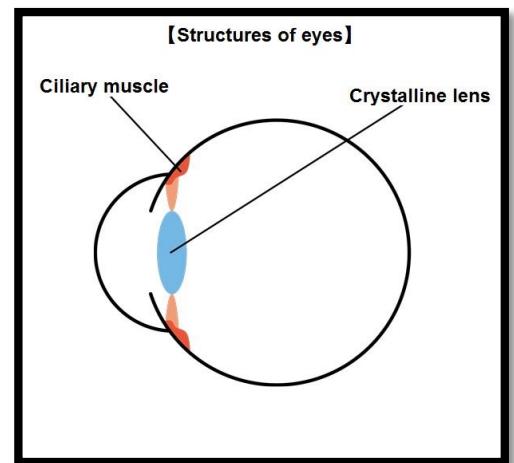
When focusing on nearby objects, the ciliary muscles are tightened which can adjust the thickness of the crystalline lens in our eyes. By continuing to look at the screen of a computer or smartphone for a long time, the ciliary muscle easily becomes fatigate which in turn causes fatigue of the eyes. The strength of ciliary muscle falls among people with presbyopia. Therefore, they suffer difficulties of seeing nearby objects.

When the secretion of tears decreases or the balance of components of tears disrupted, the ability to wet the surface of the eyes decreases.

This condition is called dry eye. The most common cause of dry eye is the reduction of the frequency of blinking due to watching a screen of computer or smartphone continuously and aging. One in three company employees tend to be dry eye. When the amount of tears decrease, the surface of the eye cannot be kept smooth and even if visual acuity is good, there is a possibility of seeing objects blurred.

When visual acuity changes because of those reasons, the ciliary muscle is forced to adjust to focus on objects which will result in creating more fatigue to the eyes. If you are using eyeglasses or contact lenses, it is recommend to check regularly if they match to your actual visual acuity.

Furthermore, if you continuously work with objects nearby for a long time or have insufficient sleep, the blood flow reduces which makes for less amount of nutrients and oxygen to reach the cells of the eyes. The metabolism of these cells declines and eventually the eyes accumulates fatigue. Thus, falling into a vicious circle. We suggest to take a break frequently when you use a computer or smartphone, have quality sleep and eat a balanced diet.



◆◆ How to heal tired eyes?

It is important to relieve tensions in the ciliary muscle and improve the blood flow around the eyes in order to heal the tired eyes. If you continuously work with objects nearby for a long time, you should rest your eyes for about 10 minutes every hour and see far away.

When you warm your eyes with a steamed towel, the tension in the ciliary muscles is reduced and the blood flow is improved which will alleviate to reduce eye fatigue. In addition, steamed towels are effective for improving the conditions of dry eye. You can easily make a steamed towel: you just lightly squeeze a towel and heat up for 1 to 2 minutes in a microwave over around 40 degrees C seems to be comfortable to reduce the muscle tensions.

The muscles around eyes are not the only factor involved in causing eye fatigue, the autonomic nerve system may also be involved in causing this condition. When the parasympathetic nerve which works to give us relaxing sensation command the ciliary muscles, they contract/ tense and focus on nearby objects. However, the sympathetic nerve becomes predominant due to stress and tensions from computer works. If the condition where sympathetic and parasympathetic nerves are confused continues, the balance of autonomic nerve collapses. Disorder of autonomic nerve may cause eye fatigue. It is necessary to have a good rest both in mind and body.

◆◆ How to care the eyes by daily diets?

It is important to take effective nutrients for tired eyes. Lutein, anthocyanin and astaxanthin are effective. We should combine these nutrients into our daily diets and take care our eyes from inside the body.

Nutrients effective for eye fatigue

◆ Astaxanthin

It is a red pigment composition rich in salmon and shrimp and has a strong antioxidant property. Astaxanthin is one of the few compositions that can pass through the "blood-retina barrier" which only allows the ingredients that are necessary for the eyes to pass. It works directly at the back of the eyes. It improves focus adjustment and is effective for eye fatigue.



Foods rich in astaxanthin: Red salmon, Red snapper (alfonsino), Salmon roe, Crab, Shrimp

A recommended intake volume is 5 mg per day.

e.g. 2 thick fillets of red salmon can provide about 5 mg of ataxanthin.

◆ Lutein

Lutein is a kind of carotenoid. It is a yellow pigment compound with an antioxidant potency, and is abundant in green-yellow vegetables. Lutein is present in important parts of eyes like crystalline lens. It suppresses active oxygen and protects eyes from blue lights which are emitted from computers and smartphones, and stimulation from ultraviolet rays.

Foods rich in lutein: Kale, spinach, lettuce, broccoli

A recommended intake volume is more than 6 mg per day. e.g. 1/4 bundle of spinach can provide about 6 mg of lutein.



◆ Anthocyanin

It is a pigment compound contained in dark colored vegetables with reddish purple, black and red colors. It promotes the recombination of rhodopsin which is involved in sensing brightness and darkness in the retina of the eyes. If rhodopsin is not resynthesized properly, the eyes may take a time to get used to sudden changes in brightness, or get tired quickly. Anthocyanin works on the ciliary muscle to help their focus adjustment and reduce eye fatigue.

Foods rich in anthocyanins: Blueberry, black soy bean, eggplant, grape, perilla

A recommended intake volume is more than 40 mg per day. e.g. a double handful of blueberry can provide about 40 mg of lutein.



We are in an environment surrounded by computers and smartphones and often feel tired in eyes. The aggravation of eye fatigue will cause poor physical condition throughout the whole body, including stiff neck and shoulders and headache. It is important to have well balanced meals and good quality sleep as well as taking a break frequently when you are forced to use the eyes. It is important to care of your eyes from the inside and outside in order to resolve the tiredness of your eyes quickly.