OR-010

Deprivation of sleep in eye and visual homeostasis

Marjan Irman

Očesni center Irman, Slovenia

Deprivation of sleep between 4 and 6 hours per night can significantly disrupt eye and visual homeostasis, leading to several physiological and functional negative efects. Sleep in 5 to 7 cycles of 90 to 110 minutes is essential for regeneration of cells and higher structures in visual system from eye surface to cortical structures. When duration of sleep is shorter than 6 hours with disrupted cycles, eye is prone to fatique, redness, dryness etc.in the morning. Memory fog, tiredness and bad feeling is present. Chronic sleep deprivation lead to disrupted homeostasis of intraocular(IOP) and intracranial presure (ICP), disrupt regeration proces in ganglion cells, retinal cells , glimphatic circulation, circadiane rytm , etc. Reduced cognitive processing and attention impares visualy influenced cognitive tasks, especialy in negative stress situations. In coclusion, adequate sleep of 5 to 7 cycles per night is essential for optimal eye and visual functioning during day time.

Vpliv prikrajšanja spanja na očesno homeostazo

Marjan Irman

Očesni center Irman, Slovenia

Prikrajšanje spanja na 4 in 6 ur na noč lahko signifikantno moti očesno homeostazo, ki ima več fizioloških in funkcionalnih posledic. Spanje s 5 do 7 cikli, katerih eden traja 90 do 110 minut, je bistveno za regeneracijo celic in višjih organskih struktur od površine zrkla do možganske skorje. Ko je spanje kronično krajše od 6 ur z motnjami v posameznem ciklu, je oko zjutraj utrujeno, pordelo , suho, itd. Prisotna je utrujenost, slabši spomin in slabo počutje. Kronično pomanjkanje spanja moti homeostazo intraokularnega in intrakranialnega tlaka, moti regeneracijo ganglijskih in drugih celic mrežnice, glimfatično cirkulacijo, cirkadiani ritem , itd. Slabše kognitivno procesiranje in pozornost moti na vidno funkcijo vezane kognitivne procese
v negativnih stresnih okoliščinah. V zaključku: spanje v 5 do 7 ciklih na noč je optimalno za normalno delovanje vidnega sistema in očesa podnevi.