

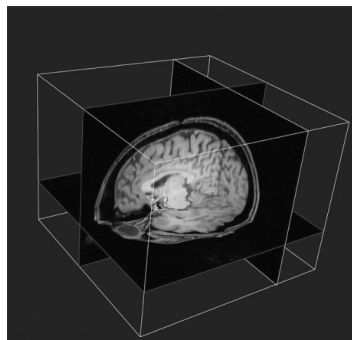


# news briefs

## Light-Stimulated Migraine Aggravation

Scientists at Harvard have identified a neural pathway that plays a crucial role in light-induced migraine. It has always been a mystery why exposure to light - in contrast to darkness - tends to exacerbate headaches. Interestingly, the report, published in *Nature Neuroscience*, highlights that light induces migraine pain even in blind patients, suggesting that cells in the retina that are not involved in visual pathways are affected by the presence or absence of photo-stimuli.

Retinal ganglion cells (RGCs), the photosensitive cells in the retina, route signals to a region of the brain known as the thalamus. Using micro-electrodes to record electrical pulses in rat brains, the



study identified a region of overlap between fibers of these cells and light-sensitive neurons in the thalamus. Light stimulates melanopsin - a unique photopigment in RGCs - and causes RGCs to send an electrical signal to the thalamus. In the thalamus, specific neurons involved in migraine circuitry are connected to these fibers, and become activated when receiving the signal. (1). The results of this study shed light onto the mechanism by which light increases migraine pain, and provides insight into other possible overlapping circuitries that could reveal how auditory and olfactory stimuli are also involved in migraine sensation. **H**

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1. R. Roseda, V. Kainz, M. Jakubowski, J.J. Gooley, C.B. Saper, K. Digre, R. Burstein. A neural mechanism for exacerbation of headache by light. *Nature Neuroscience* 13, 239 - 245 (2010)

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## After Copenhagen: Environmental Baby-steps

Although the U.N Climate Summit in Copenhagen finished in December, the effects of the conference are just beginning to manifest themselves in concrete resolutions around the world. Certainly many were disappointed with the discord that dominated the two weeks of the conference itself, but optimists among environmentalists know that in the long term, the seriousness that President Obama brought to the December conference could one day have substantial significant long-term effects.

On January 29th, the United States articulated its determination to bring the country's greenhouse gas emission four percent below the 1990 level by the year 2020. Certainly, Congress must translate these words into true legislation, but nonetheless, these necessary small steps will hopefully set a tone for other nations to propose more dramatic goals. The White House also decreed that the Federal Government will reduce its own green house gas emissions by 28 percent by 2020. These goals may not be substantial

enough to thwart the drastic climate changes looming in light of the ever-increasing levels of carbon dioxide in the atmosphere, but perhaps companies, countries, and consumers around the planet will be inspired to take similar—or more extensive—necessary measures. **H**

—*Susan DeWolf '10 is a Neurobiology concentrator living in Lowell House.*



1. Biello, David "U.S. Commits to Greenhouse Gas Cuts Under Copenhagen Climate Accord." [www.scientificamerican.com](http://www.scientificamerican.com)  
2. The White House: Office of the Press Secretary. "President Obama sets Greenhouse Gas Emissions Reduction Target for Federal Operations." <http://www.whitehouse.gov/>

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