

HOME PAGE TODAY'S PAPER VIDEO MOST POPULAR TIMES TOPICS Log In | Register Now | Help

The New York Times Search All NYTimes.com

Health

WORLD U.S. N.Y./REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION ARTS STYLE TRAVEL JOBS REAL ESTATE

AUTOS

Search Health 3,000+ Topics

Inside Health
[Research](#) | [Fitness & Nutrition](#) | [Money & Policy](#) | [Views](#) | [Health Guide](#)



In Eyes, a Clock Calibrated by Wavelengths of Light

Published: July 4, 2011

(Page 2 of 2)

In January in the journal PLoS One, the University of Basel team also compared the effects of incandescent bulbs to fluorescents modified to emit more blue light. Men exposed to the fluorescent lights produced 40 percent less melatonin than when they were exposed to incandescent bulbs, and they reported feeling more awake an hour after the lights went off.

In addition, the quantity of light necessary to affect melatonin may be much smaller than once thought. In research published in March in The Journal of Clinical Endocrinology and Metabolism, a team at the Harvard Medical School reported that ordinary indoor lighting before bedtime suppressed melatonin in the brain, even delaying production of the hormone for 90 minutes after the lights were off, compared with people exposed to only dim light.

What do these findings mean to everyday life? Some experts believe that any kind of light too late into the evening could have broad health effects, independent of any effect on sleep. For example, a report published last year in the journal PNAS found that mice exposed to light at night gained more weight than those housed in normal light, even though both groups consumed the same number of [calories](#).

Light at night has been examined as a contributor to [breast cancer](#) for two decades. While there is still no consensus, enough laboratory and epidemiological studies have supported the idea that in 2007, the World Health Organization declared shift work a probable carcinogen. Body clock disruptions “can alter sleep-activity patterns, suppress melatonin production and disregulate genes involved in [tumor](#) development,” the agency concluded.

Blue light’s effects might be particularly pronounced for shift workers and others who get little natural daylight, some researchers say. Consider one small trial that appears the June issue of The Journal of the American Medical Directors Association. Among 28 elderly nursing home residents, those exposed to just 30 minutes of blue light on weekdays for four weeks showed improvement in cognitive abilities, compared with patients exposed only to red.

Researchers like Dr. Brainard hope the science may lead to a new generation of lights and screens designed with wavelengths that adjust according to the hour of the day.

Among those interested are officials at NASA, who have approached the neurologist about designing light on the International Space Station in a way that promotes alertness during waking hours and encourages sleep during times of rest.

“I think we’re on the verge of a lighting revolution,” said Dr. Brainard. If the hormone-sparing lights can be made to work during spaceflight, he said, “people will use it here on the ground.”

RECOMMEND

TWITTER

SIGN IN TO E-MAIL

PRINT

SINGLE PAGE

REPRINTS

SHARE



Log in to see what your friends are sharing on nytimes.com. [Privacy Policy](#) | [What's This?](#) [Log In With Facebook](#)

What's Popular Now

The Mother of All No-Brainers Statue of Reagan Unveiled in London

- Stubborn Back Pain? Try Massage**
July 4, 2011
- Really? The Claim: Hospital Mortality Rates Rise in July**
July 4, 2011
- Transforming Beans Into Vegetarian Patés**
July 1, 2011
- What Cellphone Calls Say About Parent-Teenager Relations**
July 1, 2011
- Giving Medical Receptionists Their Due**
June 30, 2011

50 Extreme Exercises

[Click here](#) to get lean & ripped fast with these 50 extreme exercises.

Advertise on NYTimes.com

Get the Opinion Today E-Mail

Sign up for the highlights of the day in Opinion, sent weekday afternoons.

[See Sample](#) | [Privacy Policy](#)






Health & Fitness Tools

BMI Calculator
What's your score? »



**How to quit
smoking now**
LEARN MORE »
nytimes.com/health

INSIDE NYTIMES.COM ◀ ▶

<p>HEALTH »</p>  <p>The Effects of Light on Melatonin</p>	<p>OPINION »</p>  <p>Op-Ed: Think Inside the Box</p>	<p>ARTS »</p>  <p>The 'Ring' Is a Supreme Test for Opera Directors</p>	<p>BUSINESS »</p>  <p>An Agency Builder, but Not Yet Its Leader</p>	<p>OPINION »</p> <p>Editorial: Power-Hungry Devices Television set-top boxes are not really off when you think they are off.</p>	<p>WORLD »</p>  <p>A South Indian Temple Has Unearthed Riches</p>
---	--	--	--	---	---

[Home](#) | [World](#) | [U.S.](#) | [N.Y./Region](#) | [Business](#) | [Technology](#) | [Science](#) | [Health](#) | [Sports](#) | [Opinion](#) | [Arts](#) | [Style](#) | [Travel](#) | [Jobs](#) | [Real Estate](#) | [Autos](#) | [Site Map](#)
 © 2011 The New York Times Company | [Privacy](#) | [Your Ad Choices](#) | [Terms of Service](#) | [Terms of Sale](#) | [Corrections](#) | [RSS](#) | [Help](#) | [Contact Us](#) | [Work for Us](#) | [Advertise](#)