



## NATIONAL HEADACHE FOUNDATION

formerly National Migraine Foundation

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### ENVIRONMENTAL AND PHYSICAL FACTORS

The environmental factors that can provoke a migraine are extremely variable and affect only a small proportion of migraine sufferers. Environmental factors that can trigger a migraine include a change in climate or weather (such as a change in humidity or temperature), a change in altitude or barometric pressure, high winds, traveling, or a change in routine. Other environmental triggers include a bright or flickering light (sunlight reflections, glare, fluorescent lighting, television, or movies), extremes of heat and sound, and intense smells or vapors.

Weather changes can cause biological changes in the body's chemical balance and thus precipitate a migraine headache in some sensitive people. Weather conditions also can increase the severity of a headache induced by other factors. Extreme cold as well as very humid weather conditions have been known to trigger migraine headaches. A very dry and dusty atmosphere also can precipitate a migraine. When too many electrically charged dust particles are inhaled, it is thought that certain vasoactive chemicals are released, thus triggering a headache. These particles also may provoke the migraine headaches associated with certain winds and storms or with crowding in a stuffy room. A change in barometric pressure can trigger a migraine headache. The reduction of oxygen causes the blood and blood vessels to compensate. The scalp arteries swell, as they are extremely sensitive to the pressure of oxygen in the blood, especially to sudden changes, such as those that occur with flying in an airplane or sea diving. People living or traveling at high elevations can experience similar headaches.

Any change in a migraineur's environment that involves adjustment and adaptation can provoke a headache. Changing schools or jobs requires a great deal of adaptation, resulting in difficulty for the migraine sufferer. Travel may provoke migraine headaches because of the change in routine or diet as well as the new environmental and atmospheric conditions. Many migraineurs are sensitive to travel and seasickness. The jarring motion of a car, train, or boat can trigger a headache.

Many migraine sufferers are very sensitive to light, especially to glare. Bright lights are more likely to trigger migraine headaches when they are of a "flickering" quality, and a slow flicker is usually more irritating than a more rapid one. It is believed that some people have more excitable brain cells in response to light than others. A dazzling, flicker type of light can be found in light reflected on snow, sand, or water, or through clouds. Some fluorescent lighting or the light that flickers from television and movie screens may have a similar effect. The use of polaroid lenses in these glaring conditions can be helpful.

Certain fumes and vapors can cause the blood vessels of the susceptible person to swell and dilate, triggering a migraine headache. Carbon monoxide poisoning from a poorly ventilated environment can provoke a headache. Faulty furnaces in winter can be responsible for such fumes. The nitrites used in explosives can trigger a headache in susceptible persons who are employed in munitions plants. Smoking can provoke or intensify a headache. It can cause biological changes in the blood and blood vessels. Just being in a smoke-filled environment can provoke a headache in susceptible people. Loud and irritating noises also can precipitate migraine headaches. This may be associated with stress as well as change in environmental conditions.

Many physical factors also can trigger migraine headaches, including overexertion such as bending, straining, or lifting; high blood pressure; toothache; or localized head or neck pains.

