

Negative Ions for the Brain

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The atmosphere we breathe normally is full of positive and negative ions. Air conditioning, lack of ventilation, and long dry spells remove negative ions, which usually serve to latch onto airborne dirt particles and wrestle them to the floor, rendering the air purer. Roughly one-third of the population seems to be particularly sensitive to negative-ion depletion. The proportion of negative ions is highest around moving water (storms, oceans, rivers, waterfalls)—It's no wonder that we feel so energized at the beach. The best ratios of negative to positive ions are associated with waterfalls and the time before, during, and after storms. The worst are found in windowless rooms and closed, moving vehicles. Air purifiers typically work by emitting negative ions, which purify room air by attaching to impurities and sinking them.

High concentrations of negative ions are essential for high energy and positive mood (Thayer, 1996)^[1]. In fact, Marian Diamond, a professor of neuroanatomy at the University of California, Berkeley, has found that levels of negative ions are inversely related to levels of serotonin in the brain. Negative ions suppress serotonin levels in much the same way that natural sunlight suppresses melatonin. Hence the invigorating effect of fresh air and sunshine and the correspondingly depressed feelings associated with being closed in and dark. If you deplete the air of negative ions, you experience an increase in serotonin and its attendant drowsiness and relaxation—not what you want when mental agility is demanded. Diamond's research (1988)^[2], along with other information on ions, is summarized in Yepsen (1987).^[3]

In an interesting twist, Josh Backon, a member of the Department of Cardiology, The Hebrew University of Jerusalem, writes in an Internet posting (his E-mail address is backon@vms.huji.ac.il) that in order to increase left-hemisphere activity (linear, language, logical), one can block the left nostril and engage in "forced unilateral nostril breathing." Likewise, to increase right-hemisphere activity (creative, holistic, emotional), the right nostril should be blocked. This practice increases the supply of negative ions to a specific hemisphere.

Applications

- 1. Don't live or work in a space with no fresh air unless the air conditioning system contains an ion generator.
- 2. Purchase a room ion generator to keep in the room in which you spend the most time, and run it when you are not getting any outside air.
- 3. Take frequent breaks in fresh air, and when you can't, open the window!

References:

[1] Thayer, R.E. (1989). *Biopsychology of Mood and Arousal*. New York: Oxford University Press

[2] Diamond, M. (1988) *Enriching Heredity: The Impact of the Environment on the Anatomy of the Brain*. New York: Free Press.

[3] Yepsen, R.B., Jr. (1987) *How to Boost Your Brain Power: Achieving Peak Intelligence, Memory and Creativity*. Emmaus, Pa.: Rodale.