



## Cycling Science

# Breathe easy

**Air quality can have a major impact on both health and cycling. JOE BEER looks at ionisers to investigate their possible effect on human performance**

**A**s an active person you use your lungs, breathe plenty of fresh air and try to stay healthy. However, although you may not be a smoker, and try to stay away from pollution, do you breathe quality air? To answer this you need to know what could be 'good' or 'bad' in the air.

Imagine that sticky, close feeling before a thunderstorm. Contrast that with the fresh air quality just after it has moved away. Similarly, this 'good' air can be found near a waterfall, at high altitudes, or standing under the shower. It contains a high amount of negative ions, the ingredients of healthy air. Conversely, positive ions cause lassitude, depression, nausea, insomnia and (important to your aerobic system) respiratory disturbances. Bad ions can

come from cars, fumes, power lines, electrical equipment and even digital watches.

Ions are formed when electrons detach from a gas molecule, for example oxygen could be O<sup>2-</sup> (a positive ion) or O<sup>2+</sup> (a negative ion). The balance between positive and negative ions gives rise to changes in not only the air 'type' but also organisms which breathe the air.

The air we breathe also has several milligrams of vitamins and minerals within it, plus other volatile substances. A classic study showed that negative ions increase brain chemicals associated with euphoria and elation. Another project noted that rabbits in a high positive ion environment were more aggressive.

Ion research has been

consistently undertaken since the mid 1950s. Data previously unavailable from Russia, now presented in the Soviet Science Review, indicates their athletes used air ionisation as a recovery method in the mid 1980s, enabling them to begin training sooner after events.

Research by Dr. Deborah Graham at LaTrobe University in Melbourne who has conclusively shown that inhaled negative ions increase the power of the immune system. As exercise tends to decrease immune function, using an ioniser the Russian way seems to make logical sense for boosting a reduced immune system back to life.

Data from Romania shows that using a negative ion generator could make you a faster cyclist. Deleanu and co-

workers used ionisers for 15-20 minutes per day for four weeks at a relatively low exposure.

The results were remarkable:

- ❖ reduced lactic acid build up in exercising rats
- ❖ positive hormonal adaptations to exercise stress
- ❖ improved human respiratory function
- ❖ accelerated recovery after exercise
- ❖ improved sports performance

Such are the sports improvements and health revelations of ioniser users that the negative ions have come to be known as 'vitamins of the air'. I've been using a Mountain Breeze air ioniser for almost five years and have recommended their use to cyclists from novice to World Class levels. ■

### WAYS TO HELP IONIC BALANCE

- Use an ioniser when working on a computer or near electrical equipment.
- Point an ioniser directly at you and use for a maximum of 12 hours per day.
- Have a 'no-rush' morning and/or evening shower.
- Turn off any unwanted electrical appliances, minimising use of TV, computer and microwave oven also helps.
- Dress in natural fibres (cotton, wool).
- Have good ventilation through your home and office.
- Set up an ioniser in your turbo training room one hour before starting the session.
- Minimise driving and contact with rush-hour traffic.

#### Ionisers

PIFCO (Mountain Breeze Ioniser)

Bionic Products of America (Elanra ioniser)

#### Further reading

Cowan D. & Girdlestone, R.  
(1996) *Safe as Houses*.  
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### RESEARCH REFERENCES

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- (2) Charry, J.M. (1984) *Biological Effects of Small Air ions: A review of findings and methods*. *Env. Res.* 34, pp351-389.
- (3) Bionic Products (1997) *Personal Communication*.
- (4) Delanu, M. (1980) Data concerning the intervention of air ions in physical exercise. *Proceeding presentation and published in the International journal of Biometerology*.

