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Electromagnetic hygiene: air ions, grounding and health

Air ions

Most of us are familiar with air ionisers – devices that claim to make our rooms 'fresh as a mountain breeze'. The idea is actually quite old and well-established; the existence of air ions has been known for over a century, and scientific research on their effects on health and well-being dates back at least to the 1920s. Unfortunately it isn't necessarily just as simple as just buying a cheap ioniser to increase negative ions.

Air ions can be positively or negatively charged. Small air ions (SAI), such as charged oxygen, are biologically-essential charged gaseous molecules. In nature over 80 per cent of these are created from the decay of radioactive substances from the air, earth and materials used in building, with the Sun and cosmic radiation being responsible for at least another 10 per cent. Intermediate and large air ions (LAI) are created when SAI collide with airborne ultrafine particles and though not all LAI are toxic, most appear to be so. Air ion concentrations, their size and the balance between negative and positive air ions also appear to be of great importance. Hence when considering the use of air ionisation there are many factors to consider. Air ionisation can also affect people in different ways depending on their body/personality type.

The weather affects the balance of air ions considerably, and some people feel as great a sense of well-being after a thunderstorm as others do by the sea. But what we do also makes a difference: the materials we use in our homes (and wear on our bodies), pollutants in urban environments (and in the home), and electromagnetic devices and machines can all effect local air ion concentrations.

The interaction of air ions with particulate matter, charged particles and/or micro-organisms is important, and depends on the attraction or repulsion caused by the surface charges, as well as on the direct effect of the ions themselves.

Small air ions are microbiocidal (can kill microbes, eg bacteria, viruses and fungi), but in many environments where there are high electric or electromagnetic fields, small air ions are depleted and the proportion of large air ions (charged ultrafine particles which can contain many potential contaminants) increases. This leads to increased deposition of contaminants, and worse, their increased deposition velocity (due to excess charge) which increases the impact between surfaces and charged contaminants, including bacteria, increasing adhesion (the 'splat' factor). Hence it can be seen that in clinical or surgical environments, air quality in terms of small air ions is vitally important: bactericidal factors are instead replaced by increased adhesion of contaminants, whether on structural surfaces, or on skin, or when inhaled. Washing may not be enough in a hospital environment with poor electromagnetic hygiene, caused by inappropriate use and specification of air conditioning, humidity levels, materials and electrical equipment.

In offices, similar effects are noted primarily due to the increased used of poorly specified equipment and materials that can increase localized incidences of electromagnetic pollution. Here, the impact of SAI balance on well-being in general, as well as in the spread of viruses and bacteria, is a contributory factor to reduced productivity. With absence a substantial cost in the UK, there should be greater corporate awareness of the increasing electromagnetic factors from office furnishing materials, to wireless devices, and air and lighting quality. These are controllable factors that deserve proper attention by occupational health professionals.

In some countries (eg Russia) there are already mandatory regulations on air quality relating to small air ions, whereas in the UK the possible benefits are of introducing such guidelines are little studied or

acted upon, even in the face of virulent superbugs.

What we want to develop in these pages is a picture of just how much is known about air ions and air quality, how this can be measured, and simple and economic means whereby especially indoor air quality can be improved to cost-effectively protect well-being and improve productivity.

Now visit our research pages for more detail.

Grounding

There was a time when we walked barefoot on the ground, slept on the ground, or close to it, moved around from place to place, and breathed nothing but fresh air. As like as not, many of us will spend much of our time in man-made built environments, in rooms full of electrostatically active synthetic materials, with enormously unnatural electric, magnetic and electromagnetic fields, some distance from the ground. When we go home to sleep it will be the same precise location we lay our heads for many years.

It should be no surprise that this difference matters. Between our feet and the top of our heads there is a natural electrical potential, and we move in the earth's natural magnetic field. This is the environment in which we evolved and adapted over millions of years, and the way our bodies work is attuned to it. We too operate with extremely subtle electric, magnetic and electromagnetic impulses, we even respond to changes in the Earth's Schumann resonance with which our 'brain waves' are tuned, and the modern environment is a brutal asault on all this.

50 Years of Schumann Resonance: find out more about what we really do know.

Nerve cells operate with electric potentials up to 0.03 to 0.09 volts. Our skin as well as our inner organs is conductive, and the conductive pathways operating on AC and DC, throughout our bodies carry tiny currents and hold tiny potentials, not accidentally, but functionally. Excess charge, acquired by whatever means, therefore quite naturally affects our sense of well-being and reduces biological performance.

Grounding is just one small but effective thing we can do when this assault undermines our ability to adjust or adapt.

A practical grounding page
