



## Environmental Neurology & Coaching

No man (or woman) is an island. We are all affected by the things that happen around us and that we come into contact with. However, not only are people subject to all the neurological stimuli that they are aware of, but they are also affected by that of which they are unaware.

You may not necessarily have heard the term '**Occupational and Environmental Neurology**' as it's something rarely looked at outside the medical profession. However, most people will be aware of cumulative trauma disorders such as RSI (repetitive strain injury) or similar overuse syndromes. That's probably because (using the USA as an example) in 1981 such issues accounted only for about 18% of all occupational illnesses (23,000) but which by 1989 had rocketed to 52% (146,900). Just five years later RSI alone was costing their economy \$20 billion a year in compensation (with around 849,000 cases). The way human bodies were responding to the work environment suddenly started getting expensive; hence the dramatic rise in the popularity of the study of ergonomics and the great deal of attention being paid to the manner in which humans perform their work. It's logical then that attention is also being paid to what's around them while they are doing it. I believe that in a similar way workplaces have been reorganised to account for better working practices we will start to see workplace environments being shaped to offer the best psychological and most positive neurological response.

At present neurology is largely ignored when it comes to environmental issues and unlike specialists in occupational medicine neurologists will only rarely work with industry, groups representing the labour force, or government. The functioning of the central nervous system is however of great importance for any profession concerned with the regulation and influencing of human behaviour. Coaching in its purest form offers a client the opportunity to discover and uncover potential that has hitherto lay dormant or of which they had been unaware. Coaching however covers a spectrum of interventions and approaches; approaches that include the coach manipulating the environment to facilitate personal development by being aware of the way environmental factors affect human behaviour.





### **The environment won't make people change but it can make them more willing to try:**

In the science of occupational and environmental neurology much attention is paid to accurate reporting and analysis; very often large amounts of compensation depend on it. The difference between work related and occupational disorders is therefore important; work related diseases may be **partially** caused or exacerbated by workplace exposures, while an occupational disease is **totally** related to a workplace exposure. The same distinction is also important in a coaching application of the science. For the sake of credibility it must be made when it comes to identifying work related or occupational neurological benefits, in that it's not necessary to demonstrate that feelings of happiness, flexibility, high spirits and good will are **totally** related to a work place exposure, they merely need to be **partially** caused by it.

Making the leap from hard medicine into coaching however might look tricky, but it really does make perfect sense: It's easy to recognise the possible link between balance problems, dizziness and sluggish thinking and a persons job if they are, say, an automotive pain sprayer or an engineer in a factory using solvents. The idea that an environment laden with chemicals becomes a candidate as a cause of a medical problem is easy to understand. More recently however, symptoms of anxiety, not sleeping at work, low self-esteem, constant weariness or temper outbursts have also been linked with specific working environments, and a positive environment where people are civil to each other has been shown to result in improvements in symptoms of well being. It's simply a matter of identifying cause and effect.

### **Changes are not superficial, they are physical and real:**

Most of the clinical work has centred on suspected effects of exposure to inorganic compounds. Investigations into the physical effects have suggested real changes in the way the brain interprets events; pain levels change and there are often changes in the threshold for temperature and touch; and such abnormalities can be clearly linked to the environment being experienced. In other words, there is no doubt that exposure to a specific environment can result in not only an obvious reaction, but also a less obvious but equally powerful unconscious change in the way a person is processing information.

The impact of psychological issues in the workplace is now recognised by the World health Organisation (WHO):





“Psychosocial factors are at least as important as the physical ergonomics in the working environment”

To determine causality, questions around occupational history are used to establish links with the environment and the symptom. Doctors will ask questions such as;

*“What is the temporal relationship between the symptoms and the workplace?”  
“What happens to symptoms before beginning work?...During work?...After work?...On weekends or on holiday?” “Where specifically is the work taking place and how long is spent there”, “Does everyone who is exposed have similar problems?”*

They have to look closely at the persons work history as it can be some time before the symptoms actually appear. It's therefore reasonable to take the same approach with regard to manipulating an environment for positive ends; in that there may well be some immediate changes, however the maximum benefit might take some time to manifest. A poor environment might also have contributed over the long term to negative behaviour in a similar way to that of the medical symptom. Coaches might therefore find similar questioning useful in helping the client make the link between their own behaviour and the environment they have been exposed to.

While most research has been carried out on the links between neurological problems (illness and injury) and the working environment, and although disease susceptibility may be influenced by many things; life style and diet at home and at work are important considerations that should not be underestimated. What we do with our bodies and to our bodies have a direct influence on how our central nervous system responds. Epidemiological studies have been valuable in analyzing the occurrence of potential occupational hazards so it's a small step to make the link between positive effects on neurology and the environment. It is entirely logical to suspect beneficial psychological changes in brain chemistry in response to the impact of the immediate environment.

### **People handle more work in a neurologically supportive environment:**

Studies have identified a correlation between the likelihood of a worker seeking compensation and the level of life stress and job satisfaction they are experiencing; a poorly experienced work environment was related to increases in neck and shoulder pain. These studies demonstrate that aspects of work content and social support at work were related to the physical experience of pain. Yet the same studies revealed that there was no such correlation between pain and

3





work demands. In other words, it's not the quantity of work a person is required to produce but the effects of their environment that could cause them to crack under the pressure.

Using the same criteria used to determine the outcome in compensation cases, we can determine how a positive environmental change supports the stimulation of new and beneficial behaviour:

- 1 **Cause** = an agent, circumstance. Or event capable of producing a new effect or aggravating an already existing effect
- 2 **Effect** = a diagnosis, status, function, or condition that can result from or be aggravated by a cause
- 3 **Probability** = something that is more likely (greater than 50%) than not to be true
- 4 **Possibility** = something that is less likely (less than 50%) than not to be true
- 5 **Aggravation** = a stimulus that can either temporarily or permanently exacerbate an already existing state

By using the same criteria it is relatively easy to determine a potential environmental causal link with a specific behaviour; the point being that when a potential environmental cause has been identified it's possible to ask questions and search for acceptable solutions to address it.

### **It doesn't always take a long time:**

In the cases of damage caused by the organic environment or occupation, normally long periods of time are needed for the damage to be done. Most reports consider between 3 and 10 or more years of exposure is required to produce some neurological symptoms. One of the problems researchers have is to disentangle other activities from the impact of the environment; problems with self inflicted damage such as the consumption of alcohol can invalidate research results. They do however conclude that acute, high-level exposure to an environment will induce short-lasting effects on brain function.

In the case of sleep disorders the effect of rapid changes to the environment can clearly be seen to have a dramatic effect on performance: Sleep complaints are very common with around  $\frac{1}{4}$  of the workforce (in the USA) suffering from either insomnia or excessive sleepiness. Industrial accidents and lost productivity are frequently attributed to worker fatigue or lack of attention. Issues such as shift working, light exposure, noise and activity levels all have been shown to effect brain function. Remedies such as changing the environment to include periods of strong bright light during the hours of darkness and a complete absence of light





during the day have helped dramatically in aligning circadian rhythms and provide relief to the problem of sleep disorders.

### **Putting environmental neurology to good use:**

In addition to raising awareness of the impact a particular environment can have on the central nervous system, it's also possible to use environmental neurology to rapidly change emotions and create an immediate positive effect; such as linking the idea of a holiday destination with a business trip. For the past decade I have been utilising venues in vacation resorts for business team development. From the most senior directors and chairmen of large enterprises to groups of middle managers, all have demonstrated a greater willingness to participate in challenging work related team activities and personal development when presented with a trip to the sunshine as opposed to spending time in a (albeit four or five star) UK hotel.

Now psychological studies back my anecdotal experience; they have concluded that enjoying a holiday trip is universal. In 2008 and 2009 hundreds of international tourists were interviewed as part of a study by NHTV Breda University with almost 96% reporting themselves to be in a positive mood merely because they were on vacation. Even when holidays haven't in actuality been wonderful there is something labelled the 'rosy-view' effect that results in their recall being more positive than they were in reality. There's also some evidence that overseas travel can spur creativity; a study by the Kellogg School of Management found that students who'd spent more time abroad were more likely to solve a creativity problem, and an epidemiological study involving thousands of men at risk from heart problems found that the more holidays they took, the more likely they were to survive the study's nine year follow year period. A review of studies into the effects of holidays on well being carried out by Radboud University concluded that going on holiday had a small but significant positive effect on worker's wellbeing.

The less positive news is that there is a 'fade out' period where the benefits of being away slide as 'things' get back to normal. Yet that's nothing new and it doesn't lessen the benefit and power of harnessing the potential; of environmental neurology. There is a drop off and fade away from any learning experience. An extended period of coaching however is a great way of making sure the benefits of an immersion experience in the sunshine aren't lost!

