Effects of Praescent™ (plant derived odour) on chronic stress

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Chronic stress results in many adverse effects that may be life threatening; e.g. hypertension, immune-suppression, depression, anxiety and loss of libido. Many of these peripheral effects of stress are mediated by the sympathetic nervous system. Using continuous telemetry recording of heart rate, ECG, body temperature and locomotor activity we have been able to evaluate the level of stress (i.e. an increase in heart rate and a rise in body temperature) when animals are exposed to various presumed stressors. The electrophysiological studies we have conducted have revealed that chronic stress exposure induces an up regulation of sympathetic neurotransmission. The response to stress has been shown to be affected by olfaction. Olfactory bulbectomised rats show hyperactivity in their hypothalamic-pituitary-adrenal axis during stress following 15 minutes of immobilising stress. Odours from various sources are known to affect animals; we have shown that rat odour increases sympathetic neurotransmission in mice; plant odours have been reported to attenuate the acute increase in body temperature associated with a psychological stressor and to alter the EEG of humans. Telemetry and electrophysiology methods have been used to assess the effectiveness of a mixture of plant derived odours (Praescent) in alleviating stress with common animal housing conditions. Praescent was shown to negate the stress induced up regulation of sympathetic neurotransmission and increase in heart rate and body temperature. This work may thus have significant implications for animal welfare in laboratories and in agriculture, as well as alleviating the unwanted effects of chronic stress on humans.

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