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## The Molecular Psychiatry Abstract March, 2001

**Increasing retention rates among the chemically dependent in residential treatment: Auriculotherapy and sublaxation-based chiropractic care. Jay M. Holder, Robert C. Duncan, Matthew Gissen., Michael Miller, and Kenneth Blum, American College Of Addictionology & Compulsive Disorders, Miami Beach, Fl., University of Miami School of Medicine, Miami, Fl., Village/Exodus Addiction Treatment Center, Miami, Fl. and University of North Texas, Denton, Tx.**

In the residential treatment of the chemically dependent a major clinical problem is retaining the dependent person in treatment long enough to initiate the recovery process. Following the abrupt discontinuation of high-dose chemical use, the subject may experience lethargy, pain, dysphoria, and sleep disturbances, culminating in anxiety and depression. Because of the known calming effect of auriculotherapy (ear acupuncture) a randomized study of auriculotherapy versus a capsule placebo group was carried out in a residential setting among 66 residential patients. In addition to the traditional Shen Men, Sympathetic, and Kidney points, the Limbic system, Brain, and Zero points were incorporated in the treatment of the acupuncture group.

Completion rates were analyzed by multivariate logistic regression. Patients who completed at least 10 days of auriculotherapy and did not receive intercurrent medications were more likely to complete the 30 day residential program than were patients in the comparison group (odds ratio =9.68,  $p=0.026$ ). This study suggested that non-medication based treatment could have a positive effect on retention in a residential program. Based on these results, a randomized, placebo controlled, single blind study utilizing sublaxation-based chiropractic care ([Torque Release Technique](#)) was implemented in the same residential setting. Three groups were randomized: active treatment comprising daily adjustments to correct vertebral sublaxations using the Integrator adjusting instrument but set to deliver zero force with no direction while maintaining the audible click; and, a usual care group who followed the general policies of the residential program. A total of 98 subjects (14 female and 84 male) were enrolled after giving informed consent. The chiropractic and usual care groups each had 33 subjects (5 females each) while the placebo group had 32 subjects (4 females). At baseline the Spielberger State Anxiety scores were  $50.0 \pm 1.9$  for the Active group,  $45.3 \pm 2.5$  for the Placebo group, and  $42.8 \pm 2.0$  for the Usual Care group. The Active and Usual Care groups were significantly different at baseline ( $p<0.05$ ). The corresponding scores on the Beck's Depression Inventory were  $18.6 \pm 1.6$ ,  $21.0 \pm 1.8$ , and  $16.7 \pm 2.0$  respectively. All of the Active group completed the 28-day program, while only 24 (75%) of the Placebo group and 19 (56%) of the Usual Care group completed 28 days. These completion rates are significantly different than that for the Active group ( $p<0.05$ ). A Kaplan-Meier survival analysis showed that the probability of retention in the Placebo and Usual Care groups was less than that for the Active treatment group (Log Rank Test,  $p<0.001$ ). At four weeks the Spielberger State Anxiety scores were  $32.0 \pm 1.6$  for the Active group,  $42.5 \pm 3.0$  for Placebo group, and  $33.1 \pm 3.7$  for the Usual Care group. The Active and Placebo groups were significantly different at four weeks ( $p<0.05$ ), with the Active group showing a significant decrease in anxiety ( $19.0 \pm 2.2$ ,  $p<0.001$ ) while the Placebo group showed no decrease in anxiety ( $2.3 \pm 2.9$ , ns). The corresponding scores on the Beck's Depression Inventory at four weeks were  $2.6 \pm 0.7$ ,  $6.5 \pm 2.0$ , and  $3.3 \pm 1.2$  respectively. In contact to anxiety, the three groups showed similar decreases in depression scores. The frequency of visits to the Nurse's station was monitored during the courses of the study. Among the Active treatment group only 9% made one or more visits to the Nurse, while 56% of the Placebo groups ( $p<0.001$  compared to Active) and 48% ( $p<0.002$  compared to Active) made such visits. In summary, these modalities show significant promise for increasing retention of patients in the residential setting.

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## The University Of Texas Houston Health Science Center School of Public Health Dept. of Behavioral Service

### Breakthrough Brain Research Links Chiropractic Treatment to Addictive Behaviors

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A "brain reward cascade" of neurotransmitters, when operating properly, results in feelings of well-being. If an imbalance impedes the normal flow of the "cascade", the feelings of well-being are supplanted by anxiety, anger,... or by craving substances which alleviate the negative emotions. Disruption of the "brain reward cascade" results in Reward Deficiency Syndrome ("RDS").

"RDS" can be manifested in mild forms (such as the chain smoker) or more severe forms as in the chemical addict. A genetic based biochemical inability to derive reward from everyday activity links these extremes in behaviors. Alcohol addiction, obesity (as a result of carbohydrate binging), nicotine addiction, attention-deficit/hyperactivity disorder, cocaine addiction, Tourette's disorder, and post-traumatic stress disorder are centrally mediated "RDS" behaviors. Anomalies of the Dopamine D2 Receptor genes, Dopamine Transporter genes, and Dopamine Beta hydroxylase genes predispose individuals to "RDS".

Lack of dopamine receptors results in the inability to cope with stress and causes craving. A number of substances (i.e., alcohol, cocaine, marijuana, nicotine, carbohydrates) that release neuronal dopamine may be taken in the attempt to gain temporary relief of stress and craving. These substances can be used singly, in combination, or to some extent interchangeably (have you noted how often recovering alcoholics crave nicotine and/or sugar?).

In support of a comprehensive treatment regimen for "RDS" behaviors, we must review research establishing the vertebral sublaxation complex as a primary issue in the multi-factorial expression of addictions and compulsive disorders. The foundation of chiropractic is neurological; therefore, for our purpose we re-focus on neurophysiology and neuroimmunology.

The state of well-being has not received adequate scientific investigation in chiropractic; nor has vertebral sublaxation received due study relative to its ability to interfere with the expression of both function and communication "information". The "Brain Reward Cascade" model is effective in providing a better understanding of one's ability to maintain a state of well-being.

Feelings are mediated in the limbic system and are expressed through the reward cascade of neurochemicals. A number of these neurochemicals including neuropeptides are the biochemical mediators of a state of well being. Using autoradiography science has established opiate receptors are densest in the amygdala and hypothalamus (classically considered the core of the limbic system). Pert and Dienstreit (1988) expanded the limbic system (the neurosubstrate of emotions) to include the amygdala, hypothalamus, dorsal roots and dorsal horn of the spinal cord. In this regard a direct connection of the nociceptive reflex at any level of the spine to the limbic system has

been established.

Moreover, we suggest it is time to accept that "every level of the spine has an intimate relationship with the limbic system's ability to process and establish a balanced brain reward cascade" (Holder and Blum, 1995). A literature review (Holder and Blum, 1995) revealed only vertebrates have an opiate receptor brain reward cascade mechanism; therefore, inspite of opioid peptides found in invertebrates, only vertebrates express a well-being state. In this instance the common denominator is the spine and spinal cord. If the spine is allowed to express itself without interference (minus subluxations), the vertebrate can express a state of well-being at its greatest potential. Consequently, the ability of the limbic system to function and express itself without interference requires a subluxation free spine. In 1994 The Holder Research Institute finished a study implicating the vertebral subluxation complex as a primary intervention resource in the treatment of chemical dependency in a residential setting.

Pert and Dienstfrey (1988) state "The sub-conscious is in the spinal cord and even lower" and "the sub-conscious extends to one's T-cells [and] one's monocytes, and.... back to one's brain cells." The origin of Pert's interference was at the dorsal horn of the spinal cord.

Burstein and Potrebic (1993), Harvard Medical School, provide evidence for direct projection of spinal cord neurons to the amygdala and orbital cortex. Their laminar distribution in the spinal cord and the involvement of the amygdala and orbital cortex in limbic functions suggest these pathways play a role in neuronal circuits that enable somatosensory information, including pain, to effect autonomic, endocrine, and behavioral functions. Giesler, et al. (1994), University of Minnesota, found the spinal pathways to the limbic system for nociceptive information; they describe the pathway to include the hypothalamus bilaterally. Prior to Giesler, et al. nociceptive information was thought to reach the hypothalamic neurons through indirect, multisynaptic pathways.

Raffa et al. (1993), Robert Wood Johnson Pharmaceutical Research Institute, report evidence linking the immune and opioid systems. Kyles et al. (1993), University of Britol, found that when dopaminergic and opioid systems process nociceptive information it is mediated spinally.

Chiropractic must be maintained on a broad base, not limited to musculo-skeletal applications. Further evidence supports the connection of a healthy spine in mediating, not just immune system function, but growth factor, chemotaxis of human tumor cells, body temperature, water saving and water seeking behavior, etc. (Pert and Dienstfrey, 1988).

Similarities between the addictive process and subluxation are striking. When one considers these similarities and the connection between the subluxation complex and genetic deficits in the dopaminergic system, it becomes important for the modern chiropractor to consider a total regimen of natural healing including the maximum reduction of the subluxation complex, genetic testing, and the administration of appropriate neutraceuticals.

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