



ROYAL OTTAWA HOSPITAL  
HOPITAL ROYAL D'OTTAWA

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The scientific literature has consistently raised a number of questions in reference to factors which both relate to the acquisition and maintenance of smoking behavior. It is my strong belief based on my own laboratory findings and studies of European, British and American laboratories, that the mechanisms underlying acquisition-maintenance processes are in part based on the inherent or intrinsic psychophysiological makeup of the individual smoker. More specifically, it is within reason to speculate that smokers, prior to a smoking history, exhibit a psychophysiological profile which, relative to future non-smokers, is characterized by a greater vulnerability to stress as reflected in central, autonomic and skeletal-muscular systems and a deficient behavioral responsiveness as reflected in attentional information-processing and decision making functions.

With the "need" inherently established, the enormous attraction of tobacco lies in its ability to "normalize" psychophysiological responsiveness and thus allow for more efficient behavioral performance and increased subjective well-being.

With respect to these assumptions, it is suggested that the following hypotheses be examined:

1. Intrinsic psychophysiological factors operate in some individuals to predispose them to the acquisition of a smoking habit.

Methods: A battery of tests - psychophysiological, psychological, behavioral and social-cultural would be administered to young children (8-9 yrs. of age) and they would be followed up over a 4-5 year period for the purpose of estimating the incidence of smokers and non-smokers and examining the relationship of these test batteries to their smoking - non-smoking status. It would be expected that smokers and non-smokers would be quite different with respect to their initial test results. Additional follow-ups (5 years, 10, 15, 20 ...) could be initiated on the same group to determine the long-term smoker and non-smoker status of this same group sample.

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2. Although smoking abstinence is correlated with temporary psychological symptoms, as is the discontinuation of any strong "habit", the physiological alterations occurring at the time of abstinence are not transitory abnormalities related to a "smoking-withdrawal" phenomena which return to "normal" after an elapsed time period. It is suggested here that the physiological alterations are reflective of a return to an enduring psychophysiological makeup which is characteristic of smokers.

Method: Smokers from tobacco-abstinence clinics will be monitored before and for 1 year after (at 1 month intervals) smoking cessation with regards to a battery of tests including psychophysiological, psychological and behavioral parameters. It would be expected that physiological changes would not change over time and that smokers, relative to non-smokers would continue to exhibit vulnerability to stress and inefficient performance even after 1 year. Support of these findings could dismiss the classification of tobacco as a "dependence" disorder as a withdrawal syndrome is crucial to the definition of drug dependence.

3. As tobacco smoking alleviates stress by (a) reducing the impact of aversive stimulation and by (b) increasing information-processing and attentional-filtering capacity, it is quite reasonable to hypothesize that it would have definite clinical utility for psychiatric patients who exhibit such disorders in the extreme. This receives indirect support from the fact that psychiatric patients exhibit a markedly higher consumption rate than the normal population and they exhibit marked distress when supplies are low.

Method: Psychophysiological, psychological and behavioral tests will be administered to various clinical categories (i.e., schizophrenics, anxiety and depressed patients) before and after tobacco smoking. Attempts will also be made to evaluate whether clinical symptoms are exaggerated following 1, 2, 3 days of abstinence and whether they are normalized after cigarette smoking.

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The combined research proposals could be carried out over a 5 year span. The initial 1st 2 years would be focused on proposal no. 1, i.e., collecting a large sample of children and acquiring profiles for future reference in the 5th year. The third and fourth years would be focused on the 2nd and 3rd protocols (one year for each) and the 5th year would be dedicated to following up the sample of children for the final collection of data.

If these research protocols are accepted for support it is anticipated that they will be initiated following Phase III of my present research project on "Tobacco Smoking and Stress Reduction" with C.F.H.C. The research budget per annum should approximate the present rate with minor alterations to compensate for increased costs.

Although each of the 3 protocols are geared towards general "basic scientific correlates" of tobacco smoking i.e., what are the beneficial or motivational gains behind tobacco smoking, and there is very little emphasis placed on the "applied science" of cigarette smoking i.e., marketing, it is hoped that acceptance of these proposals for support will result in a more lucid understanding of attraction of the tobacco smoking habit.

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