

ous history of cigarette smoking The nicotine tube has been marketed as a nicotine delivery system that allows smokers to obtain nicotine from the tube in settings where smoking is prohibited The manufacturer makes no health claims about the product Its use may remove environmental pressures to quit smoking and help maintain tobacco dependence The effectiveness of the tube in delivering nicotine to the body has been questioned Nicotine gum has been marketing as a therapeutic device to aid nicotine dependent users in abstaining from tobacco cigarettes The gum is dispensed only through the prescription of a physician, although its acceptance by the medical community has not met initial expectations of some The proliferation of nicotine delivering devices has raised a number of public policy issues Recent state and federal actions that regulate the devices or their marketing will be discussed as well as future policy trends

### SYMPOSIUM

#### The Impact of Diet on Mood States

Monday August 31, 1987 • 2 00 p m -2 50 p m  
Marriott Marquis Hotel • Empire/Hudson/Chelsey Room

Chair *Larry Christensen*, Texas A&M University

#### THE BIPHASIC EFFECT OF CALCIUM ON MOOD AND EMOTIONAL BEHAVIOR

Kamyar Arasteh, Texas A&M University

Mood and emotion have been shown to be attenuated by biochemical changes The therapeutic use of pharmacological agents in the therapy of depression, for example, is an instance of the general susceptibility of emotion to physiological change Dietary substances represent a major source of the transient biochemical make-up of an organism and as such they should influence behavior, cognition, and emotion Calcium, as one of the essential minerals in the diet of humans, plays an important role in the cellular processes including neuronal transmission, and neurotransmitter secretion Moreover, because alterations in emotion have been shown to be associated with changes in the neurotransmitter function, calcium might prove influential in the emotional process In one experiment intended to assess this proposed effect, rats were maintained on a high calcium water solution and tested in a learned helplessness paradigm The high-calcium rats showed significantly longer escape latencies than their control counterparts Also, biochemical assays revealed that, in contrast to the control group, high-calcium rats had a significantly lower level of activity of the neurotransmitter 5-hydroxytryptamine, a finding associated with depression In another experiment, human participants were given a much lower dose of calcium and were then administered several scales designed to assess changes in mood and cognition The calcium group, when compared to the placebo group, showed a significant enhancement of mood It is, therefore, proposed that calcium influences mood and emotional behavior, and that this influence is exerted in a dose-dependent and biphasic fashion More specifically, small increases in the level of calcium are suggested to enhance mood, while large increases are thought to exacerbate the same

#### PRESENTING SYMPTOMS AND PSYCHOLOGICAL CHARACTERISTICS OF DIET INDUCED MOOD-DISTURBANCE

Kelly Krietsch, Texas A&M University

Caffeine is a dietary substance that has typically been

thought of as a psychoactive drug which has the effect of increasing alertness and decreasing drowsiness Since the late 1970's a number of studies have appeared which have challenged this general assumption and have revealed that caffeine seems to be related to a variety of mood states such as depression, anxiety, and irritability However, caffeine's effect is very idiosyncratic affecting different individuals in different ways Additionally, caffeine is not a substance affecting all individuals who are experiencing depression or anxiety Sucrose is another substance which seems to have a similar idiosyncratic influence on individuals Although the literature on sucrose is contradictory, evidence exists indicating that this dietary substance does have an effect on certain individuals although these individuals are definitely not those with Attention Deficit Disorder The literature is very consistent in demonstrating that the effect of sucrose, if any, is to benefit this disorder However, another body of literature indicates that sucrose seems to have the effect of increasing fatigue, reducing vigor and increasing depression But sucrose is not related to all individuals with such symptoms Therefore, several studies were conducted which attempted to identify the presenting symptoms and the psychological characteristics of individuals who possessed symptoms induced by dietary caffeine and dietary sucrose In order to identify these presenting symptoms and psychological characteristics it was necessary to identify a group of individuals who were responsive to each of these substances and then focus on the characteristics and symptoms which differentiated these two groups Double-blind challenges with dietary caffeine or sucrose were used to identify those individuals whose symptoms were totally or partially due to ingestion of caffeine and/or sucrose Analysis of the presenting symptoms revealed that the subjects responsive to these substances presented with a specific set of symptoms but they did not reveal a set of psychological characteristics which would differentiate them from those who did not respond to dietary caffeine and/or sucrose

#### A PSYCHOMETRIC TEST FOR IDENTIFYING A DIETARY INDUCED MOOD DISTURBANCE

Larry Christensen, Texas A&M University

Within the past decade a number of studies have appeared in the literature documenting the fact that various dietary substances can have an impact on behavior Caffeine, for example, has been demonstrated to have an impact on anxiety, depression, restlessness, and irritability Sucrose has been demonstrated to have a variety of effects such as inducing sleepiness, drowsiness, and confusion, and reducing vigor The difficulty with applying this knowledge is that the affects of these dietary substances are idiosyncratic Caffeine, for example, will produce insomnia and nervousness in some people and increased alertness and a feeling of contentedness in others Similarly, sucrose has been demonstrated to produce drowsiness and confusion in some individuals but have no negative impact on other individuals such as hyperactive children In fact some evidence indicates that sucrose may be of benefit to hyperactive children Consequently, some mechanism is needed that will be able to identify those individuals that are experiencing a negative impact from the dietary substances caffeine and sucrose For the past several years we have been developing a psychometric instrument explicitly for the purpose of identifying individuals with a dietary induced mood disturbance This