Special Interests

Consequences of alcohol abuse and risk factors for alcohol use disorders. Alcohol use disorders are the most prevalent of the addictive disorders. We currently have limited understanding of personal risk factors and the individuals who are at greatest risk. We have conducted studies of physiological alterations associated with alcohol dependence. These show functional cardiovascular differences between abstinent alcohol dependent subjects and age matched social drinking controls. In particular, there are differences in blood pressure regulation possibly related to alcohol-induced hypertension that cause abnormal rises in blood pressure to challenges such as isometric handgrip. In contrast to physiological stressors, such as handgrip, alcohol dependent volunteers have normal to attenuated cardiovascular responses to psychological stressors, such as mental arithmetic and simulated public speaking. This is especially visible in reduced heart rate change. A related finding is that cortisol response to a wide range of stressors is reduced or absent in recovering alcohol dependent volunteers. The extent to which these alterations are a consequence of heavy alcohol exposure or represent preexisting differences remains to be determined. For this reason, we have undertaken a large, long-term study of nonabusing offspring of families with evidence of alcohol use disorders titled the Oklahoma Family Health Patterns Project. This will provide information about familial risk factors and psychophysiological alterations associated with them independent of the consequences of heavy drinking.

Stress reactivity and early life adversity. As an outgrowth of the OFHP listed above, we have acquired a very large cohort of healthy young adults on whom we have stress response data. Since the stress field has long focused on persons with large stress responses as a potential predictor of disease, we carried out a systematic analysis of our heart rate and cortisol data to determine which variable was most predictive of large and small responses. We discovered that persons exposed to adversity in childhood and adolescence, including physical and sexual abuse and separation from parents, predicted small stress responses. In addition, this explained the source of small stress reactivity in the OFHP subjects with a family history of alcoholism because persons with a positive family history have much higher levels of adversity. Finally, in the high adversity persons with a positive family history of alcoholism we have seen an earlier age at first drink (<15 years), greater experimentation with drugs, and a higher body mass index, all indicators of poorer regulation of intake behaviors and a higher risk of alcoholism. We are extending this by starting a Gene x Environment analysis on our cohort to examine genetic vulnerabilities to early life adversity.

Education

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Selected Publications


