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# Body Chemistry And Criminality

## Abstract

The elements of a crime are complex. Criminologists still argue whether the dominating cause is sociological, psychological, or something else. Additional blockade to progress is the fact that criminal violence is not a single status, but rather a diverse set of afflictions. The study controlled for a host of possible intervening factors, including gender, diet, illicit drug use, psychiatric medications, the season of the year, dietary processor of serotonin, alcohol and tobacco use, body mass, socioeconomic status, IQ, and history of suicide attempts. Today's biological theorists have made significant studies in linking violent or disruptive behavior to body chemistry. Also, aggressive behavior in men may be influenced by high testosterone levels combined with low brain levels of the neurotransmitter. Experts point out that no relationship between serotonin levels and aggression was seen in the female subject. Unfortunately, low cortisol levels were associated with the early onset of aggression.

## Ingested Substances and Nutrition

One of the first studies to focus on chemical imbalances in the body as a cause of crime was reported in the British medical journal "Lancet in 1943" ( Rick Nevin). The authors of the study linked the murder to hypoglycemia or low blood sugar. Low blood sugar, produced by too much insulin in the blood or by near-starvation diets, was said to reduce the mind's capacity to reason effectively to judge the long-term consequences of behavior. Even the courts have accepted the "notion that excess sugar consumption resulting in hyperglycemia may be linked to the crime"( Rick Nevin). The interesting case was found in the early 1980s, Dan White, a former San Francisco police officer, was given a reduced sentence after his lawyers used what came to be known as the Twinkie Defense .They argued that Whites nightlong binge on large amounts of Coca-Cola before he murdered San Francisco Mayor George Moscone and City Councilman Harvey Milk was evidence of White's unbalanced mental state. According to Rick Nevin "the consumption of junk food was presented as evidence of depression because White was normally very health conscious".

Also, some studies have implicated food additives, such as the flavor enhancer monosodium glutamate, dyes, and artificial flavoring, in producing criminal violence. Some prison program has been designed to limit the intake of dietary stimulants through nutritional management and substitution of artificial sweeteners for refined sugar. Some studies appear to show that diets deficient in various vitamins and other nutrients can increase aggressiveness and agitation, and can open the door to crime. Although, Stephen Schoenthaler, a researcher at the California State University in Stanislaus, has demonstrated significant declines in bad behavior in incarcerated adults and school children receiving specifically designed vitamin-mineral supplementation. In addition to schoolchildren receiving vitamin supplements showed "a 47% lower rate of antisocial behavior than children who received placebos" ( Rick Nevin). The drop in disciplinary infractions among children taking the supplements was due mostly to a decrease in infractions by those who had been identified as habitual offenders before entering the study.

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## Environment Pollution

Various substances found in our environment are linked to criminal behavior. First and foremost, the researches reasoned that toxic metals affect individuals in complex ways. Because lead diminishes a person's normal ability to detoxify poisons, it may heighten the effects of alcohol and drugs. Industrial pollution, automobile emissions, lead-based paints, and aging water delivery systems are all possible sources of lead contamination. It is undeniable that "brain chemistry is altered by risk to massive metals and other toxins, people lose the natural restraint that holds their violent tendencies in check" ( Rick Nevin). Some studies focused on prenatal substance exposure to substances like tobacco smoke, and alcohol. L. Goldschmidt and his colleagues reported the results of a ten-year study that monitored the development of children of more than 600 low-income women. The study began during the women's pregnancies, found that prenatal marijuana use was significantly related to increased hyperactivity, impulsivity, inattention, increased delinquency, and externalizing problems. It is a well-known fact that prenatal alcohol exposure also seems to be linked to delinquency and psychiatric problems later in life. Perhaps we should also point out the fact that biological factors do not operate in environment vacuum, nor do environmental factors operate in biological vacuum. These biological factors affect criminal behaviors.

## Psychobiotics

A new field of study called psychobiotics has begun to emerge that looks at the psychological and behavioral effects that bacteria can have on the mind, feelings, and emotions. What is more, the central focus of the study is what is referred to as gut bacteria. Although bacteria are a single-celled organism, they are generally far smaller than human tissue cells. One cannot deny that in human beings, gut bacteria, taken in total, weigh more than the human brain. Current analysis has established that gut bacteria transport a vast array of genes that can contribute thousands of chemicals. According to John Cryan "many of these chemicals, once produced, are absorbed through the digestive system into the blood. Some of them are linked to brain signaling and include bacteria produced dopamine, and serotonin"(2014). In other words, gut bacteria appear to produce chemical messengers that interact with the brain and nervous system.

## Hormones

A photo of professional wrestler used sex hormones such as testosterone, have been linked to aggressive behavior. A hormone is "a chemical substance produced by the body that regulates and controls the activity of certain cells or organs" (Paul C. Bernhardt). The male sex hormone is testosterone, for example, has been linked to aggression and appears to play an important role in increasing the propensity toward violence and aggression among men. It is undeniable that testosterone is a steroid hormone. Although females produce some testosterone, it is normally present in far higher quantities in the blood and tissues of males. Some scientific suggested that testosterone is the agency primarily responsible for male criminality and that its relative lack in women leads them to commit fewer crimes. According to Psychosomatic Medicine, "most studies on the subject have consistently shown a relationship between high blood testosterone levels and increased aggressiveness in men, and focused studies have unveiled a direct relationship between the amount of the chemical present and the degree of violence demonstrated by sex offenders" ( Dan Olweus, 1980). Also, some studies

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demonstrated a link between testosterone levels and aggression in teenagers. Adolescent problem behavior and teenage violence rise in proportion to the amount of testosterone in the blood of young men. However, some scientists also agree that high levels of testosterone in the blood of young men may have some effect on behavior, but the effect is likely to be moderated by the social environment.

## **Serotonin**

Paul C. Bernhardt found that testosterone “might not act alone in promoting aggression” (Paul C. Bernhardt,1997). Bernhardt discovered that aggressive behavior in men may be influenced by high testosterone levels combined with low brain levels of the neurotransmitter serotonin. According to some experts, serotonin plays a huge aspect in the adjustment of learning, mood, and sleep, and the constriction of blood vessels. Men whose brains are lacking in serotonin, feel the effects of frustration more acutely and therefore tend to respond to frustration circumstances more aggressive, especially when testosterone levels are high. Serotonin had been called a “behavior -regulating the chemical,” and animal studies have demonstrated a link between low levels of serotonin in the brain and aggressive behavior (Paul C. Bernhardt,1997). The most common proof used to help the chemical imbalance theory is the influence of antidepressant medication. These pills work by gaining the total amounts of serotonin and other neurotransmitters in the brain.

The arguments I have presented in this paper suggest that a chemical imbalance in the brain is pronounced to occur when there's either too much or too little of certain chemicals. We cannot ignore the fact that both the rational and emotion centers of the brain are implicated in ethical choices. Thus, biological sex differences may also be an influence on women's and men's predisposition to crime and, unethical behavior.

## **Work cited**

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