Blood Alcohol in Nondrinkers

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Twenty-one individuals were tested for reducing substances in the blood using a test kit sensitive to aldehydes, alcohols (including amyl, butyl, propyl), and fermentation processes in the gastrointestinal tract. Blood samples were obtained at the following times: before breakfast, mid-morning, before dinner, mid-afternoon, and about seven p.m.

Alimentary reducing substances may normally range from 0-5 mg. per hundred cc's. Since none of the individuals had been consuming alcohol or other hydrocarbons in foods or drinks, it is assumed that all the reducing substances were produced by gastrointestinal fermentation. While any amount of these chemicals in the blood is injurious, the greater the level, the more injury inflicted. It has been noted that 50 mg. per hundred cc's will give most individuals grossly measurable signs of intoxication of the nervous system. The critical level of obvious intoxication is around l00 mg. per hundred cc's. Severe motor intoxication begins at about 200 mg. per hundred cc's and stupor at about 300 mg. per hundred cc's.

Even very small levels of blood alcohol reduce mental acuity and the processing of information by the brain. Alimentary alcohol production should be prevented, if possible, to avoid interference with the higher (but difficult to measure) functions of judgment, reason, tact, discernment, etc.

There developed from our study certain patterns of blood alcohol levels corresponding with the meal patterns of the individual tested. Six of the individuals ate no between meal snacks, no complex mixtures, and a limit of three dishes at each meal with bread and spread. These persons took only two meals daily. These six individuals showed the lowest blood alcohol levels, a sum of the five specimens reaching no higher than 24 mg. per hundred cc's, or an average of slightly less than 4 mg. per hundred cc's per specimen. The range of the sums for the five specimens was from 15-24 mg. per hundred cc's for the six individuals. Thirteen individuals also ate no between meal snacks, but had complex mixtures at two meals, and a total of seven dishes with bread and spread. One of these individuals had a small evening meal. The range of sums was from 27-50mg. per hundred cc's or an average of slightly under 10 mg. per hundred cc's per specimen.

One individual with the hypoglycemic syndrome, but with a meal pattern similar to the six having a low level, showed 88 mg. per hundred cc's as a sum for his five specimens, or slightly less than 18 mg. per hundred cc's as an average specimen level. It has been found in subsequent tests that individuals with the hypoglycemic syndrome, and the high transit time which usually accompanies this condition, are heavy fermenters, and produce much reducing material. The highest level obtained was in an individual who ate between meal snacks, complex mixtures, eight dishes at meals, and three or more meals daily. The level was 236 mg. per hundred cc's for

the sum of five specimens, or an average of 47 mg. per hundred cc's as an average specimen level. Some specimen levels were high enough to expect that signs of nervous system intoxication could have been demonstrated by proper testing.

The level of reducing substances was most likely to be elevated in the specimen taken before 6:30 a.m. or after 7:00 p.m. This would seem to indicate that physical activity might play a factor in the blood levels, either in their formation or in their elimination.

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