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Is Heroin as Dangerous as White Sugar?

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Mr. Richard H. Nolte
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Dear Mr. Nolte:

Sugar cane is a constant feature of American tropical landscapes. In the continental United States most persons consume large quantities of white sugar -- chemically pure sucrose that is extracted and refined from cane juice -- but few have seen the plant growing. Being around sugar cane fields during much of the past year has made me more aware of the different ways cane can be used and has given me some new ideas about white sugar.

The most direct and natural way to eat cane sugar is to cut a length of the fresh stalk, peel it, and chew on it, sucking the sweet juice and spitting out the fiber. Children in the hot country of Latin America are avid gnawers of cane. For my taste, the reward of the fresh juice does not quite make up for the disagreeableness of a mouthful of fiber, and I prefer to get my sugar in another form. In Cuernavaca, Mexico, a popular juice bar sells fresh jugo de caña (pressed from the stalks and dispensed from a Jet-Spray Cooler) as a health drink, advertizing it as "rich in minerals and vitamins." In other places I have seen sidewalk venders with portable presses sell glasses of the same freshly-pressed juice. It is a grayish-green, watery liquid, sweet, of course, but insipid in flavor.

If cane juice sits around in a warm place for a day or two, it turns brown, tangy, and alcoholic; it is then guarapo -- a popular drink of workers at cane-processing plants and a home brew of hot-country Indians, but little known in the cities. At its best guarapo is like a good hard cider, slightly sparkling, sweet, and refreshing. But I am more interested in unfermented sugar and want to go on to describe what happens to the fresh juice of sugar cane on its way to becoming the pure white powder we are all familiar with.

The first step in the process is concentration. That is, the juice is boiled down (often in large copper-lined vessels over open wood fires) to drive off excess water as steam. As the juice reduces in volume, it darkens and acquires a very strong characteristic flavor. When it is concentrated to a syrup of the proper density, it is poured into molds where it quickly crystallizes into blocks of raw brown sugar known as panela.

Panela bears little resemblance to anything Americans know as "brown" or "raw" sugar. What is sold as "light brown" and "dark brown" sugar in U.S. grocery stores is really refined white sugar colored and flavored by the addition of molasses. The "raw" sugars sold at such high prices by health food stores are prepared in the same way -- that is, they are processed one step further than white sugar.

Panela is the true and only raw sugar, and it is sold all over tropical Latin America, in supermarkets as well as Indian markets. It comes in a variety of shapes, from blocks the size of building bricks to large hemispheres and cones ("sugar loaves") and a variety of colors from dark brown to russet. But although panela is widely available and widely consumed in Latin America, it is probably only a runner-up to white sugar in total sales and uses. Even most cane workers and Indians seem to prefer to use white sugar as their ordi-

nary sweetener, saving panela for special things like certain pastries, candies, and beverages. In the same way, most North Americans have come to rely on white sugar for ordinary uses, saving brown sugar for special dishes where its different flavor is desired.

The best way I can think of to describe the taste of panela is to say that its differentness from white sugar is much more pronounced. Many persons who try panela for the first time do not like it. And even people who do like it, like it in things where its flavor is diffused and modified. Sometimes I like a taste of straight panela, especially out of a mold where it is cooling, but I never care to eat more than a lick from the end of a finger. It is to remove these disagreeable flavors that panela is subjected to further processing.

If raw sugar is dissolved in fresh water, boiled down to a syrup again and cooled, it crystallizes out lighter in color and flavor than the liquor left behind. This liquor, when concentrated, is molasses. It contains the "impurities" that color and flavor cane syrup along with some sugar. By a series of recrystallizations, sugar can be made completely free of these additional compounds. As by-products, various grades of molasses are collected, ranging in taste from those that are useful as distinctive sweeteners in their own right to those so strong that they appeal to very few palates. (Much molasses is fermented and distilled into rum.)

White sugar, then, is the pure sweet principle isolated from the natural context of flavors in which it occurs in cane juice. And those flavors, concentrated and minus most of the sweet principle, do not taste very good. Because of its non-naturalness, white sugar is shunned by Americans who follow diets rich in natural foods. Some advocates of natural foods cannot talk about sugar without becoming irate. Here, for example, is the opening paragraph of a tract called "The

"Sugar Story," currently being distributed in U.S. health food stores:

No organic merchant sells white sugar or any products containing white sugar because it is a foodless food. It is 99.95% sucrose and when taken into the human body in this form is potentially dangerous. It is touted as an energy food, but such propaganda is misleading for there is ample evidence that white sugar robs the body of B vitamins, disrupts calcium metabolism, and has a deleterious effect on the nervous system.

The author goes on to denounce brown and raw sugars as "phony": "Having done a thorough personal investigation, I can assure you that brown sugar is nothing more than white sugar wearing a mask." He also paints grim pictures of sugar refineries, conjuring up images of huge filtration units "filled with charred beef bones" that are certain to horrify patrons of health food stores.

A representative from one of the sugar companies who came to see me to answer some questions from a letter I had written said the burned beef bones were to give the white sugar a more pleasing 'esthetic' effect. He explained that burned beef bones make white sugar whiter. Of course, it's purely personal opinion, but I say, God save us from such 'esthetics.'

I find it difficult to evaluate this sort of polemic because I am of two minds on the subject. On the one hand I do not know of "ample evidence" that white sugar robs the body of B vitamins, disrupts calcium metabolism, harms the nervous system, or does anything else of comparable awfulness. At the same time I am in sympathy with the idea that more natural substances are inherently less dangerous than less natural ones.

Two years ago, at a drug symposium in Michigan, I heard a remark that seemed outrageous. A long-haired representative of the counterculture, arguing against the value judgments society has made about some drugs, told an audience of public

school teachers that he and his friends thought white sugar was "addicting and more dangerous than heroin." Of course, it is not possible to compare the two: one is an intoxicant, the other a food (or non-food to some); one is put into the nose, lungs, or veins, -- the other into the mouth and stomach. But let us see if there is anything to learn from an analogy drawn between two pure chemicals that are far removed from their natural sources.

Heroin is a synthetic derivative of morphine, which, itself, is only one of 22 alkaloids in the latex of the opium poppy. Its relationship to opium as an intoxicant does seem to me analogous to the relationship between white sugar and the panela of Latin America. In both cases the pure white powders are the results of attempts to separate out and isolate a single component of something that is complex in nature. The motivation for this process is the craving for a more pleasurable experience: for better sweetness in the sugar-eater, for a better rush in the addict. But heroin is not a good thing to be involved with. Its use tends to get out of hand, and this is so because of its nature: it is too easy to use too much of it too much of the time. Opium is a gummy dark resin that cannot be injected because it is "impure"; heroin can be pumped into veins as fast as one can buy it.

I said earlier that I do not know of any specific adverse medical effects of white sugar. But I do think that as a people we consume far too much sugar in general and that this dietary excess is an important factor in our national tendencies toward dental caries, obesity, and cardiovascular disease. I also think there is some evidence that premature deposition of cholesterol in human arteries is correlated with a disorder of sugar metabolism rather than one of fat or cholesterol metabolism. And I am certain that people would eat far less sugar if the only cane product they could get were panela. It is

much easier to be a regular, heavy consumer of the refined product, just as it is much easier to get hooked on heroin than on opium.

Perhaps, then, the problem with refining natural substances into white powders is that we lose in the process certain signs that advise us how to use potentially harmful things. The disagreeable taste that builds up as cane juice is boiled down might be a clue telling us not to seek sweetness in concentrated form beyond a certain point. I think poppy lovers would be better off eating opium instead of shooting heroin. And I think sugar addicts would be better off eating more panela (and thereby less sugar).

Because the process of refining, if carried too far, leads to the creation of pure substances that may be much harder to control than their natural sources, some people seek to do away with processing altogether, urging us to consume nothing that is not in a wild state. I believe that man can improve on nature and should not cease trying to make natural things better. The cultivation of fruits and vegetables to produce superior varieties is an example of good tampering with nature (provided the qualities selected for development are goodness and flavor rather than uniformity of size and resistance to shipping). Similarly, the preparation of foods for eating can enhance natural qualities without destroying them.

There must be a middle ground between the synthetic "food-like" products that occupy more and more space in supermarkets and the faddist's diet of raw fruits and vegetables. In my own diet I use honey, some molasses and maple syrup, and a little white sugar when I want neutral sweetness without a special flavor. I do not avoid white sugar as a poison or a non-food, but I do regard it as something more liable to abuse than any other sweetener. And I look forward to being

again in areas of the world where I can buy panela, the true raw sugar of the tropics.

Sincerely yours,

Andrew T. Weil

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