

## Appendix 4: White Sugar as Antinutrient

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Extracts from *Sugar Blues* by William Dufty, Warner Books, New York, 1975

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[AMA - American Medical Association; FTC - Federal Trade Commission]

On April 12, 1973, three prominent doctors, two of them representing the AMA's Council on Food and Nutrition, were testifying before a Senate Committee on Nutrition and Human Needs.

Senator Schweiker of Pennsylvania tried valiantly to get the doctors to make the distinction between "sugar" and "carbohydrate." Here's what happened (*italics added*):

SENATOR SCHWEIKER: ... one of the points apparently at issue here medically [in the AMA report] ... saying it is inaccurate to state that sugar has high antinutrient properties. I wonder is this an accurate expression and who might comment on this for me?

DR. VAN ITALIE: When *we* talk about antinutrient properties, we *usually* refer to a substance in the diet or a drug that is antagonistic to a nutrient, interfering in some way with its use or its metabolism. Carbohydrate is metabolized or "burned" with the help of certain enzymes which contain thiamin and other B vitamins. Thus, there is an increased need for these vitamins when more carbohydrate in the diet is consumed. This is why people on very high carbohydrate diets in the Far East who also have a low vitamin B<sub>1</sub> intake develop beriberi. The fact that the requirement for vitamin B<sub>1</sub> and certain other B vitamins will increase somewhat when you take more carbohydrate does not justify the statement that carbohydrates – or sugar – is an antinutrient.

SENATOR SCHWEIKER: I am not talking carbohydrate; I'm talking sugar. Let's keep it on the sugar track.

DR. VAN ITALIE: There is no difference between sugar or carbohydrate with respect to vitamin B<sub>1</sub>.

SENATOR SCHWEIKER: Well, we have had a number of dentists just come before us recently and tell us how bad sugar, not carbohydrate, was on dental cavities.

DR. VAN ITALIE: That is correct, but that's not what I am talking about. Sugar is lacking in vitamins. That's agreed and it's *probably* bad for teeth. ... I was addressing myself to one specific statement ... which affirms sugar to be an antinutrient. This is scientifically not a correct statement Sugar and all other carbohydrates increase the need for vitamin B<sub>1</sub>. That's the only statement I made.

DR. VAN ITALIE: An antinutrient is a substance that interferes with the utilization or metabolism of a nutrient. Something that actually antagonizes its metabolic use. It might be, let's say, an excess of certain toxic metal that might interfere with metabolism. Certain drugs interfere with the nutrients and are called antinutrients. The antifertility pill may have antinutrient properties.

SENATOR SCHWEIKER: And you are saying that something that increases the need for nutrients in terms of quantity is not an antinutrient?

DR. VAN ITALIE: That is correct.

SENATOR SCHWEIKER: Are you sure we are not getting into a semantic argument here?

DR. VAN ITALIE: It's misleading to say that there is something bad about carbohydrate because it increases the need for a vitamin. ...

DR. VAN ITALIE: After all, exercise increases the need for certain vitamins. That doesn't mean that exercise is "anti-nutrient."

SENATOR SCHWEIKER: If we market a cereal and say we presweetened the cereal and added sugar, we are working against ourselves. A customer buys a pack of cereal, nutrients added, presweetened. Here we have both in the same ingredients. That increases the nutrients and who are we kidding? If we hadn't had the sugar we might not need the nutrients.

DR. VAN ITALIE: I am not defending sugar, Senator Schweiker. I am not hi favor of an excessive intake of sugar. I was merely objecting to the term of antinutrient in the context it was used. I agree

with you that when you add sugar to a product you may make people eat it because it is sweeter but it certainly adds no nutritional property other than energy.

SENATOR SCHWEIKER: Right That is all the questions I have, Mr. Chairman. Thank you.

DR. BUTTERWORTH: Sugar is a carbohydrate.

SENATOR SCHWEIKER: It is one of the carbohydrates but to say that the whole range of carbohydrates and sugar are the same thing is not true. Dental cavities are caused by sugar, not by carbohydrates. That's exactly the differentiation I am trying to make.

DR. BUTTERWORTH: That is correct but I didn't want to leave the hearing with the impression that sugar is an anti-nutrient Now, sugar may cause dental caries and, certainly, there is excellent evidence for that.

SENATOR SCHWEIKER: There is no doubt about that.

DR. BUTTERWORTH. No doubt. But it is not an antinutrient Sugar is a nutrient and sugar is a carbohydrate.

SENATOR SCHWEIKER: But it does substantially increase the need for nutrients.

DR. VAN ITALIE: No more than other forms of carbohydrates. ...

DR. VAN ITALIE: I think it is important to point out that any carbohydrate you take, no matter what it is, if it's going to be absorbed by the intestine, has to be reduced to "sugar" before it can be absorbed. When you take starch, any form of starch, it's digested in the intestinal tract and ends up as glucose or one of the other simple sugars. Thus sugar or sucrose is really a "pre-digested" type of carbohydrate.

SENATOR SCHWEIKER: Now, the FTC made the sugar associates quit advertising that sugar was an energy builder and nutrient Now, say carbohydrate is an energy builder but to say sugar is an energy builder nutrient, the FTC made them cease and desist, so we are getting hi a very close area here of what impression the public has.

DR. ADAMSON: I would like to examine the credentials of those who made this recommendation. It is certainly hard for me, not being a nutritionist, to accept that anybody who is qualified to make a judgment and testify to your committee could make a statement that sugar is not an energy deliverer – energy giver.

DR. VAN ITALIE: I think the reason that the FTC cracked down on that sugar ad was that the sugar people were suggesting there was something unique about sugar as an energy source. If this was the case, I believe the Federal Trade Commission was justified in their criticism of this 'kind of advertising approach.

SENATOR SCHWEIKER: But it was getting to the semantics of what the layman understands. It is very well for us to define the dimensions of what we mean but if the effect is the opposite on the public that is what the FTC was complaining about. They implied it was a nutrient Now, when *you* say it's inaccurate to call it an antinutrient we are getting awfully close to the same thing. That's two negatives making a positive.

DR. VAN ITALIE: Any food that contains readily available calories is a good source of energy. I think that's what the FTC was saying.

SENATOR SCHWEIKER: When you say it's inaccurate to, call it an antinutrient, you are really saying it is a nutrient, by any kind of deductive reasoning.

DR. VAN ITALIE: Sugar is a nutrient.

SENATOR SCHWEIKER: And that is just what the FTC said you can't say because they don't believe it.

DR. VAN ITALIE: I'm sorry, but I don't agree with that. I think the FTC was objecting to possibly misleading information that the advertisers were using in the promotion of sugar.

SENATOR SCHWEIKER: Well, I'll be glad to show you the ad. I have a copy of it.

At that point the Chairman of the Senate Select Committee, Senator McGovern, said they were running out of time. The argument and the hearing were adjourned.