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By Patricia B. Mutch

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health-conscious consumers to select decaffeinated coffee and soft drinks.

### Relaxing Our Guard

Strangely, however, Adventist youth appear to be relaxing their guard against caffeine. Evidence from a recent survey of North American delegates to the 1984 Pan-American Youth Congress by the Institute of Alcoholism and Drug Dependency suggests that many SDA youth do not perceive caffeine as a dangerous drug.<sup>2</sup>

The researchers distributed a short questionnaire during a caucus of the North American delegation to the youth congress. The study inquired about influences promoting abstinence from alcohol and drugs, since this select population of youth leaders would presumably have a low incidence of usage of such substances. The survey also included questions on past or present usage of alcohol, tobacco, marijuana, various illegal drugs, and caffeine.

A total of 763, or 40.3 percent of the possible caucus attendees, responded to the survey. Since we could not offer anonymity in a caucus setting, a low response rate was expected. We assume that the results significantly understate actual usage. Table 1 details the preva-

# CAFFEINE

## *A DRUG OF EDUCATIONAL CONCERN*

Coffee and tea have historically been avoided by Seventh-day Adventists in keeping with counsel by Ellen G. White following her 1848 vision outlining their dangers.<sup>1</sup> She classified these beverages, so commonly consumed by the general public, along with alcohol, opium, and tobacco, as poisonous drugs. At the time of these warnings, advertisements for coffee and tea promoted their healthful properties, and their consumption was on the rise.

Today, public attention is increasingly being drawn to the dangerous effects of coffee, and particularly to a major drug contained in coffee and tea: caffeine. Research findings citing increased health risks from caffeine have prompted many

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lence of use of various addictive drugs, including caffeine. The high incidence of present use of caffeine, 41.7 percent, is disturbing.

A review of the frequency of drug use showed that a significant number of respondents ingest caffeine daily. Use of drugs by other SDA youth is outlined in Table 2. Only 16.2 percent of those surveyed responded that none or nearly none of their SDA friends used caffeine.

These results are further amplified by a cross-comparison of caffeine use with abstinence influences. Youth who used caffeine responded as abstainers to the question on influences promoting abstinence. This suggests that they consider caffeine to be in a different category from alcohol, tobacco, and narcotic drugs.

Such a casual or lenient attitude toward caffeine may reflect more relaxed attitudes in the church as a

whole. However, such a trend is of particular concern for youth because the deleterious effects of caffeine may hamper their learning as well as increase their future health risks.

### Chemical Makeup of Caffeine

Caffeine is a methylxanthine, which shares some common chemical properties with theophylline (found in tea) and theobromine (found in cocoa and chocolate). The drug is a stimulant, acting on the central nervous system to cause increased wakefulness and arousal through increasing the level of

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blood sugar and free fatty acids, causing a surge of energy.<sup>3</sup>

These changes result in a person's feeling hyperenergetic. However, they deplete normal body reserves of energy for emergency situations. After the caffeine leaves the system, the user feels let-down and fatigued. To compensate, the person may consume more caffeine in order to feel

energetic again. Thus a cycle of arousal and letdown is established, leading to addiction. In reality, tests have shown that following a letdown, the "lift" felt from caffeine is just a return to an original normal state; caffeine does not actually create a state of "super-energy." Withdrawal leads to depression and headaches in addicted persons.<sup>4</sup>

### Effects on Learning

Students who are high on caffeine will be jittery, show increased motor activity, and may have an increased rate of speech. They are likely to be disruptive, belligerent, and less receptive to instruction. Caffeine has been associated with aggression in both human and animal studies.

Caffeine has been used to treat hyperactivity, but the bulk of evidence suggests that it is unreliable as a medication for this problem. A careful double-blind study by Elkins<sup>5</sup> showed that at low doses caffeine did little to improve behavior, while at high doses it caused motor restlessness and anxiety. Another double-blind study by Rapoport<sup>6</sup> discovered that mothers of hyperactive boys reported more side effects of nervousness and irritability in children fed caffeine than in those who received placebos.

Studies have shown that caffeine slightly improves performance on manual tasks but offers no benefit in mental efficiency or performance. On the contrary, there is significant danger of users developing a chronic anxiety state, caffeineism, which results from regular heavy consumption of the drug. This free-floating anxiety syndrome is clinically indistinguishable from anxiety neurosis.

Such general nervousness handicaps students who, seeking to do well on a quiz or exam, take a

TABLE 1. REPORTED USAGE OF DRUGS BY YOUTH CONGRESS DELEGATES

	Percent of All Respondents*	
	Past Use	Present Use
<b>SOCIAL DRUGS</b>		
Alcohol	31.6	3.3
Tobacco	18.1	1.2
Caffeine	28.0	41.7
<b>ILLEGAL DRUGS</b>		
Marijuana	12.1	1.2
Cocaine	4.1	0.3
Uppers	7.0	0.4
Downers	4.2	0.4

\*n = 763

TABLE 2  
OPINIONS OF PREVALENCE OF USE AMONG SDA YOUTH<sup>16</sup>

Question: "How many of the SDA youth whom you know use \_\_\_\_\_?"

	Percent of Respondents*				
	None or Nearly None	About 25%	About Half	About 75%	Nearly All
Alcohol	52.6	30.6	11.4	4.1	1.3
Tobacco	70.4	22.2	5.2	1.6	0.6
Narcotic Drugs	74.5	20.0	4.1	0.8	0.6
Caffeine	16.2	12.3	15.9	21.1	34.5

\*n = 763

caffeine-containing "stay-awake" pill or drink several cans of caffeinated soda in order to stay up late studying. Since caffeine does not aid thinking ability or improve memory, instead of helping exam performance, it may actually interfere with recall and reasoning ability. Pupils who are most susceptible to anxiety attacks would be particularly vulnerable to academic impairment. They would be more likely to do well on a test if they avoided caffeine and got a good night's sleep before the exam.<sup>7</sup>

### Health Hazards of Caffeine

Caffeine also has mutagenic properties, which is a significant concern in young people. In animal studies, the drug has been shown to alter genetic material in undesirable ways. Caffeine has been linked with an increased risk of birth defects and potential risk of cancer. Mutagenic substances have their greatest impact if use begins early in life, though it may take many years for effects to appear. Both the FDA and the March of Dimes have warned pregnant women to avoid caffeine or use it in minimal amounts during pregnancy.<sup>8</sup>

Caffeine may increase the risk of bladder, breast, or pancreatic cancer. The evidence in this area is controversial. However, in 1982 the National Academy of Sciences in their report *Diet, Nutrition, and Cancer*<sup>9</sup> listed caffeine as a potential cocarcinogen, which indicates that, combined with other environmental cancer-inducing agents, it may increase the risk of cancer.

Clearly, caffeine provides no benefits that would not be more positively achieved through other means, such as obtaining normal sleep or rest. Avoiding this drug is a prudent measure for promoting lifelong good health.

**TABLE 3. COMMON SOURCES OF CAFFEINE<sup>17</sup>**

<b>COFFEE AND TEA, mg/6 oz cup</b>	
Automatic drip coffee	146
Automatic perk coffee	110
Instant coffee	66
Bagged tea: 1 minute brew	28
3 minute brew	44
5 minute brew	47
Leaf tea: varies with weight. Generally higher than bagged tea.	
Iced tea—1 tsp (1 g)	32-38
<b>SOFT DRINKS, mg/12 oz can</b>	
Coca-Cola and Diet Coke	45
Pepsi Cola	38
Diet Pepsi and Pepsi Lite	36
Dr. Pepper and Diet Dr. Pepper	40
Tab	45
RC Cola and Diet RC	33-36
Mountain Dew	54
Diet-Rite Cola	36
Mellow Yello	53
Mr. Pibb	41
Mr. Pibb (Diet)	57
Shasta Cola and Diet Shasta Cola	44
<b>OVER-THE-COUNTER DRUGS, mg</b>	
Cold tablets (bromoquinine)	15
Allergy relief	30
Stay-awake tablets	100-200
Cafergot	100
Headache relief with aspirin mg/std dose	65-130
<b>COCOA PRODUCTS, mg</b>	
Milk chocolate candy, 2 oz.	12
Baking chocolate, 1 oz. square	26
Dutch process cocoa, per cup fluid	10-17

### Sources of Caffeine

Caffeine is so widely available that many people consume significant quantities of it without realizing how much they have taken. Children, particularly, tend to consume a greater dose per pound body weight than adults, because of heavy consumption of caffeinated soft drinks. Gilbert has estimated that a 60-pound child who drinks three colas and eats three small chocolate bars a day would ingest 7.2 mg per kilogram of body weight. In adults, a dose of 2.9 mg per kilogram will produce a wakeful state.<sup>10</sup>

Table 3 provides general information on the caffeine content of common sources.<sup>11</sup> While a pharmacologic dose appears to be

about 250 mg for adults, individual sensitivity varies widely. Some people will experience tremors after drinking only one cup of coffee.

### Positive Approaches

Some of the factors that promote abstinence from addictive drugs among SDA youth are outlined in Table 4. The top three factors, "Concern for Health," "Want Control of My Life," and "Commitment to Christ," offer positive approaches for educating and motivating youth to live drug-free.<sup>12</sup> Caffeine is a gateway drug, whose use encourages dependence on artificial stimulation to "feel good." Such a pleasure-producing effect may encourage the later use of other, more stimulating substances. Therefore, teaching the wisdom of avoiding this common stimulant offers an early protection strategy for prevention of drug abuse.

Our children and youth need to learn the wisdom of resting when their bodies are tired, and avoiding all chemical stimulants. While caffeine may appear to be an innocent stimulant compared to illicit drugs, the addictive nature of the drug, its

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**TABLE 4. INFLUENCES PROMOTING NON-USE<sup>18</sup>**

	Percent Citing Influence as "Strong"	
	ABSTAIN	QUIT
Concern for my health	86.1	67.5
Want to be in control of my life	81.2	71.9
Commitment to Christ	68.2	67.8
Parental disapproval	49.1	31.0
Against the rules	19.3	9.0
Fear of legal results	16.0	12.8
Too expensive	15.6	11.2
My friends' disapproval	13.5	7.9

input was obtained from academy principals and college dormitory deans. The surveys inquired about respondents' involvement with tobacco, alcohol, marijuana, "uppers" and "downers," cocaine, and heroin.

<sup>4</sup> \_\_\_\_\_, *The Ministry of Healing* (Mountain View, Calif.: Pacific Press Publishing Assn., 1969), p. 172.

<sup>5</sup> *Temperance*, p. 36.

<sup>6</sup> Grace Paley, *Later the Same Day*, quoted in *Time* 125:15 (April 15, 1985), p. 98.

<sup>7</sup> Adapted from Miller Newton, *Gone Way Down* (Tampa, Florida: American Studies Press, 1981), and Vernon Johnson, *I'll Quit Tomorrow* (New York: Harper and Row, 1973).

<sup>8</sup> Vernon Johnson, "Why Do They Have to Suffer So Long," pamphlet (Center City, Minn.: Hazelden Educational Materials, n.d.).

<sup>9</sup> Sharon Wegscheider, "Inside Structured Intervention," *Alcoholism Magazine* (July-August, 1982), p. 35.

<sup>10</sup> Recommendations and other information in this article drawn from the "Capable of Caring" program—a drug-awareness workshop for concerned Seventh-day Adventist educators, parents, and leaders, by Paul and Carol Cannon, The Bridge Fellowship, Inc., Bowling Green, Kentucky.

<sup>11</sup> *The Ministry of Healing*, pp. 171, 172.

## Influencing Legislation

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citizen involvement in temperance laws.

There can never be a right state of society while these evils exist. And no real reform will be effected until *the law* shall close up liquor saloons, not only on Sunday, but on all days of the week. The closing of these saloons would promote public order and domestic happiness.—*Temperance*, p. 208.\*

The honor of God, the stability of the nation, the well-being of the community, of the home, and of the individual, demand that every possible effort be made in arousing the people to the evil of intemperance. Soon we shall see the result of this terrible evil as we do not see it now. Who will put forth a determined effort to stay the work of destruction? . . .

Let the voice of the nation demand of its *lawmakers* that a stop be put to this infamous traffic.—*The Ministry of Healing*, p. 346.\*

\*Italics supplied.

We should not work solely for our own people, but should bestow labor also upon noble minds outside of our ranks. We should be at the head in the temperance reform.—*Temperance*, p. 220.

In other churches there are Christians who are standing in defense of the principles of temperance. We should seek to come near to those workers and make a way for them to stand shoulder to shoulder with us. We should call upon great and good men to second our efforts to save that which is lost.—*Testimonies for the Church*, vol. 6, p. 110.

## Reaching Legislators With Your Concerns

Letters to legislators and concerned groups are read with great interest. Such correspondence greatly influences the votes of congressmen and state representatives. Letters from children and young people are very effective in shaping the opinions of lawmakers regarding healthful living. Here are a few principles to keep in mind when you and your students write to such people:

1. Write in your own words.
2. Be brief.
3. Give your reasons for taking a stand on the topic you are writing about.
4. Ask for a response.
5. Be kind and courteous.
6. Use the facts and be accurate.
7. Write a letter of thanks if you get a response.
8. Don't write on every issue.
9. Keep copies of your letters.
10. Keep informed on legislative issues. Be extremely vigilant.

Remember, your efforts to obtain good laws and ban commercial advertisements for health-destroying substances demonstrate love in action. □

## Caffeine—A Drug of Educational Concern

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creation of a false energy, and its anxiety-producing properties are significant hazards. Its practical effects on test performance should particularly be noted. Students should realize that using caffeine may prevent them from achieving the academic success that they seek.

*Students who are high on caffeine are . . . likely to be disruptive, belligerent, and less receptive to instruction.*

In closing, Ellen White's counsel is inspired wisdom for us today: "Tea is poisonous to the system. Christians should let it alone."<sup>13</sup> "Coffee is a hurtful indulgence. It temporarily excites the mind, . . . but the aftereffect is exhaustion, prostration, paralysis of the mental, moral, and physical powers."<sup>14</sup> □

### FOOTNOTES

<sup>1</sup> Ellen G. White, *The Ministry of Healing* (Mountain View, Calif.: Pacific Press Publishing Assn., 1909), pp. 326, 327; \_\_\_\_\_, *Testimonies for the Church* (Mountain View, Calif.: Pacific Press Publishing Assn., 1948), vol. 2, pp. 64, 65.

<sup>2</sup> Institute of Alcoholism and Drug Dependency, "Influences Promoting Abstinence From Alcohol and Drugs Among North American Youth Delegates," Technical Report 85-1. Berrien Springs, Michigan, Andrews University, 1985.

<sup>3</sup> B. A. Mosher, "Caffeine," Report by American Council on Science and Health, 1984. For information write to 1995 Broadway, New York, NY 10023.

<sup>4</sup> P. Mutch, "What's All the Fuss About Caffeine?" *Listen*, vol. 37, No. 1 (January, 1984), pp. 10-13; J. Scharffenberg and F. Soper, "What's in That Coffee Cup?" *Listen*, vol. 38, No. 8 (August, 1985), pp. 10-14; Richard H. Zander,

## NOTE

Because of space limitations, this article has dealt primarily with alcohol and tobacco. However, many opportunities can be found to influence legislation dealing with the manufacture and distribution of both legal and illicit drugs, such as tranquilizers, amphetamines, marijuana, hallucinogens, cocaine, and heroin.

"Are You a Caffeine Addict?" *Saturday Evening Post* (May-June, 1982), p. 50.

<sup>5</sup> Robert N. Elkins, et. al., "Acute Effects of Caffeine in Abnormal Prepubertal Boys," *American Journal of Psychiatry*, vol. 138, No. 2 (1981), pp. 178-183.

<sup>6</sup> J. Rapoport, et. al., "Behavioral and Cognitive Effects of Caffeine in Boys and Adult Males," *Journal of Nervous Mental Disorders*, 169:7 (1981).

<sup>7</sup> Mutch, op. cit.

<sup>8</sup> *Ibid.*; Scharffenberg and Soper, op. cit.

<sup>9</sup> National Research Council, *Diet, Nutrition, and Cancer* (1982), pp. 246-247.

<sup>10</sup> R. Gilbert, et. al., "Caffeine Content of Beverages as Consumed," *Canadian Medical Association Journal*, 114:205-210 (1976).

<sup>11</sup> M. L. Bunker and M. McWilliams, "Caffeine Content of Common Beverages," *Journal of the American Dietetic Association*, 74:28 (1979); R. Gilbert, et. al., op. cit.

<sup>12</sup> "Influences Promoting Abstinence From Alcohol and Drugs," op. cit.

<sup>13</sup> White, *Testimonies*, vol 2, p. 64.

<sup>14</sup> \_\_\_\_\_, *Temperance* (Mountain View, Calif.: Pacific Press Publishing Assn., 1949), p. 77.

<sup>15</sup> "Influences Promoting Abstinence From Alcohol and Drugs," op. cit.

<sup>16</sup> *Ibid.*

<sup>17</sup> M. L. Bunker and M. McWilliams, op. cit.; R. Gilbert, et. al., op. cit.; Jean A. T. Pennington and Helen Nichols Church, *Bowes and Church's Food Values of Portions Commonly Used* (Philadelphia: J. B. Lippincott Co., 1985), pp. 223, 224.

<sup>18</sup> "Influences Promoting Abstinence From Alcohol and Drugs," op. cit.

## Drugs—Good and Bad

(Continued from page 7)

of two things: either reduce the dose or give you another prescription. Under those conditions, the chemical is beneficial, and it's controlled.

However, today kids go to their parents' medicine chests, take out the barbiturates that were prescribed for Mother, dump them into a bowl along with what the other kids have scrounged up, stir them up with a spoon, and pick out the chemicals at random. Now, those chemicals were intended to be beneficial, but when they are used in this way, who knows what happens, and who knows who gets hurt?

### Are you saying that there is no such thing as a harmless drug?

I am told by the pharmacologists that if any chemical can produce temporary or permanent change it is capable of harm, without excep-

tion. The story I've been using recently to illustrate my point is that of Teddy Kennedy. When I came to Washington, D.C., some time ago for an appointment, I picked up the *Washington Post*. The headlined story reported that Senator Edward Kennedy had been taken to the hospital. The last paragraph said that he had taken two aspirin at nine o'clock, and at ten o'clock he had gone to the hospital.

I asked the teenagers, "Would two aspirin put you into the hospital?" I don't answer that right away; I let them think about it awhile. The truth of the matter is that Edward Kennedy had a bleeding ulcer. At the time it was not bleeding, but he took the aspirin and it started bleeding. If Senator Kennedy had stayed out of the hospital until midnight, he might have bled to death. Now, if such small amounts of the so-called simplest drug we use by the billions every year can do that kind of thing, there is no such thing as a harmless drug.

### How about drugs that are used simply for the feeling that the user might get?

Any so-called recreational use of drugs is to be deplored, and we ought to advise against it. That is one of the newer aspects of our current scene. If I read my history books correctly, there have never been so many people who are using drugs for what we call recreational purposes. People who do this are playing with fire. There are many chemicals which appear to be beneficial as far as their effect on our feelings goes. But every one of these chemicals has a tendency to produce either psychological or physiological addiction.

Take cocaine, for example. Only five years ago we were being told by the so-called authorities that

cocaine was not dependency-producing. Well, what has happened? In 1982 there were more overdose deaths from cocaine in America than there were overdose deaths from heroin. Psychiatrists today tell us that cocaine produces the worst psychological dependency of any chemical on the market. *The Journal of Toronto's Addiction Research Foundation* tells us that surveys done of cocaine users indicate that they rate cocaine above family, money, or job. So here again we have the classic illustration, of which we have had many in the past, in which a so-called harmless chemical turns out to be dangerously destructive. We ought to learn after awhile that recreational drugs are potentially destructive. They destroy literally thousands of lives every year.

### Why do people deliberately choose to kill themselves?

This is the age-old question, and I have two answers which probably aren't all the answers there are.

One answer is that everybody likes to feel good. We all are creatures of feeling. Feelings control us far more than reason does. Although man is capable of being rational, he usually does what he feels like and then provides himself with a rational reason for doing what he has done. Most of these chemicals produce at least a temporary feeling of euphoria.

Second, there is a desire today to be "with it," to be part of the current scene. Propaganda tells us that if you're really going to be with it, then you're going to drink, you're going to smoke, and you're going to use whatever the popular chemical is. So these two motivations are very powerful.

Then there is another psychological negative. No matter how many times you tell people what the risks are, they have the tendency to feel