FOR RELEASE:
4 p.m. EDT, Monday
July 23, 2007

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This release is also the subject of a video news release and podcast.

American Heart Association rapid access journal report:

Diet and regular soft drinks linked to increase in risk factors for heart disease

DALLAS, July 24 -- Drinking more than one soft drink daily -- whether it's regular or diet -- may be associated with an increase in the risk factors for heart disease, Framingham researchers reported in Circulation: Journal of the American Heart Association.

"We were struck by the fact that it didn't matter whether it was a diet or regular soda that participants consumed, the association with increased risk was present," said Ramachandran Vasan, M.D., senior author of the Framingham Heart Study and professor of medicine at Boston University School of Medicine.
"In those who drink one or more soft drinks daily, there was an association of an increased risk of developing the metabolic syndrome."

Metabolic syndrome is a cluster of cardiovascular disease and diabetes risk factors including excess waist circumference, high blood pressure, elevated triglycerides, low levels of high-density lipoprotein (HDL "good"
cholesterol) and high fasting glucose levels. The presence of three or more of the factors increases a person's risk of developing diabetes and cardiovascular disease.

Prior studies linked soft drink consumption to multiple risk factors for heart disease. However, this study showed that association not only included drinking regular calorie-laden soft drinks, but artificially sweetened diet sodas as well, researchers said.

"Moderation in anything is the key," said Ravi Dhingra, M.D., lead author of the study and an instructor in medicine at Harvard Medical School. "If you are drinking one or more soft drinks a day, you may be increasing your risk of developing metabolic risk factors for heart disease."

The Framingham study included nearly 9,000 person observations made in middle-aged men and women over four years at three different times.

In a "snapshot in time" at baseline, the researchers found that individuals consuming one or more soft drinks a day had a 48 percent increased prevalence of the metabolic syndrome compared to those consuming less than one soft drink daily.

In a longitudinal study of participants who were free of metabolic syndrome at baseline (6,039 person observations), consumption of one or more soft drinks a day was

associated with a 44 percent higher risk of developing new-onset metabolic syndrome during a follow-up period of four years.

The researchers also observed that compared to participants who drank less than one soft drink daily, those who drank one or more soft drinks a day had a:

-- 31 percent greater risk of developing new-onset obesity (defined as a body mass index [BMI] of 30 kilograms/meter(2) or more);
-- 30 percent increased risk of developing increased waist circumference;
-- 25 percent increased risk of developing high blood triglycerides or high fasting blood glucose;
-- 32 percent higher risk of having low HDL levels.
-- A trend towards an increased risk of developing high blood pressure that was not statistically significant.

Researchers then analyzed a smaller sample of participants on whom data on regular and diet soft drink consumption was available from food frequency questionnaires. Participants who consumed one or more drinks of diet or regular soda per day had a 50 to 60 percent increased risk for developing new- onset metabolic syndrome, said Dhingra, who is also an attending physician at Alice Peck Day Memorial Hospital in New Hampshire. "It didn't matter whether it was a diet or regular soft drink."

"Results also don't appear to be driven by the dietary pattern of soft drink users, i.e., by other food items that are typically consumed along with soft drinks," Vasan said. "We adjusted in our analyses for saturated fat and trans fat intake, dietary fiber consumption, total caloric intake, smoking and physical activity, and still observed a significant association of soft drink consumption and risk of developing the metabolic syndrome and multiple metabolic risk factors."

One explanation is that the fructose corn syrup in regular soft drinks causes weight gain, and can lead to insulin resistance and diabetes, Vasan said. "But then you would expect to see an association with regular soft drinks, but not diet soft drinks. Our findings suggest that this is not the case."

Another possible explanation is that consuming more liquids is associated with a lesser degree of dietary compensation. Usually if you eat a large meal, then you're inclined to eat a smaller amount at the next meal, Vasan said. But liquids don't have the same degree of compensation as solids. If you drink a large amount of liquids at a meal, you are more likely to eat a larger amount at the next meal (compared to what you would eat had you consumed more solids at the prior meal).

Other theories are that the high sweetness of diet and regular soft drinks makes a person more prone to eat sweet items, or the caramel content in soft drinks may promote development of advanced glycation end products, complexes of sugars that can result in insulin resistance and can cause inflammation in experimental studies.

"These are all theories, and experts debate their importance," Dhingra said. "Our study was observational, and so right now all we demonstrate is an association. We have not proven causality."

Dhingra and Vasan called for further studies to replicate the results and to understand the mechanisms driving this association before recommendations can be made.

Other researchers included Thomas J. Wang, M.D.; Caroline S. Fox, M.D.; Lisa Sullivan, Ph.D.; Ralph B. D'Agostino, Ph.D.; James B. Meigs, M.D., M.P.H.; J. Michael Gaziano, M.D., M.P.H. and Paul F. Jacques, Ph.D.

Editor's Note: For a free brochure about the American Heart Association's diet and nutrition recommendations called "Making Healthy Food and Lifestyle Choices: Our Guide for American Adults," call 1-800-AHA-USA1.

NR07 - 1167 (Circ/ Vasan)

Contact information: Dr. Vasan can be reached through Ms. Gina Digravio in Corporate Communications at the Boston Medical Center at (617) 638-8491 or Gina.Digravio@bmc.org. Dr. Dhingra can be reached at (603) 448-3122 or ravidhingra27@hotmail.com. (Please do not publish contact information.)

SOURCE American Heart Association

-0- 07/18/2007

/Web site: http://www.americanheart.org/

NEWS RELEASE

EMBARGOED
UNTIL 4:00 PM EDT JULY 23, 2007

Contacts: ABA Communications
202-463-6774

STATEMENT OF AMERICAN BEVERAGE ASSOCIATION
REGARDING SOFT DRINK CONSUMPTION STUDY IN *CIRCULATION*

In response to "Soft Drink Consumption and Risk of Developing Cardiometabolic Risk Factors and the Metabolic Syndrome in Middle-Aged Adults in the Community," a study published in Circulation: Journal of the American Heart Association, Susan K. Neely, president and chief executive officer of the American Beverage Association (ABA), said:

"This study doesn't prove any link between soft drinks and increased risk of heart disease. Its' assertions defy the existing body of scientific evidence, as well as common sense. Even the researchers acknowledge that their study can't support a link.

The assertions being made could apply to any caloric product – if you over consume any food or beverage with calories, there are health consequences. There is no scientific evidence to single out soft drinks as unique in this equation, and even this study doesn't support such an assertion.

Further, it is scientifically implausible to suggest that diet soft drinks – a beverage that is 99 percent water – cause weight gain or elevated blood pressure.

All this study does is to again underscore the need for moderation in our diets — a better balance between calories consumed and calories burned. After all, we know that the key to living a healthy and balanced lifestyle lies in consuming a variety of foods and beverages in moderation along with getting regular exercise.

All of our industry's beverages – including regular or diet soft drinks - can be part of a healthy way of life when consumed in moderation and as part of a balanced lifestyle. Our industry certainly supports the pursuit of balanced lifestyles with the growing development of beverage offerings beyond the traditional full-calorie offerings to include bottled water, flavored waters, enhanced waters, diet beverages, teas, sports drinks, low-calorie and mid-calorie juice drinks.

The beverage industry is an active partner in efforts to educate the public about making good choices regarding diet and exercise. And we welcome studies and initiatives that improve public awareness of the need for moderation in their diets and more activity in their lifestyle."

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The American Beverage Association is the trade association representing the broad spectrum of companies that manufacture and distribute non-alcoholic beverages in the United States.

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Mr. Joseph Loscalzo
Editor-in-Chief
Circulation: The Journal of the American Heart Association
560 Harrison Avenue
Suite 502
Boston, MA 02118

Dear Mr. Loscalzo,

I am writing in regard to your news release for "Soft Drink Consumption and Risk of Developing Cardiometabolic Risk Factors and the Metabolic Syndrome in Middle-Aged Adults in the Community," the recent study published in your journal. While we take the study seriously (as we do with any study), we have a significant concern with the headline of your news release, which goes far beyond the findings of the study. Accordingly, we hereby request a public retraction without delay.

Specifically, the headline incorrectly implies causation, stating that a "link" was found between soft drink consumption and heart disease. This bold assertion stands in stark contrast to what the study authors themselves acknowledge in their study:

"Given the observational nature of the present study, we cannot infer that the observed associations are causal." (pgs. 7-8)

We would urge that you apply the same rigorous scientific standards to your news release that you would to any other *Circulation* publication.

Regards,

Susan K. Neely
President & CEO
American Beverage Association

Cc: M. Cass Wheeler, CEO, American Heart Association

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American Heart Association statement on Framingham Study on soft drink consumption

Monday, July 23, 2007 – An observational study by Framingham researchers that showed an association with higher risks of developing the metabolic syndrome and multiple metabolic risk factors among people who consumed more than one diet or regular soft drink a day is being published today in the rapid access issue of *Circulation: Journal of the American Heart Association.*

Metabolic syndrome is a cluster of cardiovascular disease and diabetes risk factors including excess waist circumference, high blood pressure, elevated triglycerides, low levels of high-density lipoprotein (HDL "good" cholesterol) and high fasting glucose levels. The presence of three or more of the factors increases a person's risk of developing diabetes and cardiovascular disease.

This study may raise some questions among consumers about health risks associated with drinking soft drinks. Since this is an observational study, it is important to note that the study does not show that soft drinks *cause* risk factors for heart disease. It does show that the people studied who drank soft drinks were more likely to develop risk factors for heart disease.

However, it is possible that other factors could explain this relationship. Often people who drink soft drinks also eat and drink more calories, saturated fat and *trans* fat and less fiber and dairy products. Also, these people tend to be less physically active. This was true among the subjects in this study.

While the authors did account for these aforementioned diet and lifestyle factors in the analysis, it is possible that other lifestyle factors still account for the measured increase in risk factors leading to heart disease. As the authors note in the study, more research is needed to understand these associations before any recommendations can be made to the public.

Diet soda can be a good option to replace caloric beverages that do not contain important vitamins and minerals. The American Heart Association supports dietary patterns that include low-calorie beverages like water, diet soft drinks, and fat-free or low-fat milk as better choices than full calorie soft drinks.

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AMERICAN BEVERAGE ASSOCIATION

NEWS RELEASE

FOR IMMEDIATE RELEASE
JULY 23, 2007

Contacts: ABA Communications
202-463-6774

American Heart Association Clarifies *Circulation* Report: "The Study Does Not Show That Soft Drinks *Cause* Risk Factors for Heart Disease"

WASHINGTON - The American Heart Association (AHA) put out a new statement to the media today making it clear that a report in *Circulation: Journal of the American Heart Association* "does not show that soft drinks *cause* risk factors for heart disease."

The clarifying statement said that other factors could explain the development of risk factors for heart disease with the people observed in this report. And the AHA made it clear that diet soda is a good option for consumers looking to avoid calories in their beverages.

"The AHA acknowledges that the report published in *Circulation* does not show that soft drinks cause an increased risk of heart disease and it recognizes that diet soft drinks are a good option for those looking to cut calories in their beverages," said Susan Neely, president and CEO of the American Beverage Association. "We appreciate the AHA clearing up any confusion surrounding this report."

Neely said the report clearly showed no link between soft drinks and increased risk of heart disease, a conclusion supported by several prominent scientists, doctors and nutritionists who looked independently at the report published in *Circulation.*

"It defied common sense and the existing body of scientific evidence to assert a link between soft drinks and increased risk of heart disease," Neely said. "Even the researchers themselves admit their study can't support a link. Further, it is scientifically implausible to suggest that diet soft drinks – a beverage that is 99 percent water – cause weight gain or elevated blood pressure."

Neely said the assertions being made in the report could apply to any caloric product – if you over consume any food or beverage with calories, there are health consequences. The AHA concurred with this point in its clarifying statement, saying that " … it is possible that other factors could explain this relationship. Often people who drink soft drinks also eat and drink more calories, saturated fat and trans fat and less fiber and dairy products. Also, these people tend to be less physically active. This was true among the subjects in this study."

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CIRCULATION/ADD ONE

The AHA statement, released this afternoon, reads in part:

"Since this is an observational study, it is important to note that the study does not show that soft drinks cause risk factors for heart disease. It does show that the people studied who drank soft drinks were more likely to develop risk factors for heart disease.

"However, it is possible that other factors could explain this relationship. Often people who drink soft drinks also eat and drink more calories, saturated fat and *trans* fat and less fiber and dairy products. Also, these people tend to be less physically active. This was true among the subjects in this study.

"While the authors did account for these aforementioned diet and lifestyle factors in the analysis, it is possible that other lifestyle factors still account for the measured increase in risk factors leading to heart disease. As the authors note in the study, more research is needed to understand these associations before any recommendations can be made to the public.

"Diet soda can be a good option to replace caloric beverages that do not contain important vitamins and minerals. The American Heart Association supports dietary patterns that include low-calorie beverages like water, diet soft drinks, and fat-free or low-fat milk as better choices than full calorie soft drinks."

The full statement can be found at http://www.ameribev.org/news-detail/download.aspx?id=148.

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The American Beverage Association is the trade association representing the broad spectrum of companies that manufacture and distribute non-alcoholic beverages in the United States.

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5 of 29 DOCUMENTS

The Associated Press

July 24, 2007 Tuesday 1:38 AM GMT

Study: Diet soda associated with same heart risks as regular soda

BYLINE: By JAY LINDSAY, Associated Press Writer

SECTION: BUSINESS NEWS

LENGTH: 773 words

DATELINE: BOSTON

People who drank one or more diet sodas each day developed the same risks for heart disease as those who downed sugary regular soda, a large but inconclusive study found.

The results surprised the researchers who expected to see a difference between regular and diet soda drinkers. It could be, they suggest, that even no-calorie sweet drinks increase the craving for more sweets, and that people who indulge in sodas probably have less healthy diets overall.

The study's senior author, Dr. Vasan Ramachandran, emphasized the findings don't show diet sodas are a cause of increased heart disease risks. But he said they show a surprising link that must be studied.

"It's intriguing and it begs an explanation by people who are qualified to do studies to understand this better," said Vasan, of Boston University School of Medicine.

However, a nutrition expert dismissed the study's findings on diet soda drinkers.

"There's too much contradictory evidence that shows that diet beverages are healthier for you in terms of losing weight that I would not put any credence to the result on the diet (drinks)," said Barry Popkin, of the University of North Carolina in Chapel Hill, who has called for cigarette-style surgeon general warnings about the negative health effects of soda.

Susan Neely, president of the American Beverage Association, said the notion that diet drinks are associated with bulging waistlines defies common sense.

"How can something with zero calories that's 99 percent water with a little flavoring in it ... cause weight gain?" she said.

The research comes from a massive, multi-generational heart study following residents of Framingham, Mass., a town about 25 miles west of Boston. The new study of 9,000 observations of middle-aged men and women was published Monday online in the journal Circulation.

The researchers found those who drank one or more sodas a day diet or regular had an increased risk of metabolic syndrome, compared to those who drank sodas infrequently. Metabolic syndrome is a cluster of symptoms that increase the risk for heart disease including large waistlines and higher levels of blood pressure, blood sugar, cholesterol and blood fats called triglycerides.

At the start of the study, those who reported drinking one or more soft drinks a day had a 48 percent increased prevalence of metabolic syndrome compared to those who drank less soda.

Of participants who initially showed no signs of metabolic syndrome, those who drank one or more sodas a day were at 44 percent higher risk of developing it four years later, they reported.

Researchers expected the results to differ when regular soda and diet soda drinkers were compared, and were surprised when they did not, Vasan said.

But Popkin said that result isn't that surprising. He said much of the market for diet sodas are people who have unhealthy lifestyles and know they need to lose weight with the other portion being thin people who want to stay that way. That means many people drinking diet sodas have unhealthy habits that could lead to increased heart disease risks, whether they drink diet soda or not.

In studies in which some users were randomly given diet sodas and others were given regular soda, diet soda drinkers lost weight and regular soda drinkers gained weight, Popkin said.

In a statement, the American Heart Association said it supports dietary patterns that include low-calorie beverages.

"Diet soda can be a good option to replace caloric beverages that do not contain important vitamins and minerals," the association said, adding further study is needed before any association between diet soda and heart risk factors would lead to public recommendations.

Vasan also said poor overall health habits may be one reason diet soda drinkers did not show lower heart disease risks in the Framingham study, but there hasn't been enough research to say for sure.

Another possible reason is a controversial theory called "dietary compensation," which holds that if someone drinks a large amount of liquids at a meal, they aren't satisfied and will tend to eat more at the next meal, Vasan said.

Other theories, Vasan said, are that people who drink a large amount of sweetened drinks are prone to develop a taste for sweeter foods, or that the substance that gives soda its caramel color promotes resistance to insulin, which is needed to process calories.

Without a more definitive explanation, Vasan offers only this advice to diet soda drinkers: "Consume in moderation and stayed tuned for more research."

On the Net:

Framingham Heart Study: http://www.framinghamheartstudy.org/

American Heart Association: http://www.americanheart.org

LOAD-DATE: July 24, 2007

LANGUAGE: ENGLISH

PUBLICATION-TYPE: Newswire