

*Advancing cancer prevention and survival through nutrition education and research.*

## **Processed Meats in Schools: Putting Children at Risk for Cancer**

A Report from The Cancer Project  
Summer 2008

### **Summary**

Approximately 150,000 Americans will develop colon cancer or rectal cancer in 2008, according to the National Cancer Institute. Colorectal cancer, the fourth most common cancer, will kill nearly 50,000 people this year in the United States.

Consuming processed meats—including hot dogs, pepperoni, bacon, and deli meats—is a key risk factor for this disease, according to a comprehensive report released late last year by the American Institute for Cancer Research (AICR) and the World Cancer Research Fund. After reviewing all existing data on nutrition and cancer risk, AICR scientists concluded that processed meats increase one's risk of colorectal cancer by an average of 21 percent for every 50 grams of processed meat consumed daily. A 50-gram serving is approximately the size of a typical hot dog. Because research on processed meats shows cancer risk starts to increase with any portion, the AICR recommends avoiding such products.

As children return to school this fall, how many will be served processed meat products that increase their risk of colorectal cancer later in life? To determine the prevalence of processed meats in school meals, nutritionists with the Cancer Project analyzed lunch and breakfast menus at 29 large school districts in 23 states and the District of Columbia. Nutritionists evaluated one month's worth of menus from each district. Menus were taken from the spring semester of 2008.

### **Findings**

The Cancer Project's analysis revealed that processed meats were served to children in every school district. However, considerable variation exists. Processed meats were relatively rare on menus in Denver and San Francisco. In other districts, processed meats were much more common. In Chicago, Columbus, and Clark County (Las Vegas), processed meats were found in a high percentage of school lunches. In Chicago, 30 percent of the regular lunches served to high school students included processed meats, and 58 percent of Chicago's cold lunches served to elementary, middle, and high school students contained processed meats.

Breakfast menus also vary greatly. In San Francisco, the breakfast menu examined for this survey included no processed meats. In Austin, on the other hand, 45 percent of elementary school breakfasts contained processed meats, including chicken sausage patties and link sausage. And in Minneapolis, 100 percent of the breakfasts served in elementary, middle, and high school included processed meats. Menus from Los Angeles, Chicago, Philadelphia, and Washington, D.C., also indicated frequent use of processed meats in their school breakfasts.

## Processed Meat Report Card

SCHOOL DISTRICT	GRADE
Denver County Schools	Satisfactory
San Francisco Unified Schools	Satisfactory
Gwinnett County Public Schools	Fair
Jefferson County Public Schools	Fair
Mesa Public Schools	Fair
Miami-Dade County Public Schools	Fair
Milwaukee Public Schools	Fair
Seattle Public Schools	Fair
Detroit Public Schools	Poor
Fairfax County Public School District	Poor
Memphis City School District	Poor
Omaha Public Schools	Poor
Prince George's County Public Schools	Poor
Atlanta Public Schools	Failing
Austin Independent School District	Failing
Charlotte-Mecklenburg Schools	Failing
Chicago Public Schools	Failing
Clark County Public Schools	Failing
Columbus City Schools	Failing
District of Columbia Public Schools	Failing
Hancock County Schools	Failing
Hillsborough County Public Schools	Failing
Houston Independent School District	Failing
Los Angeles Unified School District	Failing
Minneapolis Public Schools	Failing
Montgomery County Public Schools	Failing
New York City Department of Education	Failing
Portland Public Schools	Failing
School District of Philadelphia	Failing

*Details about the percentage of meals containing processed meats served in each district can be found starting on page 4.*

## Grading Criteria

Grades were based on the highest percentage of meals containing processed meats on any lunch or breakfast menu in the district.

GRADE	CRITERIA
Excellent	District served no processed meats on the menus surveyed.
Satisfactory	No menu had more than 10 percent of meals containing processed meats.
Fair	At least one menu had more than 10 percent of meals containing processed meats, but not more than 15.
Poor	At least one menu had more than 15 percent of meals containing processed meats, but not more than 20.
Failing	At least one menu had more than 20 percent of meals containing processed meats.

## Background

In 2007, the World Cancer Research Fund and the American Institute for Cancer Research released a landmark report, *Food, Nutrition, Physical Activity and the Prevention of Cancer: a Global Perspective*, providing an up-to-date and comprehensive summary of evidence on cancer prevention. This report summarized the evidence on processed meats and cancer risk and concluded that “Processed meat is a convincing cause of colorectal cancer.”

This conclusion was based on a review of 44 case-control studies (in which the diets of individuals with cancer were compared to those of individuals who did not have cancer, but who were similar in other respects) and 14 cohort studies (in which the diets of individuals were assessed before cancer onset, and the individuals were followed over time to assess relationships between diet patterns and cancer risk). These studies show that individuals who consume processed meats are at significantly increased risk of developing colorectal cancer later in life, compared with those who avoid these products.

Risk increases with increasing consumption. According to the World Cancer Research Fund and the American Institute for Cancer Research, risk of colorectal cancer increases, on average, by 21 percent for every 50 grams of processed meat consumed daily. Some studies have also suggested that processed meats may contribute to risk of cancer of the esophagus, lung, stomach, and prostate, but evidence is more limited than for colorectal cancer.

Despite the scientific consensus on colorectal cancer risk, processed meat products are still widely consumed, particularly by children. Americans ate more than 1.5 billion pounds of hot dogs in 2006. A 2005 report from the U.S. Department of Agriculture showed that, based on the most recent available figures, average per capita consumption of processed pork products (lunch meat, bacon, sausage, and smoked ham) was 31.8 pounds.

## Detailed Results

### Denver County Schools

Colorado

Grade: Satisfactory

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	6%
Middle School	6%
High School	6%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	0%
Middle School	0%
High School	0%

### San Francisco Unified Schools

California

Grade: Satisfactory

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	10%
Middle School	10%
High School	10%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	0%
Middle School	0%
High School	0%

### Gwinnett County Public Schools

Georgia

Grade: Fair

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	13%
Middle School	15%
High School	3%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	No data
Middle School	No data
High School	No data

## Jefferson County Public Schools

Kentucky

Grade: Fair

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	13%
Middle School	13%
High School	13%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	13%
Middle School	13%
High School	13%

## Mesa Public Schools

Arizona

Grade: Fair

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	14%
Middle School	6%
High School	0%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	13%
Middle School	No data
High School	No data

## Miami-Dade County Public Schools

Florida

Grade: Fair

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	10%
Middle School	No data
High School	No data
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	14%
Middle School	No data
High School	No data

## Milwaukee Public Schools

Wisconsin

Grade: Fair

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	14%
Middle School	14%
High School	14%
<b>Breakfast Menus</b>	<b>% days when processed meats are offered</b>
Elementary School	0%
Middle School	0%
High School	0%

## Seattle Public Schools

Washington

Grade: Fair

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	11%
Middle School	5%
High School	5%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	14%
Middle School	No data
High School	No data

## Detroit Public Schools

Michigan

Grade: Poor

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	19%
Middle School	19%
High School	19%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	0%
Middle School	0%
High School	0%

## Fairfax County Public School District

Virginia

Grade: Poor

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	7%
Middle School	17%
High School	17%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	0%
Middle School	No data
High School	No data

## Memphis City School District

Tennessee

Grade: Poor

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	13%
Middle School	5%
High School	5%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	20%
Middle School	20%
High School	20%

## Omaha Public Schools

Nebraska

Grade: Poor

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	17%
Middle School	14%
High School	14%
<b>Breakfast Menus</b>	<b>% days when processed meats are offered</b>
Elementary School	10%
Middle School	10%
High School	10%

## Prince George's County Public Schools

Maryland

Grade: Poor

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	20%
Middle School	6%
High School	5%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	0%
Middle School	0%
High School	0%

## Atlanta Public Schools

Georgia

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	13%
Middle School	15%
High School	11%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	20%
Secondary School	60%

## Austin Independent School District

Texas

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	17%
Middle School	10%
High School	12%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	45%
Middle School	No data
High School	No data



## Charlotte-Mecklenburg Schools

North Carolina

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	12%
Middle School	15%
High School	2%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	23%
Middle School	62%
High School	69%

## Chicago Public Schools

Illinois

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School, Cold Menu	58%
Elementary School, 2 Entrée	21%
Elementary School, 3 Entrée	28%
Elementary School, 4 Entrée	23%
Middle School, Cold Menu	58%
Middle School, 2 Entrée	21%
Middle School, 3 Entrée	28%
Middle School, 4 Entrée	23%
High School, Cold Lunch	58%
High School, Regular Lunch	30%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	50%
Middle School	50%
High School	100%

**Clark County Public Schools (Las Vegas)**

Nevada

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School, Regular Menu	29%
Elementary School, Satellite Menu	17%
Middle School	9%
High School	16%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	0%
Middle School	No data
High School	No data

**Columbus City Schools**

Ohio

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	32%
Middle School	2%
High School	2%
<b>Breakfast Menus</b>	<b>% days when processed meats are offered</b>
Elementary School	40%
Middle School	40%
High School	40%

**District of Columbia Public Schools**

Washington, DC

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	5%
Middle School	14%
High School	14%
<b>Breakfast Menus</b>	<b>% days when processed meats are offered</b>
Elementary School	30%
Middle School	88%
High School	88%

## Hancock County Schools

West Virginia

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	25%
Middle School	15%
High School	15%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	16%
Middle School	No data
High School	No data

## Hillsborough County Public Schools

Florida

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	15%
Middle School	5%
High School	5%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	25%
Middle School	65%
High School	65%

## Houston Independent School District

Texas

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	13%
Middle School	No data
High School	No data
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	60%
Middle School	No data
High School	No data

**Los Angeles Unified School District**

California

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School, District 1 & 2	13%
Elementary School, District 3 & 4	13%
Elementary School, District 5, 6, & 7	13%
Middle School	11%
High School	11%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary, Districts 1 & 2	60%
Elementary, Districts 3 & 4	60%
Elementary, Districts 5, 6, & 7	60%
Middle School	80%
High School	80%

**Minneapolis Public Schools**

Minnesota

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School, Full Prep	1%
Elementary School, Prepack	10%
Middle School, Full Prep	1%
Middle School, Prepack	10%
High School, Full Prep	1%
High School, Prepack	10%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School, Full Prep	100%
Elementary School, Prepack	100%
Middle School, Full Prep	100%
Middle School, Prepack	100%
High School, Full Prep	100%
High School, Prepack	100%

## Montgomery County Public Schools

Maryland

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	13%
Middle School	8%
High School	2%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	40%
Middle School	40%
High School	40%

## New York City Department of Education

New York

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	0%
Middle School	1%
High School	1%
Cold Satellite Menu	59%
Hot Satellite Menu	0%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	27%
Middle School	27%
High School	27%

## Portland Public Schools

Oregon

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School	No data
Middle School	1%
High School	1%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School	29%
Middle School	29%
High School	No data

**School District of Philadelphia**

Pennsylvania

Grade: Failing

<b>Lunch Menus</b>	<b>% of meals with processed meats</b>
Elementary School, Regular Menu	15%
Middle School, Regular Menu	15%
High School, Regular Menu	15%
Elementary School, Satellite Menu	18%
Middle School, Satellite Menu	18%
High School, Satellite Menu	18%
<b>Breakfast Menus</b>	<b>% of days when processed meats are offered</b>
Elementary School, Regular Menu	100%
Middle School, Regular Menu	100%
High School, Regular Menu	100%
Elementary School, Satellite Menu	14%
Middle School, Satellite Menu	14%
High School, Satellite Menu	14%