Causes and Effects of the Changing American Diet, 1900 to the Present

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**Introduction**

This paper will explore the culturally adaptive, yet physically maladaptive, changes in American diet from early to late twentieth century. A shift from traditional to convenience foods coincides with the general industrialization of the United States, specifically in the role of women in the home and in the workforce. As America changes from a rural nation to one that is urban and industrialized, with rapidly increasing technology, more and more women are seen in the workforce. This increased activity allows less time for preparing meals, and food and cooking technology makes spending this time unnecessary. However, increased accessibility of food, and especially convenience food, leaves late twentieth century America with a high prevalence of obesity, which can lead to numerous health problems.

The purpose of this paper is to review the literature relating to the changes in American diet in the twentieth century. The increased proportion of women in the U.S. labor force will be cited; this trend will be regarded as a probable cause for an overall decrease in food preparation time and an increase in food eaten away from home. Also, nutritional patterns will be described. The negative consequences of the late twentieth century diet will be summarized lastly.

**Women in the Workforce and the Changing Role of Women in the 20th Century**

The twentieth century in America was marked by a shift from a rural to an urban nation, with the urban percentage of total population surpassing fifty percent by 1920 (Population Housing Unit Counts, 1992). The spread of interstates and other national roads after World War II facilitated the move to the cities, and the Industrial Revolution increased the opportunity for employment in these areas.
Another prominent trend in the 1900s was an increase in the number of women in the United States workforce. Figure 1 and Figure 2 show the growing percentage of the female participation rate for both married women and the total female population (U.S. Census Bureau, 1975; 2001).

Figure 1 drawn from data in U.S. Census Bureau, 2001 p.372 no.576 Marital Status of Women in the Civilian Labor Force: 1970 to 2000, Total Female Participation Rate, and U.S. Census Bureau, 1975 p.133 Series D49-62 Marital Status of Women in the Civilian Labor Force: 1890 to 1970, Total Female Labor Force as Percent of Female Population

Figure 2 drawn from data in U.S. Census Bureau, 2001 p.372 no.576 Marital Status of Women in the Civilian Labor Force: 1970 to 2000, Married Female Participation Rate,

The low percentage of women in the workforce in the early 1900s is consistent with the idea that the predominant role of women at the turn of the century was that of a housewife, this occupation being typically characterized by cooking, housecleaning, and childcare. But by 1980, approximately half of all women and half of all married women were in the labor force. Figure 3 shows the employment status of U.S. civilians in 2001 (US Dept. of Labor, 2001).

![Image of Employment Status of U.S. Civilians, 2001]

**Figure 3**, drawn from data in US Dept. of Labor, 2001

As shown, in 2001, 70.8 percent of men and 57.3 percent of women over the age of 16 were in the United States workforce. The increase in the number of women in the workforce, as well as the high percentages of civilian employment at the end of the
twentieth century, implies that the role of homemaker has been gradually minimized since the early 1900s.

Technological advances in food preparation from the early to late 1900s have perhaps accelerated the decline of the role of housewife. The twentieth century saw great changes in the way that food is cooked, making preparation of meals more convenient and less time consuming; therefore, the necessary workload of the housewife would have been reduced. By 1997, over fifty percent of all U.S. households had a dishwasher, eighty-three percent contained a microwave oven, and nearly all households contained a refrigerator (U.S. Census Bureau, 2001).

**Changes in American Diet**

American modernization was complemented by greater production and consumption of convenience foods, which require little or no preparation or cleanup. The term convenience foods will be used here to include frozen or prepackaged food, food eaten at fast food restaurants, and any food eaten away from home. Food processing advancements, such as freezing and canning, were first used commercially in the 1930s, when packaged food and also food fortification were introduced (Bente and Gerrior, 2002). The introduction of the TV dinner in the 1950s provided an alternative to cooking for particularly busy days. Currently, grocery stores sell an increasingly wide variety of ready-to-eat, prepackaged food. The growth of fast food chains has also impacted American diets. When McDonald’s started in the 1940s, and particularly when Ray Kroc bought the company in 1954, a huge market was found for fast food restaurants in the United States (Schlosser, 2002). Kentucky Fried Chicken opened in 1952, and Carl’s Jr. opened in 1956 (Schlosser, 2002). The first Dunkin’ Donuts was opened in 1948, and
many other chains were started in this era, making fast food a rapidly growing American establishment (Schlosser, 2002). Today, half of the United States food budget is used to buy food at restaurants (Schlosser, 2002).

**Nutrient levels, 1900-present**

A study conducted by the U.S. Food Supply series reported per capita nutrients and food available for consumption from the years 1909, 1945, 1975, and 1999 (Bente and Gerrior, 2002). Food was divided into categories of meat and alternatives, milk and milk products, vegetables, fruits, and grains. As seen in the following figure (Figure 4), the total amount of supply, in pounds per person per year, for each category has generally increased from 1909 to 1999 for all groups excepting vegetables and grain products (Bente and Gerrior, 2002).

![Foods available in U.S. Food Supply, per person per year](chart)

**Figure 4**, drawn from data in Bente and Gerrior, 2002 p.46 Table 1 Foods available in U.S. food supply (per person per year), by major food group for selected years

Some notable trends include a decrease in whole milk, but an eightfold increase in cheese consumption (Bente and Gerrior, 2002). Poultry consumption has also increased greatly, from 17 lbs in 1909 to 95 lbs in 1999, but red meat consumption has decreased only
slightly in these years, from 148 lbs to 134 lbs (Bente and Gerrior, 2002). Nutrients, according to the 2002 study, have fluctuated significantly over the past century (Bente and Gerrior, 2002). Many per capita nutrient levels have remained fairly constant or increased from 1909 to 1999, several largely due to food fortification and enrichment (see Table 1). Folate and iron are good examples of these nutrients, having increased dramatically in availability due to enriched flour and breakfast cereals (Bente and Gerrior, 2002). Calcium levels have fluctuated greatly, starting at 760 mg per capita per day in 1909, to 1,070 mg in 1945, then dropping back down to 990 mg in 1999 (Bente and Gerrior, 2002). Vitamins A, E, and C have increased in availability, while Vitamins B6, B12, and potassium have remained approximately the same (Bente and Gerrior, 2002).

### Nutrient Levels from U.S. Food Supply, selected years

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>1909</th>
<th>1945</th>
<th>1975</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>vitamin A</td>
<td>1240</td>
<td>1540</td>
<td>1590</td>
<td>1780 micrograms</td>
</tr>
<tr>
<td>vitamin B</td>
<td>2.2</td>
<td>2</td>
<td>2</td>
<td>2.5 milligrams</td>
</tr>
<tr>
<td>Folate</td>
<td>323</td>
<td>347</td>
<td>330</td>
<td>641 micrograms</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>8.4</td>
<td>9.3</td>
<td>8.5</td>
<td>8.1 micrograms</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>7.2</td>
<td>10.5</td>
<td>14</td>
<td>17.8 micrograms</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>98</td>
<td>119</td>
<td>114</td>
<td>132 milligrams</td>
</tr>
<tr>
<td>Calcium</td>
<td>760</td>
<td>1070</td>
<td>870</td>
<td>990 milligrams</td>
</tr>
<tr>
<td>Iron</td>
<td>14.2</td>
<td>16.4</td>
<td>16.4</td>
<td>23.6 milligrams</td>
</tr>
<tr>
<td>Potassium</td>
<td>4060</td>
<td>4270</td>
<td>3450</td>
<td>3890 milligrams</td>
</tr>
</tbody>
</table>

**Table 1**, drawn from data in Bente and Gerrior, 2002 p.49 Table 2 Nutrients available (per person per day) in U.S. food supply for selected years

### Increase of Fats, Sugars, and Calories in the American Diet

While the nutrient levels in the American diet have mostly survived the rise of convenience foods, the amount of fat and sugar consumed in the United States has risen
significantly, causing concern among many over the health benefits, or detriments, of our changing meal patterns. The following chart (Figure 5) is taken from the U.S. food supply record, and it illustrates the increase of fats and oils, and sugars and sweeteners, available per person per year in 1909, 1945, 1975, and 1999 (Bente and Gerrior, 2002).

![Food available in U.S. Food Supply, per person per year](image)

**Figure 5.** drawn from data in Bente and Gerrior, 2002 p.49 Table 2 Nutrients available (per person per day) in U.S. food supply for selected years

Additionally, the consumption of corn sweeteners has risen from less than 5 lbs in 1909 to 85 lbs in 1999 (Bente and Gerrior, 2002). This change is largely due to a huge increase in consumption of carbonated soft drinks and other sweet beverages (Bente and Gerrior, 2002). From a nutritional standpoint, daily availability of carbohydrates and protein, in Table 2, has remained stable, while total fat has increased steadily over the decades (Bente and Gerrior, 2002).

**Per Capita Availability, U.S. Food Supply**

<table>
<thead>
<tr>
<th></th>
<th>1909</th>
<th>1945</th>
<th>1975</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>pounds per person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
carbohydrates  500  425  381  500mg  
protein       101  104  92   111mg  
fat           122  138  144  164mg  

*Table 2*, drawn from data in Bente and Gerrior, 2002 p.49  
Table 2 Nutrients available (per person per day) in U.S. food supply for selected years

A closer look at the sources of food energy shows that sugars and sweeteners, as well as fats and oils, have risen in percentage in the 1900s, while meats and grains have declined slightly as sources of energy from 1909 to 1999 (Bente and Gerrior, 2002). The increase in percentage of carbohydrates as sugars has been documented in other cases of modernization (Bindon, 1994). Food energy on a per capita availability basis has increased from 3500 kcal per day in 1909 to 3800 kcal in 1999 (Bente and Gerrior, 2002). More significantly, the 1999 value is recovered from a drop to 3300 kcal in 1945 and 3100 kcal in 1975 (Bente and Gerrior, 2002).

**Obesity and Related Health Problems**

Obesity is characterized by a high caloric intake as well as a high intake of carbohydrates (Cushman and Salans, 1978). Dietary composition has a substantial impact on adipose tissue and glucose metabolism, which in turn affects human body weight (Cushman and Salans, 1978). Obesity in the United States has been linked to diet and food availability (Forbes, 1979; Salans, 1979). In 1997, 20 percent of Americans were considered obese and 55.3 percent were considered overweight, this number including those who were obese (U.S. Census Bureau, 2001). These statistics are based on a body mass index (BMI), a ratio of weight to height, in units of kilograms and meters, respectively. Obese persons are characterized as having a BMI greater than or equal to 30, and overweight persons have a BMI greater than or equal to 25. Previous measurements for obesity included calculation of a desirable weight, also using a weight-
to-height ratio. In 1960-1962, using this technique, an average of 14.5 percent of men
and 25.1 percent of women deviated by twenty percent or more. In 1971-1974, these
numbers were 14.0 and 23.8 for men and women (Sims, 1979). However, genetic
evidence indicates that obesity is increasing in prevalence in America (Sims, 1979).

Metabolic consequences of obesity include diabetes mellitus and insulin
resistance, hyperlipoproteinemia, and hypercholesterolemia (Salans, 1979). High blood
pressure, arthritis, and the gout can also be caused by obesity, while gallbladder disease,
atherosclerotic disease, cancer, and death have all been associated with obesity (Rimm
and White, 1979). The relationships between obesity and both diabetes mellitus and
vascular disease have been studied quite extensively (Doisy, 1978; Berger et al., 1978;
Atkinson and Bray, 1978). The twentieth century in America shows a substantial
increase in deaths due to diabetes mellitus and cardiovascular-renal disease from 1900 to
1970, as shown in Figures 6 and 7 (U.S. Census Bureau, 1975).

![Death Rates for Diabetes Mellitus](image)

**Figure 6**, drawn from data in U.S. Census Bureau, 1975 p.58 Series B149-166 Death
Rate, for Selected Causes: 1900 to 1970
The number of deaths due to diabetes also increased in the 1990s, though deaths due to cardiovascular diseases decreased during this time (U.S. Census Bureau, 2001).

**Discussion of Sources**

Data for this paper has been taken from the U.S. Census Bureau, the U.S. Food Supply Series, the U.S. Department of Labor, the U.S. Department of Health, Education, and Welfare, and various studies relating to obesity and associated health risks. Much of this research was conducted on an annual basis, with national surveying being the typical research method. Percentages and other figures are representative of the U.S. population at large.

**Conclusion**

The United States in the 1900s exhibited an increase in the number of women in the workforce, caused by or paralleled with the urbanization and industrialization of the United States. Increased consumption of convenience foods-prepackaged and frozen foods, fast food, and restaurant food-over this century demonstrates a declining amount of time necessary for food preparation, and this trend is concluded to be an adaptation to modernization and greater numbers of women in the workforce. This adaptation is
cultural, rather than biological, and implies a beneficial change as a result of an environmental stressor. In this case, industrialization and more women in the workforce are environmental stressors, allowing less available time for food preparation. Increased cooking technology and consumption of convenience foods are adaptive responses, as they allow food to be prepared in less time. From a biological standpoint, nutrients received from foods have not changed significantly over the past 100 years. Adequate nutrition is likewise reported in the diet of children in the American Samoa, whose diet was also affected by modernization (Bindon, 1994). Goungetas and Morgan (1986) conducted a similar study of American eating habits, particularly related to eating away from home and snacking. They found that nutrient levels were not significantly affected by these factors. Krebs-Smith et al. (1986) speculated that greater variety in food choices tends to cause increased availability of food nutrients. However, in a study of Samoan adults, Bindon (1984) found that increasing modernization was associated with decreasing nutrient intake. In this paper, the main biological consequences from diet alteration were related to obesity, a symptom found in both studies of Samoa (Bindon, 1984; Bindon, 1994). Obesity is a frequent cause of several significant health problems, including diabetes and cardiovascular problems. These results, being detrimental to physical health, suggest the trend towards obesity is biologically maladaptive.

**Suggestions for further study**

The effects of snacking, as discussed by Goungetas and Morgan (1986), were not examined directly in this paper, although an increase in snacking from 1900 to 2000 is assumed as part of an increase in convenience foods overall. Generally, the diet of children could be looked at in greater detail, with regards to snacking, fast food, and
school-sponsored lunches. Obesity is a common problem with young Americans, and will likely continue to be so as more and more food products are marketed to children. Levels of exercise were not considered here, although they certainly relate to obesity rates. More specifically, the impact of television on American activity level and weight gain would be an interesting area for research. Much has been published on the majority of these topics, and further study would be very possible.
Works Cited


