

**HOW TO EAT AND LOSE WEIGHT:  
A SECOND LOOK**

by  
Sue Dunham

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Nutrition

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Sue Dunham

Approved: \_\_\_\_\_  
Fats Domino, Ph.D.  
Chair of the Department of Nutrition

Approved: \_\_\_\_\_  
Minnesota Fats, Ph.D.  
Dean of the College of Hard Knockwurst

Approved: \_\_\_\_\_  
Ann L. Ardis, Ph.D.  
Senior Vice Provost for Graduate and Professional Education

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: \_\_\_\_\_  
Fats Waller, Ph.D.  
Professor in charge of dissertation

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: \_\_\_\_\_  
Fat Albert, Ph.D.  
Member of dissertation committee

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: \_\_\_\_\_  
Virginia Slims, D.D.S.  
Member of dissertation committee

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: \_\_\_\_\_  
Slim Pickens1, M.K.C.  
Member of dissertation committee

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## **ABSTRACT**

The problem of energy equilibrium in the human body has received a great deal of attention in the United States. Many methods have been advocated to reduce the caloric value of the food without affecting its taste or the appetite of the consumer. Some pharmaceutical houses have even expanded by wise investment of the monetary equivalent of the weight theoretically lost by their customers.



## Chapter 1

### A NEW SOLUTION TO AN OLD PROBLEM

The problem of energy equilibrium in the human body has received a great deal of attention in the United States.<sup>1</sup> Many methods have been advocated to reduce the caloric value of the food without affecting its taste or the appetite of the consumer. Some pharmaceutical houses have even expanded by wise investment of the monetary equivalent of the weight theoretically lost by their customers.<sup>2</sup>

#### 1.1 Various Methods

The various methods advocated involve either a drastic reduction in the quantity of the food ingested, use of drugs that affect the appetite, or increase in the amount of physical exercise. The first method leaves the patient permanently hungry, the second makes him subhuman by dulling his senses, and the third defeats its own purpose by increasing the appetite and leading to a vicious cycle.

##### 1.1.1 Proposal

In this communication, I propose a new method of reducing, without changing the quantity of the food ingested. The method is based on the principle that the caloric value of the food also depends on its temperature.

For each degree of temperature of the food below the temperature of the human body, the body has to supply heat (energy) to raise the temperature of the food to that of the body.

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<sup>1</sup> As seen by people's increased awareness of health and physical fitness over the last decade.

<sup>2</sup> This article is adapted from the *Journal of Irreproducible Results*. Copyright 1983 by the Journal of Irreproducible Results. Reprinted by permission, Workman Publishing. All Rights Reserved.

The next section will discuss changing temperatures and the effect they have on the breakdown of the molecular structure of food.

#### 1.1.1.1 Heating and Thawing

When food is frozen, heat of thawing has to be supplied to it at the rate of 80 calories/gram of water contained in the food in addition to 1 calorie/gram for each degree centigrade the temperature rises. Table 1.1 shows this using the example of frozen milk.

**Table 1.1:** Heating and Thawing. The caloric energy needed for heating and thawing frozen milk.

Substance	0 Degrees C	37 Degrees C
Frozen Milk	16,000 cal.	27,400 cal.

One can easily see that a glass of frozen milk (200 grams) at the temperature of deep freeze, i.e., -20 degrees C, would need  $200 \times 80$  calories for thawing and  $200 \times 57$  calories for heating up to 37 degrees C (98 degrees F), i.e.,  $16,000 + 11,400 = 27,400$  calories or 27.4 Cal. The caloric value of a glass of whole milk is 138 Cal. and of skim milk only, 74 Cal. Thus,

$$\frac{(27.4 \times 100)}{74} = 34\% \quad (1.1)$$

of caloric milk energy is lost for its heating. If you dilute the milk in the ratio of 1:2, 68% of the energy would be lost on consuming the same amount (200 grams) of milk.

##### 1.1.1.1.1 The Steak Example

Similarly, one can calculate that consumption of a pre-cooked frozen steak calls for an expenditure of at least one third of its caloric value on the thawing and heating. See figure 1.1 for an image of the steak. If one adds to this the amount of energy supplied as heat by the body and the mechanical energy required to crush the food with the jaws, the loss of the caloric value of the food becomes even greater.



**Figure 1.1:** The Steak Example (T-bone cut).

For those individuals who do not care to crush their food with their teeth, there are several alternatives ...

## Chapter 2

### THE NEED TO EAT AND OVERINDULGE

#### 2.1 Processes

As we all know, it takes 1 calorie to heat 1 gram of water 1 degree centigrade. Translated into meaningful terms, this means that if you eat a very cold dessert (generally consisting of water in large part), the natural processes which raise the consumed dessert to body temperature during the digestive cycle literally suck the calories out of the only available source, your body fat.

#### 2.2 Materials

Referring back to equation 1.1, a dessert served and eaten at near 0 degrees C (32.2 degrees F) will, in a short time, be raised to the normal body temperature of 37 degrees C (98.6 degrees F). For each gram of dessert eaten, that process takes approximately 37 calories as stated above. The average dessert portion is 6 oz, or 168 grams. Therefore, by operation of thermodynamic law,  $6,216 \text{ calories} (1 \text{ cal./g/deg.} \times 37 \text{ deg.} \times 168 \text{ g})$  are extracted from body fat as the dessert's temperature is normalized. Allowing for the 1,200 latent calories in the dessert, the net calorie loss is approximately 5,000 calories.

Obviously, the more cold dessert you eat, the better off you are, and the faster you will lose weight if that is your goal. This process works equally well when you are drinking very cold beer in frosted glasses. The results here are really remarkable, and it beats running, hands down. Unfortunately, for those who eat pizza as an excuse to drink beer, pizza (loaded with latent calories and served above body temperature) induces an opposite effect. But, thankfully, as the astute reader should have already

reasoned, the obvious solution is to drink a lot of beer with pizza and follow up immediately with large bowls of ice cream.

**Table 2.1:** Frozen Pizza Brands Review. Are they worth the calories?

Brand/Type	Cost	Calories per Serving	Fat
365 Mediterranean Pizza Vegetable	\$5.00	300	12g
American Flatbread Pizza Sundried Tomato and Mushroom	\$12.00	340	12g
Amy's Pizza Spinach	\$7.00	310	12g
DiGiorno Crispy Flatbread Pizza Mushroom Medley	\$6.89	320	19g

A way to significantly improve the results would be to ***cook*** the pizza, then put it in the refrigerator overnight and eat it (cold) the next morning. Since the pizza would be below body temp, it would provide even greater calorie loss to the body!

We could all be thin if we were to adhere religiously to a pizza, beer, and ice cream diet ...

## REFERENCES

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Sherman, Howard, and Donald D. Kelley. *Essentials of Nutrition and Diet*. New York: Macmillan, 1945.

## **Appendix A**

### **CALORIES OF COMMON FOODS**

A handy list of common foods and their nutritional information helps to maintain your weight. See table [2.1](#) for an example of frozen pizzas.

## Appendix B

### TRADITIONAL RECIPES FROM MY MOTHER'S AND GRANDMOTHER'S KITCHENS

#### B.1 Homemade Hamburgers

This makes 4 burgers. Just increase the ingredients as needed for more.

##### Equipment:

- A bowl
- A sharp knife
- A cutting board
- A skillet or heavy frying pan ( or a Grill )

##### Ingredients:

- 1lb/500g ground sirloin
- 1 half onion grated or finely chopped; one can substitute green onions, but use the bulb only.
- 4 pinches ground coriander; one can use cumin instead for more spice.
- 4 pinches paprika powder; optional smoked, spicy or sweet paprika for a savory variety.
- A dash of fresh ground black pepper
- A pinch of salt
- A tablespoon of Worcestershire sauce
- 1 egg lightly beaten



First, mix all the ingredients in a bowl and, using your hands, shape into four balls. Turn the heat to medium under the skillet and add a tiny amount of oil. When the skillet is hot, add the burgers, pushing them flat with a spatula. Cook for about 3 minutes each side for medium rare, longer for well done and less for rare.

Just before the burgers are ready, toast the inside of the buns under a broiler, over a grill, or in a toaster. If using a grill or broiler, spread a little butter on the buns first. My personal preference for serving them is to spread a little mayonnaise on the bottom of the bun then add the burger, a thin slice of raw onion, a lettuce leaf, and a slice of tomato. I top it off with a dab of ketchup and a good helping of English mustard on the top half of the bread. But the great thing about making homemade hamburgers is that you can add what you want. I like to serve them with homemade French fries.