Analysis of the calories and the fat: Cereal Dataset

Information on the distribution of various groups of nutrients among 77 commonly available

breakfast cereals was obtained from the *statistical graphics exposition* in 1993. The number

of calories and grams of fat, was recorded.

A plot of the relationship between the caloric content/serving and the fat (Figure 1) showed a

linear relationship. The estimated relationship (R-Square= 0.2084; p < .0001) is:

Calories = 95.13 (SE 3.14) + 9.81 (SE 2.21)*Fat

Therefore, for every additional gram of fat, the calorie content is estimated to increase by 9.81

calories, and this could scale from 5.4 to 14.2 calories (95% CI for the slope) based on the

different collected cereal sample. The huge differences due to other nutrients' affect (omitted

variable bias). The standard error of slope is 2.21, p-value < 0.0001. We can say that there is a

positive relationship between the calories and fat and the relationship consistent with the

stand value of 9 calories of fat.

An estimate of the mean caloric content/serving for a cereal with 4 grams of fat is 134.376

calories. And for the uncertainty in **the MEAN caloric content of all cereals** with 4 grams of

fat, 95% confidence interval is between 120.51 and 148.20 calories. And for the range of

INDIVIDUAL cereals with 4 grams of fat, 95% prediction interval is between 93.37 and
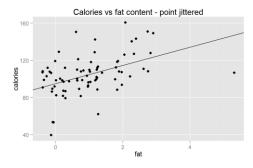
175.34 calories.

	Coef	SE	CI.2.5..	CI.97.5..
(Intercept)	95.13	3.14	88.87	101.39
fat	9.81	2.21	5.41	14.20

Figure 1. A plot of the calories against fat(g).