

Vegetarian Children Can Be Healthy Without Animal Protein

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Abstract

Despite stereotypes and concerns, research shows that it is realistic for vegetarian children to be healthy. Typical worries about the health of vegetarian children include protein and vitamin deficiencies. Research shows that vegetarian children are able to consume the appropriate amount of protein with planning. Vitamins such as B-12 can be more difficult for vegetarians to find, but it is possible through supplements and fortified cereals. Getting enough food energy for vegetarian children requires proper meal choices because they are only able to eat so much in one sitting, but this energy can be found in cereals, legumes, and nuts. Although it can be more difficult for vegetarian children to obtain the proper nutrients, with careful planning and awareness, vegetarian children can be healthy.

Introduction

In recent years vegetarianism has become more prevalent in the United States as reflected by more vegetarian options in restaurants. The term vegetarianism is vague. Lactoovovegetarians, lactovegetarians and vegans are the three main vegetarian categories. Lactoovovegetarians consume milk products and eggs. Lactovegetarians only consume milk and dairy products. Vegans, sometimes referred to as total vegetarians, consume no animal products excluding breast milk. A common concern is that the proper nutrients are not available from a vegetarian diet, especially for growing children.

I hypothesize that vegetarian children can be healthy without animal protein. The only exception to this rule is that vegetarian children need to be breast fed during the early stages of life, and often for a slightly longer period of time than non-vegetarian children. Infants have in fact often been reared on lactovegetarian diets for up to their first year, so the idea of children upholding a vegetarian diet is reasonable. Vegetarian diets often lack certain essential vitamins, especially vitamin D and B-12. Vitamin B-12, usually found in foods of animal origin, is important for normal cell activity, DNA replication and production of the mood-affecting substance SAME (S-adenosyl-L-methionine). Vitamin D has an important role in regulating body levels of calcium and phosphorus, and in maintaining strong bones. These vitamins can be found in supplements and fortified cereals (2).

Food energy can play a role in the growth and development of children. Those who consume an omnivorous diet often have a higher intake of energy because animal fat has more calories. It can be difficult for children, especially vegetarian children, to obtain proper energy because they can only eat so much in one sitting. Children ages one to three can consume approximately 200-300mL at each meal (2). To get enough calories, in addition to fruits and vegetables, one must eat cereals, legumes and nuts, which are essential to maintain proper energy (7).

Method

There were many more studies about vegetarian adults than about children. To be sure that my sources were accurate I avoided internet websites even if they were through organizations. First I gained a general background on adult vegetarianism from Collin Campbell's book, *The China Study*. I then gathered child specific information from peer-reviewed scholarly articles. The main journal I used was the *American Journal of Clinical Nutrition*, but I also used the *Journal of the American Dietetic Association*, and the *Journal of Pediatric Health Care*

Results

(See charts)

The children from whom the graphs are based lived in a community called "The Farm" in rural Tennessee and consumed vegetarian diets as shown in Table 1 (4). The charts and graphs show that weight and height are only somewhat affected by a vegetarian diet in children. Most of the children are between the 25th and 75th percentile of the National Center for Health Statistics, making them average. Although there is less of a range in weight and height in the farm children, there is not a large portion significantly lower or higher than others in the National Center for Health Statistics.

TABLE 1. Social, Demographic, and Dietary Data of The Farm Children

Item	No. (% of Children)*
Birth data	
Born on The Farm	304 (82)
Lived on The Farm by 2 y of age	339 (91)
Birth wt <2500 g†	18 (5)
Infant feeding patterns	
Breast-fed‡	335 (95)
Solid foods started by 6 mo of age§	121 (80)
Other dietary information	
Mother's diet during pregnancy	
Vegan	281 (75)
Lacto-ovovegetarian	64 (17)
Omnivore	28 (8)
Child's diet	
Birth-2 yr of age	
Vegan	288 (83)
Lacto-ovovegetarian	49 (14)
Omnivore	11 (3)
Vegan since birth	253 (73)
Vitamin/mineral supplementation	263 (76)
Regular yeast supplementation	139 (87)

* Based on available data.
† Mean birth weight 3389 g.
‡ Mean number of months breast-fed was 12 months.
§ Mean age when solid foods were introduced was 5 months.

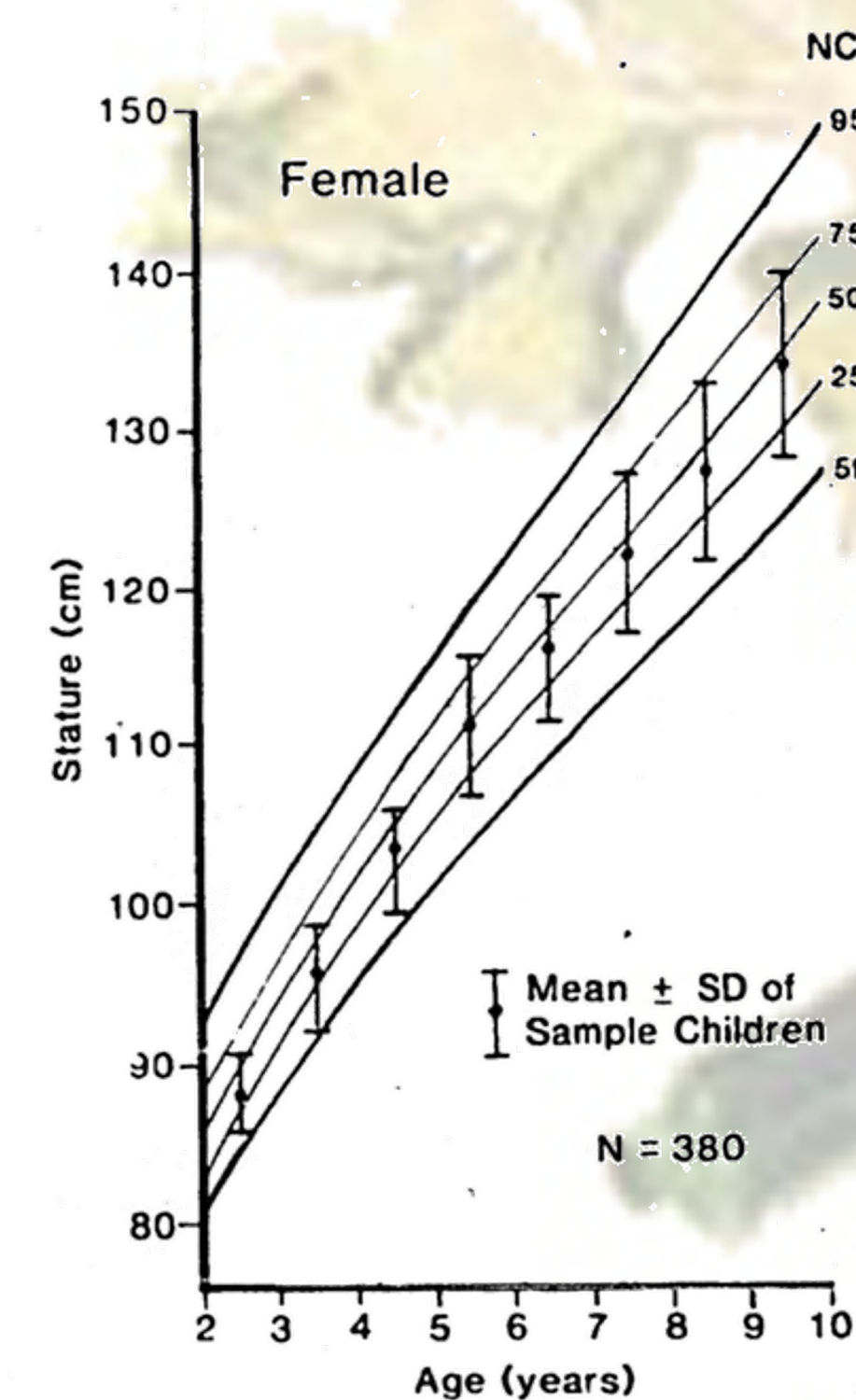


Figure 1 Height for age of girls from The Farm relative to National Centers for Health Statistics (NCHS)/Centers for Disease Control percentiles.

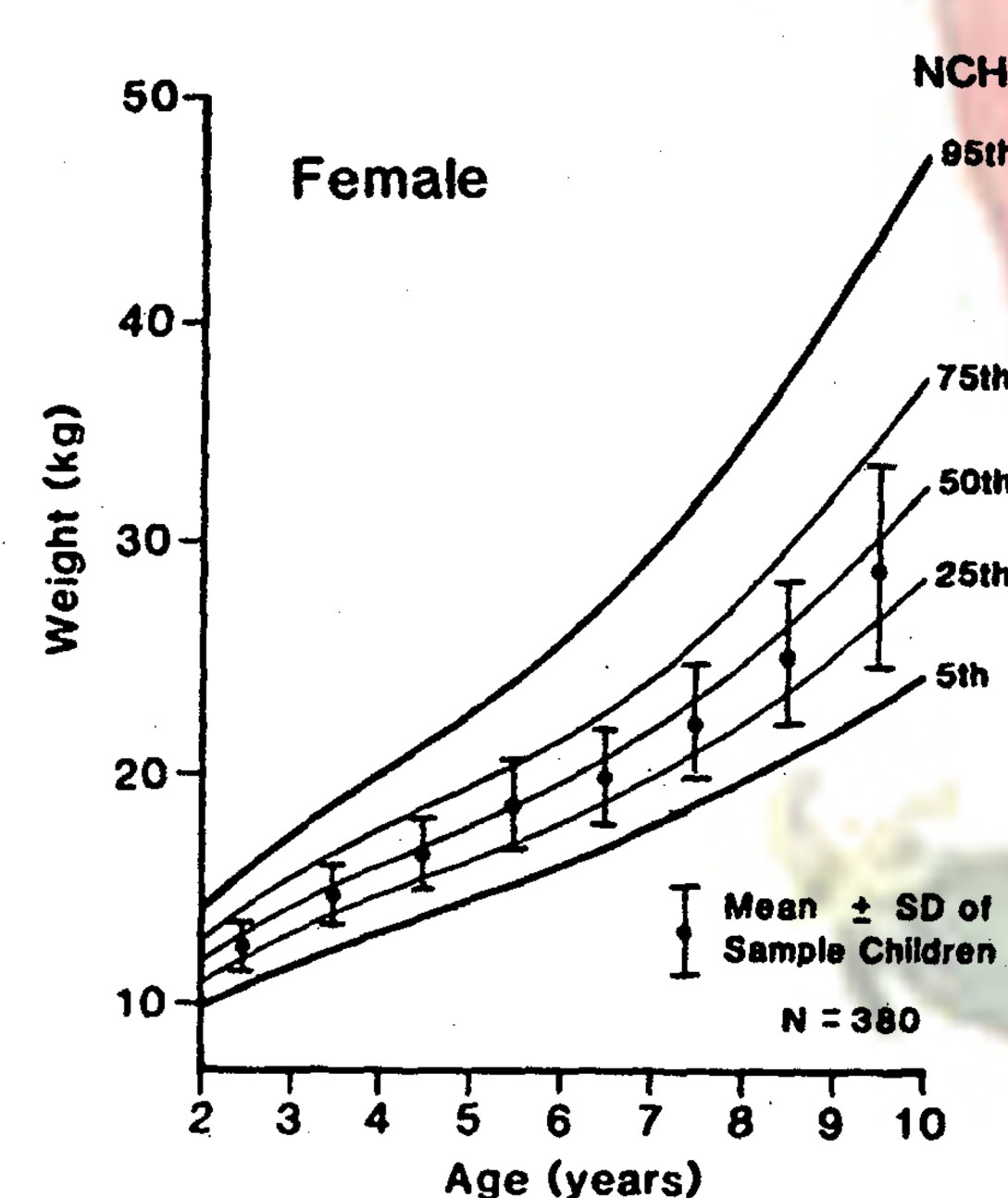


Figure 3 Weight for age of girls from The Farm relative to National Center for Health Statistics (NCHS)/Centers for Disease Control percentiles.

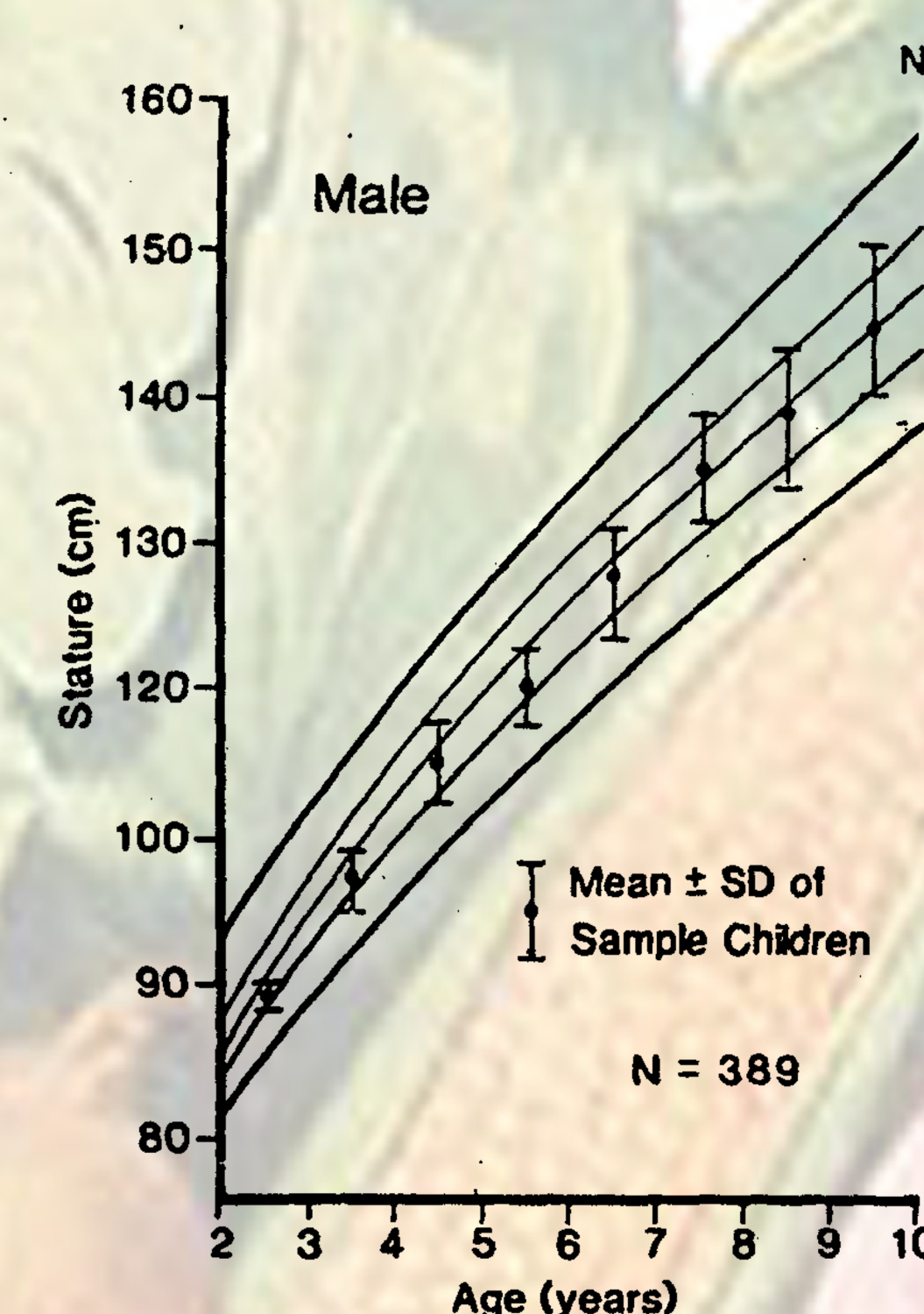


Figure 2 Height for age of boys from The Farm relative to National Center for Health Statistics (NCHS)/Centers for Disease Control percentiles.

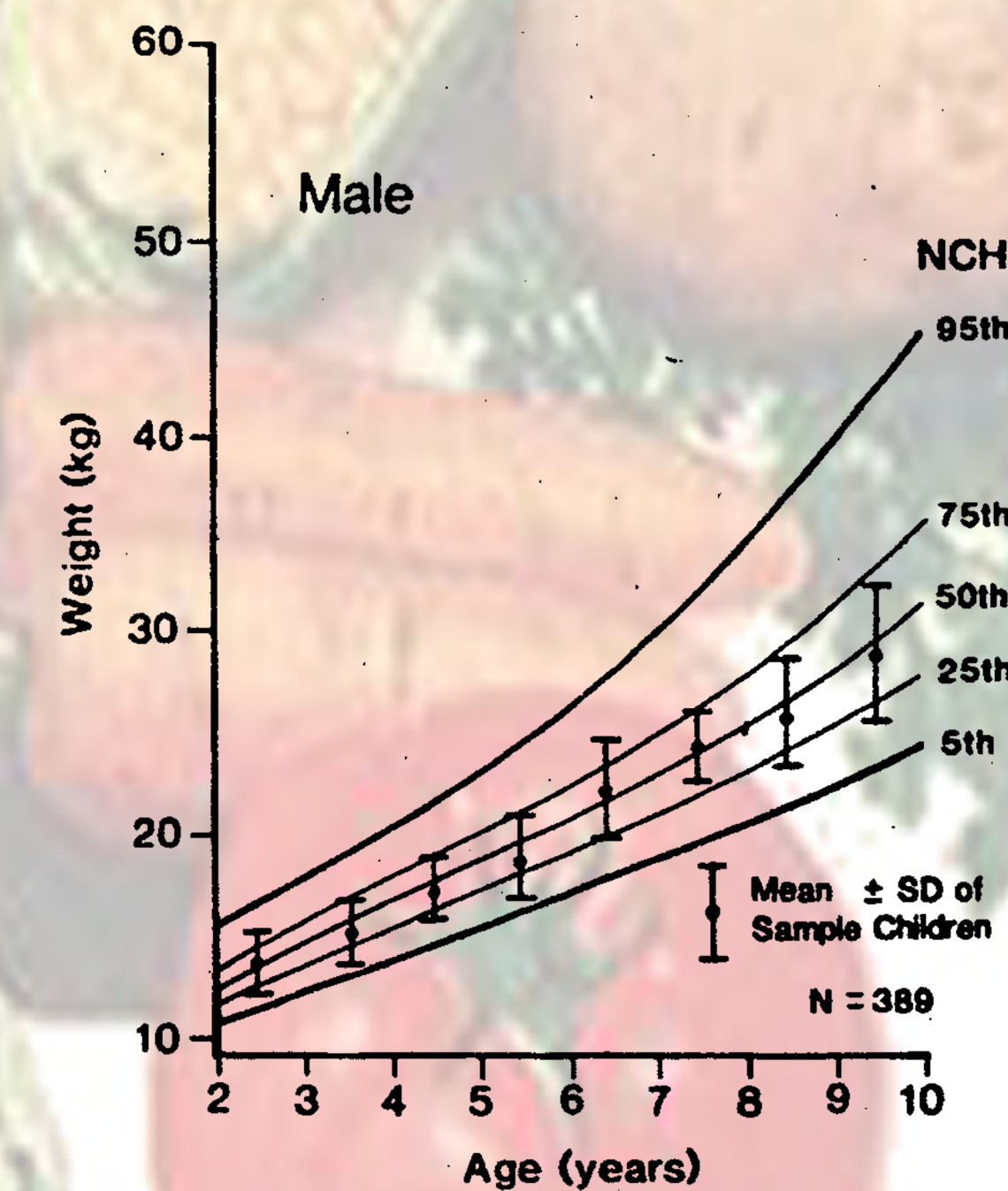


Figure 4 Weight for age of boys from The Farm relative to National Center for Health Statistics (NCHS)/Centers for Disease Control percentiles.

Results (continued)

Looking at the farm study children compared to others from the National Center for Health Statistics shows that children are able to grow properly and maintain a normal weight while consuming a vegetarian diet.

Discussion

Children who consume vegetarian diets must be more aware of their health needs. Vitamin D and B12 are essential for vegetarians to supplement in their diet (2). Acknowledging these needs, it is possible for children to eat a nutritionally balanced diet and get enough energy from food as is observed in the farm study with 73% of the children being vegan since birth and being within a normal growth range (4). Vegetarian children who maintain well balanced diets have comparable heights and weights according to the National Center for Health Statistics (4). The graphs demonstrate that a vegetarian diet provides substantial nourishment to promote growth in growing bodies. Although it requires more planning, vegetarian children can be healthy without animal protein.

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