



COMPLEMENTARY FEEDING USING ADULT FOOD AND DEVELOPMENT OF TASTE TOWARD THE MEDITERRANEAN DIET

Geneva · Switzerland | 09 – 12 May 2018

Authors

Raffaella de Franchis, Fabio Albano, Luigi Bozza, Pasquale Canale, Maria Chiacchio, Paolo Cortese, Antonio D'Avino, Maria De Giovanni, Mirella Dello Iacovo, Antonietta D'Onofrio, Aniello Federico, Nicoletta Gasparini, Felicia Iaccarino, Giuseppe Romano, Raffaella Spadaro, Mariangela Tedesco, Porfirio Toscano, Giuseppe Vitiello, Salvatore Auricchio[^], Dario Bruzzese[^] [^].
Italian Federation of Maedical Paediatrics (FIMP), Naples, Italy
[^]European Laboratory Food Induced Disease (ELFID) and
[^]Dipartimento di Sanità Pubblica, University of Naples "Federico II", Italy

SUMMARY

Taste development may be influenced by early exposure to natural flavours. Preference for tastes of the Mediterranean Diet (MD) may be kept over the years if these foods are early used in the complementary feeding. Objective of the present study is to verify the long term effect of weaning breast fed or formula fed infants using adult foods typical of the MD.

The authors do not have any conflict of interest.



Figure 1

Questionnaire 1

Annals of Internal Medicine

ESTABLISHED IN 1937 BY THE AMERICAN COLLEGE OF PHYSICIANS

From: Effects of a Mediterranean-Style Diet on Cardiovascular Risk Factors: A Randomized Trial

Ann Intern Med. 2006;145(1):1-11. doi:10.7326/0003-4819-145-1-200607040-00004

Appendix Table 1. Quantitative Score of Adherence to the Mediterranean Diet

Foods and Frequency of Consumption	Criteria for 1 Point*
1. Do you use olive oil as main culinary fat?	Yes
2. How much olive oil do you consume in a given day (including oil used for frying, salads, out-of-house meals, etc.)?	≥4 tbsp
3. How many vegetable servings do you consume per day? (1 serving = 200 g (consider side dishes as half a serving))	≥2 (1 portion raw or as salad)
4. How many fruit units (including natural fruit juices) do you consume per day?	≥3
5. How many servings of red meat, hamburger, or meat products (ham, sausage, etc.) do you consume per day? (1 serving = 100-150 g)	<1
6. How many servings of butter, margarine, or cream do you consume per day? (1 serving = 12 g)	<1
7. How many sweet or carbonated beverages do you drink per day?	<1
8. How much wine do you drink per week?	≥3 glasses
9. How many servings of legumes do you consume per week? (1 serving = 150 g)	≥3
10. How many servings of fish or shellfish do you consume per week? (1 serving = 100-150 g of fish or 4-5 units or 200 g of shellfish)	≥3
11. How many times per week do you consume commercial sweets or pastries (not homemade), such as cakes, cookies, biscuits, or custard?	<3
12. How many servings of nuts (including peanuts) do you consume per week? (1 serving = 30 g)	≥1
13. Do you preferentially consume chicken, turkey, or rabbit meat instead of veal, pork, hamburger, or sausage?	Yes
14. How many times per week do you consume vegetables, pasta, rice, or other dishes seasoned with soffritto (sauce made with tomato and onion, leek, or garlic and simmered with olive oil)?	≥2

* 0 points if these criteria are not met.

Quantitative Score of Adherence to the Mediterranean Diet

METHODS

A randomized controlled trial was carried out by 18 general paediatricians affiliated to the Italian Federation of Maedical Paediatrics (FIMP) of Naples. Exclusive breast fed or formula fed infants were weaned between 4 and 6 months of age, accordingly to the current guidelines. The weaning scheme was characterized either by industrial foods commonly used at weaning (controls) or by natural and seasonal foods as suggested by the MD (cases). Moreover, an adequate presence of fish, legumes, green vegetables, spices and aromatical herbs are early offered to children of the case group. Verbal reinforcement was carried out only in cases' families at any visit in the paediatrician office to focus the mother attention on quality and quantity of food the kid is assuming and stressing the preventive role of MD to chronic-degenerative diseases. All mothers receive a questionnaire (N.1) before the weaning (T0) and at 36 months of age of the kid (T36) to monitor eating family habits variations. Growing rates of children were regularly registered by the paediatrician. The explaining manual "MD in the first year of life" (Figure 1) is freely given to all cases' mothers. Data about MD adherence were collected by using questionnaires both for adult and for children (kidmed score, questionnaire 2).

Figure 2

	Cases (200)	Controls (203)
Age at enrollment(days)	145 +/-17	143 +/-20
Gender (female)	108 (54)	103 (50.7)
Birth weight (kg)	3.16 +/- 0.48	3.18 +/- 0.44
Weight at enrollment (kg)	7.61 +/- 4.99	7.17 +/- 0.96
Brothers/ sisters in the house (yes)	101 (50.5)	112 (55.2)
Breastmilk	62 (31.2)	50 (24.6)
Formula	109 (54.8)	116 (57.1)
Mixed	28 (14.1)	37 (18.2)
Mother's educational level		
Elementary/Middle school	52 (26.1)	71 (35)
High school	87 (43.7)	84 (41.4)
University	60 (30.2)	48 (23.6)
Mothers adherence to MD (%)	63 +/- 13	61 +/- 15

Questionnaire 2

KIDMED

	Score
1 Every day I eat fruit or freshly squeezed fruit juice.	+1
2 A second would consume more fruit every day.	+1
3 Regularly once a day would consume fresh and cooked vegetables.	+1
4 I consume more fresh or cooked vegetables per day.	+1
5 I eat fish regularly (at least 2-3 times per week)	+1
6 To fast-food style restaurant (hamburger) go more than once a week.	-1
7 I love legumes more than once a week, and I'm exhausted	+1
8 I eat pasta and rice almost every day (5 or more per week)	+1
9 Breakfast cereal (bread) or grain products (cereals) would consume.	+1
10 I eat nuts regularly (at least 2-3 times per week)	+1
11 I use olive oil at home	+1
12 Do not eat breakfast	-1
13 I consume milk and dairy products for breakfast	+1
14 Ready for breakfast I eat baked goods and pastries.	-1
15 2 cups daily milk / yogurt and / or a large slice (40g) cheese I consume.	+1
16 Sweet sugar and sweets several times a day would consume.	-1

Kidmed Score

< 3: very low quality diet

4-7: need to improve diet to reach Mediterranean Model

> 8: good Mediterranean Diet

Serra-Majem L et al. Food, youth and the Mediterranean diet in Spain. Development of KIDMED, Mediterranean Diet Quality Index in children and adolescents. Public Health Nutr. 2004 Oct;7(7):931-5.

The primary endpoint of the study was the percentage of children with an optimal adherence to the MD (kidmed score >=8). The secondary endpoint was the longitudinal evaluation of the BMI. A further objective of the study was to register the familial eating habits in order to verify how many changes may come from an early education of the kid toward a Mediterranean eating style.

PRELIMINARY RESULTS: .325 children (163 cases and 162 controls) have been enrolled. The two groups are perfectly homogeneous, as shown in Figure 2. Preliminary results show a statistically significant association between mothers degree and their adherence to the MD (Figure 3). In contrast, no correlation was observed between mothers adherence to MD and birth weight of children (Figure 4). Interesting data come out from the analysis of mothers eating habits (Figure 5): about 100% of mothers regularly assume olive oil; in contrast only 40% assume three fruits per day and three portions of fish during the week. More than 80% of mothers does not regularly consume dried fruits and more than 50% regularly use commercial sweetened products. At 12 months of age, the kidmed score of the case group showed that 73,4% had a value between 8 and 12 (good adherence); 2,7% between 1 and 3 (bad adherence); 23.9% between 4 and 7 (Figure 6). Answers to the kidmed questionnaire at 12 months are shown in figure 7. Finally, kids eating family's foods and sitting with the rest of the family in the case group where significantly higher than those in the control group (figure 8)

RESULTS:

NO YES

Figure 5

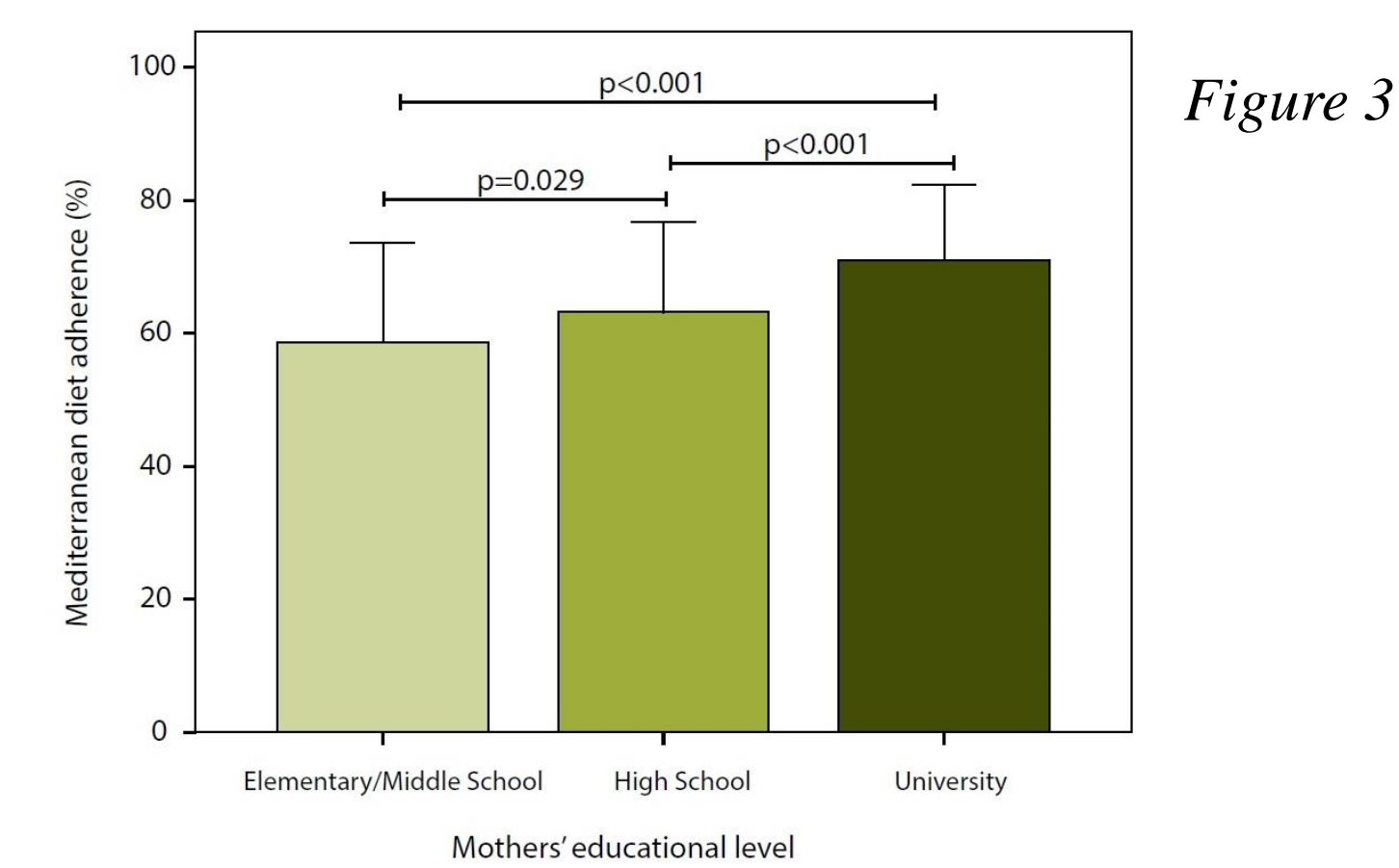
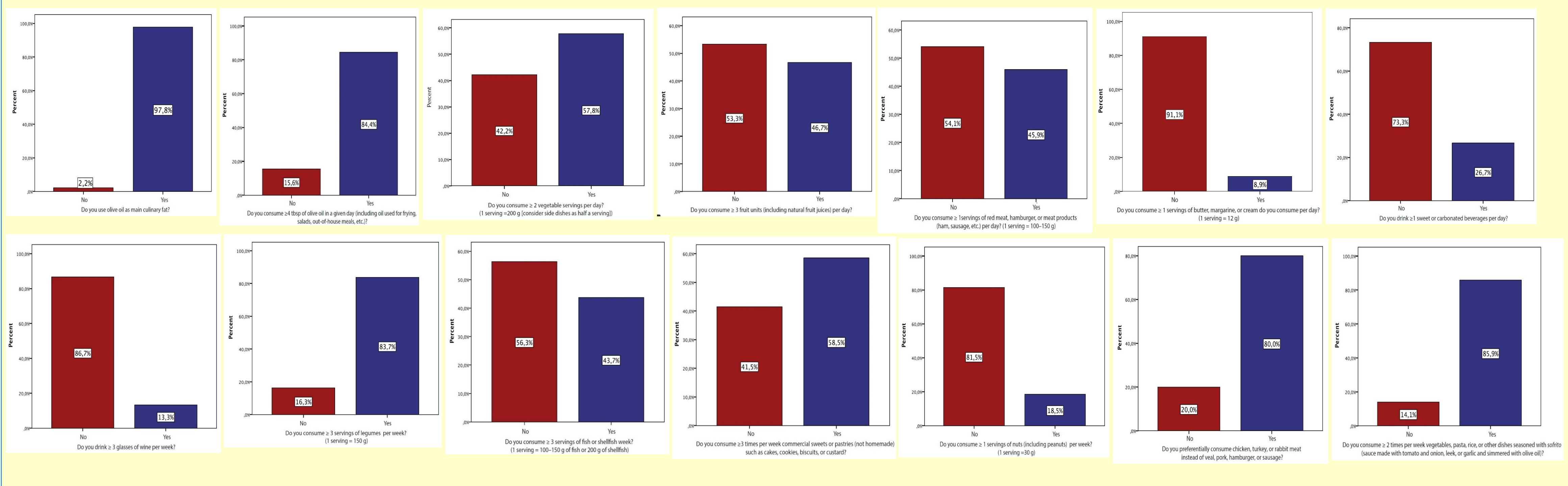


Figure 3

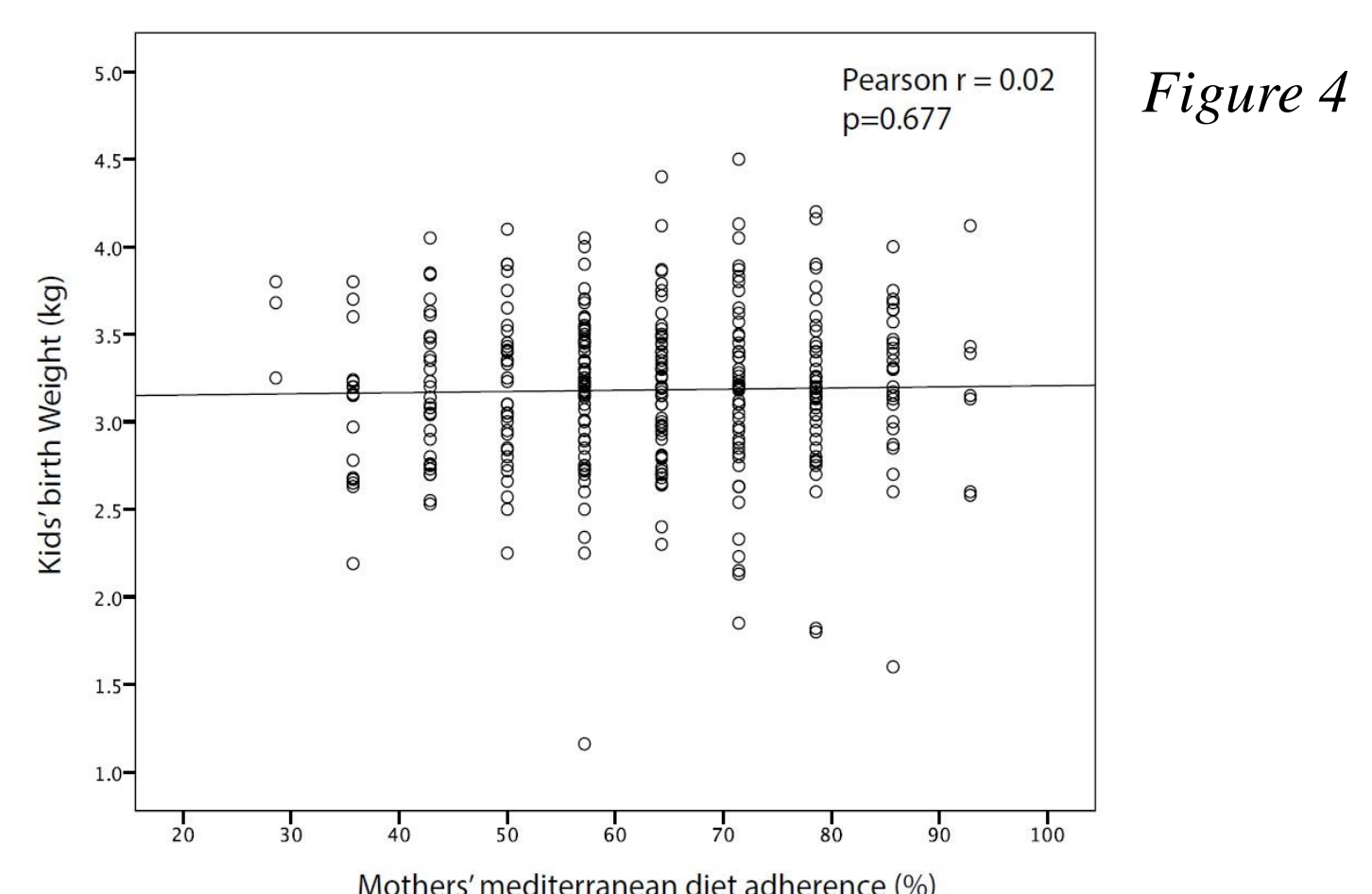


Figure 4

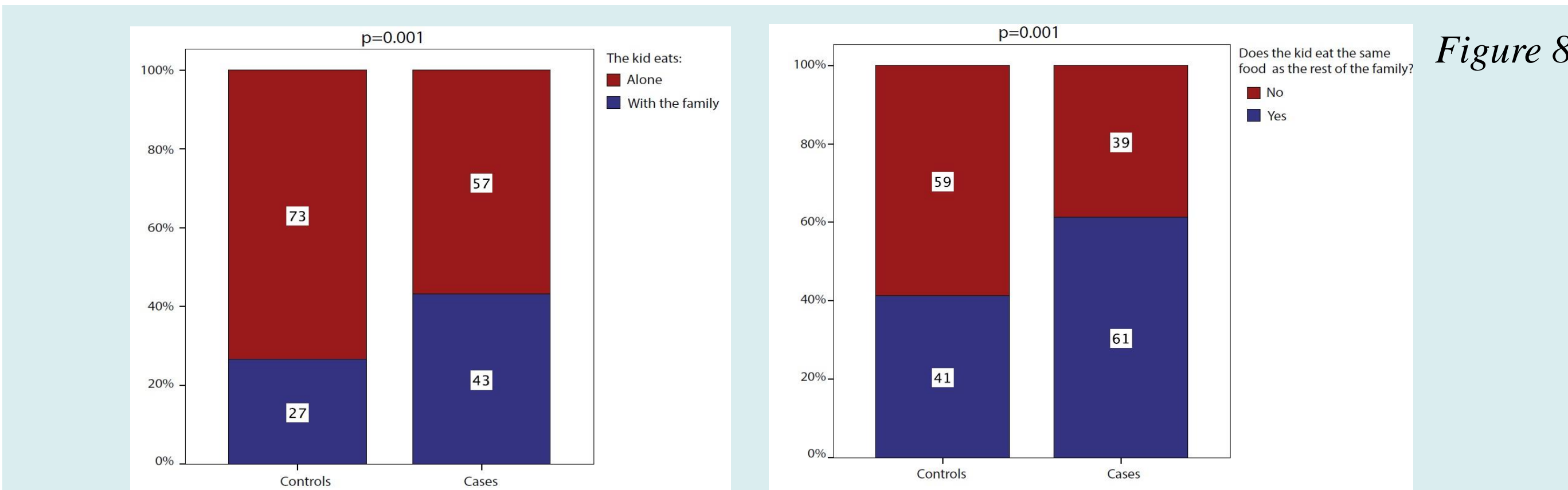


Figure 8

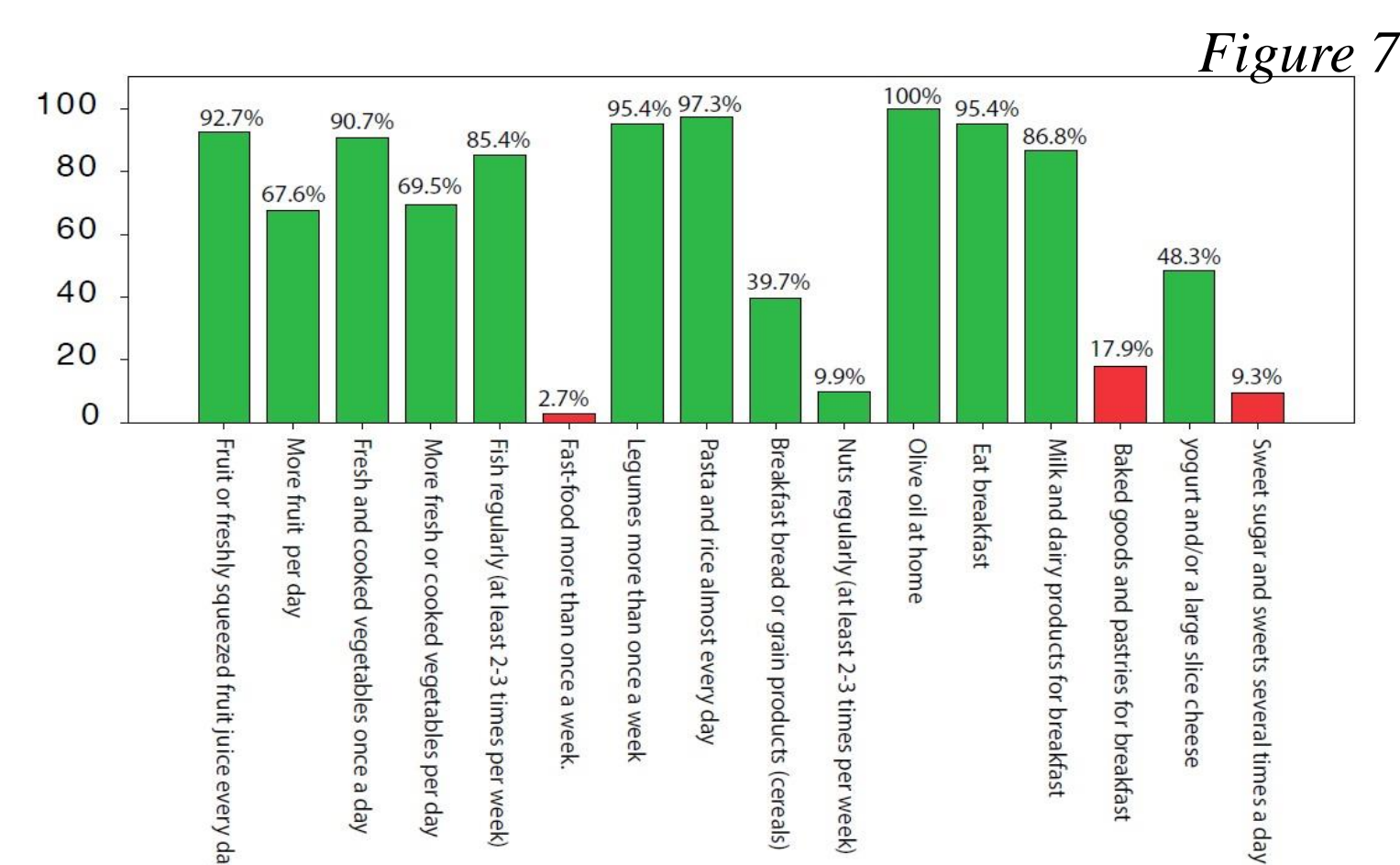


Figure 7

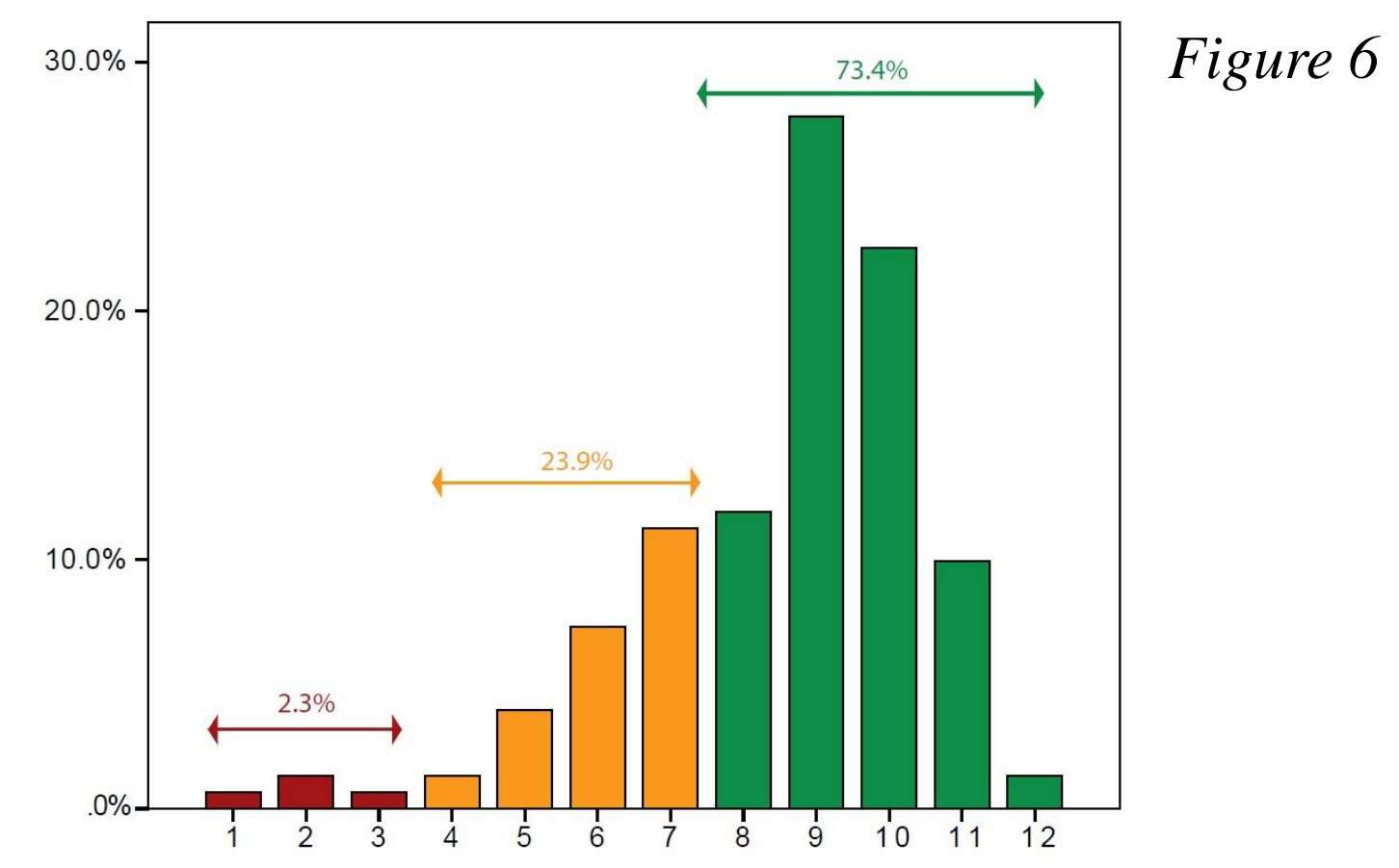


Figure 6

CONCLUSION. The weaning time is a critical moment to have effects on children and familial eating habits. MD at weaning seems to be useful to have healthy habits at 12 months of age. In the next two years we will compare the control group to the case group and will analyze how useful are natural foods when early introduced with complementary feeding in comparison to a traditional weaning, in order to verify long term eating habits and health outcome.