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Timing of gluten introduction and quantity and nature of gluten-containing foods consumed by infants in Valencia, Spain

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Currently, there is no information on the level of gluten intake for Spanish children. Recent studies have shown that the timing of gluten introduction in relation to breast-feeding as well as the amount of gluten could be related to a higher incidence of coeliac disease^(1,2). The food questionnaire estimates how frequently certain foods are eaten in a specific period of time. The aim of the present study was to develop and validate a food questionnaire for the assessment of gluten consumption of children aged 3–12 months in the Valencia area.

Information on the gluten-containing food intake of healthy children aged 3–12 months was collected prospectively, including the brand names. For the study the children were assigned to two groups: 3–6 months; 7–12 months. Information was compiled by interviewing parents to establish how and when foods other than breast milk or formula milk were introduced into their children's diet. The most-frequently-used gluten-containing food products were selected and included in the FFQ, which covered a period of 7 d. To calculate the amount of gluten in these products the vegetable protein content was multiplied by 0.8⁽³⁾. To validate the FFQ the results of this FFQ were compared with those from a 7 d food record⁽⁴⁾. If gluten had been introduced before the study was conducted, the exact timing of introduction was recorded.

A total of 100 children were included in the study. In the age-category 3–6 months none of the thirty babies had started consuming gluten. Moreover, when asked about the timing of gluten introduction the thirty mothers with children aged between 7 and 24 months all reported that gluten had been introduced after the sixth month of life.

Age (Months)	<7	7–8	8–9	>9
% children consuming gluten	0	60	70	100

In the 7–12 months age-group (*n* 70) the most important gluten-containing food products consumed were muffins and croissants, cereals, chocolate, ready-to-eat fruit and ready-to-eat meals, biscuits, bread, pasta (macaroni, spaghetti etc.) and crumbed products. All children >9 months were consuming gluten-containing food products. In a preliminary study of the gluten intake in this group the mean gluten intake obtained from the FFQ was 2.55 mg/d.

The current amount of gluten consumed by children in Spain, and more specifically in Valencia, has been established. The variety of gluten-containing food is limited and controlled, and the mean daily gluten intake in this preliminary study is 2.55 mg/d. Moreover, the timing of gluten introduction for infants in Valencia is between 7 and 9 months of age. It has been shown previously that gluten introduction after 7 months of age in at-risk infants is associated with a higher risk of coeliac disease, i.e. 1.87 as compared with gluten introduction between 4 and 6 months (OD 1)⁽²⁾. It is possible that this late introduction of gluten could be related to the higher prevalence of coeliac disease observed in the Valencia area in the last 5 years.

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