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### EDITORIAL

## Mediterranean diet as a protection against asthma: Still another brick in building a causative association



The association between Mediterranean diet consumption and a lower prevalence of asthma was described for the first time by our group and by a Greek one. In fact, the results of both studies were published in the same issue of *Thorax* in 2007.<sup>1,2</sup> Both studies were epidemiological and cross-sectional, and thus with obvious limitations. The results of those two seminal papers were replicated in other epidemiological cohorts in the following years with most of them pointing to the same direction: Mediterranean diet was a protective factor for asthma.<sup>3–8</sup> A new step was taken when some evidence was found that this diet taken in pregnancy protected of asthma symptoms in school-children.<sup>9</sup> Yet a further stage was achieved when a Mexican group found that Mediterranean diet was associated to better lung function (higher FEV1) and lower inflammatory response (lower IL-8 in nasal lavage) in a group of asthmatic children.<sup>10</sup> The results of the International Study of Asthma and Allergies in Childhood (ISAAC) Phase Two, including more than 50,000 children from a wide range of countries, but mostly from Europe, found even more evidence that the diet in question was associated to lower prevalence of asthma symptoms in school children 8–12 of age.<sup>11</sup> Mediterranean diet has also been associated with lower prevalence of eczema in ISAAC Phase Three in Spain<sup>12</sup> and was included as an important item in a prediction model for wheezing in the first year of life.<sup>13</sup>

Although some researchers could not find an association between diet in children and asthma<sup>14</sup> and between maternal diet during pregnancy and recurrent wheezing<sup>15</sup> or asthma in children,<sup>16</sup> none of those studies was specifically designed for that purpose.

Two recent meta-analyses arrived at the same conclusion of Mediterranean diet associated to less asthma prevalence<sup>17,18</sup>; and the first one also found that the effect was not comparable everywhere and that it was mainly driven by cohorts based in Mediterranean areas.

The paper by Calatayud-Sáez et al.,<sup>19</sup> included in the present issue of *A&I* adds important evidence that Mediterranean diet may help to control asthmatic children. About one hundred families of asthmatic children 1–5 years of age

were enrolled in the one year program “Learning to Eat from the Mediterranean”. Children as a group modified substantially their diet after the program, and this accompanied by an overall improvement of their asthma control as measured by the need of medication, number of asthma attacks and emergency department visits. The change in BMI before and after the program was not significant although lean mass was higher significantly increased.

In summary, epidemiological evidence points out that Mediterranean diet might be a protector factor for asthma, although more and specific studies are needed to better establish whether this association is causative. Of especial importance are studies which include the diet of mother in pregnancy both in general and in high-risk populations. Therefore, ongoing trials such as the one recently reported by Sewell et al.<sup>20</sup> in a high risk population and the starting pregnancy cohort “Nutrition in Early Life and Asthma” (NELA)<sup>21</sup> in the general population may contribute to clarify the issue of Mediterranean diet as a primary prevention intervention. Other stages of prevention should also be looked for, as in the paper published in the present issue of *A&I*. With new knowledge coming from such studies we will be able to disentangle whether Mediterranean diet is in itself (and by what mechanisms) a protective factor for asthma everywhere, or just in some type of environments,<sup>22,23</sup> or just a marker of a specific lifestyle which promotes healthier habits. These may include the intake of certain nutrients/foods which have already been related to lower<sup>24</sup> or the avoiding of others which have been shown to be related to higher asthma prevalence<sup>25</sup>; or the maintenance of BMI in the healthy range,<sup>26</sup> among other factors.

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