100 $\mu\text{mol/l}$ (about 3 mg/l) of soluble silicon is necessary to protect against the absorption of aluminium, that is all forms of aluminium in the diet.⁴ Unfortunately, we did not have historical data on silicon levels in water before the onset of dementia. We therefore applied the current silicon levels to our case-control pairs and found a non-significant OR of 0.8 based on the postulated protective level of 3 mg/l of dissolved silicon in water. The weight that can be placed on this result is debatable given that the proposed protective factor was measured after the disease onset, albeit based on the address before the onset of dementia. However, silicon levels in the same water source are relatively stable with time, although the source of water for a particular area may have been changed. Additionally, relatively few of the samples had a silicon concentration of 3 mg/l or above in order to test the threshold hypothesis of silicon in water.

Silicon determines the bioavailability of all

dietary exposures to aluminium. It is availability rather than simple exposure which is important if aluminium is causally involved in AD; we therefore suggest that the possible preventive role of silicon in PDAT requires further investigation. For example, the incidence rates of AD in areas in which the concentration of silicon is high (3 mg/l or above in water) could be compared with those in areas of low silicon values.

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Asthma history and sociodemographic characteristics in elderly French people

Chakib Nejari, Jean François Tessier, Pascale Barberger-Gateau, Luc Letenneur, Jean François Dartigues, Roger Salamon

Asthma is a disabling chronic disease, especially in elderly people in whom prevention of the loss of autonomy becomes very important.¹ Recent data have also suggested that mortality related to asthma has increased over the past 10 years in both Britain and France, particularly in the elderly.² There are, however, few epidemiological data on asthma in this group.

This was a cross sectional study. Based on a cohort of subjects aged 65 and over (Paquid cohort), we aimed to investigate the prevalence and sociodemographic characteristics of self reported asthma in this population.

Methods: Paquid is a cohort of 3777 dwellers, representative of the population aged 65 and over in two administrative areas of south western France (Gironde and Dordogne). Baseline data were collected in 1988-89. The Paquid questionnaire included sociodemographic characteristics: age (in years), sex, main lifetime occupation (housewives, farm workers, blue collar workers, and white collar workers), smoking status (current, former, and never smokers), and many variables on health status, disability, cognitive performance, and medication. Details of the Paquid methodology have been published elsewhere.³

Data for this study were taken from the third year of the follow up. A total of 2406 subjects (63.7% of the initial sample) were involved. Asthma identification was based on two questions: (1) "Have you ever had asthma?" and (2) "Did you have at least one asthma attack in the last 12 months?" Subjects were categorised according to their smoking history.

The prevalence of asthma was evaluated in relation to sex, smoking status, and lifetime occupation. An association between former work and asthma was determined by logistic regression analysis. The dependent variable was asthma history (coded 1 *versus* 0). Explanatory variables were age (in years), sex (women *versus* men), smoking history (current smokers, and former smokers *versus* never smokers), and former work (housewives, farm workers, and blue collar workers *versus* white collar workers).

Results: Of 2406 subjects, 2355 (97.5%) responded to the questions on asthma symptoms (979 men and 1376 women). A total of 144 subjects (6.11%) reported asthma and 58 (40.2%) of them at least one attack in the last 12 months. The mean (SD) age was lower in subjects with a history of asthma compared

INSERM U 330,
Université de
Bordeaux II, 146 rue
Léo-Saignat, F 33 076
Bordeaux Cedex,
France
C Nejari
J F Tessier
P Barberger-Gateau
L Letenneur
J F Dartigues
R Salamon

Correspondence to:
Dr J F Tessier.

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Relationship between asthma and principle lifetime work

Professional activity (versus white collar workers)	Proportion (95%CI) of subjects with asthma history (%)	Risk for asthma	
		Crude OR (95%CI)	Adjusted OR (age, sex, smoking)
Farm workers (n = 367)	8.72 (7.83, 11.61)	2.11 (1.26, 3.56)	2.35 (p<0.0007)
Blue collar workers (n = 905)	7.10 (5.40, 8.74)	1.68 (1.09, 2.62)	1.85 (p<0.004)
Housewives (n = 220)	4.61 (1.82, 7.40)	1.05 (0.48, 2.25)	1.3 (NS)
White collar workers (n = 833)	4.32 (2.94, 5.70)		

NS = non-significant

with others: 76.4 (5) versus 77.4 (6) (p<0.03). The prevalence was higher in men than in women (7.35% (95% confidence interval (CI) 5.72%, 8.98%) and 5.23% (95%CI 4.05%, 6.41%) respectively).

A history of asthma was more prevalent (p<0.001) in former smokers (8.28% (95%CI 6.12%, 10.44%)) than in current smokers (4.67% (95%CI 1.84%, 7.50%)) and never smokers (5.43% (95%CI 4.29% to 6.57%)).

The table gives the proportion with a history of asthma in each occupational category. We could classify only 2325 subjects into the four categories of activity described above. The highest proportions reporting asthma were farm workers (8.72% (95%CI 5.8%, 11.61%)) and blue collar workers (7.10% (95%CI 5.40%, 8.74%)) and the lowest white collar workers (4.32% (95%CI 2.94%, 5.70%)).

Compared with white collar occupations, farm workers (odds ratio [OR] 2.35 (95%CI 1.42, 3.89)) and blue collar workers (OR 1.85 (95%CI 1.21, 2.83)) were more likely to report asthma after controlling for age, sex, and smoking history.

Discussion: These results show that asthma is not uncommon in the elderly in France. It is difficult to give a simple definition of asthma in the elderly in either clinical practice or epidemiological studies. Asthma is often associated with chronic bronchitis – 29.86% of asthmatics in our sample had a history of this. Of the asthmatics, 6.94% were current smokers and 36.11% former smokers. This fact is more important, particularly in asthmatic men in whom 43.06% have a chronic bronchitis (versus 16.70% in women) and 72.22% are current or former smokers (versus 13.89% in women).

Because of this we have adjusted for smoking history in our logistic regression analysis.

To evaluate asthma prevalence and socio-demographic characteristics of the sample, we focused on the cumulative asthma history. The reason for this was the small number of subjects reporting asthma attacks in the previous 12 months. All our subjects were retired, and our results stress the risk of asthma linked to occupation, even after retirement. Despite some bias such as survivor effect and impaired memory, asthma was more prevalent in farm and blue collar workers, even after controlling for age, sex, and smoking history.

Although the relative risk of asthma in retired farm workers is high, our findings rely on the respondent's own assessment. In farmers, there is an increased risk of extrinsic allergic alveolitis (EAA) and other occupational lung diseases, and we cannot exclude the possibility that some of the reported asthma may in fact have been EAA, which could only be assessed by respiratory function test and chest x ray. There might also be diagnostic confusion between occupational groups which could account for some of the excess risk, particularly in farm workers. In the Paquid cohort, we had already found that farmers had a higher risk of dyspnoea than white collar occupations.³ The respiratory risk in farming has been found in other studies, but most of these were in working people and concerned chronic, non-specific lung diseases in particular.⁴ In our study, blue collar workers were also more at risk for asthma. Conditions of work and exposure to pollutants could explain this, as has been shown in many studies of younger subjects at work.⁵ These data indicate that it will be useful to analyse the long term and specific effect of each exposure on asthma and bronchial hyperresponsiveness in elderly.

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