Comment

Although a large prospective study of fever in returning travellers has recently been published by researchers at the Hospital for Tropical Diseases in London,[2] the patients in that study were highly selected and did not include children. To our knowledge this is the first prospective study of fever in children in the United Kingdom who have recently spent time in the tropics. Although the proportion of minor, self limiting illnesses would probably have been higher in children seen in general practice, we have documented a relatively high incidence of potentially fatal tropical infections in those referred to hospital. As the clinical features of malaria are frequently non-specific, and the diagnosis cannot be excluded by a single negative blood test, children at risk of this disease usually require hospital admission, with subsequent investigation by professionals with a detailed knowledge of the local prevalence of specific diseases.[3]

As in retrospective reviews of imported malaria,[1] most of the cases in our study were among children of former immigrants who had visited their family's country of origin, with south Asia being the commonest destination (reflecting the large local south Asian community). The complete absence of white children in this study is remarkable, perhaps reflecting a reluctance in this section of the community to take children to exotic holiday locations. The poor understanding of the risks associated with travel in our study population is well illustrated by their underuse of antimalarial prophylaxis. Proguanil, which is available only as tablets, was particularly poorly tolerated, highlighting the need for a liquid suspension that is more palatable to children. With more than two children a month being admitted to our unit with potentially life threatening tropical infections, paediatricians in the United Kingdom clearly need a good working knowledge of these conditions, especially as access to specialists in tropical medicine is limited.

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Determinants of car travel on daily journeys to school: cross sectional survey of primary school children

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The annual distance walked by children has fallen 28% since 1972, partly because car travel has replaced walking on many school journeys.[1] Increasing car use has been linked with obesity, adverse health effects in later life, limitations on children's independence, traffic congestion, and pollution.[2 3] To inform the development of strategies to reduce school related car travel, we surveyed the travel patterns of urban primary school children.

Methods and results

The survey was conducted in the inner London boroughs of Camden and Islington. The questionnaire—based partly on published surveys[4 5] and prepared in English, Bengali, Turkish, Greek, and Cantonese (first languages of 85% of eligible pupils)—asked about that day's school journey, children's independent travel, and parental concerns. From the sampling frame of all primary schools (excluding pilot, boarding, and special schools), 31 of the 100 eligible schools were randomly selected. We weighted sampling probability by combined class sizes in year 2 (ages 6-7 years) and year 5 (ages 9-10). Questionnaires, with a letter from the head teacher and a multilingual request form for translation, were distributed to pupils for completion at home. Questionnaires were left for absentees. One week later, we collected completed questionnaires, gave new questionnaires to non-respondents, and distributed requested translations. All pupils were given pencil cases.

We used logistic regression, including a random effect (school) to account for cluster sampling, to estimate odds ratios and 95% confidence intervals for determinants of car travel versus walking. We excluded pupils who used public transport.

Thirty schools (97%) agreed to participate. Of 2476 enrolled children, 2086 (84%) returned usable questionnaires: 96% English, 2% Bengali, 1% Turkish, and 1% English and Bengali (duplicate versions returned). Response rates were highest in independent schools (96%) and lowest in local authority schools (81%). Excluding independent schools, for which the information was unavailable, the respondents' ethnic distribution (54% white, 18% black, 14% Asian, and 15% other) was similar to that of the school population (50% white, 18% black, 15% Asian, 17% other).

Most children walked (69%) or travelled by car (26%). Four (0.2%) cycled, and the rest travelled by bus, underground, or train (5%). Proportions were similar for the journey home. Adults accompanied 84% of children to and from school. Most children (61%) were rarely or never allowed out without an adult for school or leisure. Only 3% of bicycle owners were allowed to cycle on main roads. Ninety per cent of parents were

Determinants of car travel versus walking on daily journeys to and from primary school

Variable	No (%) of pupils	Journey to school		Journey from school	
		Univariate odds ratio (95% CI)	Multivariate odds ratio (95% CI)*	Univariate odds ratio (95% CI)	Multivariate odds ratio (95% CI)*
Distance to school (n=2028)†:					
<0.5 miles	1168 (58)	1.0	1.0	1.0	1.0
0.5-<1 miles	461 (23)	3.5 (2.6 to 4.8)	4.9 (3.4 to 7.2)	3.0 (2.2 to 4.1)	3.9 (2.8 to 5.5)
1-2 miles	206 (10)	22.2 (14.2 to 34.5)	37.2 (19.6 to 70.8)	11.7 (7.7 to 17.7)	11.1 (6.8 to 18.1)
>2 miles	179 (9)	192.2 (65.1 to 567.0)	82.1 (28.1 to 239.8)	134.9 (50.2 to 362.9)	59.8 (22.5 to 158.8)
Not known	14 (1)	0.9 (0.1 to 7.6)	1.3 (0.1 to 20.0)	0.6 (0.1 to 6.1)	0.5 (0 to 10.5)
Type of school (n=2086):					
Local authority	1290 (62)	1.0	1.0	1.0	1.0
Church of England	315 (15)	0.9 (0.5 to 1.7)	1.3 (0.7 to 2.4)	1.5 (0.8 to 2.8)	1.6 (0.99 to 2.6)
Roman Catholic	270 (13)	1.5 (0.9 to 2.7)	1.7 (0.95 to 3.2)	4.1 (2.3 to 7.2)	2.3 (1.5 to 3.7)
Independent	211 (10)	19.7 (7.8 to 49.5)	6.7 (2.8 to 15.8)	83.9 (33.0 to 213.6)	14.1 (6.6 to 30.1)
Car ownership (n=1979):					
None	764 (39)	1.0	1.0	1.0	1.0
One	937 (47)	29.7 (15.5 to 56.7)	58.3 (24.0 to 141.7)	15.8 (9.7 to 25.7)	17.2 (10.0 to 29.8)
Two or more	278 (14)	66.0 (32.3 to 134.8)	143.6 (53.5 to 385.5)	30.3 (17.1 to 53.6)	30.3 (15.5 to 59.1)
Mother in paid work out of home (n=1926):					
No	1001 (52)	1.0	1.0	1.0	—
Yes	901 (47)	2.0 (1.6 to 2.7)	1.6 (1.1 to 2.4)	1.9 (1.5 to 2.5)	—
Not living with child	24 (1)	2.3 (0.8 to 6.7)	2.2 (0.3 to 13.7)	2.7 (0.9 to 8.3)	—
Father in paid work out of home (n=1963):					
No	392 (20)	1.0	1.0	1.0	1.0
Part time	140 (7)	0.9 (0.5 to 1.6)	0.4 (0.2 to 1.0)	1.3 (0.7 to 2.2)	0.9 (0.5 to 1.8)
Full time	863 (44)	1.5 (1.1 to 2.2)	0.5 (0.3 to 0.9)	1.6 (1.1 to 2.3)	0.7 (0.4 to 1.1)
Not living with child	288 (15)	1.2 (0.7 to 1.8)	1.0 (0.5 to 1.9)	1.3 (0.8 to 2.0)	1.2 (0.7 to 2.2)
Not specified	280 (14)	1.1 (0.7 to 1.7)	1.1 (0.6 to 2.3)	1.0 (0.6 to 1.5)	1.3 (0.7 to 2.3)
Attends play scheme after school (n=2035):					
No	1714 (84)	1.0	—	1.0	1.0
Yes	321 (16)	1.3 (0.9 to 1.8)	—	1.7 (1.3 to 2.4)	1.8 (1.2 to 2.7)
Child allowed out without an adult (n=2023):					
Often or sometimes	786 (39)	1.0	1.0	1.0	1.0
Rarely or never	1237 (61)	1.9 (1.5 to 2.5)	1.6 (1.1 to 2.3)	2.1 (1.6 to 2.7)	1.6 (1.2 to 2.3)
Parents worried about abduction or molestation (n=1949):					
Not at all	31 (2)	1.0	1.0	1.0	—
Not very	162 (8)	4.3 (0.7 to 25.3)	5.4 (0.7 to 43.2)	5.2 (0.9 to 29.4)	—
Quite	484 (25)	4.1 (0.7 to 23.3)		4.6 (0.8 to 24.9)	
Very	1272 (65)	4.6 (0.8 to 25.8)		4.5 (0.8 to 24.3)	
Parents worried about child becoming lost (n=1965):					
Not at all	262 (13)	1.0	1.0	1.0	1.0
Not very	525 (27)	2.4 (1.5 to 3.6)	1.7 (0.96 to 2.9)	2.0 (1.3 to 3.1)	1.5 (0.9 to 2.5)
Quite	427 (22)	2.0 (1.3 to 3.2)		1.9 (1.2 to 3.0)	
Very	751 (38)	1.7 (1.1 to 2.6)		1.8 (1.2 to 2.7)	
Parents worried about traffic danger (n=2001):					
Not at all or not very	214 (11)	1.0	—	1.0	—
Quite or very	1787 (89)	1.6 (1.0 to 2.5)	—	1.6 (1.0 to 2.5)	—
Borough (n=2086):					
Camden	1014 (49)	1.0	1.0	1.0	1.0
Islington	1072 (51)	0.8 (0.6 to 1.1)	1.1 (0.7 to 1.8)	0.4 (0.3 to 0.6)	1.7 (1.1 to 2.4)
Ethnicity (n=2015):					
White	1183 (59)	1.0	1.0	1.0	—
Black	332 (16)	1.1 (0.8 to 1.6)	1.9 (1.1 to 3.2)	1.1 (0.8 to 1.5)	—
Asian	279 (14)	0.9 (0.6 to 1.5)	0.9 (0.4 to 1.6)	0.9 (0.6 to 1.4)	—
Other	221 (11)	1.1 (0.7 to 1.7)	1.1 (0.6 to 2.0)	1.2 (0.8 to 1.7)	—
Year in school (n=2086):					
Year 5	1005 (48)	1.0	—	1.0	—
Year 2	1081 (52)	1.3 (1.1 to 1.7)	—	1.3 (1.0 to 1.6)	—
Housing (n=1921):					
Rented or housing association	1338 (70)	1.0	—	1.0	—
Owner occupied	583 (30)	2.1 (1.6 to 2.9)	—	2.4 (1.8 to 3.2)	—
Bicycle ownership (n=2008):					
No	558 (28)	1.0	—	1.0	—
Yes	1450 (72)	2.1 (1.5 to 2.9)	—	1.7 (1.2 to 2.3)	—

*Based on complete cases (n=1629 for journey to school, n=1695 for journey from school) adjusted for cluster sampling and covariates. Models include variables with odds ratios shown.
†Respondents were offered mileage categories or, if unknown, were asked to estimate total minutes required to walk to school with their child. These estimates were categorised into estimated distances: <15 minutes=≤0.5 miles, 15-29 minutes=0.5-<1 mile, 30-59 minutes=1-2 miles, ≥60 minutes=>2 miles.

very or quite worried about abduction or molestation, and 89% were very or quite worried about traffic. The strongest predictors of car travel to school were car ownership, greater distance to school, attendance at an independent school, and parental worry about abduction (table). For the journey home, the strongest predictors were greater distance to school, car ownership, and attending an independent school.

Comment

Distance to school and car ownership were principal determinants of car travel. After adjustment for these factors, children at independent schools were still more likely to travel by car. Parental fear about "stranger danger" also influenced the decision to drive children to school.

Although few translated questionnaires were requested, the study population adequately represented the ethnic distribution of children attending school in the two boroughs. Our results might appropriately be generalisable to other urban primary school populations.

Increasing emphasis on school choice has been accompanied by a 20% increase in average distance travelled to school.[1] Policies that encourage children to attend nearby schools are likely to reduce car travel and increase walking. Parents who currently drive their children might forgo the car for safe, convenient alternatives that address their fears. Unless such alternatives are developed, parents who do not currently drive to school are likely to do so when the option becomes available.

This study originated from joint work with the Camden and Islington Accident Prevention Alliances.

Contributors: CD designed the protocol and questionnaire, implemented the study, and participated in the study design, data analysis and interpretation, and writing the paper. IR initiated the research and participated in study and questionnaire design, data analysis and interpretation, and writing the paper. LL performed data analysis and edited the paper. DA managed and audited the data, performed preliminary analyses, and edited the paper. We received helpful advice on questionnaire and study development from Mayer Hillman, Belita Clahar, Michelle Walsh, and Suzanne Slater, and on statistical analysis from David Dunn. We acknowledge the assistance of Jackie Payne, Elaine Morrison, the local education authorities in Camden and Islington, and the participating schools, teachers, and pupils.

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Evaluation of indices of obesity in men: descriptive study

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The intra-abdominal accumulation of fat is more common in men; it is an independent risk factor for diabetes mellitus and cardiovascular disease.[1] The assessment of obesity usually focuses on abdominal fatness, but the most appropriate clinical measurement of obesity has been disputed.[2 3] We evaluated several measures of obesity by comparing them with observed intra-abdominal and subcutaneous fat during postmortem examination.

Methods and results

A series of 100 men was studied. Cases of prolonged hospitalisation, severe trauma, chronic wasting disease, and postmortem decomposition were excluded from analysis. Measurements were made using techniques suitable for supine cadavers. Body weight was measured to within 1 kg, body length to within 1 cm, hip circumference at the iliac crests to within 1 cm, and waist circumference at the umbilicus to within 1 cm. Uniform cores of subcutaneous fat were obtained from over the biceps, anterior thigh, anterior chest, and anterior abdomen. These samples were weighed to within 0.1 g. The greater omentum was excised as was the pararenal fat; these were weighed to within 1 g.

The mean age at the time of death was 52.8 years (median 55.5, range 17 to 89, interquartile range 37 to 67). Mean body weight was 74 kg (median 73, range 39 to 142, interquartile range 65 to 83). In nine cases the body mass index (weight (kg)/height (m^2)) was <20; in 50 it was 20 to 24; in 32 it was 25 to 29; in 8 it was 30 to 39; and in 1 it was ≥ 40. Waist circumference was <94 cm in 69 cases; 94 to 101 cm in 19, and ≥ 102 cm in 12.

The strongest correlation between the weight of the subcutaneous fat taken from the four sites was between the fat at the abdomen and that at the chest (0.60); the weakest correlation was between the fat at the abdomen and that at the upper arm (0.36). The correlation between the weight of the intra-abdominal fat and the weight of the subcutaneous fat was 0.57 for the anterior chest, 0.38 for the abdomen, 0.45 for the upper arm, and 0.28 for the thigh. When 82 cases with body mass index between 20 and 30 were analysed, the correlation was 0.49 for the anterior chest, 0.23 for the abdomen, 0.39 for the upper arm, and 0.15 for the thigh.

When the weight of intra-abdominal fat was used as the outcome r^2 predictive value was 40% for body weight, 37% for body mass index, 61% for waist circumference, 47% for hip circumference, 43% for