

# RESEARCH

The *BMJ* is an Open Access journal. We set no word limits on *BMJ* research articles, but they are abridged for print. The full text of each *BMJ* research article is freely available on [bmj.com](http://bmj.com)

Scan this image with your smartphone to read our instructions for authors



**RESEARCH NEWS** All you need to read in the other general medical journals Alison Tonks, associate editor, *BMJ* [atonks@bmj.com](mailto:atonks@bmj.com)

## Malaria prevalence highest among the poorest of the poor

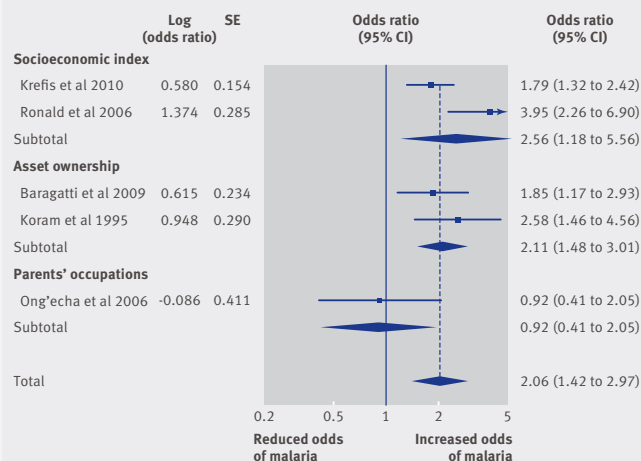
Poverty and malaria are closely interlinked, and a meta-analysis has recently confirmed that even within poor communities, those at the very bottom of the socioeconomic scale have a significantly higher prevalence of malaria than those at the top. Researchers pooled data from 15 observational studies, mostly from Africa, looking at prevalence of confirmed falciparum malaria among children aged  $\leq 15$  years. In adjusted analyses the poorest children had double the odds of disease compared with the least poor children in the same locality (adjusted odds ratio 2.06, 95% CI 1.42 to 2.97,  $P < 0.001$ ).

The association between poverty and malaria is complex and likely operates in both directions, say the authors. Poor households are less able to afford prevention or treatment, and the higher burden of malaria may push them deeper into poverty. It's a vicious cycle that can't be broken by traditional control measures alone. Health interventions such as malaria prophylaxis and treated bed nets are already threatened by the spread of parasites resistant to antimalarial drugs and the spread of mosquitoes resistant to insecticides. Development programmes that relieve poverty and improve standards of living are another important tool in malaria control, and potentially more sustainable in the long term, they write.

*Lancet* 2013; doi:10.1016/S0140-6736(13)60851-X

Cite this as: *BMJ* 2013;346:f4025

### Association between different measures of poverty and malaria



Adapted from *Lancet* 2013; doi:10.1016/S0140-6736(13)60851-X

## Forty per cent of murdered women are killed by a partner

An intimate partner is responsible for roughly 40% of female homicides globally, according to the latest estimates (38.6% of female homicides, interquartile range 30.8–45.3%). Intimate partners are also responsible for just over 6% of male homicides (6.3%, 3.1–6.3%), say researchers, who compiled their estimates from a systematic review and a survey of national statistics offices.

They collected data on nearly half a million homicides in 66 countries, and report that one in seven (13.5%) of all homicides in these countries is committed by an intimate partner. Homicide is an important cause of premature mortality for men and women. For women, the main risk seems to come from partners, say the researchers.

About a fifth of the homicides in the study didn't record the relationship between victim and perpetrator, and the bulk of all homicides came from high income countries such as the US. So these estimates are best guesses to help us direct research and resources, says a linked comment (doi:10.1016/S0140-6736(13)61255-6). Women need better protection. But the proportions reported here disguise a surprisingly big problem for men too. Most murder victims are male, and 6% represents around 25 000 men killed each year by partners. An estimated three women are killed by a partner for every two men

killed the same way, says the comment.

*Lancet* 2013; doi:10.1016/S0140-6736(13)61030-2

Cite this as: *BMJ* 2013;346:f4026

## High prevalence of self reported brain injury among schoolchildren in Canada

When researchers from Canada surveyed almost 9000 of Ontario's senior schoolchildren in 2011, a fifth of respondents reported a history of traumatic brain injury. They were asked about injuries that resulted in loss of consciousness for at least five minutes or admission to hospital overnight. Lifetime prevalence was 20.2% (95% CI 18.1% to 22.4%), and 5.6% (4.2% to 7.5%) reported an injury in the past year.

Researchers surveyed children aged between 11 and 20 (mean 15 years) during lessons in 181 schools. Boys reported more brain injuries than girls (lifetime prevalence excluding the last year 16.2% v 12.8%). Just over half of all brain injuries in the past year occurred during sport.

In adjusted cross sectional analyses, students with average grades under 70% had a higher odds of reporting a brain injury than students with better grades. Students who used cannabis or alcohol had higher odds of a recent brain injury than students who used none. The survey's overall response rate was 62%.

*JAMA* 2013;309:2550-2

Cite this as: *BMJ* 2013;346:f4056

## Red meat linked to diabetes, through saturated fat

A diet rich in red meat is associated with an increased risk of type 2 diabetes. In three long-standing cohorts from the US, adults who increased their intake by half a serving a week in a four year period had an increased risk of diabetes over the next four years (pooled hazard ratio 1.48, 95% CI 1.37 to 1.59). Cutting intake took longer to make a difference, but risk of diabetes fell by 14% over 12–16 years of follow-up (hazard ratio 0.86, 0.80 to 0.93). Eating more red meat tends to increase body weight, and this explained some but not all of the association between red meat and diabetes in this study. All analyses were adjusted for other changes in lifestyle and quality of diet.

If red meat does cause diabetes directly (still a big if), saturated fat is one potential culprit, says a linked comment (doi:10.1001/jamainternmed.2013.7399). Adipocytes stuffed with saturated fat are pro-inflammatory, and this has a knock-on effect on insulin resistance through oxidative stress. The colour of meat, which is determined by the content of myoglobin and haemoglobin, is probably irrelevant to risk of diabetes, and we should move away from classifying meat as red or otherwise. Fatty meat, not red meat, is the problem.

*JAMA Intern Med* 2013; doi:10.1001/jamainternmed.2013.6633

Cite this as: *BMJ* 2013;346:f4027