

The global results of our analysis are given in detail in Annex 2, Tables A2.1–A2.4. The data are broken down by WHO sub-region, by disease or injury category, and by gender and age group (in some cases). The estimated attributable fractions for diseases and injuries considered are provided in Table A2.1, and indicative values for the attributable fractions are outlined by disease and environmental risk factor in Table A2.2. Tables A2.3 and A2.4 detail the environmental disease burden in deaths and DALYs, respectively. The data are broken down by disease or injury category, and by WHO subregion.

From an analysis of the results in Section 5, it was estimated that environmental risk factors contribute to 24% (21–27%) of the global burden of disease from all causes (in DALYs), and to 23% (21–25%) of all deaths. The environmental attributable fraction is slightly higher for men than for women (25%; 22–28%, versus 22%; 20–25%), partly because occupational risks were higher in men. It was greatest for WHO subregion AFR D<sup>3</sup>(31%; 28–36%), but was in the 25–30% range for subregions EMR D, SEAR D and AFR E (Figure 4). It was lowest in the industrialized subregions, at only 16% (15–18%). If the global mean value for the environmental disease burden (24%) appears relatively large compared with some subregional values, it is because the global mean value was strongly weighted by the high environmental attributable fractions for disease in the developing subregions, where most of the disease burden is found.

In children 0–4 years old, 36% (31–40%) of the overall disease burden is attributable to modifiable environmental risk factors, while that fraction is 34% among children 0–14 years of age. In terms of mortality, the environmental attributable fraction is 37% for children 0–4 years of age, and 36% for children 0–14 years. The big killers are diarrhoea, malaria and respiratory infections, which together contributed to 24% of all deaths in children under 15 years of age. Other important environmental risks to children include perinatal conditions, protein-energy malnutrition and unintentional injuries. The attributable fractions generated by this analysis are shown in Table A2.1 (Annex 2).

Indicative values for the corresponding environmental disease burdens are shown by risk factor in Annex 2 (Table A2.2). The corresponding environmental disease burdens, in deaths and DALYs, are shown by disease for each of the WHO subregions (Tables A2.3, A2.4 in Annex 2). The main diseases, and their contributions to the total environmental disease burden, are represented in Figures 8 and 9 for the global population and for children, respectively.

**Environmental factors contribute to 23% of all deaths worldwide and 36% of all deaths among children 0–14 years old.**

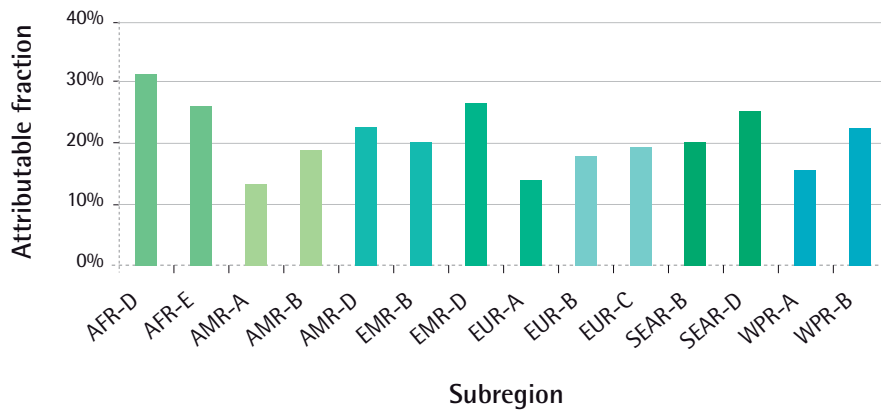


Taking a blood sample from an infant at a local health clinic (Brazil).

Credit: Mark Edwards/Still Pictures

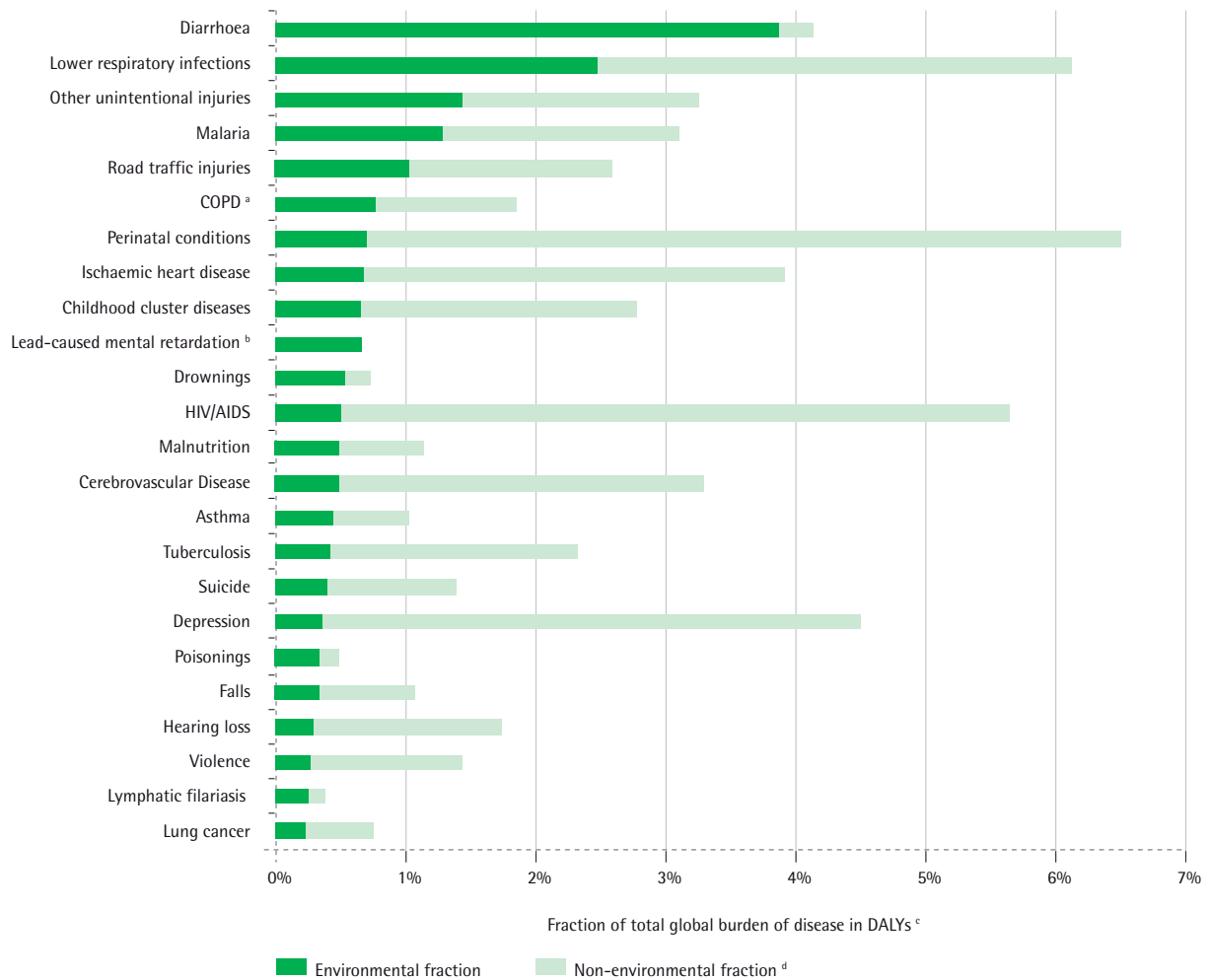
<sup>3</sup> See Annex 1 for a list of the countries in each WHO subregion.

**FIGURE 4 ENVIRONMENTAL DISEASE BURDEN, BY WHO SUBREGION <sup>a</sup>**



<sup>a</sup> The burden of disease is measured in DALYs. See Annex 1 for country groupings within WHO subregions.

**FIGURE 5 DISEASES WITH THE LARGEST ENVIRONMENTAL CONTRIBUTION**



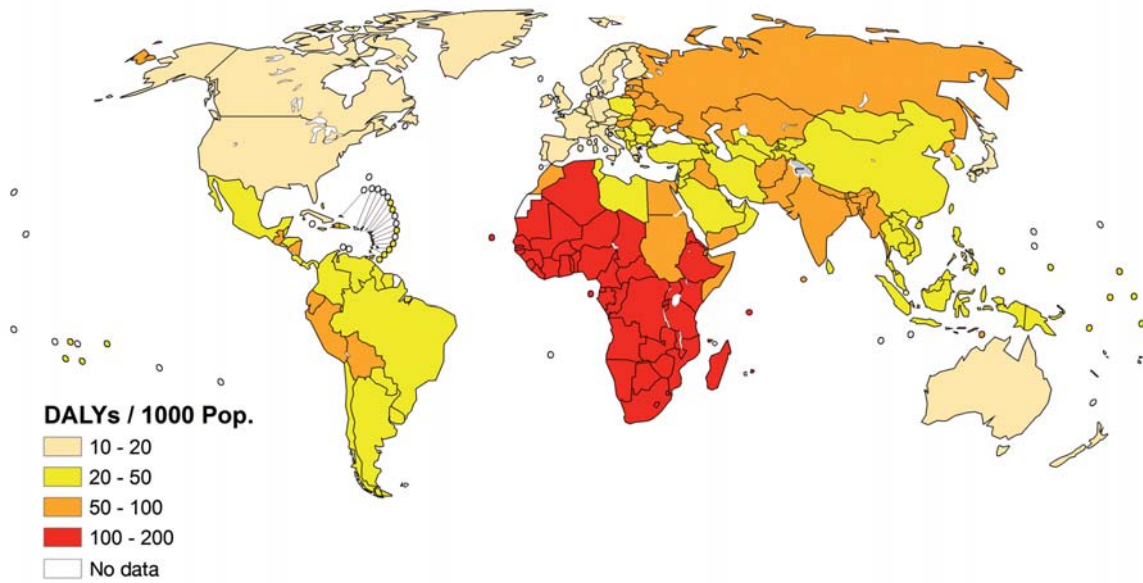
<sup>a</sup> Abbreviations: COPD = Chronic obstructive pulmonary disease.

<sup>b</sup> Lead-caused mental retardation is defined in the WHO list of diseases for 2002, accessed at: [www.who.int/evidence](http://www.who.int/evidence).

<sup>c</sup> DALYs represent a weighted measure of death, illness and disability.

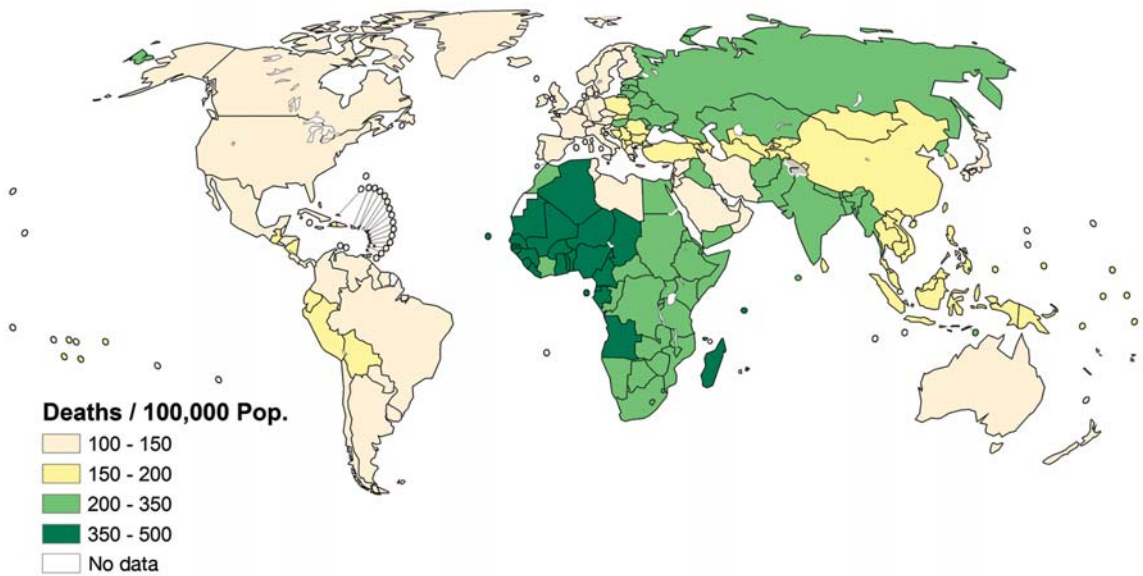
<sup>d</sup> For each disease the fraction attributable to environmental risks is shown in dark green. Light green + dark green represents the total burden of disease.

**FIGURE 6** ENVIRONMENTAL DISEASE BURDEN IN DALYS PER 1000 PEOPLE, BY WHO SUBREGION (2002)<sup>a</sup>



<sup>a</sup> See Annex 1 for a list of the countries in each WHO subregion.

**FIGURE 7** ENVIRONMENTAL DISEASE BURDEN IN DEATHS PER 100 000 PEOPLE, BY WHO SUBREGION (2002)<sup>a</sup>



<sup>a</sup> See Annex 1 for a list of the countries in each WHO subregion.

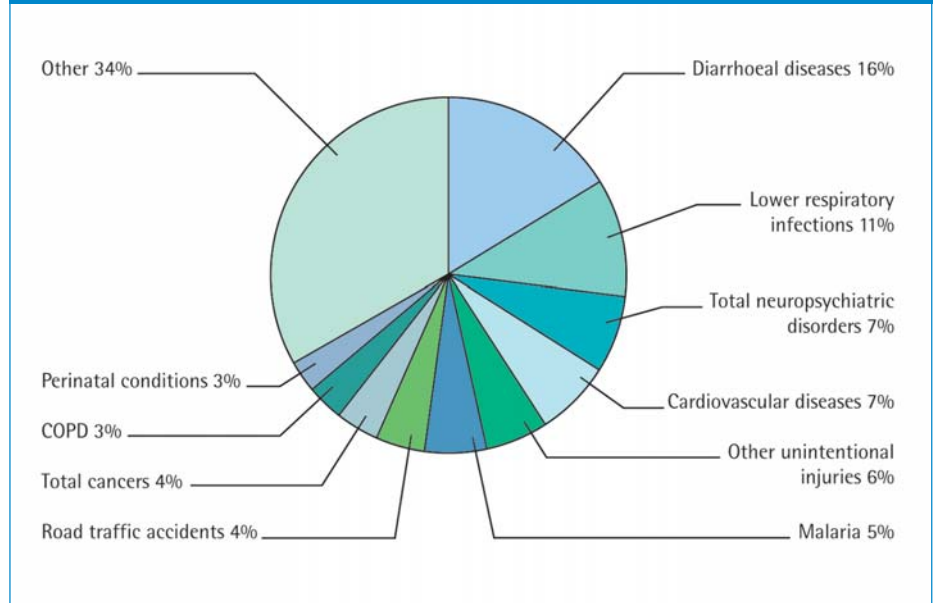
An estimated 24% of all deaths in children under 15 are due to environmentally-related diarrhoea, malaria and respiratory infections; these same three killers also represent the largest share of the childhood environmental disease burden.



Weighing a baby in Ghana as part of a project monitoring nutritional status.

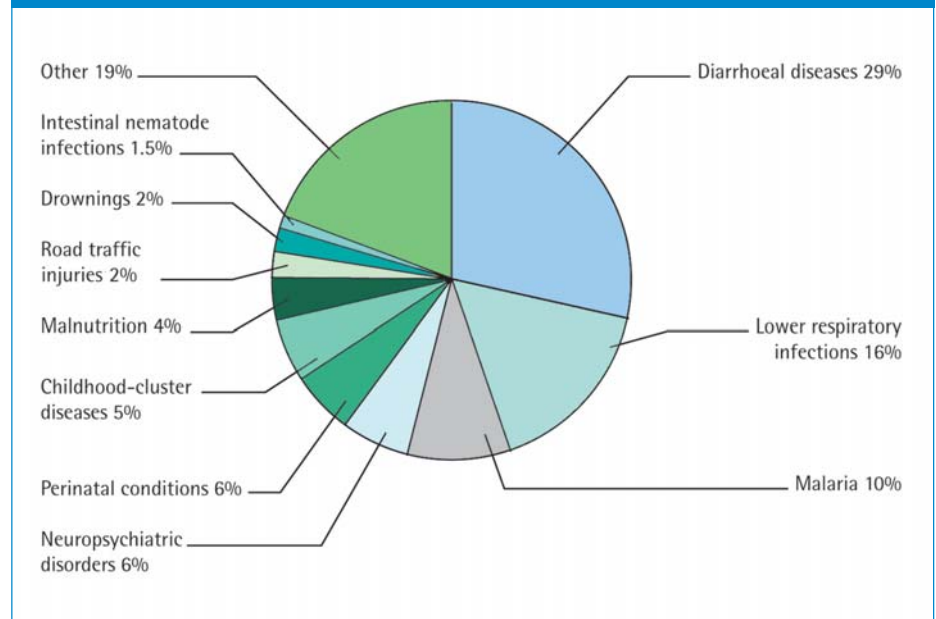
Credit: Martha Cooper/Peter Arnold, Inc.

**FIGURE 8** MAIN DISEASES CONTRIBUTING TO THE ENVIRONMENTAL BURDEN OF DISEASE, FOR THE TOTAL POPULATION <sup>a</sup>



<sup>a</sup> COPD = chronic obstructive pulmonary disease.

**FIGURE 9** MAIN DISEASES CONTRIBUTING TO THE ENVIRONMENTAL BURDEN OF DISEASE, AMONG CHILDREN 0-14 YEARS <sup>a</sup>



<sup>a</sup> The environmental disease burden is measured in disability-adjusted life years, a weighted measure of death, illness and disability (DALYs).