

# Executive Summary

The Department for Environment, Food and Rural Affairs' (Defra) Drinking Water Inspectorate, the independent regulator of drinking water quality, commissioned Ipsos MORI to conduct research to measure the tap water and total liquid consumption of children aged under 16 years of age in England and Wales, including the distribution of the volume drunk.

This report presents findings from an online survey of the drinking behaviour of 1,241 children aged 0-15 years of age in England and Wales. Fieldwork for the diary was conducted from the 13<sup>th</sup> to 19<sup>th</sup> May 2011. Full details of the background to the research and methodology used can be found in the 'Research Background' chapter.

Throughout the report, where differences in results between particular subgroups (for instance, males or a particular age group) are commented on in the text, these are statistically significant, unless otherwise stated. A guide to statistical reliability can be found in Appendix A.

## Key findings

### Property characteristics

- Most parents/guardians of children under 16 (58%) said they live in homes built before 1970. It is generally accepted that houses built after 1970 are unlikely to have lead pipes. Indeed, only 18 (4%) of the householders living in properties built after 1970 thought they had lead pipes.
- While homes built before 1970 are more likely to have lead pipes, very few parents/guardians (6% of all households) said that the pipes which supply their kitchen cold tap are made of lead. However, a third did not know what their pipes are made of (34%), and 18% of all respondents lived in properties built prior to 1970 and did not know the household's plumbing type. This indicates that the proportion of people living in homes with lead pipes (and hence have a greater risk of lead exposure via their tap water) may in fact be higher than 6%.
- None of the parents/guardians of babies under 12 months of age said they had lead pipes.

### Use of water in the home

- The majority of parents/guardians (90%) said their child uses the kitchen cold tap to make drinks or have drinks made for them on a daily basis, while just 2% do not use the kitchen cold tap for making drinks at all. These results are very much in-line with the findings of the 1978, 1995 and 2008 surveys conducted on the subject. One in seven (14%) use the bathroom cold tap daily to make drinks (14%), while a further one in four (23%) do so but less regularly. Slightly fewer (12%) say they use the kitchen hot tap to make drinks every day with a further 9% using the hot tap less frequently.
- Most parents/guardians (85%) said that, in general, when their child makes drinks or has drinks made for them using tap water in the home, the tap is left running for a period. However, most (61%) say this is just for a few seconds and just 1% run the tap for more than 30 seconds.
- Households that say they have lead pipes are more likely than those households with pipes made from other materials to run the water for 10 seconds or longer (37%

compared to 24%), which may be due to an awareness of the risks posed by lead pipes.

- A quarter of parents/guardians said the first use of the household's water at the start of the day is for making a drink (25%). These findings are consistent with what was found in the 2008 survey, where around one quarter reported using the first draw water for making drinks (25% in wave one and 23% in wave 2).
- However, fewer than half (41%) say it is normally the child who consumes this drink. Taken as a proportion of all respondents, in 10% of all households the first use of the home's water is for making a drink for the child<sup>1</sup>.
- Households with children aged 0-5 are most likely to say the first use of water is to make a drink for the child (13% compared to 9% of those aged 6-15).

### **Liquid intake estimates**

- Younger children aged 0-5 consumed the lowest volume of liquid per day, at an average of 800ml. Children aged 6-10 consumed an average of 1,016ml of liquid per day and 11-15 year olds consumed the most, at 1,333ml.
- On average, boys consumed more liquid per day than girls (1,124ml compared to 975ml).
- There was a broad relationship between weight of the child and how much liquid they consumed, with children of a heavier weight generally drinking more. However, it is important to note that there was no direct linear correlation between these two factors, as a relatively high proportion of children fell outside this pattern.
- There were no significant differences in the mean volume of liquid consumed by children from different regions. Children from social grades C1/C2 consumed the most.

### **Tap water estimates**

- As was the case with total liquid consumption, 0-5 year olds consumed the least tap water per day; an average of 442ml. Children aged 6-10 consumed an average of 560ml of tap water per day and 11-15 year olds drank the most tap water, at 659ml on average per day.
- For the sample as a whole, just over half (53%) of the total volume of liquid consumed was formed of tap water. Excluding breast milk, tap water provides the highest proportion of total liquid<sup>2</sup> intake for babies younger than 12 months old (81%). The pattern is more consistent for other age groups, with around half of total liquid intake coming from tap water, ranging from 47% for children aged 12-13 to 56% of children aged 9 to 11.
- As with total liquid consumption, on average, boys consumed more tap water per day than girls (591ml compared to 516ml), although the difference is most apparent for children aged 2 to 4 and for children aged between 11 and 13.
- Children weighing the most, drank the most tap water; those weighing more than 60 kilograms (a sample size of 48) consumed an average of 827 millilitres of tap water

---

<sup>1</sup> It is important to note that the question asked respondents to describe what 'normally' happens in the household, rather than about each individual diary drinking occasion.

<sup>2</sup> For children under the age of two, the diary did not record breastfeeding occasions so this is not included in the total liquid consumption figure. It does include cow's milk and formula milk, however.

each day. However, as with liquid consumption, overall there is only a weak correlation between child's weight and volume of tap water consumed.

- There were no significant differences in the mean volume of tap water consumed by social grade. Those living in the South West of England drank the highest proportion of tap water per day on average, while children living in Greater London drank the least (645ml and 485ml respectively, compared to a total average for all children of 554ml).
- There were no statistically significant differences between homes with different types of plumbing; children in households with lead pipes consumed an average of 532ml of tap water compared with 554ml for all children.

### **Un-boiled tap water**

- Consumption of un-boiled tap water in the home is much lower for babies aged less than one year of age than any other age group; the daily mean volume consumed among babies aged 0-11 months was 77ml, whereas all other age groups drank at least 300ml per day (rising to 443ml for children aged 14-15). It is worth noting that half (49%) of babies aged 0-11 months drank no un-boiled water.
- However, if we consider all tap water drinks consumed – both inside and outside the home – the average volume of un-boiled tap water increases; babies aged under 12 months of age consumed 87ml., while children aged 9-11 and 14-15 consumed the most (541ml. and 527ml. respectively, compared to 458ml. for all children).

### **First draw water**

- Of the total volume of all tap water drinks consumed over the course of the online diary, 1% were '*flushed*'<sup>3</sup>, 3% were '*first draw*' and the remainder (96%) were '*random*'.
- There are no significant differences in '*first draw*' consumption by age group, region, or social grade.
- One in eleven (9%) of all children drank a '*first draw*' drink during the seven days. Again, this does not differ by age or gender. Of those children who did consume a drink containing '*first draw*' water, the mean consumption per day of '*first draw*' water was 161ml.
- Children living in properties with lead pipes were more likely to drink '*first draw*' water; 17% drank some, compared to 10% of households with other types of pipes<sup>4</sup>. The mean consumption of children in homes with lead pipes was 21ml per day, compared to 16ml in households with other types of plumbing.
- Babies under 12 months old were more likely than other age groups to have consumed more than 201ml of '*first draw*' tap water (8% compared to 3% overall). It is worth noting, however, that this represents only 4 babies under 12 months of age (or 8% of the 48 in this age group).

---

<sup>3</sup> Based on the tap having been left to run for at least 30 seconds.

<sup>4</sup> This does not include the 34% who say they do not know what material their pipes are made from.

### Tap water substitutes (bottled water)

- Bottled water was much less commonly consumed than tap water. Less than half of all children drank bottled water over the seven-day period (44%). This refers to bottled water as a specific drink, rather than when used to make other drinks<sup>5</sup>.
- 11-15 year olds were the most likely to drink bottled water (55% compared to 43% of 6-10 year olds and 37% of 1-5 year olds), as were children from social grades A/B (48%) compared to D/E (38%).

---

<sup>5</sup> For instance, for a drink like tea or fruit juice, the diary recorded how much tap water was used but did not ask whether bottled water was used.