

Drinking in Schools

**A report on best practice
for hydration in schools**

What is the Expert Group on Hydration?

The Expert Group on Hydration (EGH) was launched in June 2005, with the goal of improving the nation's hydration. The Expert Group is an independent, generic panel of health professionals - a 'think-tank'- that has been established to help provide independent and objective comment about the important role of hydration for good health and performance.

Dr Paul Stillman, of the Expert Group notes:

“Today, media and Government focus tends to be on the importance of losing weight, reducing fat, cutting calories and slashing salt intake, with very little attention being devoted to hydration. It is an issue that is continually overlooked but is of great concern to us as health professionals – the body cannot operate properly without good hydration and illness and poor performance can occur when sub-optimal levels of hydration exist.”

The Expert Group consists of eight members from a range of backgrounds including nutritionists, GPs, an academic, a psychologist and a pharmacist. Their aim is to improve media and public perceptions and encourage more informed, accurate and balanced coverage about the issues surrounding hydration. There are many public and media myths surrounding hydration, such as ‘the main purpose of fluid is to flush the body of toxins’ and ‘caffeinated drinks are dehydrating’. The Expert Group explodes myths through communication of all the scientific FACTS.

Many people may be dehydrated without even realising it. A survey, undertaken on behalf of the Expert Group, shows that 62 per cent of people are not drinking the recommended amount. We each need at least two litres a day to replace the fluid lost through breathing, sweating and urination.

Dr Paul Stillman adds:

“The effects of dehydration, marginal or excessive, cannot be ignored. Symptoms can develop even in marginal dehydration, such as headaches, digestive problems, losses in concentration, cognitive impairment and lethargy. To stay fit, healthy and performing to our full capacity, we need to replace the fluids that we lose.”

Dr Juliet Gray, expert nutritionist from the Expert Group says:

“There are all sorts of reasons why people fail to drink the recommended amount each day, however, we feel that it is important to remember that, as part of a balanced diet, all kinds of ‘soft’ drinks, including water, squash, fizzy drinks, fruit juices, tea and coffee, can help people reach the recommended amount. Knowing that there are many types of drinks which count, could make it easier, more enjoyable and not too much of a chore to stay hydrated.”

The members of the EGH come from a range of health professional and academic backgrounds, to cover professional knowledge on every aspect of hydration.



EGH Members

Dr Juliet Gray BSc PhD SRD RPHNutr

Consultant nutritionist and dietician, Dr Juliet Gray is one of Britain's foremost nutritional experts. Dr Gray was one of the first members of the Nutrition Society to become a Registered Public Health Nutritionist. A former Science Director of the British Nutrition Foundation (BNF), she was Scientific Secretary to the Joint BNF and Royal College of Physicians Committee on Food Intolerance. She is currently Chairman of the Editorial Advisory Board for the BNF Nutrition Bulletin.



Professor Christiani Jeya Henry MSc PhD RPHNutr

Professor Henry is professor at the School of Biological and Molecular Sciences at Oxford Brookes University. He was a board member of the Food Standards Agency (FSA) and was seconded to UNICEF as a nutritionist. He has been Editor-in-Chief of International Journal of Food Sciences and Nutrition, Council Member of the British Nutrition Society, Scientific advisor to GMTV programme on "Inch loss" and Nutritional Advisor on Open University publication series 'Health of Nations'. He is a consultant to UNICEF, UNHCR, WHO Action Aid, Save the Children Fund, Ford Foundation on projects related to food and nutrition.



Dr Chris Steele MB, ChB

Dr Chris Steele is a general practitioner and one of the UK's foremost experts on smoking cessation, running 'Stop Smoking' courses for the NHS and Industry. He has featured on ITV's 'This Morning' show, 'The Afternoon Show' for Granada TV, ITV's 'Tonight with Trevor McDonald' and on ITV's 'Celebrity Fit Club.' He has written books on medical issues and smoking, including 'Quitting Smoking' and 'Babies and Young Children.' His recent health advisory work has been for the Security Service, MI5, Department of Health and NHS Direct.



Dr Amanda Kirby MBBS MRCGP MFFP

Dr Kirby is a GP with experience in community paediatrics and psychiatry. She has lectured extensively in Holland, Zimbabwe, Canada, Germany and the UK, and won 'Doctor of the Year' award in 1994-1995. She has also written columns in the *Independent on Sunday* and *The Daily Mirror*, and done broadcast work with BBC Radio 5 and BBC Radio Wales. Her publications include *Dyspraxia, the Hidden Handicap*.



Dr Paul Stillman MB ChB DRCOG PGCHE

Dr. Stillman is in general practice in Crawley, Sussex and is a general practice trainer with the British Postgraduate Medical Federation. He has been consultant adviser to the College of Continuing Medical Education and Chairman of the Association of Broadcasting Doctors. He now works as a consultant to Medialink International.



Sigrid (Sigi) Gibson MA, MSc RPHNutr

Sigrid's areas of expertise include statistical analysis and interpretation of diet and health data (NDNS) and reviewing and summarising nutritional findings for scientists and health professionals. She was scientific officer for MAFF nutrition branch, responsible for updating nutrient databases for the National Food Survey and providing scientific support to policy committees. Sigrid now runs her own company, providing research and advice to government agencies and academic institutions.



Dr Pamela Mason, PhD, MSc, MRPharmS

A nutritionist and pharmacist, Pamela writes regularly for the Royal Pharmaceutical Society of Great Britain, Nutrition Society, British Dietetic Association, United Kingdom Clinical Pharmacy Association, International Pharmaceutical Federation and Royal Society of Medicine. She has also featured on radio programmes for BBC Southampton, Bristol, Scotland and TV programmes on Sky.



The EGH is also supported by consultants, including Prof Ron Maughan and Prof Alexander Davison.

Dr Paul Stillman says:

“Together, we have embarked on the mammoth task of improving information and knowledge about hydration and marginal dehydration. We all agree that there is a lot of miscommunication and misunderstanding about hydration and want to correct this by communication of the scientific FACTS.”

What is the 'Drinking in Schools' report?

Everyone is at risk of marginal dehydration and this includes children. In fact, they are at a greater risk of feeling the effects of not drinking enough than an adult, because of their smaller size.

A huge focus has been given to children's nutritional intake in recent months – both in the media and by the Government and Local Education Authorities. The Expert Group on Hydration is concerned that hydration is at risk of being overlooked as part of this overhaul. Whilst we commend the Government for the efforts they have made so far in improving hydration in schools, we feel that much more still needs to be done.

That is why we have produced the 'Drinking in Schools' report. We have audited schools and Local Education Authorities around the country to find out what the current position is with regards to our children¹ and hydration.

Data from the National Diet and Nutrition Survey illustrate the shortfall in children's fluid intakes² (see Figure 1 below). Children aged 11 and above, should be drinking approximately two litres of fluid a day.

Data from the National Diet and Nutrition Survey (NDNS)

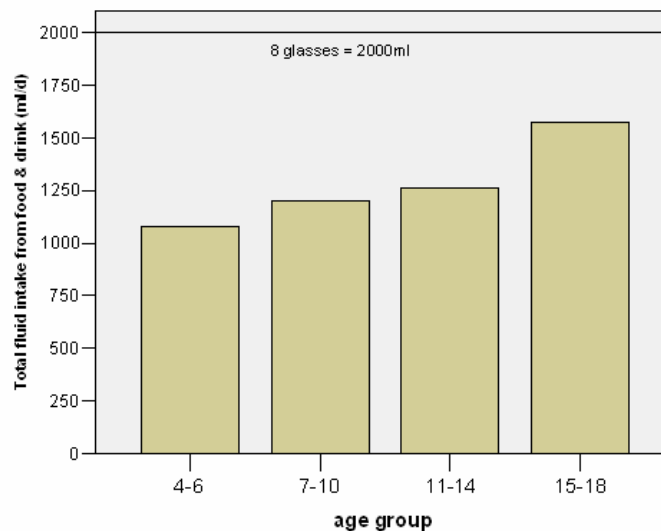


Figure 1

¹ The research covered schools with pupils aged 11-16. When the term 'children' is used it is this group that we are referring to.

² Gregory, J and S. Lowe, National Diet and Nutrition Survey: young people aged 4 to 18 years. Vol. 1. Report of the diet and nutrition survey 2000, Office of the Population Censuses and Surveys. Social Survey Division, HMSO, London.

Furthermore, the NDNS data suggest that 40 per cent of 11-18 year olds are consuming less than the Food Standards Agency's (FSA) minimum of 1.2 litres per day.

In this report, we have audited a range of schools³ and Local Education Authorities to gauge hydration policies, drinks' availability, rules and toilet facilities. From this, we have drawn conclusions on what is working well and what needs to improve, in order to identify and promote best practice.

It is crucial that it is made easier for schools to provide adequate hydration for all the children in their care. The time spent at school is the bulk of any child's day. Without adequate hydration at school, a child could potentially be without a drink for 8-9 hours a day. This is bound to have an effect on both their performance and health. In the long-term, it also means that they do not develop a healthy attitude to maintaining hydration in adulthood, where the health risks continue.

³ When the term 'schools' is used, we are referring to the results of the research undertaken with the random sample of 82 schools around the UK.

The importance of hydration

Many people may be dehydrated without even realising it. A survey, commissioned on behalf of the Expert Group on Hydration found that 62 per cent of people do not drink enough fluid to stay adequately hydrated (based on the generally accepted figure of two litres).

Water is extremely important for our bodies to work properly.

It is responsible for moving nutrients around the body and most of the chemical reactions within our cells take place in water. Our bodies are made of 70% water, with most of our organs and all of our cells counting on fluid to keep them working properly.

Human blood = 95% water
Human brain = 75% water
Human bones = 22% water
Human skin = 70% water

Every day, however, we lose water by evaporation when we breathe and sweat and, as our bodies work, they produce waste products. Some of these waste products are toxic and the body gets rid of them through the kidneys in urine, which is mainly made up of water, and faeces, which also have a high fluid content. We lose more than two litres a day through normal bodily functions.

To stay healthy and performing at our best, we need to replace the fluids that we lose. Dehydration effects can be serious (or even fatal in extreme cases) – but even in mild, or marginal, hydration unfortunate symptoms can develop, such as headaches, digestive problems, lack of concentration and dry skin. These can have a knock-on effect on work, studies and even socialising. At school, it could potentially have a devastating effect on quality of study and performance.

All of us need to drink about two litres of fluid each day in addition to the water we consume within food, such as fruit and vegetables. Very young children do not require quite as much, but for most secondary school children, this is the optimum target to aim for.

Drinking adequate amounts of fluid each day is often not regarded as a priority and may be seen as boring or inconvenient. Children, in particular, may be unlikely to take time to regularly have a drink, especially in an organised environment, such as a school, where most decisions on the running of their day are made for them.

The methodology of the research

The objectives of the research were to deliver a better understanding of three major issues:

1. Is hydration understood to be an issue by LEAs and schools?
2. How much of a priority is it?
3. How are schools addressing hydration as an issue?

Initially research was undertaken with ten of the 214 Local Education Authorities (LEAs) across England, Wales, Scotland and Northern Ireland. This scoped the diversity of opinion and the significance attached to hydration across the regions. From this, we were able to gain a top-line understanding of any barriers or obstacles to the implementation of hydration policies within schools.

Stage two involved more detailed interviews with 82 secondary schools within those LEAs.

There was a spread of school sizes represented within the sample. Half had under 1,000 pupils and half had more than 1,000. Most of the pupils were between the ages of 11 and 16, although some schools included children aged up to 18.

Is hydration seen as important in schools?

Teachers and Local Education Authorities (LEAs) appear to recognise the benefits of hydration for their students but it is not a big priority for action. The issue 'suffers' from being perceived as a relatively unimportant topic. Hydration is in danger of being overshadowed by the high profile interest in school diets and nutrition by the media, the Government and parents.

The Government's School Meals Review Panel recently acknowledged the importance of hydration and now says that clean, fresh, drinking water should be available to all children. However, it is an issue that needs further attention.

In our research, almost two thirds of respondents felt that they are well informed about the benefits of hydration by their LEA, but half feel that hydration issues are relatively unimportant compared to other issues in the school. Just one in five respondents feels that parents have any concerns that their children might not have adequate access to drinks. More emphasis has been given to issuing a blanket-ban on all carbonated drinks than on ensuring that each child understands the importance of drinking enough each day in order to function properly.

Ninety two per cent feel that hydration is a relatively easy issue to solve yet, ironically, because of the perceived ease in solving the problem, it is not seen as a priority. Our research indicates that not enough is being done. Only 13 per cent of schools surveyed have any specific policy on hydration. In just two of the schools, the policy was created by the Local Education Authority.

Sixty two per cent say that they felt they should introduce new hydration practices in their school.

It is also important to note that the topic does not appear to be emphasised in the National Curriculum, so children may not be sufficiently educated on the reasons *why* they need to drink. Forty per cent of respondents did not know whether hydration was even featured in the National Curriculum.

Understanding of why hydration is important

Eighty three per cent of respondents know that pupils would benefit from drinking more fluids throughout the day. Seventy one per cent know that even marginal dehydration can cause health or performance problems. Seventy two per cent of respondents believe that better hydration would result in better classroom behaviour.

When specific risks of dehydration were probed, spontaneous associations with marginal dehydration were poor although, when prompted, awareness did improve:

Respondents thoughts on dehydration risks:		
	Spontaneous	Prompted
Headaches	20%	87%
Lack of concentration	45%	78%
Poor memory	1%	50%
Tiredness	22%	73%

How are things improving?

It is encouraging to note, that in those schools that have implemented any measures, ninety one per cent of respondents noted that children are now drinking more but only one school in 15 is taking practical measures.

However, those schools that are increasing children's fluid intake have reported children being calmer, better behaviour generally, better concentration, fewer headaches, fewer 'sore tummies' and a reduction in lethargy. Additionally, the quality of work produced by the children improved where measures have been taken to improve hydration.

What respondents say:



If kids are feeling better, their attention is better in class

Because it's beneficial to behaviour

We need to do even more to encourage them to drink more

The school is willing to follow any practice which helps with the children's

Anything which helps the children concentrate has to be a good thing, but there is always a small faction that would abuse the system

Anything that helps the children's health is a good thing

Because results show that it helps, they don't get tired and generally are better for it

All to do with the pupils' wellbeing

I think we could do more to actively encourage more drinking

Better concentration, less headaches, sore tummies and lethargy

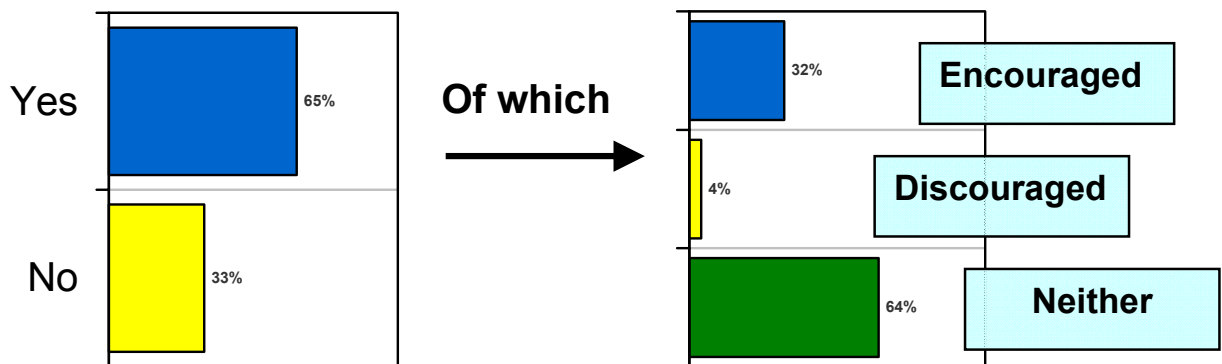
For the children's benefit

Opportunities to drink

During lessons

One in three schools do not allow any liquid consumption during class. In some cases, this may be an issue of teachers being concerned about maintaining control in the classroom. In many others, it may simply be a case of not recognising the true importance of proper hydration. Even in those schools which do allow drinking in the classroom, very few ever actively encourage children to have a drink.

Are pupils allowed to drink actually during class lessons?



For those schools that do allow drinking in the classroom, many types of drinks are taboo. Thirty five per cent of schools discourage drinking fruit juice, half do not like pupils drinking any kind of squash and most discouraged any kind of carbonated drink – even sugar-free and caffeine-free variants. We acknowledge that there are sometimes practical reasons for this – risk of spillage, staining, sticky fingers, etc. It does need to be recognised, however, that limiting the types of drinks consumed in the classroom may have a negative effect on how much children drink during the day and, therefore, on hydration levels.

The majority of schools (85%) that do not currently allow drinking in class have no plans to change.

Just one school in three encourages children to bring drinks into the classroom and fruit juice, squash and carbonates are all actively discouraged.

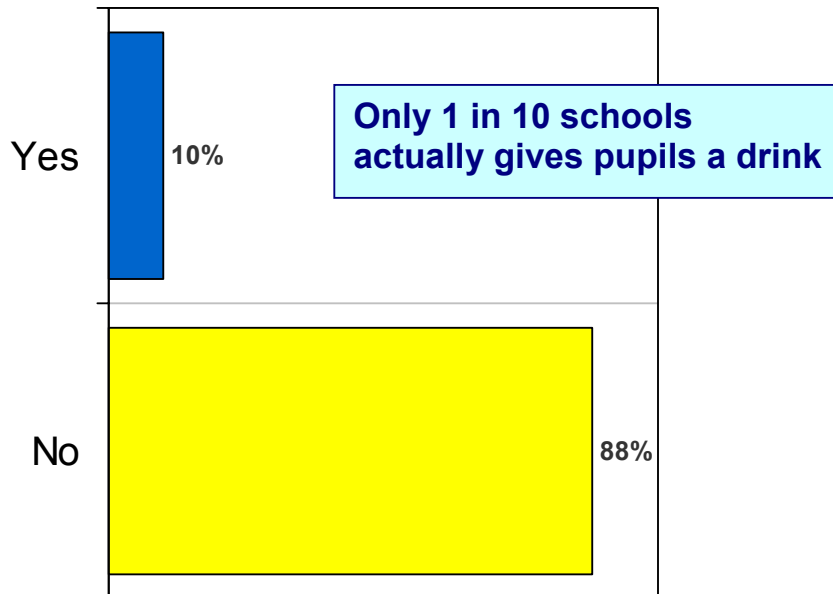
Just one school in ten ever actually gives students a drink. Those occasions when children were supplied with hydration included outings, after-school refreshment, breakfast clubs, and during/after PE.

Active encouragement?

Thirty eight per cent of schools do not encourage drinking even at times when children are most at risk of dehydration – after physical education lessons.

Sixty two per cent *do* claim actively to encourage children at this time, but there are several factors to suggest that even this figure may be misleading.

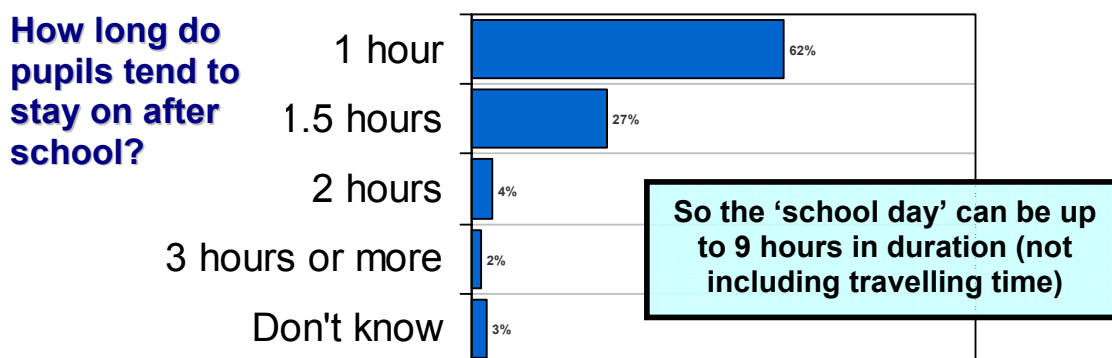
Are pupils ever given a drink?



Firstly, respondents know that there is a responsibility to push children to drink at this time, so this may have coloured their responses. When probed more deeply, the type of encouragement became blurred. One respondent described the encouragement as “I imagine the PE teacher tells them to have a drink” and another said they did not know how this encouragement took place. Several admitted that the ‘encouragement’ was simply a visual reminder because hydration facilities were positioned nearby.

Length of the day?

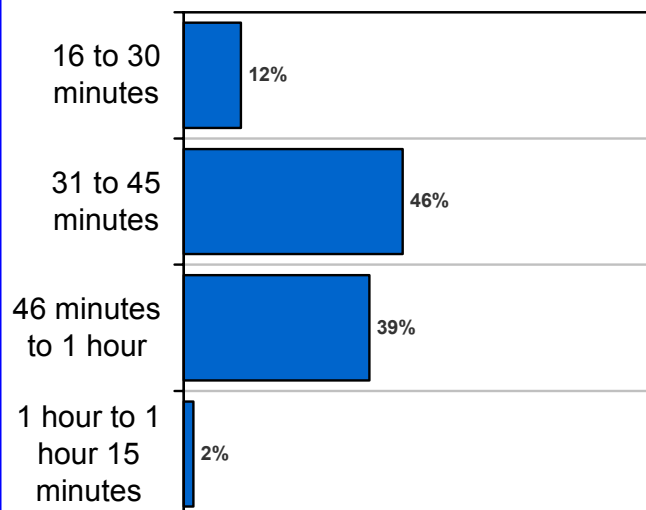
The standard school day lasts between six and seven hours, but 99 per cent of schools said that pupils stay on at the end of the day. More than ten per cent of children tend to extend their day at school by staying on after hours. For 93 per cent of children, this adds up to two hours to the school day. This means that for the majority of the waking day, children are at school. Hydration has to be a vital part of this day.



Breaks

All schools provide children with a morning break and a lunch break, but just two per cent of schools provided a break in the afternoon also. The duration of breaks ranges greatly from 16 minutes to 75 minutes for lunch. Fifty eight per cent of pupils have less than 45 minutes for their lunch break and 97 per cent have an hour or less.

What is the duration of the lunch break?



Just two per cent of schools give pupils a drink with their lunch and this drops to one per cent for the morning break.

Most schools in our audit allow children off-site during the lunch break (59%) and in 45 per cent of cases, this applies to children of all ages.

What hydration facilities are available to pupils?

In just half of schools drinks are available throughout the school day.

Drinking fountains, taps and water coolers

An impressive 91 per cent of schools claim to allow pupils to decant water from drinking fountains, taps and water coolers but, with two-thirds of schools not allowing children to drink at all in the classroom, this leaves at least five hours in the day when the children are not allowed to drink – a huge potential for marginal dehydration.

Reusable drinks bottles

Just one in five schools claims to provide drinks bottles, but again there is little encouragement to fill the bottles or drink from them.

Bringing drinks into school from outside

The range of facilities available varies from school to school. Most students are allowed to bring their own drinks in, although new proposals being mooted by the Government suggest that a ban on this might be introduced. It remains to be seen whether such a plan could be appropriate or feasible, however.

Unfortunately, suitable alternatives to students bringing drinks in with them are not always provided by schools. A quarter of schools do not supply drinking water fountains, more than half do not supply water coolers, just 20 per cent supply re-usable drinks bottles and less than half provide a tuck shop.

Vending & tuck shops

A lot of media focus has been concentrated on school vending machines, portraying the equipment itself as a malign influence. It is interesting to note that school staff themselves do not share this view, however. Seventy three per cent of schools have vending machines and just eleven per cent of these think that they should be removed.

Bottled water is the drink of choice for those who make vending decisions and it is available in 88 per cent of machines. Fruit juice is currently available in 87

per cent of machines and squash in two thirds, offering children an acceptable choice of drinks. Currently just half contain carbonated drinks of any kind.

Forty one per cent of schools have tuck shops and a similar range of drinks is sold.

So how do we improve hydration for our children?

Evidence suggests that children may not be drinking enough fluid. A 2005 survey⁴ found that children aged 8-16 are drinking on average four glasses of water a day; of which one and a half glasses are consumed at school or outside the home.

Children, like adults, are at risk of dehydration. Even marginal dehydration may cause health and performance problems such as headache, tiredness and lack of concentration.

However, drinking fluid is not necessarily seen as a priority by individuals and may also be viewed as boring and inconvenient.

Recognising the importance of hydration

The importance of hydration has been overshadowed by the high profile currently being given to school food and nutrition by the media, Government and parents. We commend the Government for the efforts they have made so far in improving hydration in schools, but much more still needs to be done.

During term-time, children will spend most of their waking hours (Monday to Friday) at school. It is practically impossible for children to try and 'make up' their fluid intake when they leave school in the late afternoon/evening.

Hydration has to be adequate at school.

Few schools have hydration policies and even those that do, have not introduced measures sufficient to maintain good hydration in many cases.

Education about the importance of hydration is not emphasised in the National Curriculum, so children may not understand exactly *why* they need to drink regularly.

⁴ The 2005 Sodexo School Meals and Lifestyle survey

Availability of fluids and opportunities to drink at school vary between schools and is limited in some. Thus, two thirds of schools do not allow any liquid consumption during class. A quarter of schools do not supply drinking water fountains, more than half do not supply water coolers and only one in five supplies drinks bottles. A more standardised approach needs to be adopted, bringing all schools up to the high standards of those schools which are achieving better hydration for their pupils.

For instance, the suggestion made in some quarters to ban specific foods and drinks from being brought into schools would seem to be impractical and inappropriate. It would appear that the reasons behind the proposal are to control children's dietary intakes, but rather than banning foods or drinks, surely the key to compliance and better dietary habits is education? Already, lunch boxes are fairly healthy on the hydration-front and, according to last year's School Lunch Box Survey from the British Dietetic Association, 76 per cent of lunch boxes already contain water, squash, milk or fruit juice.

There are talks about removing vending machines from schools altogether, but that would be an over-reaction. It would be better to use them as a positive vehicle for enabling adequate hydration. Perhaps a selection of bottled water, dairy drinks, low-cal drinks and fruit juice might provide children with a sufficient choice of 'healthy' beverages that would encourage them to drink. Getting children to drink more frequently helps them to stay hydrated and water or milk are tooth-friendly for sipping between meals.

How can we do things better?

Improving hydration in schools needs to address all of these issues and should be a much higher priority.

There needs to be increased awareness of the importance of good hydration amongst children, parents, teachers, media and Government. This can be achieved by improved education and information on the benefits of hydration and the risks from dehydration. As part of this awareness-raising, attitudes to drinking need to be addressed so that drinking is not seen to be boring and

inconvenient but essential, healthy and fun. Consideration should also be given to including the importance of hydration within the National Curriculum.

- Every school should have a hydration policy and hydration should be included in plans to review the school meals system. It cannot be seen as a separate issue.
- The availability of drinks in schools should be addressed. All schools should provide water fountains and water coolers. Access to fluids at school and, therefore, toilet facilities, should be unrestricted.
- Re-usable drinks bottles are useful but can cause hygiene problems if they are not properly washed out and sterilised between uses.
- It would be beneficial to continue to allow children to bring drinks to school. A blanket ban would be unhelpful and inappropriate.
- Drinks should be allowed in the classroom and children should be allowed to drink freely during classes. Indeed, they should be encouraged to do so, even if individual schools choose to limit the types of drinks that can be consumed during lessons.
- The demonisation of vending machines is unhelpful and should be avoided, as they can provide a controlled choice of drinks to enable adequate hydration. Schools can choose what they stock in these machines and a balance of water, fruit juice, dairy drinks and low calorie drinks would provide children with access to a variety of beverages that would encourage them to drink frequently.
- All schools provide children with a morning break and a lunch break and children should be actively encouraged to drink during these breaks. Consideration could also be given to providing an afternoon break, where this is feasible.

- Finally, the importance of drinking before, during and after PE and other sporting activities, including swimming, should not be forgotten.

In conclusion:

Hydration in schools needs to be given a much higher priority, with increased awareness of the importance of good hydration – and the risks of dehydration - among children, parents, teachers, media and Government.

Other issues affecting diet and nutrition cannot be allowed to overshadow the importance of hydration. Hydration needs to be considered in any discussions or plans affecting children’s diet and nutrition.

Every school should have a hydration policy.

Children should be encouraged to drink frequently - at least two litres of fluid each day.

Children should have unrestricted access to a variety of drinks throughout the school day.

The emphasis on hydration in the National Curriculum should be considered. The next generation is at risk of growing up without understanding the necessity of good hydration for optimum health and performance. Although much more can be done to improve children’s access to drinks, if children have no understanding of why they need to drink frequently, and little or no encouragement is given, their health, wellbeing and performance may be at risk.

Fluid consumption is vitally important in the school day. Careful consideration should be given by all schools to allowing drinking of water during classes.