



Wise up
on water!

Hydration and
healthy ageing

Introduction

Water is well known for its revitalising properties. Yet even though it is vital to health, it frequently gets overlooked as an essential nutrient. This can result in vulnerable individuals missing out on the support and guidance they need to maintain a healthy level of hydration.

Older people are a diverse group with individual needs, desires, and aspirations, which include maintaining their own health and fitness. As we get older our body's needs and health concerns change due to an increasing susceptibility to degenerative disease.¹ Water can make a valuable contribution to health in old age.

Water requirements

Older people have very similar water requirements to those of younger adults. Although there is currently no agreed recommended daily intake level for water in the UK, estimates range from approximately 1.2 litres² to 3.1 litres per day.³ A conservative estimate for older adults is that daily intake of fluids should not be less than 1.6 litres per day.⁴ Unfortunately, many older people do not drink adequate amounts of water. A recent survey of water provision in UK care homes for the elderly found that most residents only consumed 2-4 glasses of water per day (480-960ml).⁵

Age as a factor in poor hydration

The two dietary sources of water are food and drink. About 80 per cent comes from drinks and 20 per cent is contained in food.³ Some older people, however, have diminished appetites or poor nutrition and may miss out on the valuable component of their fluid intake contained in food.⁶

The kidneys play a vital role in regulating the amount of fluid in the body, but their function deteriorates with age. Age-related changes, such as alterations in hormone levels, also mean that water balance takes longer to be restored even after a drink has been consumed.⁷ Although fluid balance can usually be maintained under normal circumstances, dehydration can occur as a result of:

- cognitive impairment
- changes in functional ability
 - medication such as laxatives, diuretics or hypnotics
 - illness, or
 - stress arising from other factors.⁸

In addition, thirst, the body's natural response to dehydration, has been shown to be impaired in older people.⁹ Patients with stroke or those who are suffering from Alzheimer's disease may be particularly insensitive to thirst.¹⁰

'Tis a little thing
To give a cup of water; yet its draught
Of cool refreshment, drain'd by fever'd lips,
May give a shock of pleasure to the frame
More exquisite than when nectarean juice
Renews the life of joy in happiest hours.

Sir Thomas Noon Talfourd (English dramatist, poet and jurist
(1795 - 1854), Ion (act I, sc. 2), (Sonnet III)



Benefits of good hydration

Some of the medical evidence for the benefits of good hydration in older people is summarised below.

Pressure ulcers: Poorly hydrated individuals are twice as likely to develop pressure ulcers because dehydration reduces the padding over bony points.¹¹ Fluid intake to correct impaired hydration, increases levels of tissue oxygen and enhances ulcer healing.¹²

Constipation: Inadequate fluid intake is one of the most frequent causes of chronic constipation.¹³ It is more frequent in incapacitated or institutionalised older people, affecting some 42 per cent of patients admitted to geriatric wards.¹⁴ In individuals who are not adequately hydrated, drinking more water can increase stool frequency and enhance the beneficial effect of daily dietary fibre intake.¹⁵

Urinary infections and continence: Water helps maintain a healthy urinary tract and kidneys. Maintaining adequate hydration levels, rather than high fluid intake, per se, is important in the prevention of urinary tract infection.¹⁶ Many older people are loath to drink during the evening to eliminate the need to go to the toilet during the night. Evidence shows, however, that the restriction of overall fluid intake does not reduce urinary incontinence frequency or severity.¹⁷

Kidney and gallstones: Good hydration can reduce the risk of kidney stone formation by 39 per cent because dilute urine helps to prevent crystallization of stone-forming salts.¹⁸ Consumption of water at regular intervals can also help by diluting bile and stimulating gallbladder emptying, which in turn helps to prevent gallstone formation.¹⁹

Heart disease: Adequate hydration reduces the risk of coronary heart disease by 46 per cent in men and 59 per cent in women. It also protects against blood clot formation by decreasing blood viscosity.²⁰

Low blood pressure: Many older people suffer a drop in blood pressure on standing, which sometimes causes them to pass out. Drinking a glass of water five minutes before standing helps stabilise blood pressure, and prevents fainting.²¹

Diabetes: Water is an essential part of the dietary management of diabetes since dehydration can worsen diabetic control.³ In poorly controlled diabetic individuals, high urine output can increase the risk of dehydration.²² Good hydration levels also help to slow down the development of diabetic ketoacidosis during insulin deficiency in Type 1 diabetes, and help maintain healthy blood sugar levels.²³

Cognitive impairment: Dehydration adversely affects mental performance. Symptoms of mild dehydration include light-headedness, dizziness, headaches and tiredness,²⁴ as well as reduced alertness and ability to concentrate.^{25,26} Once thirst is felt (0.8-2 per cent dehydration²⁴), mental function may be affected by as much as 10 per cent.²⁵ Mental performance deteriorates progressively as the degree of dehydration increases. In older people this impacts on cognitive function leading to increasing frailty, functional decline, and a reduction in the quality of life.²⁷

Falls: The risk of falls increases with age and in older people this can result in injury and fractures. A broken hip, for example, can lead to a reduced quality of life, over and above the trauma and hurt. Such individuals rarely get back to the same degree of independent living as they enjoyed before they fell.²⁸ Dehydration has been identified as one of the risk factors for falls in older people, since it can lead to a deterioration in mental state, and increase the risk of dizziness and fainting. The maintenance of adequate levels of hydration in older people could be effective in preventing falls, particularly as part of a multifactorial falls prevention strategy.²⁹ In addition, in hard water areas, tap water provides a significant proportion of dietary calcium, which is essential for good bone mineral density and the prevention of osteoporosis and fractures.³⁰

Hospitalisation in older people: Dehydration has been shown to increase by two-fold the mortality of patients admitted to hospital with stroke. It also increases the length of hospital stay for patients with community-acquired pneumonia.³¹

Skin: Being well hydrated is a good way to keep skin healthy and young-looking. The skin acts as a water reservoir and participates in fluid regulation for the whole body. Mild dehydration causes skin to appear flushed, dry and loose, with a loss of elasticity, which makes it look older than it is. The effects of dehydration on the skin are more noticeable on the face, than on the lower limbs.^{24,32,33}

The role of carers

Carers have a vital role in supporting older, more dependent, individuals to maintain healthy hydration levels. They can do this by ensuring that fluids are freely available and physically accessible both day and night as well as with meals. They should be aware of the individual's need for fluid and encourage them to drink. Many types of foods contain a substantial amount of water. If an older person finds it difficult to increase the amount of fluid drunk, it may be possible to help maintain adequate hydration levels by increasing the amount of moisture consumed in foods, such as fruit and vegetables which are about 80-90 per cent water.⁶

Further information can be obtained from:

Water UK, Water for Health, *Ask about ...*

<http://www.water.org.uk/home/resources-and-links/water-for-health/ask-about>

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Water and cancer
prevention

Introduction

Next time you feel thirsty - have a drink of water. Not only will you be quenching your thirst, but you will also be helping to protect yourself against three of the biggest killer cancers.

During our lifetime one in three of us will be diagnosed with cancer and one in four will die from cancer. Of the many different types of cancer, the four most common are cancer of the breast, lung, large bowel and prostate. These four alone account for over half of all cases diagnosed. They are also reflected in the most common causes of cancer death. In 2002, 22 per cent of all cancer deaths were from lung cancer, followed by cancer of the large bowel (10 per cent), breast cancer (8 per cent), and prostate cancer (6 per cent).¹ Research suggests that drinking enough water every day, could reduce your risk of developing cancer of the large bowel, breast and prostate.

Cancer of the large bowel

Large bowel cancer, or colorectal cancer, is the third most common cancer in men, and the second most common cancer in women in the UK. Every year there are 18,500 new cases of colorectal cancer in men, and over 16,000 cases in women.²

Water plays a major role in digestion and gut function and yet it is frequently overlooked in studies considering diet and the risk of cancer of the large bowel. Three studies in which the effect of water was considered, found that people who maintained good levels of hydration had a reduced risk of large bowel cancer compared with people whose water intake was low. The extent to which the cancer risk was reduced varied between the studies. In one study, the risk of colon cancer was reduced by 45 per cent in women and 32 per cent in men who drank four or five glasses of water per day, compared to those who drank only two or less glasses per day.³ In the other two studies the protective effect was found to be greatest for men, with risk reductions for rectal cancer of 92 per cent⁴ and for colorectal cancer 42 per cent.⁵ The studies support the potential beneficial effect of adequate water intake in reducing colorectal cancer risk.

One explanation as to why good hydration protects against large bowel cancer is that water may help to dilute toxic compounds in the bowel and speed up the passage of stools so that any harmful substances (carcinogens) spend less time in contact with the bowel lining.

The cancer-protective benefits do not appear to be due to the source of water consumed, but it is possible that other unidentified lifestyle or dietary factors are relevant.⁶

Breast cancer

Breast cancer claims the lives of over 13,000 women a year – 8,000 pre-menopausal women are diagnosed, of which 15 per cent are from the 20-30 age group.⁷ Most women would welcome any opportunity to reduce their chances of developing breast cancer. Drinking

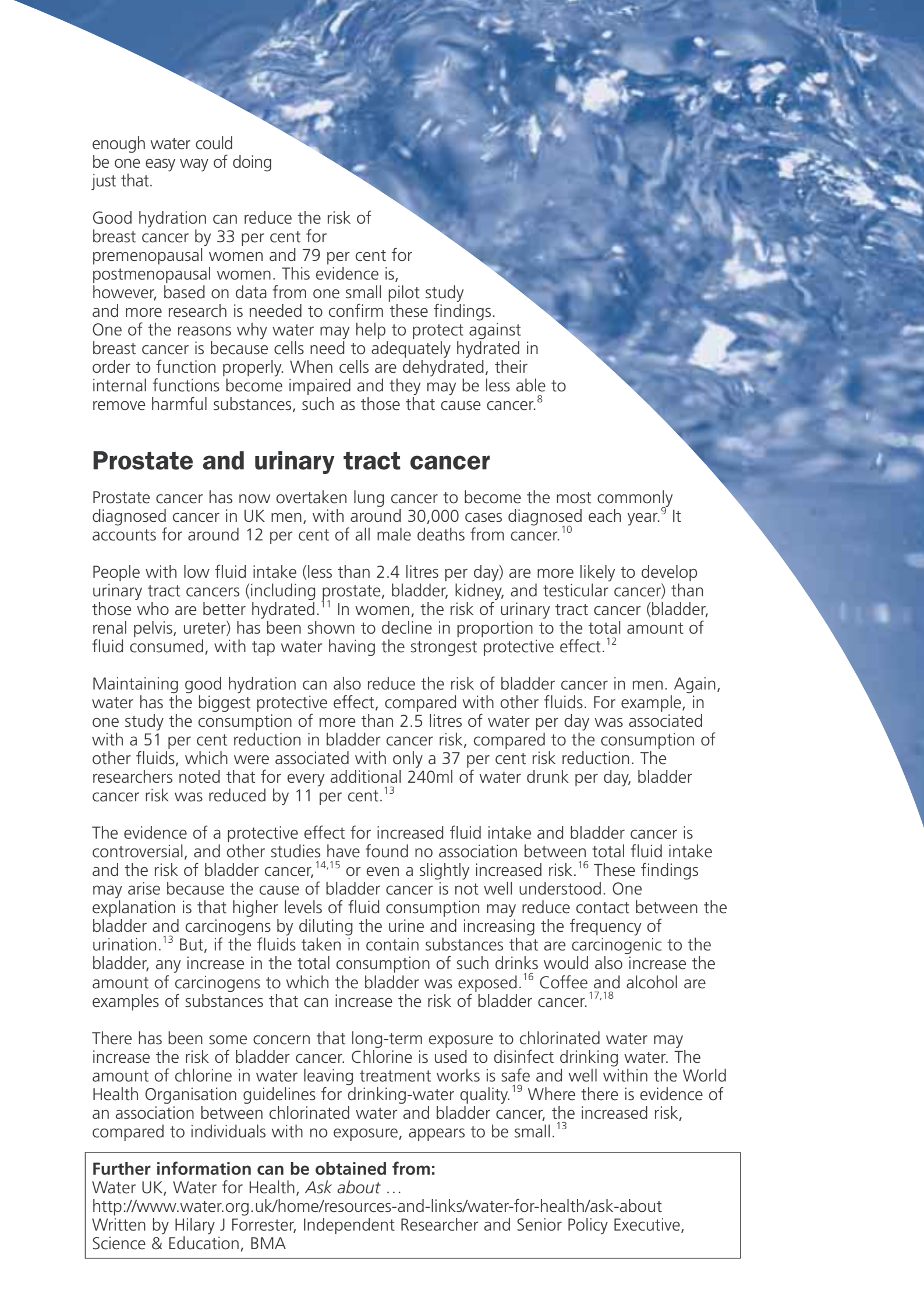


- 1** On a sedentary day, try to drink around two litres of water.
- 2** Start by drinking a glass of fresh water when you get up in the morning.
- 3** If you are not used to drinking water regularly, try initially replacing just one of your other drinks a day with fresh water, increasing your consumption as the weeks go by.
- 4** Ask for a glass of tap water to go with your coffee and tea in cafes.
- 5** Drink a glass of water before and during each meal.
- 6** Hot water with a piece of fruit in - like lemon, lime, orange etc.- often helps those who want a hot drink.
- 7** Carry a bottle filled with chilled tap water with you whenever you leave the house.
- 8** During exercise, drink at 10 to 15 minute intervals or think of it as a full glass every 30 minutes - drink slowly and drink early, it's physically easier to do this when you are still feeling fresh.
- 9** Keep a check on your urine. As a general guide to hydration, it should be plentiful, pale in colour and odourless.
- 10** Ask for a jug of iced tap water with your meal when in restaurants and with your alcohol when in bars – good establishments will be happy to provide this.

All relevant medical practice and care guidance must be observed before considering these suggestions.

In conclusion ...

The benefits of good hydration to protect against cancer have not been well studied and the current findings are considered to be inconclusive.⁶ More research is urgently needed in this area. The evidence that does currently exist, suggests that good hydration makes good sense as part of a healthy lifestyle. Most of us would agree that any opportunity to protect ourselves against three of the biggest cancer killers would be well worth taking.



enough water could be one easy way of doing just that.

Good hydration can reduce the risk of breast cancer by 33 per cent for premenopausal women and 79 per cent for postmenopausal women. This evidence is, however, based on data from one small pilot study and more research is needed to confirm these findings. One of the reasons why water may help to protect against breast cancer is because cells need to be adequately hydrated in order to function properly. When cells are dehydrated, their internal functions become impaired and they may be less able to remove harmful substances, such as those that cause cancer.⁸

Prostate and urinary tract cancer

Prostate cancer has now overtaken lung cancer to become the most commonly diagnosed cancer in UK men, with around 30,000 cases diagnosed each year.⁹ It accounts for around 12 per cent of all male deaths from cancer.¹⁰

People with low fluid intake (less than 2.4 litres per day) are more likely to develop urinary tract cancers (including prostate, bladder, kidney, and testicular cancer) than those who are better hydrated.¹¹ In women, the risk of urinary tract cancer (bladder, renal pelvis, ureter) has been shown to decline in proportion to the total amount of fluid consumed, with tap water having the strongest protective effect.¹²

Maintaining good hydration can also reduce the risk of bladder cancer in men. Again, water has the biggest protective effect, compared with other fluids. For example, in one study the consumption of more than 2.5 litres of water per day was associated with a 51 per cent reduction in bladder cancer risk, compared to the consumption of other fluids, which were associated with only a 37 per cent risk reduction. The researchers noted that for every additional 240ml of water drunk per day, bladder cancer risk was reduced by 11 per cent.¹³

The evidence of a protective effect for increased fluid intake and bladder cancer is controversial, and other studies have found no association between total fluid intake and the risk of bladder cancer,^{14,15} or even a slightly increased risk.¹⁶ These findings may arise because the cause of bladder cancer is not well understood. One explanation is that higher levels of fluid consumption may reduce contact between the bladder and carcinogens by diluting the urine and increasing the frequency of urination.¹³ But, if the fluids taken in contain substances that are carcinogenic to the bladder, any increase in the total consumption of such drinks would also increase the amount of carcinogens to which the bladder was exposed.¹⁶ Coffee and alcohol are examples of substances that can increase the risk of bladder cancer.^{17,18}

There has been some concern that long-term exposure to chlorinated water may increase the risk of bladder cancer. Chlorine is used to disinfect drinking water. The amount of chlorine in water leaving treatment works is safe and well within the World Health Organisation guidelines for drinking-water quality.¹⁹ Where there is evidence of an association between chlorinated water and bladder cancer, the increased risk, compared to individuals with no exposure, appears to be small.¹³

Further information can be obtained from:

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