

- ✓ Modern dietary habits are leading to alarming increases in obesity and related diseases
- ✓ These epidemics have been paralleled by increased consumption of sugar-containing and other soft drinks
- ✓ Adequate fluid intake is essential for good health
- ✓ Water is the healthiest beverage – for healthy function and elimination it is recommended to drink at least 2 litres of water every day

SIMPLE DIETARY CHANGES CAN HELP PREVENT THE DEVELOPMENT OF MODERN DAY DISORDERS



- Limit intake of sugar-sweetened and carbonated soft drinks
- Increase levels of physical exercise
- Drink at least 2 litres of water every day

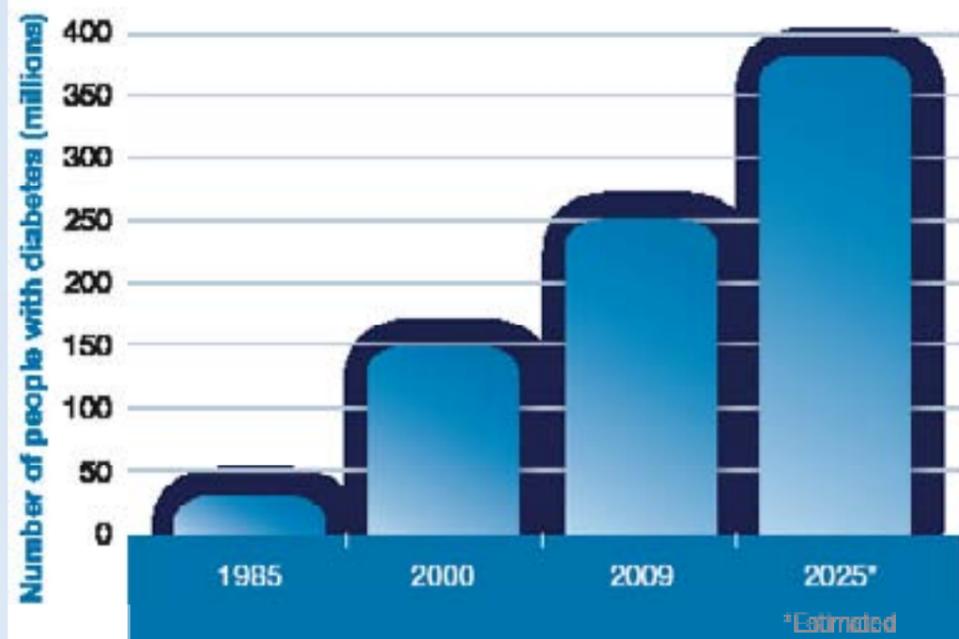


THE INNER WATER CYCLE AND HEALTHY FLUID INTAKE

OBESITY AND RELATED DISORDERS HAVE BECOME 21ST CENTURY HEALTH EPIDEMICS

- There are now more than 1 billion overweight adults in the world, at least 300 million of them obese¹
- 22 million of the world's children under 5 years old are overweight¹
- The number of people with diabetes is increasing alarmingly: 30 million in 1985, 150 million in 2000, 246 million in 2009, and predicted at 380 million in 2025²
- Metabolic syndrome now affects around 25% of the world's population²

Continuous increase in prevalence of diabetes worldwide³



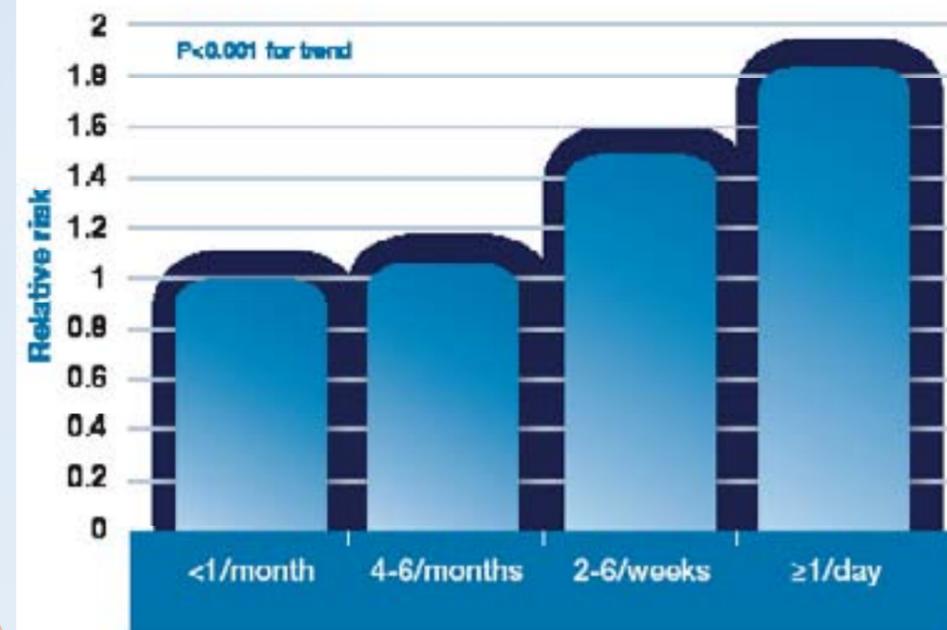
Obesity, diabetes, and metabolic syndrome have become the 21st century epidemics. Obesity and metabolic syndrome are, in the majority of cases, lifestyle-related disorders that pose a major risk for serious chronic diseases including type 2 diabetes, cardiovascular disease, hypertension and stroke, and certain forms of cancer.¹

1. World Health Organization. Available at <http://www.who.int/dietphysicalactivity/publications/facts/obesity/en/>. Accessed April 2009. 2. International Diabetes Federation. Available at <http://www.idf.org/home/index.cfm?unode=7F22F450-B1ED-43BB-A57C-B975D16A812D>. Accessed April 2009. 3. Riccardi G, et al. PASSCLAIM-body weight regulation, insulin sensitivity and diabetes risk. *Eur J Nutr* 2004;43(Suppl 2):117-46.

UNHEALTHY BEVERAGE CONSUMPTION IS LINKED TO A RANGE OF MODERN DAY HEALTH PROBLEMS

- The intake of sugar-sweetened beverages has been associated with weight gain, metabolic syndrome and type 2 diabetes¹⁻⁵

Increasing risk of type 2 diabetes with increasing consumption of sugar-sweetened beverages⁴



Consumption of liquid calories from beverages has paralleled the obesity and type 2 diabetes epidemics.^{6,7}

Evidence shows that consumption of cola carbonated beverages is associated with an increased risk of kidney stones, probably due to the phosphoric acid often found in these drinks.⁸ A general increase in obesity may also contribute to an increased susceptibility to stones.⁹

1. Ludwig DS, et al. Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis. *Lancet* 2001;357:505-8. 2. Troiano RP, et al. Energy and fat intakes of children and adolescents in the united states: data from the national health and nutrition examination surveys. *Am J Clin Nutr* 2000;72(5 Suppl):S1343-53. 3. Yoo S, et al. Comparison of dietary intakes associated with metabolic syndrome risk factors in young adults: the Bogalusa Heart Study. *Am J Clin Nutr* 2004;80: 841-8. 4. Schulze MB, et al. Sugar-sweetened beverages, weight gain, and incidence of type 2 diabetes in young and middle-aged women. *JAMA* 2004;292:927-34. 5. Bazzano LA, et al. Intake of fruit, vegetables, and fruit juices and risk of diabetes in women. *Diabetes Care* 2008; 31: 1311-1317. 6. Chen L, et al. Reduction in consumption of sugar-sweetened beverages is associated with weight loss: the PREMIER trial. *Am J Clin Nutr* 2009;89:1299-306. Epub 2009 Apr 1. 7. International Diabetes Federation. Available at <http://www.idf.org/home/index.cfm?unode=7F22F450-B1ED-43BB-A57C-B975D16A812D>. Accessed April 2009. 8. Shuster J, et al. Soft drink consumption and urinary stone recurrence: a randomized prevention trial. *J Clin Epidemiol* 1992;45:911-6. 9. Curhan GC, et al. Body size and risk of kidney stones. *J Am Soc Nephrol* 1998;9:1645-52.

WATER IS THE HEALTHIEST BEVERAGE AND ADEQUATE INTAKE IS ESSENTIAL FOR GOOD HEALTH

- Every day, at least 2.6 litres of water on average are lost through respiration, perspiration, faeces and urine alone¹
- Adequate hydration is necessary for proper bodily function including that of the urinary tract, the heart, the digestive system, and the brain²
- The kidneys have a particular requirement for good hydration levels as they are essential for eliminating waste products from the body and flushing the urinary tract³
- Adequate fluid intake is essential for proper elimination functions, and inadequate intake is related to an increased risk of kidney stones and UTI^{2,4-6}
- Water is the healthiest beverage – it contains no calories, no sugar and no additives

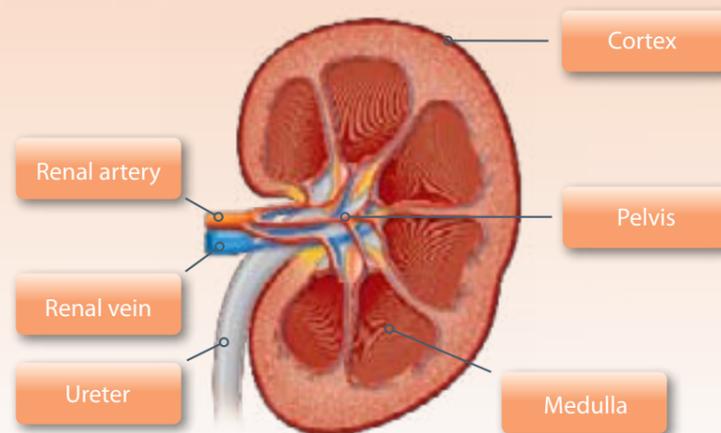
Removal of waste products by the kidney³

Waste products excreted by the kidney

- Ammonia
- Urea
- Uric acid
- Creatinine
- Oxalate
- Excess sodium
- Excess calcium

Excretory functions of the kidney

- Maintains/control salt and electrolyte balance in blood
- Removes wastes from circulating blood
- Excretes wastes and electrolytes through the urine



Water is the largest component of the body, making up an average of 60-70% of the body.⁷ Inadequate levels of hydration can lead to a range of disorders and diseases.²

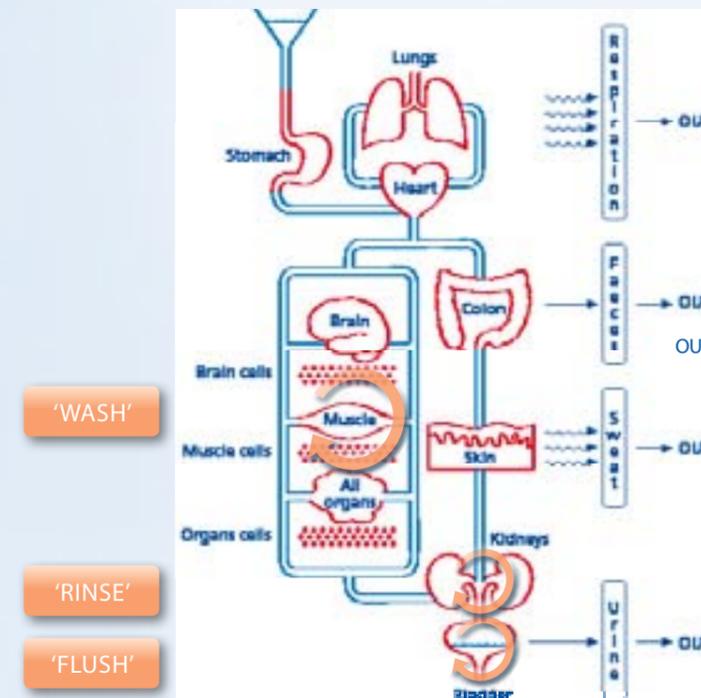
In particular, evidence is mounting that drinking more water can reduce the risk of both kidney stone formation and recurrence.^{4,5}

1. Shirreffs SM. Markers of hydration status. *J Sports Med Phys Fitness* 2000;40:80-4. 2. Manz F. 2007. Hydration and disease. *J Am Coll Nutr*;26(5 Suppl):S535-41. 3. Querin S, Valiquette L, Charbonneau R, Biche D. La néphrologie et l'urologie 2nde édition; 2004 4. Borghi L, et al. Urinary volume, water and recurrences in idiopathic calcium nephrolithiasis: a 5-year randomized prospective study. *J Urol* 1996;155:839-43. 5. Sarica K, et al. The effect of calcium channel blockers on stone regrowth and recurrence after shock wave lithotripsy. *Urol Res* 2006;34:184-9. 6. Nygaard I, Linder M. Thirst at work - an occupational hazard? *Int Urogynecol J Pelvic Floor Dysfunct* 1997;8:340-3. 7. Pivarnik JM. Water and electrolytes during exercise 1994. In *Nutrition in Exercise and Sport*, ed. Hickson JF, and Wolinsky I. Boca Raton, FL: CRC Press, 245-262.

THE BODY'S INNER CLEANSING WATER CYCLE IS INTRINSIC FOR EFFICIENT, NATURAL FUNCTIONING OF THE BODY

- Water continuously cycles throughout the body performing essential physiological and mechanical functions¹
- Adequate water intake is essential during differing physiological conditions such as high protein weight loss diets, hot environments and physical activity²⁻⁴

Schematic representing the flow of water in the human body – an inner cleansing cycle



A useful analogy to understand the important role of water in elimination and removal of waste is to see the body as a 'water-powered engine'. Water has a key role in several physiological processes in the human body: it is a major contributor to circulating blood flow, bringing nutrients and oxygen to the entire body; it acts as a body 'cooler', reducing body temperature as and when necessary; and it has a major role in the elimination process.

The body's inner cleansing cycle ensures waste is continually eliminated from the body. Elimination removes unnecessary or harmful elements from the body and is an essential requirement for maintenance of physiological homeostasis.¹ Water can be seen as the vehicle for inner cleansing, acting as a carrier to transport waste out of cells and out of the body.

1. Petracchia L et al. Water, mineral waters and health. *Clin Nutr* 2006;25:377-85. 2. Ziegler EE, Filer LJ. 1996. Present knowledge in nutrition. 7th Ed. ILSI Press, Washington DC. 3. Rehrer NJ, Burke LM. Sweat losses during various sports. *Aust J Nutr Diet* 1996;53:S13-S16. 4. Brenner BM, Rector FC. *Kidney*. 5th ed. Philadelphia; 1996.