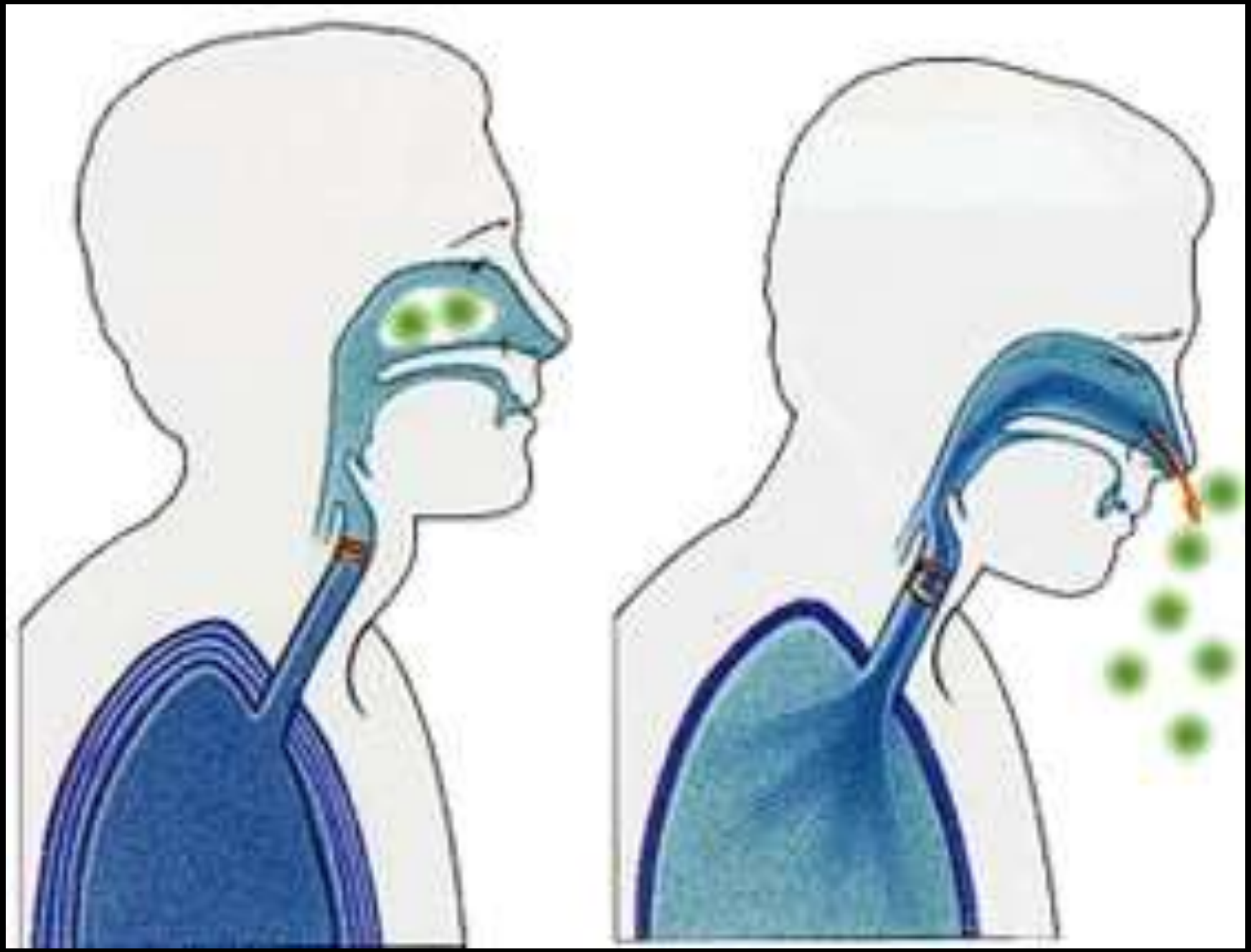
Truth and Lies: Medicine and the Media

or…

Dr Christoffer van Tulleken UCL

…Why you should take every chance you have to get in the news.


Operation
Ouch



Why do we sneeze?

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ABSTRACT

According to textbooks, the function of a sneeze is to send a strong blast of air through the nose to remove foreign bodies. Three simple tests are described that show that the current views are wrong. The pressure developed in the mouth/pharynx of the author during a sneeze was recorded as about 135 mm Hg reached in about 0.1 s. A forced maximal expiration but with the nose and mouth closed produced a nasal secretion although of smaller amount than in the sneez, in spite of a greater pressure; this is probably because the speed of tension development was much slower than in the sneeze. It is proposed that the high pressure stimulates secretory neurons via branches in the roof of the mouth. The nasal secretion dilutes irritant material in the nose and thus prevents it getting into the lungs.

Introduction

What is the purpose of a sneeze? If one consults a recent textbook of physiology one gets this kind of response:

"... a sneeze involves ... an explosive forced expiration through

excites the palatine nerves lying in the roof of the mouth, branches of which in the nasal cavity activate the nasal glands.

Experimental data

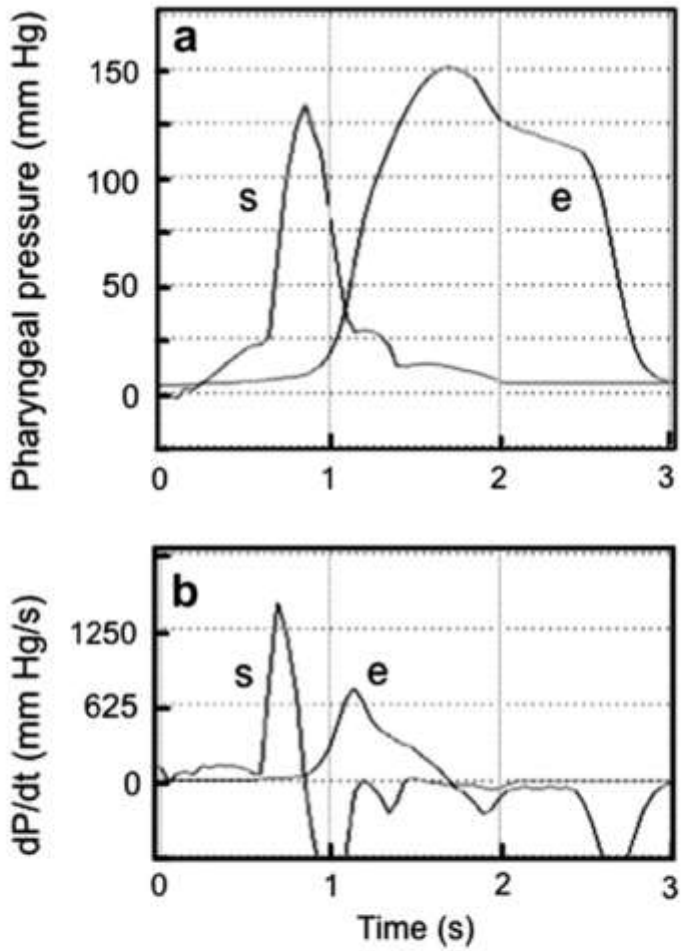


Fig. 1. Pharyngeal pressure changes during a sneeze and a maximal blocked expiration. (a) Time course of a sneeze elicited by a small pinch of laundry detergent (s) and maximal expiration with nose and mouth closed (e). These were both recorded by connection via a mouthpiece to a pressure transducer (Cobe CDXIII, Cobe Labs). (b) Differentials of the records in a. Ordinate: dP/dt = change of pressure with time.

Kalma Camp from 5.15km above

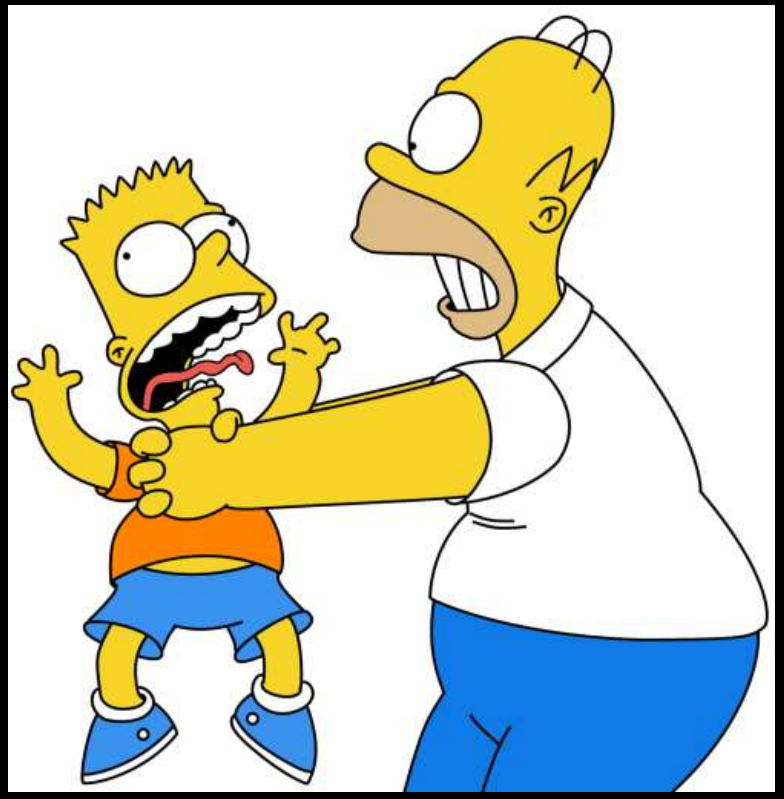
How to save as many lives as possible

- Air
- Food
- Water
- Shelter

- Bare life

Ethnosurgery

- What is the most common surgical procedure in East Africa?
- Uvulectomy!
- WHY??!!



Uvulectomy Case Study

- 2 Groups
- Academic papers
- Kalma Camp, Darfur Case Study

Uvulectomy

- Widespread popularity of uvulectomy across Africa
- lack of religious association
- Discussed in articles examining tribal practices: hepatitis B transmission, HIV infection, and potential for severe hemorrhage post uvulectomy.
- **No recent medical articles** have examined or explored potential benefits of uvulectomy.

Uvulectomy

Medical Literature (Consensus):

- *"As the uvula contains very little or no lymphoid tissue there seems no reason to suspect that its removal should have any effect on local infection. Traditional medical knowledge is created by the people and contributes to their way of life. It is not scientifically based and is open to abuse by local healers… any attempt to eliminate misinformation and improve knowledge must begin by establishing rapport with traditional populations, disseminatng information in the educational and health systems…as people acquire better understanding of disease causes and processes once could anticipate that the* ***relatively crude traditional practices might become less attractive to parents****." Medical Journal*

Uvulectomy

Anthropological Literature…

- Detail:
  - "The procedure is performed with a variety of instruments which may include some form of tongue depressor in conjunction with a cuttng instrument such as a curved knife, blunt scissors, a razor blade fixed to a stick, or in some cases a snare fashioned from a giraffe tail-hair."
- Indications:
  - The Hausa: if left, the uvula will swell and rupture causing coughing, gasping and eventual suffocation.
  - Nigeria, Ethiopia, Sudan and Mali indications may include cough, nausea, vomiting, pain, weakness, hoarseness and almost any throat problem

Uvulectomy

Anthropological Literature…

- Results:
  - The possibility of “at least temporary beneficial results without too many unacceptable side effects.”
  - Widespread and almost immediate subjective relief of symptoms!!!
  - Regarded as safe and routine by those that perform it as well as by their patients
- Pathology
  - Association of elongated uvula with race and with nasopharyngitis,
  - Case reports that prophylactic uvulectomy may prevent development of pharyngeal lymphoid tissue reducing the change of significant symptoms from this region later in life.
- ?an analogue between uvulectomy and tonsillectomy in the west as “relievers of tension”
- *"uvulectomy is a procedure that is continued certainly through sociocultural pressure but possibly also through pragmatic observation of its effectiveness."* Katz (anthropologist obviously!)

Cyclone Nargis, 2--3 May 2008, winds 200kph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Aktion
Deutschland
Hilft

A Rights--Based Approach to Health

- Participation
- Non-discrimination
- The right to health (availability, accessibility, acceptability, quality of services)
- Transparency and accountability

Why?

- Interdependence
- **Participation**
- Non-discrimination
- Accountability
- **Availability**
- **Accessibility**
- **Acceptability**
- **Quality**

'There are no hard distinctions between what is real and what is unreal, nor between what is true and what is false. A thing is not necessarily either true or false; it can be both true and false.'


Vankarem
Russia, Autonomous District of Chukotka, село Ванкарем
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WWF


WWF

Acute biochemical responses to moderate beer drinking

G V GILL, P H BAYLIS, C T G FLEAR, A W SKILLEN, P H DIGGLE

Abstract

The consequences of drinking six pints of beer (3·3 l) over three hours were investigated in six healthy men. The expected rise in plasma osmolality, fall in plasma vasopressin concentration, and increase in free water clearance occurred; these variables had returned to normal by nine hours. There was a small but significant fall in plasma concentrations of urea and creatinine accompanied by a rise in plasma potassium concentration. Serum activities of alkaline phosphatase, gamma-glutamyl transferase, creatinine kinase, and lactate dehydrogenase did not change, and there was no alcohol-induced hypoglycaemia. All subjects had a slight hangover, but none was fluid depleted.

It is concluded that, apart from inducing changes in water balance, alcohol in this form causes remarkably little metabolic disturbance.

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Introduction

Long-term effects of excess alcohol ingestion are well known, but acute metabolic effects are less certain. Early work using alcoholic spirits defined the diuretic effect of alcohol[1] and implicated an inhibitory effect on secretion of vasopressin, which was subsequently confirmed by direct measurement.[2] In the early 1970s hyponatraemia was described in beer drinkers,[3 4] but whether this was related to an acute dilutional effect,[5] or to chronic sodium depletion was uncertain.[4 6] Beer drinking is such a common social pastime that we investigated its acute effects on sodium and water metabolism and other biochemical variables.

Subjects and methods

We studied six healthy men (mean age 25 years, range 21-32) of normal body weight (mean body mass index 22·4, range 20·9-24·8) who regularly drank moderate amounts of beer (six to 10 pints a week). The study had the approval of the local ethical committee. The investigation was carried out between 1800 and 0800 the next day, indwelling intravenous cannulae having been inserted beforehand. The subjects were not allowed to drink beer or spirits or smoke for 18 hours before the study, and during the study they did not drink tea or coffee or smoke. Blood samples (20 ml) were taken hourly from 1800 to 2400 and then at two-hourly intervals until 0800. Urine was voided at the same times; its volume was noted and an aliquot kept. Before blood sampling the subjects remained seated for 10 minutes. Blood pressure was also measured at these times. The following blood variables were measured: plasma urea, creatinine, electrolyte, arginine vasopressin, and glucose and serum ethanol concentrations; osmolality; and activities of alkaline phosphatase, γ-glutamyl transferase, creatine kinase, and lactate dehydrogenase. Urine was analysed for sodium and potassium and osmolality. Plasma arginine vasopressin

Impact of fluid intake in the prevention of urinary system diseases: a brief review

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We are often told that we should be drinking more water, but the rationale for this remains unclear and no recommendations currently exist for a healthy fluid intake supported by rigorous scientific evidence. Crucially, the same lack of evidence precludes the claim that a high fluid intake has no clinical benefit. The aim of this study is to describe the mechanisms by which chronic low fluid intake may play a crucial role in the pathologies of four key diseases of the urinary system: urolithiasis, urinary tract infection, chronic kidney disease and bladder cancer. Although primary and secondary intervention studies evaluating the impact of fluid intake are lacking, published data from observational studies appears to suggest that chronic low fluid intake may be an important factor in the pathogenesis of these diseases.

Keywords
bladder cancer, chronic kidney disease, fluid intake, urinary tract infection, urolithiasis

INTRODUCTION

Although our requirement for water and its distribution throughout the body changes with age, homeostatic control of the body fluid balance at any given age remains a tightly controlled process in which the kidneys play a crucial role [1]. Our bodies compensate rapidly for small losses of water through the activation of renal water-saving mechanisms that aim to maintain plasma osmolality within the normal range of 285–295 mOsm/kg [1,2]. As plasma osmolality increases, transient receptor potential vanilloid (TRPV) channels from neurons from the organum vasculosum of the lamina terminalis are activated [3]. This stimulates the hypothalamic release of arginine vasopressin (AVP), a hormone involved in the body's retention of water and, secondarily, in the regulation of systemic blood pressure [1]. By acting to increase water absorption in the collecting ducts of the kidney nephron, AVP promotes water conservation and decreases urine volume [1]. The urinary system, and especially the kidneys, is therefore at the frontline for adverse effects of insufficient hydration and dehydration [2].

Current recommendations for total daily fluid intake (including water from all beverages and moisture content of foods) vary widely between different countries and organizations. In 2010, the European Food Safety Agency (EFSA) recommended women (with around 20% coming from foods) [4]. Both the EFSA guidelines and the 2008 D-A-CH (Germany–Austria–Switzerland) joint nutrition guidelines recommend that urine osmolality in adults should be maintained around 500 mOsm/l [4,5]. This is equivalent to achieving urine volume of 1.6 l and 2.0 l, respectively, in women and men with an average potential renal osmolytes load [4].

What these guidelines have in common is that, unlike for other nutrients, the recommendations for total daily fluid intake are not based on a clear health rationale. Indeed, few intervention studies have assessed the long-term impact of total fluid intake on the urinary system, and no data from randomized clinical trials (RCTs) are available [2].

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prevention data – are undertaken to strengthen the existing evidence and convey a compelling enough message to alter fluid intake behaviour.

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Conflicts of interest

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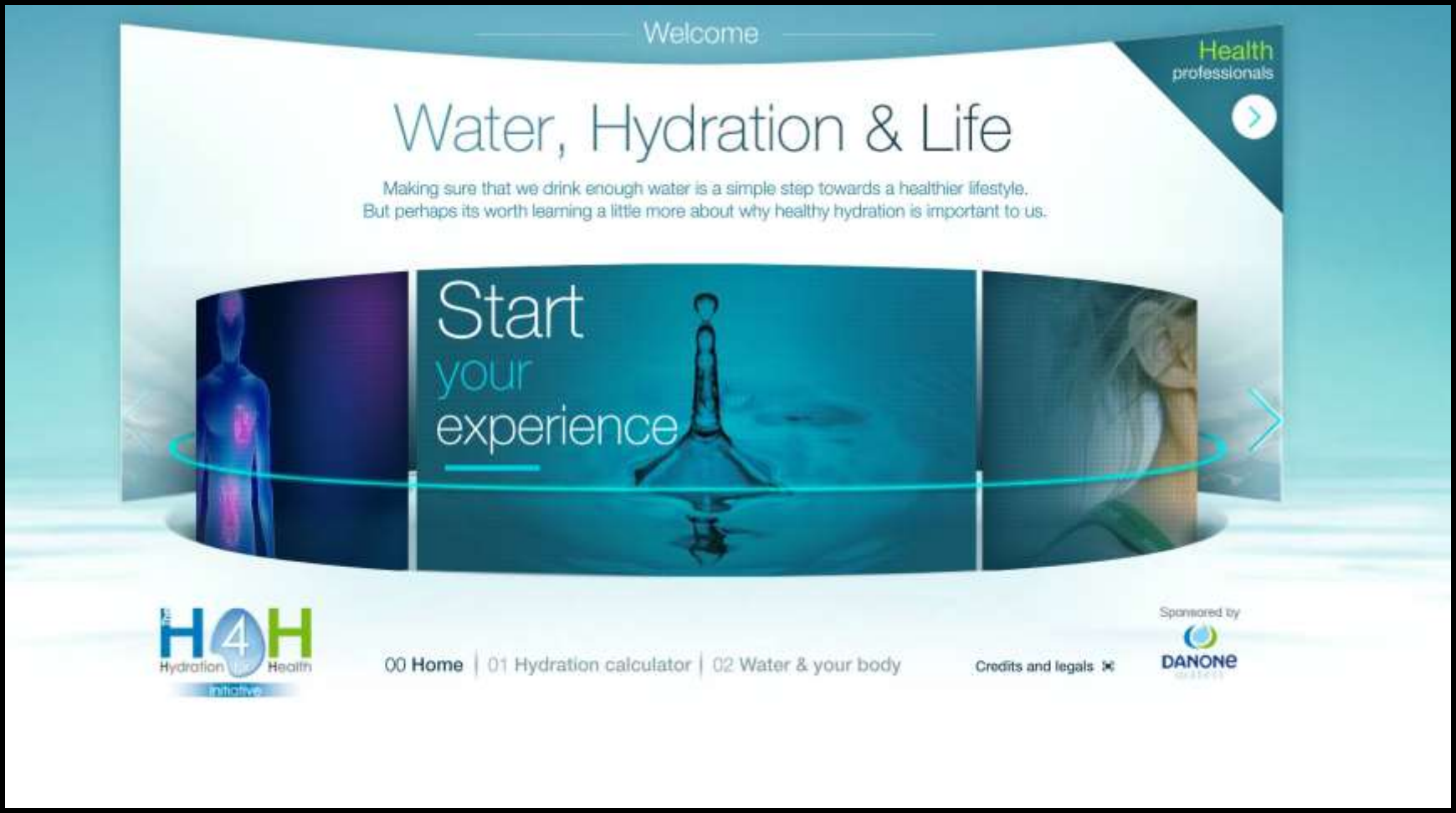
Learn More


Welcome
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- People in creative industries.: You'll help them as much as they help you. Forms of Knowledge.
- Self examination/examination of the evidence.
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Thanks to BBC Science, the MRC and everyone in the Towers' Lab at UCL.