DYING FOR A DRINK!

PRESENTED BY
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Made in the United Kingdom
Drinking water quality
Dehydration
Effects of dehydration
End user customers
Our technology and products
CRUNCHY WATER

FOR 884 MILLION PEOPLE DRINKING WATER LOOKS LIKE THIS.
NOT ALWAYS FREELY AVAILABLE
WE ARE THIRSTY TOO!

So the children drink the dirty water and get ill from diseases like cholera.
Microbial Mugshots

Giardia Lamblia (3 to 6 µm)

Cholera (1 to 5 µm)

E-Coli (0.5 µm X 2 µm)

Cryptosporidium 2 to 5 µm

Hepatitis A Virus
3.4 Million people die per year as a consequence of contaminated water

This could be a Western world issue too
WHO IS THIRSTY?

- 75% of people are generally dehydrated
- If you are thirsty you are already dehydrated
- “Your are not sick you are thirsty”
- Most people are moderately thirsty, if you are in an emergency situation you are at risk of dehydration and death
EFFECTS ON THE BRAIN

- Impact of dehydration
  - Increases blood viscosity
  - At risk of thrombo-embolism
  - Associated with renal disease
  - Potentially could reduce cerebral blood flow to viable brain tissue
THE PROBLEM IS ...

We are water!

- muscles: 75% water
- lungs: 90% water
- bones: 25% water
- brain: 76% water
WATER YUCK !!!!

Tea
Coffee (Diuretic)
Fizzy drinks ie Coke
Fruit juices

Water is no longer the worlds first choice beverage as it once was (Developed world)

Average water consumption of drinking water UK

(British Dietary Association 2012)
CAUSES OF DEHYDRATION

- Exercise - physical exertion
- Stressful situations
- Warm /Hot /air conditioned environments
- Cold environments
- Lack of fluids
EFFECTS ON PERFORMANCE

- A loss of 2% of body weight is critical

- Dehydration - degrades cognitive and psychomotor performance

- Researchers have associated Dehydration with tension, depression, anger, vigor, fatigue, confusion and boredom

- Dependent on your job or your responsibility the effects can have huge implications
COGNITIVE EFFECTS

Acute Effects of Battlefield-Like Stress on Cognitive and Endocrine Function of Officers from an Elite Army Unit NATO: United States Army research

Cognitive performance of the Rangers at the end of the exercise was greater than that of individuals who are legally drunk or clinically hypoglycemic.

After the 53hr exercise tension, rose 54%, depression 168%, and confusion 251%, and a decrease in vigor 75%, Fatigue increased 465% over the course of the study, as did anger 86%.
EFFECTS

![Bar graph showing the percentage change in POMS sub-scales: Tension, Vigor, Anger Depression, Confusion, Fatigue. Fatigue shows the highest percentage change.]
THE IMPORTANCE OF HYDRATION

The importance of hydration is crucial, especially during physical exertion and in high-temperature environments. The graph illustrates the daily water requirements based on different levels of work and environmental conditions, measured in terms of WBGT (Wet Bulb Globe Temperature)

- **Hard Work** (5600 kcal/day): Requires the highest water intake, with daily water requirements increasing sharply as WBGT temperature rises.
- **Moderate Work** (4400 kcal/day): Needs moderate water intake with a steady increase in daily requirements with higher WBGT temperatures.
- **Light-Mod Work** (3500 kcal/day): Requires less water than the previous categories, with daily requirements increasing at a moderate pace.
- **Light Work** (2800 kcal/day): The least demanding work category shows a gradual increase in daily water requirements with rising WBGT temperatures.

These requirements highlight the importance of staying hydrated, especially in challenging environments and during strenuous activities.
ADVANCES IN DRINKING WATER TECHNOLOGY

- Water carriers: methods of being able to carry water and drink regularly are many in size and shape- designed to be carried-stored used in different scenarios

- **Water filters** - do not address severe water contamination- do not deal with virus

- **Water purifiers** – Do destroy or remove viral contamination
AVAILABLE TECHNOLOGY

- Individual Water Purification Systems
- Hydration Reservoirs
- Jerry Cans & Aid Bags
- NBC Proof Hydration Reservoirs
- Improved Standards
- Better Testing Facilities
- New Materials
AVAILABLE TECHNOLOGY

- Water coolers for office Staff
- PHS- Patient hydration System
- Aquapure traveller- individuals everyday use
- Reservoirs and purifiers for Soldiers, rescue teams, fire departments, police
- Thirst Aid Station for Emergency Humanitarian Aid for safe drinking water
- Water purifier bag- military pilots- Typhoon bag
Further applications for Purelink and Pure-loc include usage in Main Battle Tanks and Armoured Fighting Vehicles.
THIRST AID STATION...
PRODUCT RANGE FROM PURE HYDRATION

UK’s Eurofighter Typhoon - H2O-to-go-Bag
PATIENT HYDRATION SYSTEM

- Pure Hydration in paid hydration trial as a medical device with a major NHS hospital
- Installing PHS for the patients in trial
- Measuring their hydration level before they start treatment
- Patients will be encouraged to hydrate using the PHS system
- Hydration status will be measured daily
- Goal to shorten stay/better outcome due to super hydration
PATIENT HYDRATION SYSTEM

Can be used for all patients who are experiencing restricted mobility particularly those who are having difficulty in using a jug and cup. This could include considering all patients who have a red topped jug with the capacity to use a hands free PHS
PATIENT HYDRATION SYSTEM

Using technology to measure hydration levels in as little as 2 seconds
CUSTOMERS

- Government departments - DFID etc
- NGO’s
- Martin Baker
- UK MOD
- U.S. DOD
- British Aerospace
- Armee De Terre (France)
- South African National Defence Force
- Charities- ShelterBox uk- etc
DYING FOR A DRINK CONCLUSION.....

No matter where you are

- downed airman
- Soldier
- Hospital patient
- Family displaced by war or flood or earthquake
- Emergency/SAR team, humanitarian1st responder
- Expedition group, camper, walker or a climber

BEING DEHYDRATED OR SICK FROM DRINKING WATER, IS AVOIDABLE
Contacts

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THE PROBLEM IS ...