



Close of Study Newsletter

Dear All

The DRIE Study is nearing the end, so we are sending a summary of the work we have

been doing, what we have found so far and what we hope to do over the next few months.

DRIE was set up to find out how to recognise dehydration (dehydration happens when we don't drink enough fluids) in older people living in care homes. The main focus was to investigate whether the simple tests which are often used to detect dehydration really work.

DRIE involved many people living in care homes and their relatives and friends, people working in and managing care homes, AgeUK Norfolk, the University of East Anglia, and National Institute of Health Research, and patient and public representatives. None of this would have happened without you, so thank you!

Some facts and figures:

- 56 care homes took part in Norfolk and Suffolk
- 232 residents consented to taking part, and we included 200 people in the study
- DRIE was guided by a Steering Group and eight Advisory Groups (4 resident groups and 4 care-staff groups). Steering and Advisory groups provided advice, support and guidance to ensure DRIE ran smoothly.

The next few pages provide details of our results, where you can find more details and what we hope to do next. Please let us know your thoughts (contact details are on the back page) and your suggestions for any future research.

Thank you once again, for all your help, support and hard work in making DRIE happen.

Diane Burn

Lee & Diane







Number 13, May 2015

What is DRIE?

Dehydration Recognition in Elders Study (DRIE) set up in 2012 to find out whether any of the simple tests often used by care staff, nurses and doctors are good at telling us whether a person is drinking enough. When we don't drink enough we become dehydrated.

What sort of tests are we talking about?

- Looking at the mouth, tongue and lips to see if they look dry.
- Assessing whether the eyes, armpits or skin looked or felt dry.
- Measuring how quickly the skin flattened when gently squeezed (skin turgor).
- Looking at urine colour, amount and specific gravity.
- Measuring blood pressure and heart rate while sitting and then while standing.

Why did DRIE do this?

We know that some of these tests work in children and sports people and it has been assumed that they would also work in older people. But these tests haven't been checked in a large study, where we know whether people are truly drinking enough or not.

DRIE was a large study (we included 200 participants) and we found out whether people were drinking enough very carefully using serum osmolality. The best way to tell whether people are drinking enough is to take a blood test, and measure serum osmolality (which assesses concentration – our blood becomes more concentrated when we drink too little).

How could DRIE tell which simple tests work?

To see if simple tests work we compared their results to the serum osmolality for each of the 200 people taking part in DRIE. We were looking for tests that gave different results in people who were <u>not</u> drinking enough, compared to people who <u>were</u> drinking plenty.

If serum osmolality tells us whether we are drinking enough, why not just use that?

Serum osmolality can only be measured using a blood sample, which can be annoying, and expensive, and can't be carried out very often. The simple tests could be carried out more easily and more often to keep an eye on whether we are drinking enough.

What did DRIE find?

There are 2 key findings so far:

- 1. None of the simple tests, when used by themselves, could tell us whether someone was drinking enough (we are now assessing a set of 3 tests).
- 2. We have found a way of estimating serum osmolality using the results of blood tests carried out for other reasons, which may be useful to hospital doctors and GP's.





How can we tell whether older people are drinking enough fluid?

Lee Hooper & Diane Bunn (I.hooper@uea.ac.uk)

for the Dehydration Recognition In our Elders (DRIE) study (see <u>http://driestudy.appspot.com/</u> Norwich Medical School, University of East Anglia, Norwich Research Park, Norwich, Norfolk, UK



This is a poster on DRIE findings that we showed at a meeting in Leeds in 2014.

While we are finishing work on DRIE we are also telling people about what we have found. We have been telling people by talking at meetings and conferences, and publishing our work in journals, as well as the DRIE Newsletter! This is what we have done so far:

How to predict serum osmolality from routine blood tests

We have found a way of estimating serum osmolality using the results of blood tests carried out for other reasons. This would let hospital doctors and GP's know whether someone is drinking enough. They may pass on this information to the older people and their carers.

This paper is published in an American Nutrition journal, you can download a free copy from:

http://ajcn.nutrition.org/content/100/3/867.long

Working with NHS England

We have been working with NHS England (which commissions primary care in England). We assessed how useful urine tests are in assessing dehydration in older people (they are not) using information from DRIE and one other study (NU-AGE). We also assessed different equations for estimating serum osmolality from routine blood test results using information from DRIE and 4 other studies. These studies will be published soon and we hope they will inform practice in the NHS as well as in care homes.

Water-loss dehydration & aging

We have published a review about dehydration, what it is, who is most at risk, and how we can prevent it. This is in a journal you need to subscribe to in order to read the articles, but if you would like a copy please ask Lee or Diane. Hooper et al, 2014. Mechanisms of Ageing & Development. Vol 136-7, p50

Beating dehydration – one specialist dementia home shows how to do it

We have been working with one of the Care Homes who participated in DRIE (Alexandra House in Great Yarmouth) to write an article about how they developed ways to keep their residents (all of whom have dementia) hydrated. This is due to be published in the Nursing Times in June 2015.

Signs of dehydration in older people

We have an article, due to be published soon in the Nursing Times about the simple tests for dehydration; what they are and what the scientific evidence is.

This is a summary, but we are also writing up the complete results from the DRIE study so that these can be fully published.

Diane recently talked about some of the common simple tests at the Royal College of Nursing Conference. You can see the abstract at: http://www.rcn.org.uk/__data/assets/pdf_file/0019/ 620317/RCN-2015-research-Book-of-Abstracts.pdf



Lizzie Twomlow, Katie Maas (Norwich Medical students) & Diane with a DRIE poster at the International Gerontology & Geriatrics conference, Dublin, April 2015



Effectiveness of external factors to reduce dehydration risk in older people living in residential care: a systematic review

Diane Bunn¹, Florence Jimoh¹, Stephanie Howard Wilsher² and Lee Hooper¹ ¹Norwich Medical School & ²Faculty of Social Sciences, University of East Anglia, Norwich, Norfolk. UK



Parliamentary Hydration Forum

Lee worked with a cross-party group to raise awareness of dehydration in older people. The report is free from the International Longevity Centre UK: http://www.ilcuk.org.uk/index.php/publications/p ublication_details/hydration_and_older_people _in_the_uk.

Assessment of a Drinks Diary: fluid intake study in the elderly (FISE)

Florence published her work on the Drinks Diary, a way for all of us to record what we drink. The article about the Drinks Diary is free from:

http://link.springer.com/article/10.1007%2Fs12603-015-0458-3

You can also download the Drinks Diary itself free from: *http://tiny.cc/w0m0mx*

Increasing Fluid & Reducing Dehydration: A Systematic Review

Diane published a summary of existing studies (a Systematic Review) to find out how best to help older people living in care homes to drink well. This was published in an American Care Journal. You can get a copy free from http://dx.doi.org/10.1016/j.jamda.2014.10.016

Thinking about Drinking



Diane asked residents, families **Drinki** and carers to take part in focus groups to talk about their thoughts and experiences about what helps older people drink well, and what makes it harder. The results will be available soon (and will be part of Diane's PhD thesis).

What Next?

DRIE hasn't finished yet! We are collecting the final information from DRIE (the 2-year follow up) and recruiting participants on a follow-up study, DRIE 2, which will find out whether a set of 3 tests may tell us if someone is dehydrated. Let us know if you would like to take part!

Further details on DRIE can be found on our website: <u>http://driestudy.appspot.com/</u>. If you would like copies of any of the papers, please let us know and we will be happy to send them out to you.

Lee Hooper is a Reader in Research Synthesis, Nutrition & Hydration at Norwich Medical School (University of East Anglia, Norwich NR4 7TJ), is the Chief Investigator for the DRIE Study. She was awarded a Career Development Fellowship to fund this study by the National Institute of Health Research (Reference: NIHR-CDF-2011-04-025). She can be contacted by mobile: 0781 391 7444; or email: <u>I.hooper@uea.ac.uk</u>.

Diane Bunn is a Research Assistant and PhD student working with Lee on the DRIE study. Her PhD studies include her work on the DRIE study, the 'Thinking about Drinking' study and the systematic review. Her contact details are: <u>d.bunn@uea.ac.uk</u>, 01603 591966.

Florence Jimoh developed the 'Drinks Diary' whilst working with DRIE and studying for a Masters in Research at the UEA.

Sue Steel is the Contracts Manager and DRIE study sponsor. She can be contacted at the Enterprise Hub, University of East Anglia, Norwich; by email: <u>sue.steel@uea.ac.uk</u>; or by telephone: 01603 591486.

The DRIE study was approved by the National Research Ethics Service Committee London-East (11/LO/1997, December 2011) and DRIE 2 by the National Research Ethics Service Committee Wales REC 7 (14/WA/0145, 25th April 2014).