

# PKD Research Studies

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Nephrology Trainee and Research  
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# Objectives

- DRINK Water Intake Trial
- Pain in PKD

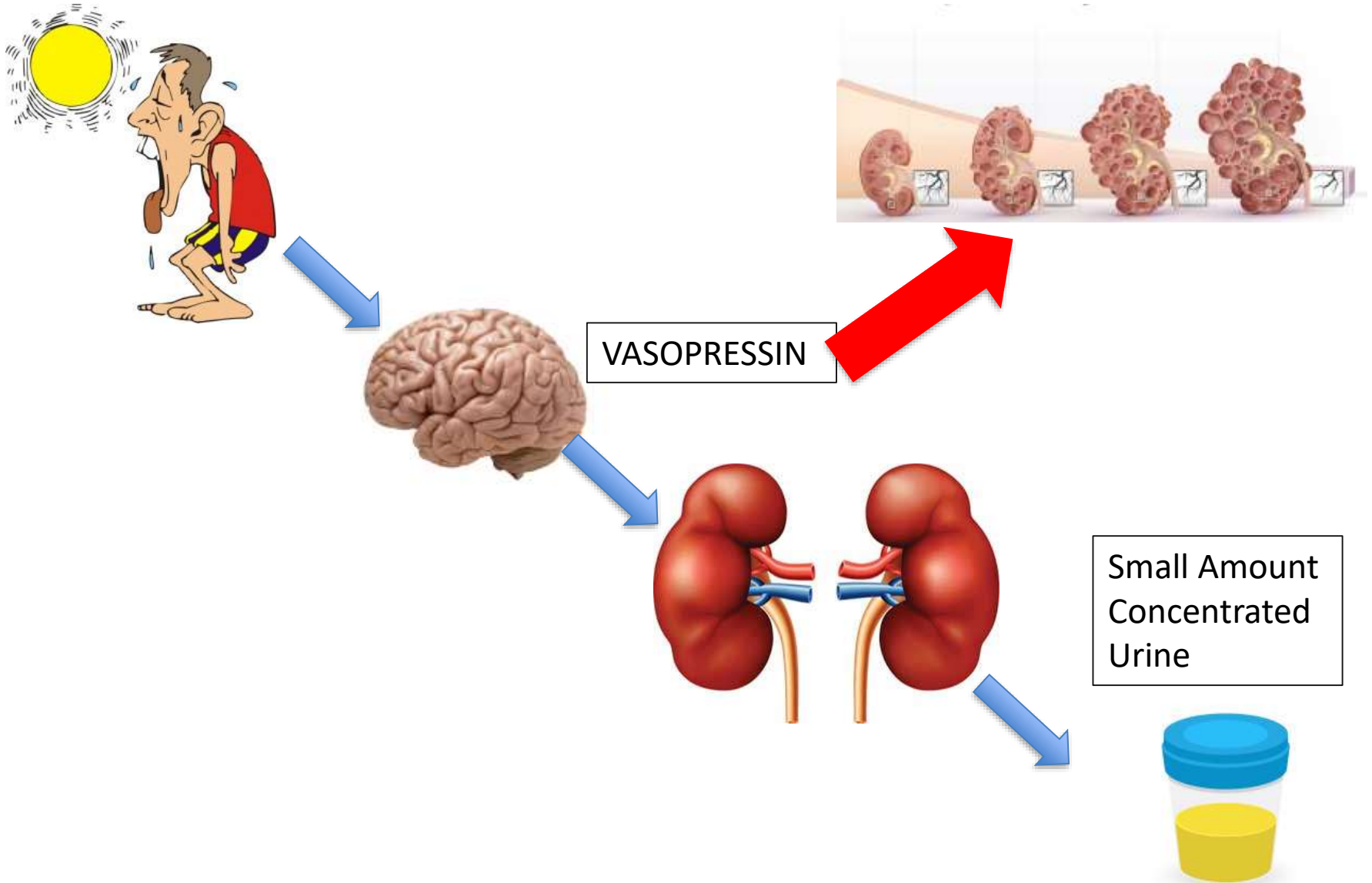
# The *DRINK* Water Intake Trial

Ragada El-Damanawi

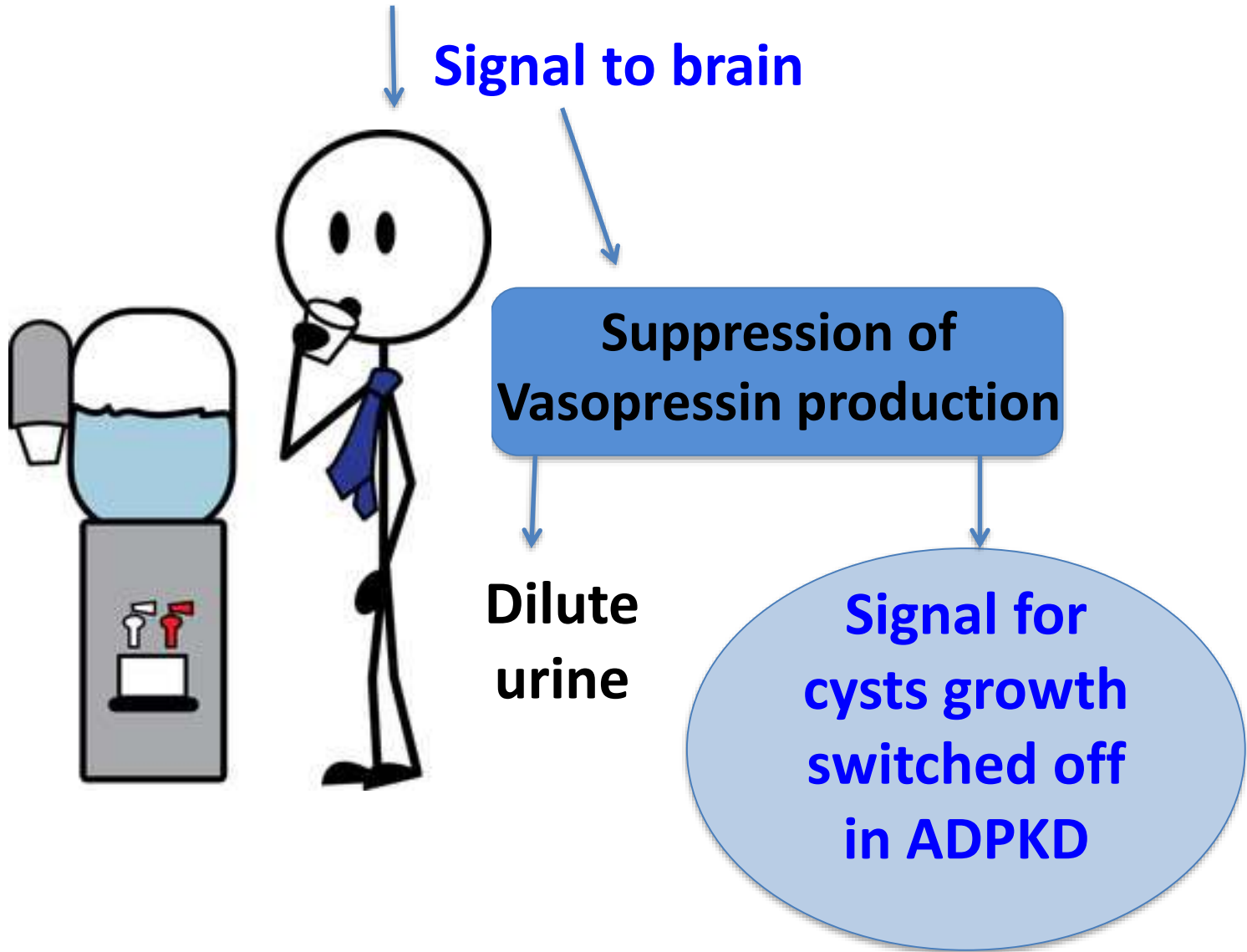
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# Vasopressin – Water Balance



# High water intake



# Animal Studies – Yes!

PCK rat

Male

Female

NWI



HWI  
(1% Agar)



- Less vasopressin made
- Less vasopressin receptors
- Fewer cysts
- Total Kidney weight smaller
- Kidney function preserved

# Human Studies - ??

- NOT RANDOMISED
- SMALL
- NOT DONE OVER LONG ENOUGH PERIOD

# Benefits of Water

- Cheap
- Widely available
- Few side effects
- Alternative – can't tolerate or not suitable for Tolvaptan
- Important question to patients – PLRH/PKD Charity



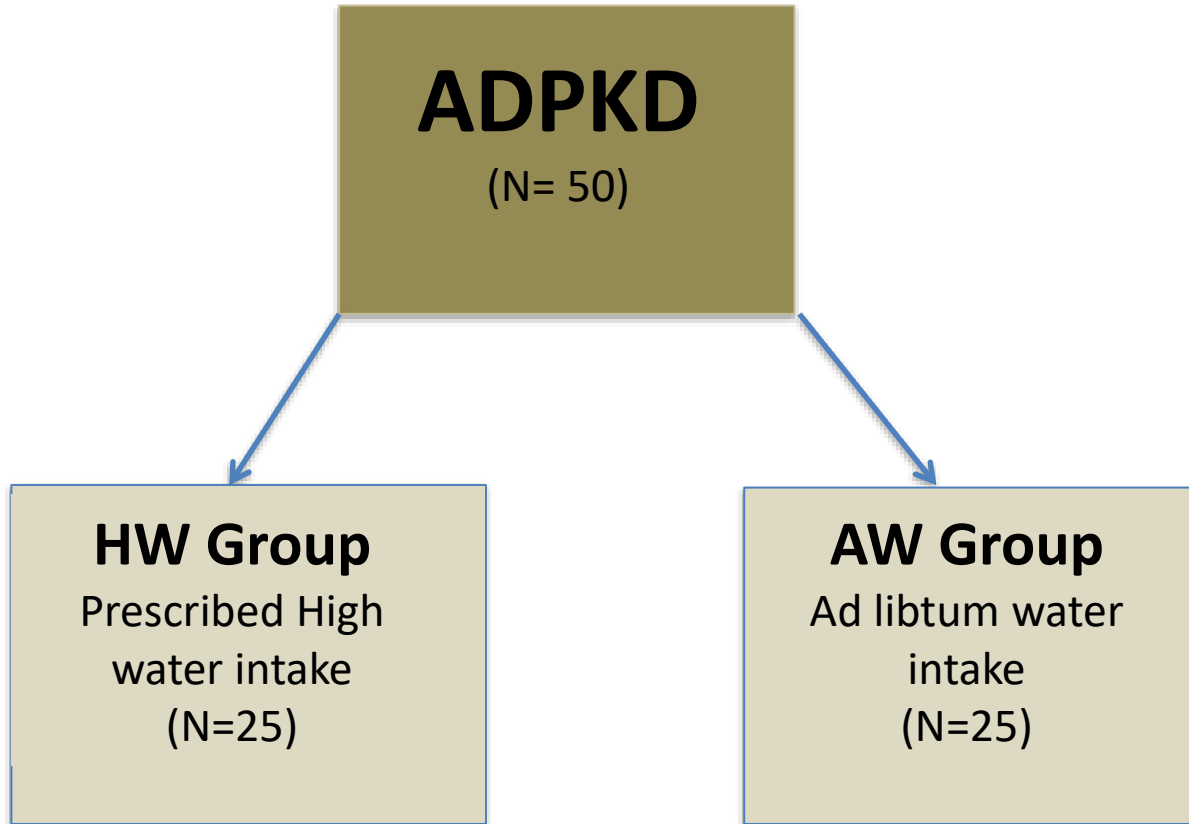
# Urine targets – Dilute enough to stop brain making vasopressin



$\leq 270$  mOsmo/Kg



# Trial Design



# Trial Design

- Randomised
- Open- label
- Feasibility

# What are the criteria for taking part?

- Inclusion Criteria
  - ADPKD (Imaging  $\pm$  Genetics)
  - Age  $\geq$  16 years
  - eGFR  $\geq$  20ml/min
  - Able to perform urine dipstick test

# What are the criteria for taking part?

- Exclusion Criteria
  - Fluid overload
  - Diuretics and other medications lower salt
  - Tolvaptan
  - eGFR <20ml/min (late CKD 4)

# What does taking part involve

- Clinic Visits
  - Physical examination
  - Blood pressure
  - Weight
- Bloods tests
  - Kidney function
  - Salt levels
  - Blood dilution levels

# What does taking part involve

- Urine Tests



24 Hour  
Collection



Spot  
Collection



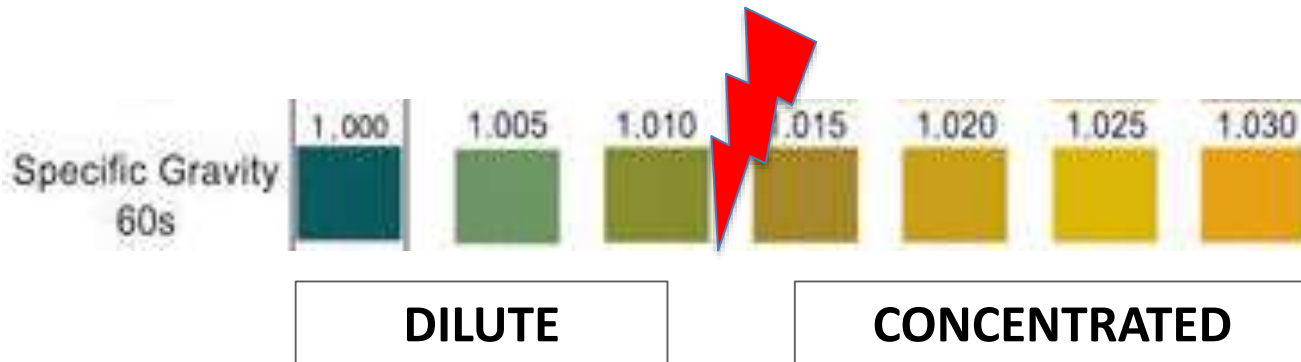
Urine Dipstick  
Test

$$\text{Fluid intake} = \frac{(\text{uOsm})(\text{uVol})}{\text{Target uOsm}} + \text{Insensible Loss}$$

# Urine Specific Gravity

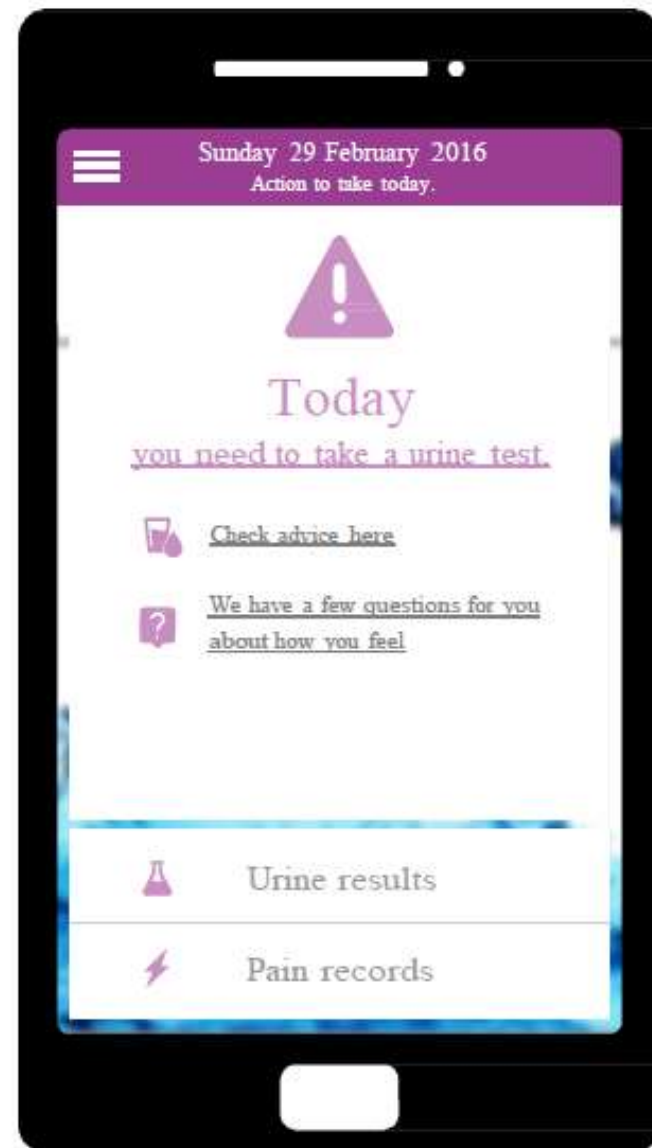
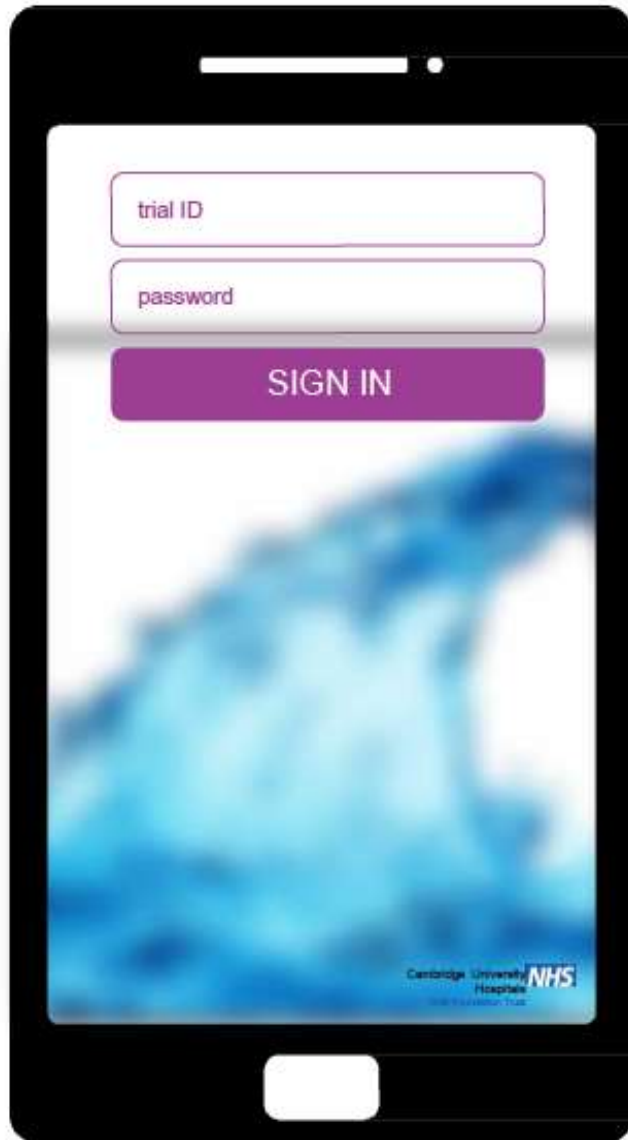


Urine Specific Gravity  
 $\leq 1.010$

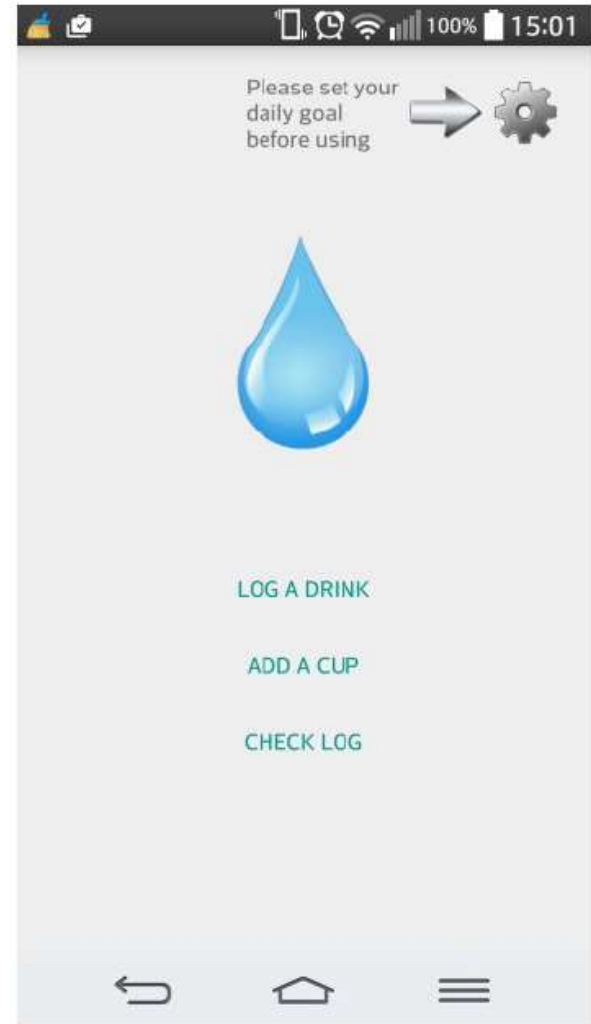




# Smartphone Apps - DRINK

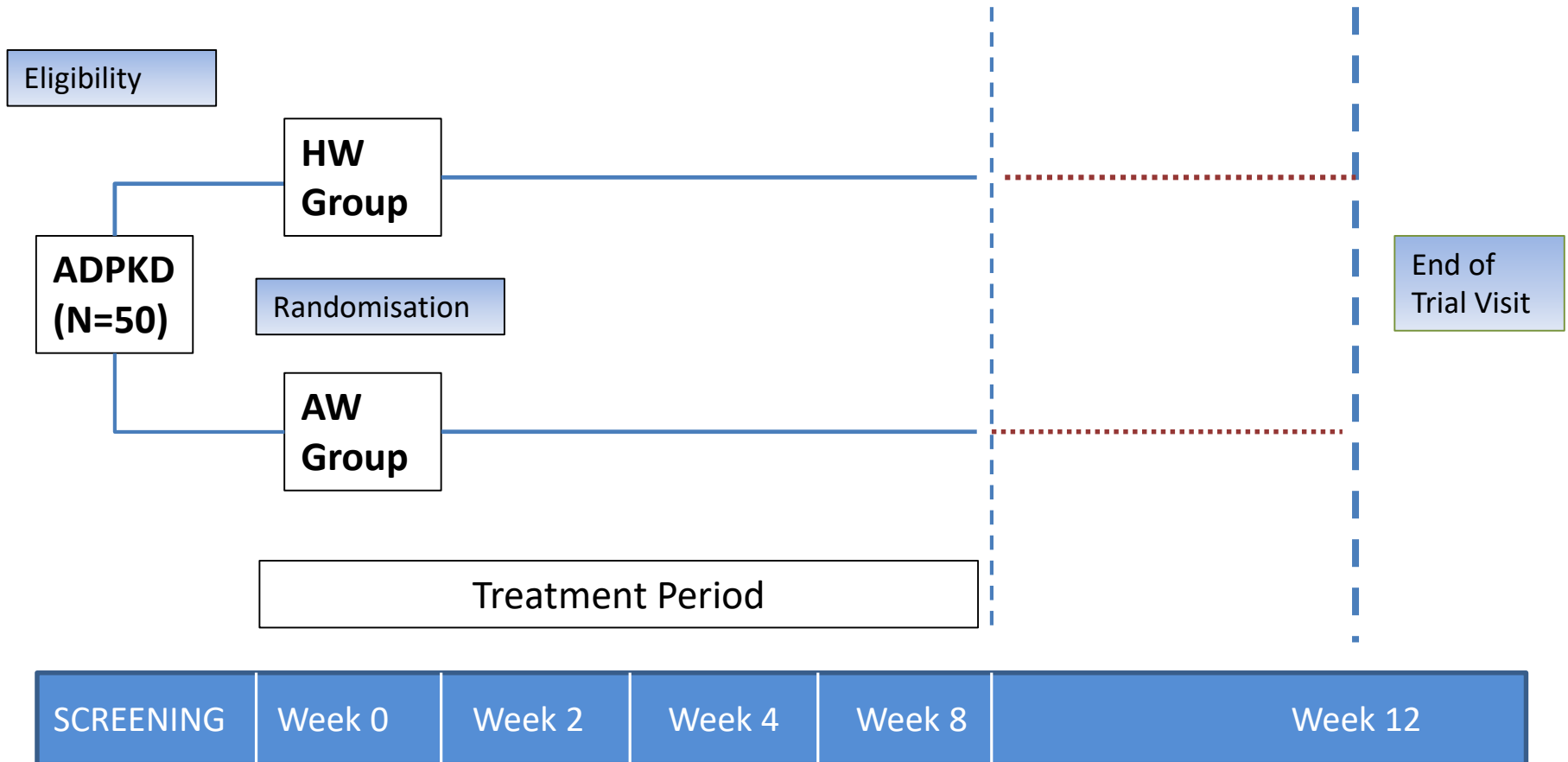


# Smartphone Apps- SPLASH





# DRINK Trial - Schedule



# What information will it give us?

- Is high water intake safe
- Can each of the groups stick to their required water intake and achieve urine targets
- Can we show that there is a significant difference between both groups
- Can participants use smartphone applications to record some of the data we need (urine dip and fluid intake)

# What will be the next step?

- Large
- Long-term (3-5 years)
- Randomised
- Trial
- High versus normal water intake
  
- Outcomes: kidney and cyst size, kidney function

# Pain in PKD – future Research Studies



# What is the problem?

- Common
- Significantly impacts QoL
- Not well understood
- Not well managed

# Data From DRINK Trial

- Novel pain questionnaire – Pain Specialist (Dr Lee).
- Information
  - Nature/Characteristics
  - Site
  - Frequency
  - Patterns: PKD and non-PKD related



# Pain Symposium

- When?
  - May 2017
- Where?
  - Cambridge
- Who is invited?
  - Pain specialists: PKD and general
  - PKD Patients
  - Specialists in clinical trials and research
  - Pain Psychologists

# Pain Symposium

- What do we hope to achieve?
  - What we know now about PKD pain so far
  - What interventions are possible and would they be acceptable
  - How to design a pain trial
  - What measures of pain should we use
  - What trial outcomes/endpoints should we choose
  - Willingness to participate in pain studies

If you would like any extra information about the research trials or would be interested in participating:

Dr Ragada El-Damanawi or Dr Thomas Hiemstra

Email: [add-tr.drinktrial@nhs.net](mailto:add-tr.drinktrial@nhs.net)

Website:

<https://cctu.medschl.cam.ac.uk/Trials/Drink/DrinkTrial.htm>

# Acknowledgments

- PKD Charity
- Addenbrookes Charitable Trust
- British Renal Society and British Kidney Patient Association
- Cambridge Clinical Trials Unit – Staff
- Patients – expertise, participation
  
- Supervisors: Dr. Thomas Hiemstra and Professor Ian Wilkinson

Questions?