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Improvement

# Good Hydration

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What do you want to get out of the training?

# Outcome from Training

- Understand the basic function of the of Urinary Tract
- Understand the importance of hydration and risks of dehydration
- Understand the effect of certain medications on the kidneys
- Urinary Tract Infections
- What the quality improvement project involves

# The Urinary System

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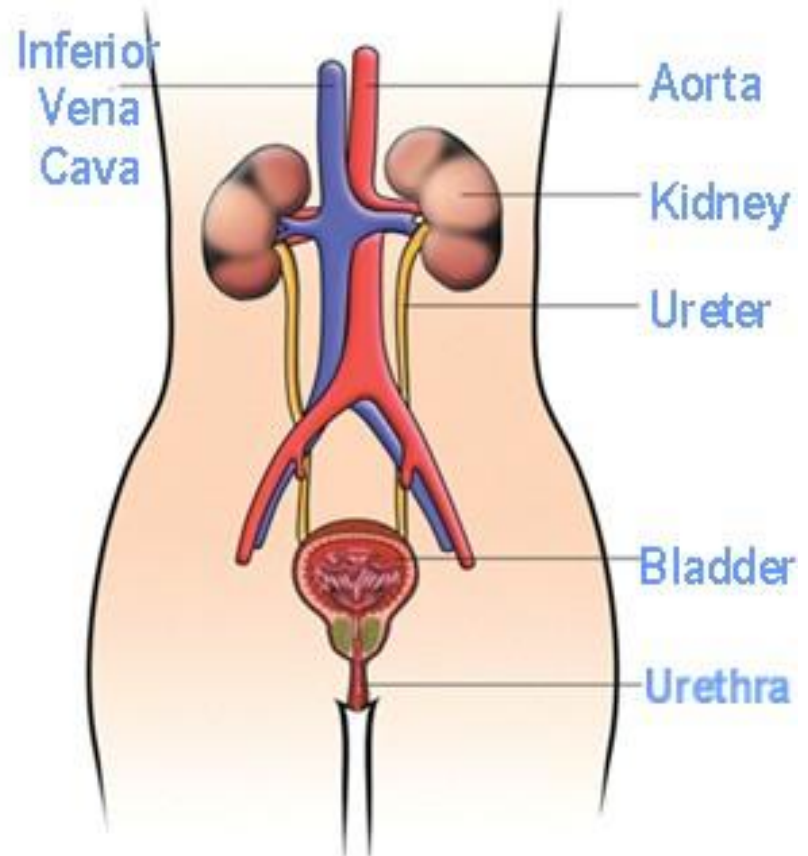
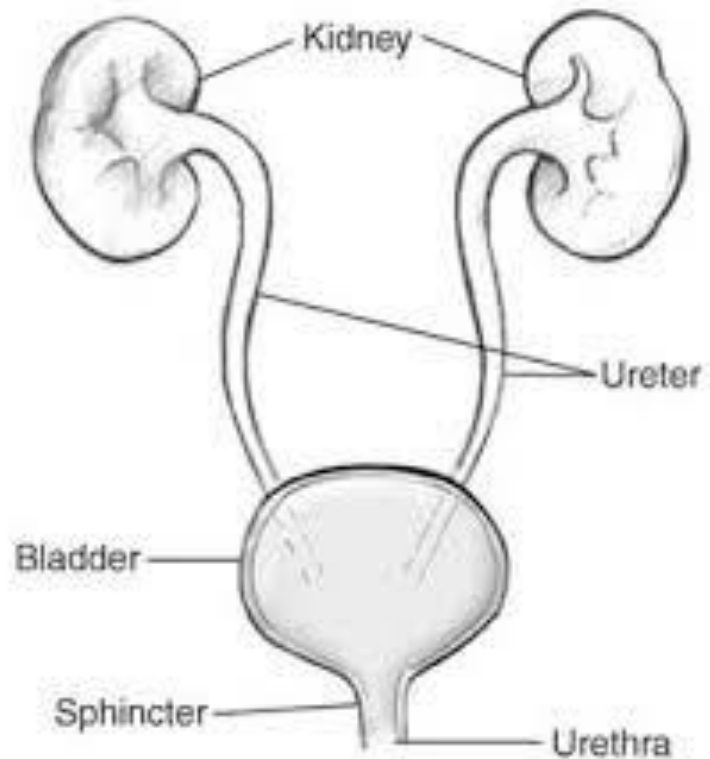
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# The Urinary System

- What parts of the body are in the urinary system?
- Kidneys
- Ureters
- Bladder
- Urethra

# The Urinary System

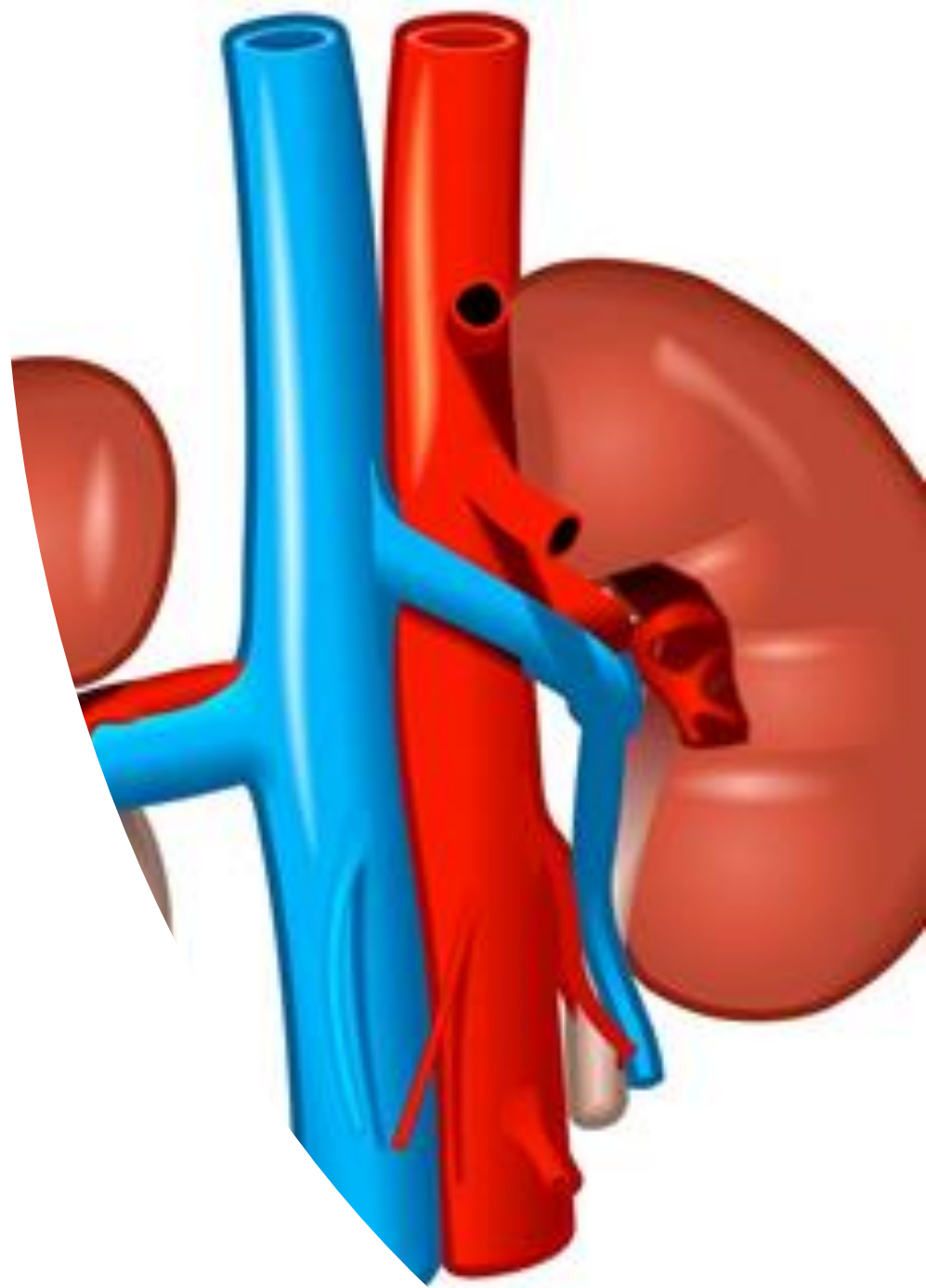
- Location in our body



# The Kidneys

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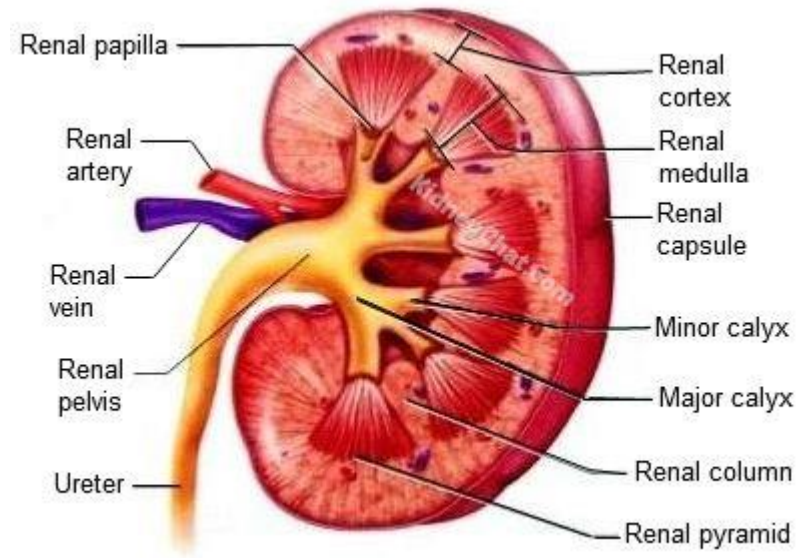
- What do kidneys look like?  
10cm long, 5cm wide in size, bean shaped
- Where are your kidneys located?  
Waist level, posterior wall of your abdominal cavity





# The Inside of a Kidney

- Multiple pyramids (triangular shaped)
- Each pyramid contains lots of tubes called nephrons
- This is a vast network of filters that take out waste products and keep the right amount of blood and salts in the body





# What is the job of the kidneys?

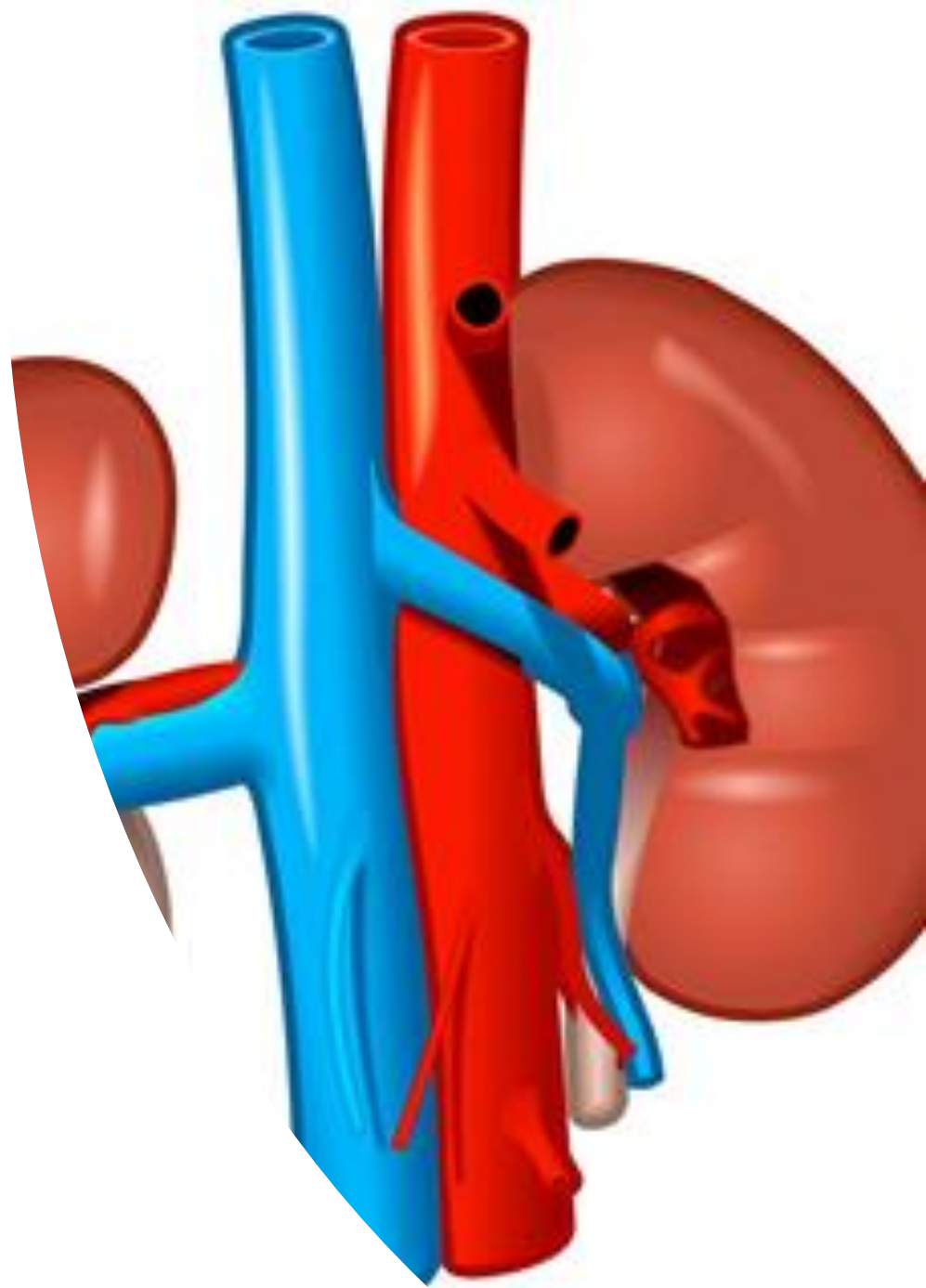
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- Controls blood make up and volume
  - Filters the blood – around 1 litre of blood passes through the kidneys each minute
  - Filter out toxins and poisons
  - Turn poisons into waste
  - Make Urine which is the waste products
  - Keeps the good and sends it back into your body



# What else do the kidneys do?

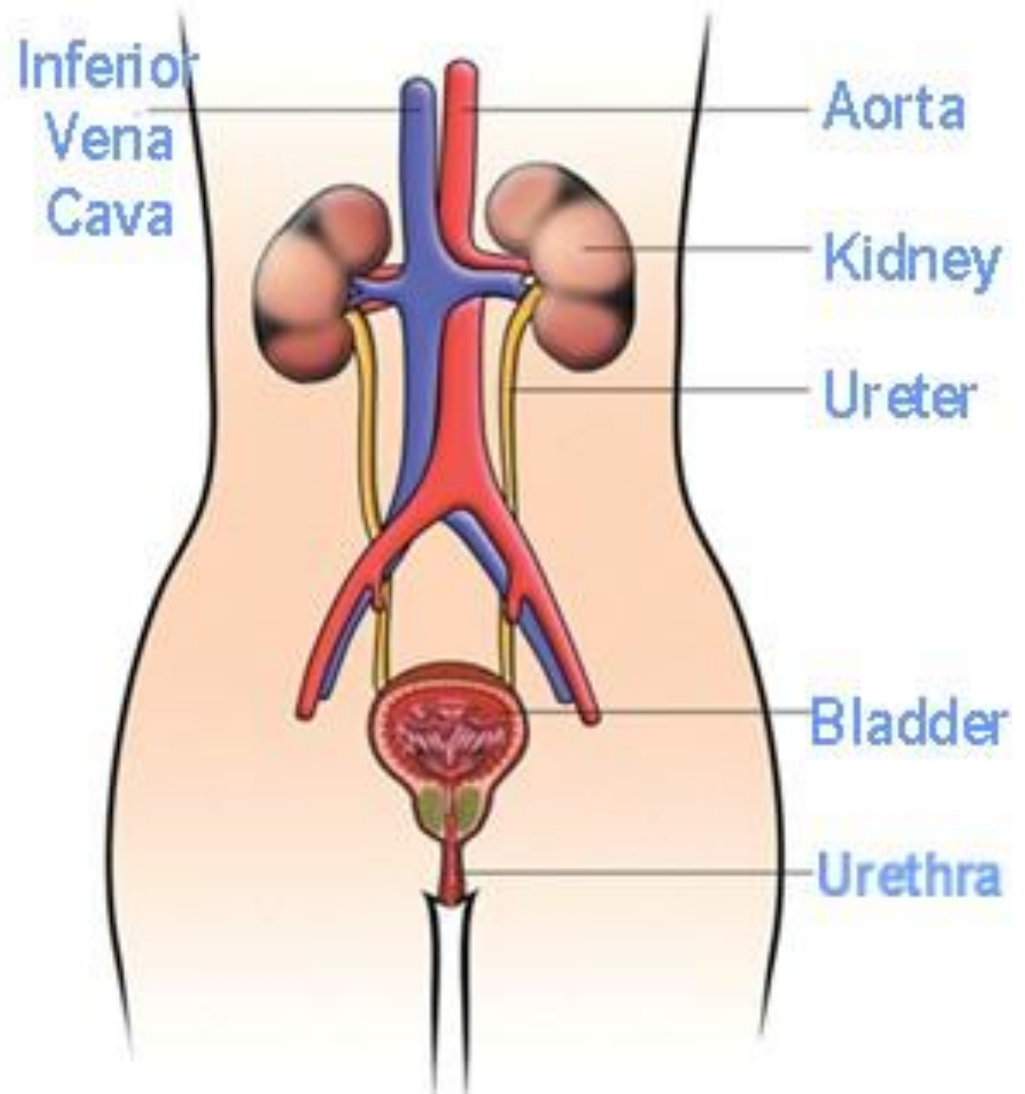
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- They monitor blood pressure – if your blood pressure is low they will produce less urine to push fluid back into the body.
- Also work on blood vessels muscles to help maintain a normal blood pressure.
- Produce hormones that controls blood pressure



# The Ureters

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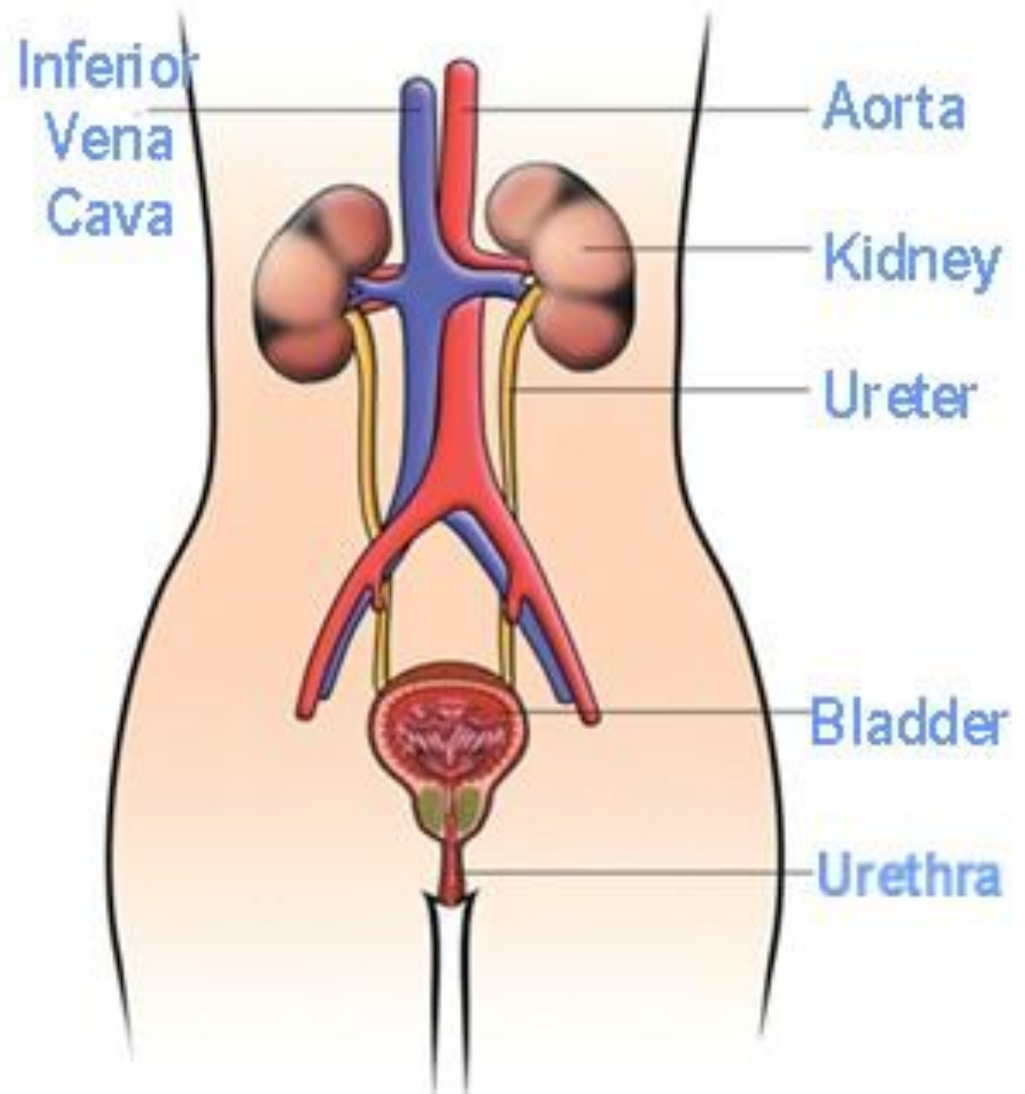


# The Ureters

- They are a pair of tubes that carry urine from the kidneys to the urinary bladder.
- The ureters are about 10 to 12 inches long.
- Gravity and contraction of smooth muscle tissue in the walls of the ureters move urine toward the urinary bladder.
- The ends of the ureters are sealed at the point of entry to the bladder by a valve. This prevents urine from flowing back towards the kidneys.

# The Urinary Bladder

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# The Urinary Bladder

This is a sac-like hollow organ used for the storage of urine.



The urinary bladder is located along the body's midline.



Urine entering the urinary bladder from the ureters slowly fills the hollow space of the bladder and stretches its elastic walls. The walls of the bladder allow it to stretch to hold anywhere from 600 to 800 milliliters of urine.

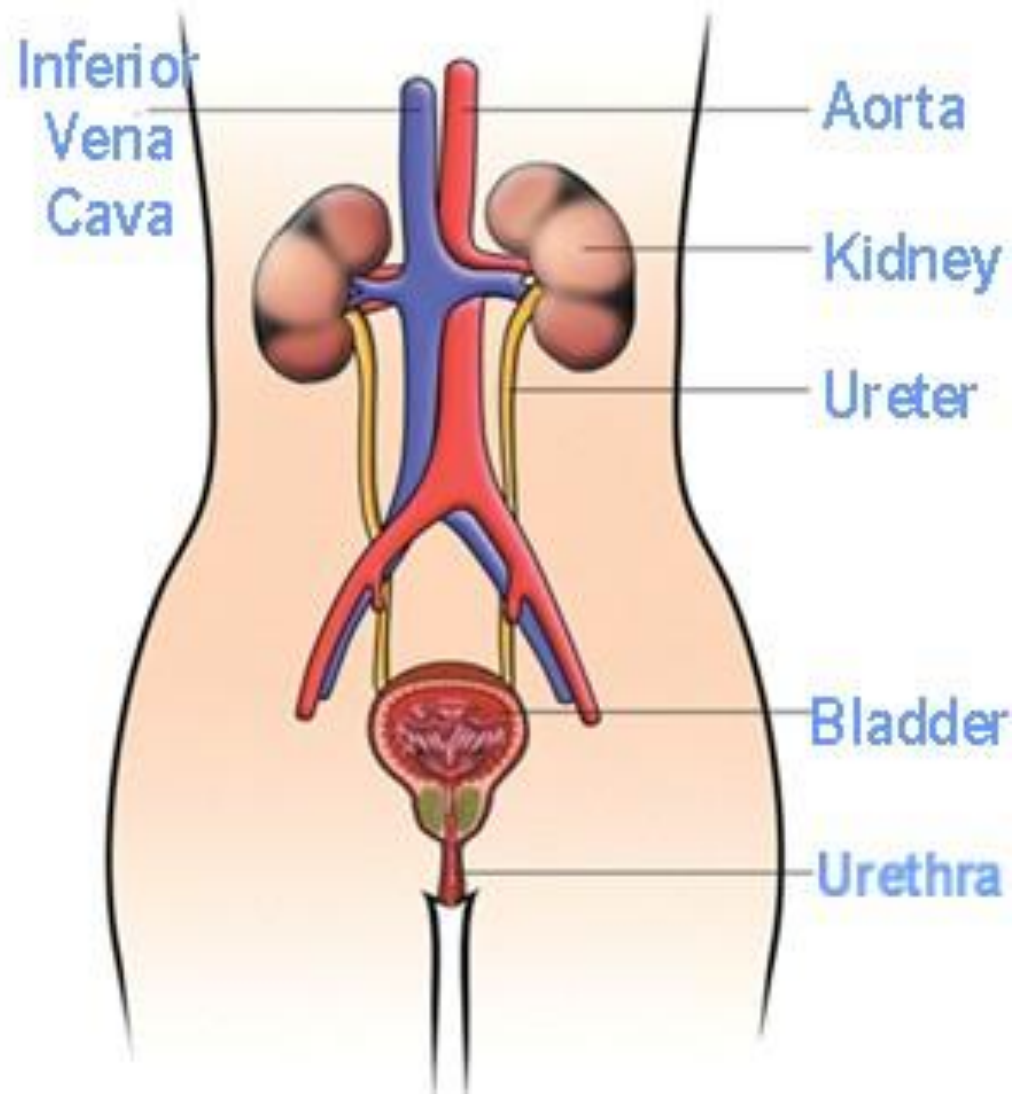


The bladder has sensory receptors in its wall that send a signal to the brain when it's getting full.



# The Urethra

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# The Urethra

This is the tube through which urine passes from the bladder to the exterior of the body.

The female urethra is around 2 inches long and the male 8 to 10 inches long

The flow of urine through the urethra is controlled by the internal and external urethral sphincter muscles.

There are 2 valves in the urethra

the internal and external

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# Dehydration and Benefits of Hydration

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# What is dehydration?

*‘the loss of water  
or body fluids from  
an individual’*  
(World Health  
Organisation  
2002)



- True or False

Dehydration can affect  
both our physical and  
mental health

True

- It can affect your mood  
and feelings as well as  
your body



CQC



## Regulation 14: Meeting nutritional and hydration needs

- People who use services have adequate nutrition and hydration to sustain life and good health and reduce the risks of malnutrition and dehydration while they receive care and treatment.
- Providers must make sure that people have enough to eat and drink to meet their nutrition and hydration needs and receive the support they need to do so.

# What are the Common Causes of Dehydration?

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# Why does the older person become dehydrated?



- ❖ The elderly have a reduced thirst so may not know when they are thirsty
- ❖ Unable to communicate (cannot say when they are thirsty)
- ❖ Pre-existing medical conditions e.g. diabetes, stroke.
- ❖ Dementia
- ❖ Cognitive impairment
- ❖ Medications e.g. diuretics
- ❖ Illness
- ❖ Fear of incontinence due to drinking
- ❖ Mobility and dexterity issues
- ❖ Excessive fluid losses

- How much water do we need to lose before we start to suffer mental and physical problems?

- 1% 10% 20%

1%

Only need to lose 1% of the water from our body to experience problems

**What are some of the signs that can indicate a resident may be dehydrated?**

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# Some of the signs that can indicate a resident may be dehydrated?



- ❖ Dry mouth
- ❖ Headache
- ❖ Dizziness
- ❖ Tiredness
- ❖ Confusion or not wanting to take part in activities
- ❖ Constipation
- ❖ UTI (urinary tract infections)
- ❖ Colour of their urine
- ❖ Pressure ulcers
- ❖ Falls
- ❖ Kidney stones
- ❖ Low blood pressure
- ❖ Medication toxicity

- How many health care workers come to work already dehydrated?
- 16%    36%    76%
- Answer
- 36% already dehydrated at the start of work – by the end of a shift around half are dehydrated
- Staff need to keep well hydrated as well as residents

# Let's Talk Hydration Levels



How hydrated is your resident?

1	Hydrated	If the colour of your resident's urine matches 1, 2 or 3, they are properly hydrated.	
2			
3			
4	Dehydrated	If the colour of your resident's urine matches 4, 5 or 6, they need to drink more. Start a care plan to ensure regular drinks taken and ensure allocated member of staff helps the resident for the rest of the day.	
5			
6			
7	Severely Dehydrated	If the colour of your resident's urine matches 7 or 8 – <b>the resident needs to be rehydrated.</b> Urgent fluids needed, commence fluid chart, hourly fluids, observe for other signs of deterioration and contact the doctor if necessary.	
8			

**Note:** some foods, vitamins and some medication can change the colour of urine. Also, be aware if your patient is on a fluid restriction for heart failure

**Can you think of ways to  
improve hydration?**

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# How can I help someone keep hydrated?

- Offer lots of choice throughout the day
- Ensure glasses are full
- Help those who need assistance
- Provide ice-pops for the people who may not like drinking
- Give water with every meal
- As the weather gets warmer, increase the availability of drinking water and encourage patients to drink more.
- Try serving water (hot or cold) with slices of orange, lime or lemon
- Many fruits and vegetables also contain water which can help with maintaining hydration
- Asking residents what their favourite drink is or serving it in a favourite cup/mug etc.





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# QUIZ

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## Medicines and Water

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# Medicines and water



## Medicines that can cause dehydration

- Diuretics
- Laxatives
- Blood pressure medicines
- Anti-histamines
- Antacids

## Medicines that can aggravate the kidneys with dehydration

- D** - Diuretics
- A** - ACE-Inhibitors/ARBs
- M** - Metformin
- N** - Non-steroidal anti-inflammatory drugs (NSAIDs)

# Medicines and water



## **Laxatives** e.g. senna, lactulose

*Reduce water absorption by accelerating gut movement*

*keep water in the gut so reduce water absorption into the body*

## **Diuretics** e.g. furosemide, bendroflumethiazide, amiloride, bumetanide

*Used frequently in heart failure and take more fluid out of the body. Can cause dehydration and electrolyte (minerals such as sodium, calcium, potassium) disturbance*

## **Anti-histamines** – blocks histamine

*Histamine is triggered when there is not enough water in the body – it redistributes water to where it is needed*

## **Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)** e.g. ibuprofen, naproxen

*Constricts the renal arteriole and reduces the ability for the kidney to increase glomerular flow (can't get rid of more poisons)*

## **Antacids**

*Magnesium based antacids can cause diarrhoea*

# Medicines and water

- **Angiotensin Converting Enzyme inhibitors (ACEi)** e.g. ramipril, lisinopril
- **Angiotensin II Receptor Blockers (ARBs)** e.g. candesartan, losartan
- **Mineralocorticoid receptor antagonists** spironolactone and eplerenone, used frequently in heart failure.
- **Blood-pressure-lowering drugs**

The above all lower systemic blood pressure and so ultimately volume of fluid in blood supply

- **Metformin** – is excreted by the kidneys and can be toxic with dehydration causing lactic acid to build up



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# Urinary Tract infections

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# UTIs – Urinary Tract Infections

## *What Is it?*

A **urinary tract infection (UTI)** is an infection in any part of the urinary system — the kidneys, ureters, bladder and urethra.

# UTIs – Urinary Tract Infections

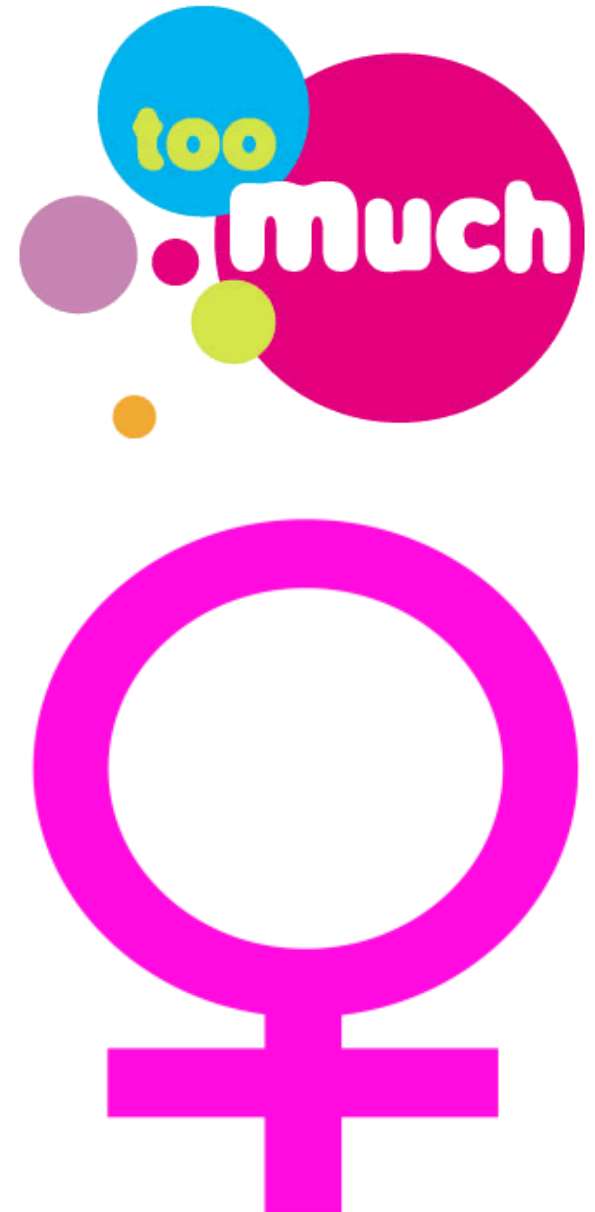
UTIs are more common in women than in men.

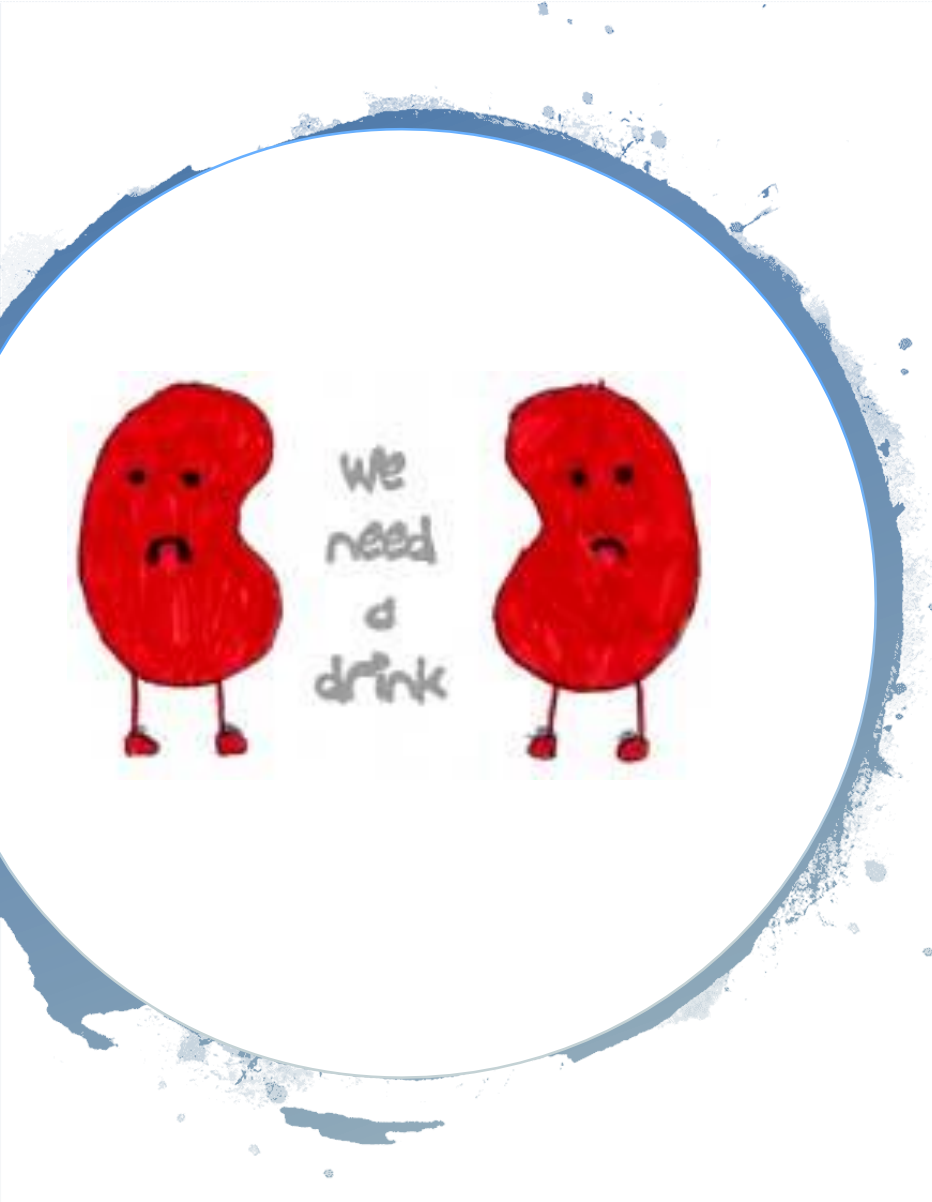
Urinary tract infection incidence increases with age for both sexes.

**NICE CKS**

UTIs in the elderly are often over-diagnosed and over-treated!

**NICE QS90**





# UTIs and the Elderly

- The diagnosis of UTIs is particularly difficult in older people, who are more likely to have **asymptomatic bacteriuria**
- Older people in care homes frequently have unnecessary antibiotic treatment for asymptomatic bacteriuria
- Asymptomatic bacteriuria may be reduced with increased volume of water or fluids

# UTIs and the elderly in care homes

Many carers look for the following:

- **Dark urine?**
- **Smelly urine?**
- **Positive dip stick?**

**This may indicate a resident is becoming de-hydrated but they are not signs and symptoms of a UTI**



# Signs and Symptoms of a UTI

Does the patient/resident have two or more of following as **new** symptoms?

- **Dysuria** - (painful or difficult urination)
- **Urgency** - (needing to go to the toilet quickly)
- **Frequency** - (needing to go to urinate more often than normal)
- **Urinary incontinence** – (unintentional loss of urine)
- **shaking chills (rigors)**
- **Flank or suprapubic pain** – (pain in the side of the body or above the groin area)
- **Haematuria** (blood in the urine)
- **New onset or worsening of pre-existing confusion /agitation**

SIGN guidance 88

<http://www.sign.ac.uk/assets/sign88.pdf>

# Why reduce UTIs?

Prevent ill health and improves quality of life



Prevent hospital admissions



Prevent need to use antibiotics



**Reduces antibiotic resistance**



**EVERYONE IS A WINNER !**



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## Case Study

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# “Good Hydration” quality improvement initiative

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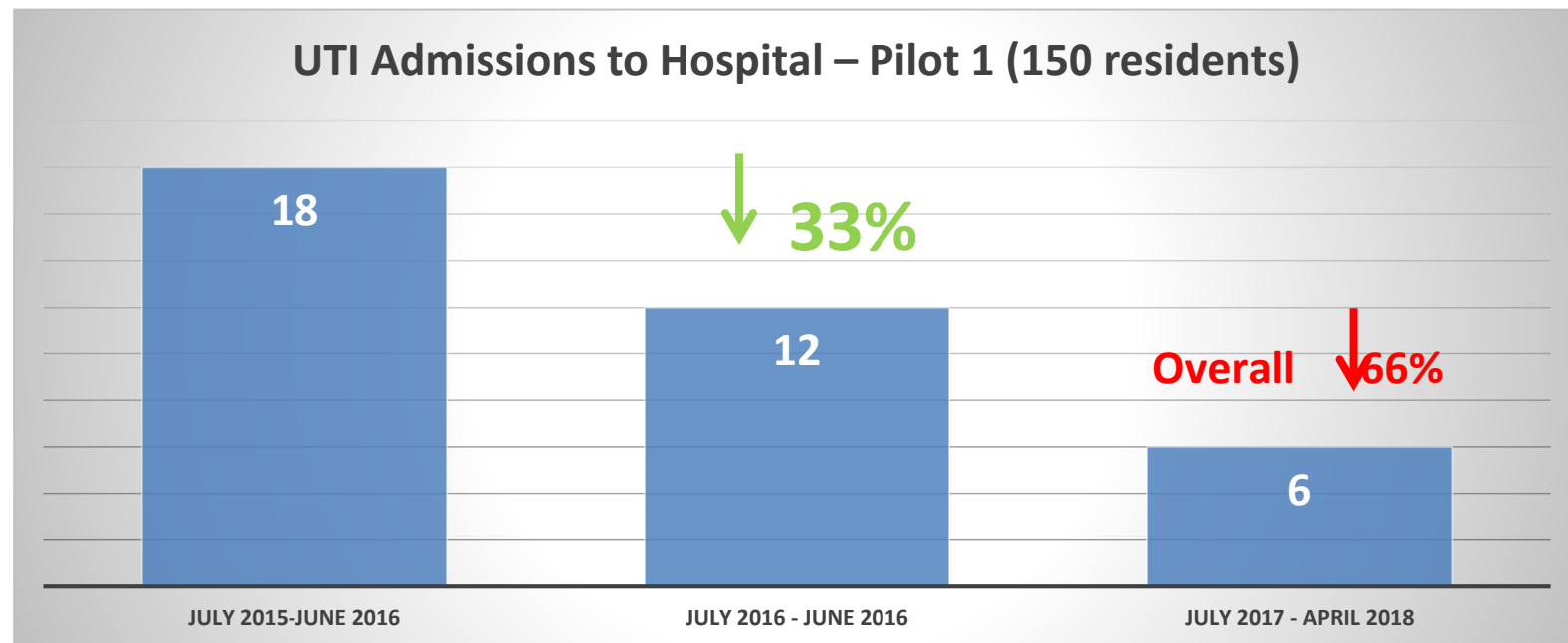
# Hydration Quality Improvement Project



A quality improvement project's aim is to improve the outcomes for residents within our care by doing something different within the care package

- Introduction of a **structured drinks round**

# Results of this project from other care homes



Care home code	Started Project	Baseline Average (2 months)	Average to date	Greatest number of days between UTIs (May 2016-June 2018)
E1	01/07/2016	1 UTI per 9 days	1 UTI per 70 days	214 days
H1	01/07/2016	0 UTIs	1 UTI per 61 days	243 days
M1	01/07/2016	1 UTI per 15 days	1 UTI per 54 days	225 days
L1	01/07/2016	1 UTI per 10 days	1 UTI per 20 days	92 days

# What is a structured drinks round?

- A structured drinks round is to be done at a **set time** of day
- On a **dedicated trolley** or in a **dedicated area**





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# What is a structured drinks round?

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- By a dedicated drinks **hostess** – someone allocated at the start of the shift **Drinks Champions**
- By offering multiple choices the resident can choose what they want each time.





## Add lots of choices

- Hot and cold
- Different flavours
- Colourful options
- Fruit infused water
- Ice
- Squash
- Fruit Juice
- Nourishing milk drinks (agree with the chef)
- Different types of cups – find out what residents like
- Try something new each week/month



# Make it fun – Theme your trolley



- World cup
- Wimbledon
- Olympics
- Halloween
- Thanksgiving
- Christmas
- Bunting

Some residents can help to  
decorate trolley

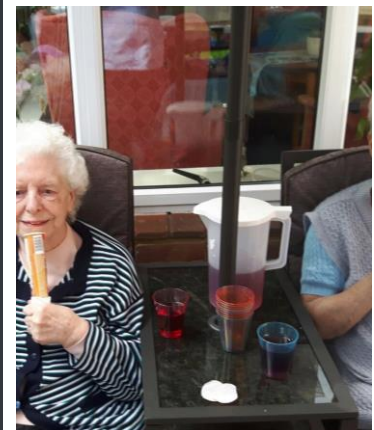
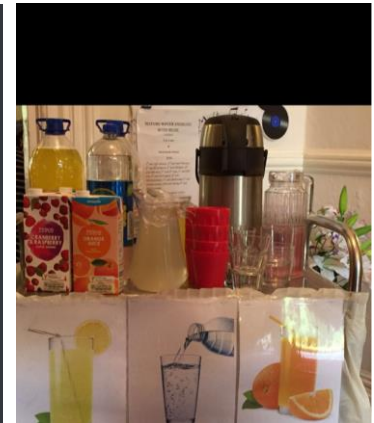




# Care homes drinks rounds



- Colourful
- Themed
- Interacting
- Lots of choice
- Bright
- Hot and cold



- 
- A word cloud of verbs related to drinking, including sip, slurp, drink, quaff, guzzle, swallow, imbibe, consume, gulp, drain, indulge, and sup. The words are arranged in a circular pattern, with 'quaff' and 'guzzle' on the right, 'sip' at the top, 'swallow' and 'drink' in the upper middle, 'imbibe' and 'consume' in the lower middle, and 'sup' at the bottom. The words are in various colors and orientations, creating a dynamic visual effect.

Can you guess....

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How much fluid is in....



- A mug
- **250 mls**

# How much fluid is in....



- Medium glass
- **200mls**

# How much fluid is in....



- A beaker
- **150-200**  
**mls**

# How much fluid is in....



- A Cup
- **150 mls**



# Accurate Fluid Intake



We all give out the drinks in the same cups but do we all know how many “mls” are in each cup?



Is each cup full?



Is each cup drunk in full?



Did someone else drink it?

# Recording when a structured drinks round has been completed?

- A folder will be on each drinks trolley and a chart with 7 agreed times of the structured drinks round.
- The drinks hostess will be responsible for circling Y or N that it took place

**Structured Drinks Rounds Chart**

Please circle Y or N if the drinks round took place or not at the allocated time

Name of care home \_\_\_\_\_

Month \_\_\_\_\_ Year \_\_\_\_\_

Date	Time (amend time to suit care home)							Total
	0800	1000	1200	1300	1500	1700	1900	
1	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
2	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
3	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
4	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
5	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
6	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
7	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
8	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
9	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
10	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
11	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
12	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
13	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
14	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
15	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
16	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
17	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
18	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
19	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
20	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
21	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
22	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
23	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
24	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
25	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
26	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
27	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
28	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
29	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
30	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	
31	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	

## Don't Worry!

- Work can be busy and residents situations can change.
- If you cannot do the structured drinks round at the certain time just circle NO.
- It is not a competition.





Have we answered your questions?

Do you have any further Questions, Comments, Concerns?

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