YOUR KIDNEYS AND YOU

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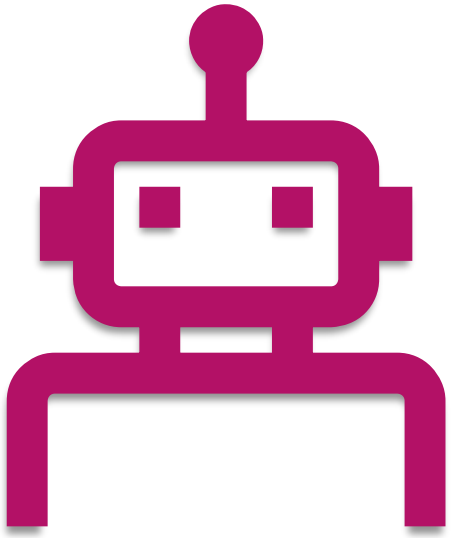
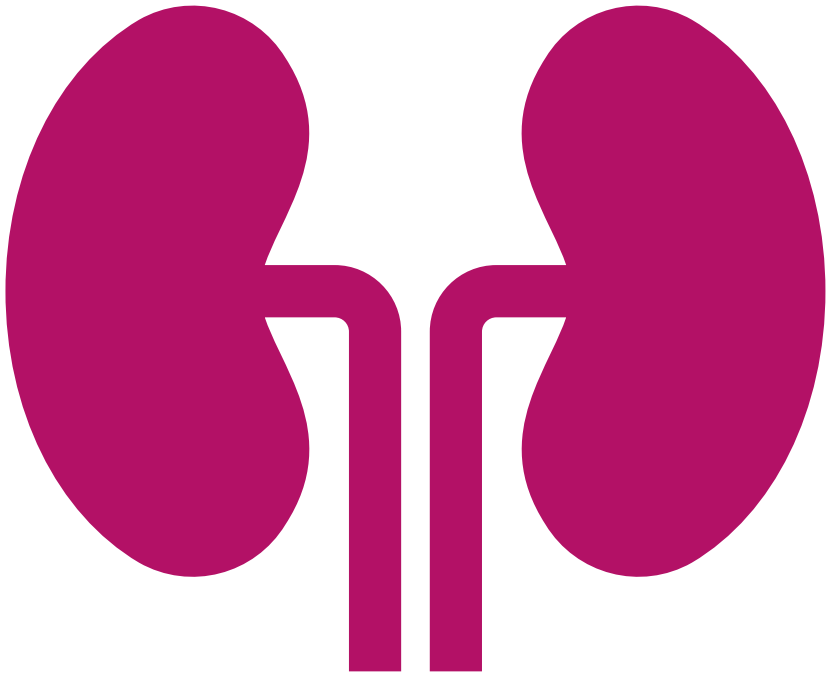
Current projects

- Improving in-patient care for patients with high output – extending ASCN recommendations to include renal management.
- Improving ostomists' knowledge of their own risk factors for acute kidney injury (AKI) and providing guidance on when and where to get help, using RAG chart.
- Improving colorectal nurses' knowledge and awareness of AKI and providing guidance on how to triage a patient with high output to prevent or provide early intervention and reduce AKI morbidity and mortality rates.



Aims of session



- To provide you with information of what the kidneys do.
- To enhance your understanding of your risks of developing kidney failure
- To understand the causes and consequences of having a high output stoma
- To provide you with information on when and where to get help
- To provide you with information on how to keep your kidneys safe

The Kidneys

Most people have two kidneys

They sit in your lower back and under the bottom ribs

They filter your blood every minute of the day

They are the hardest working organs in your body

Kidneys make urine – about 2L per day

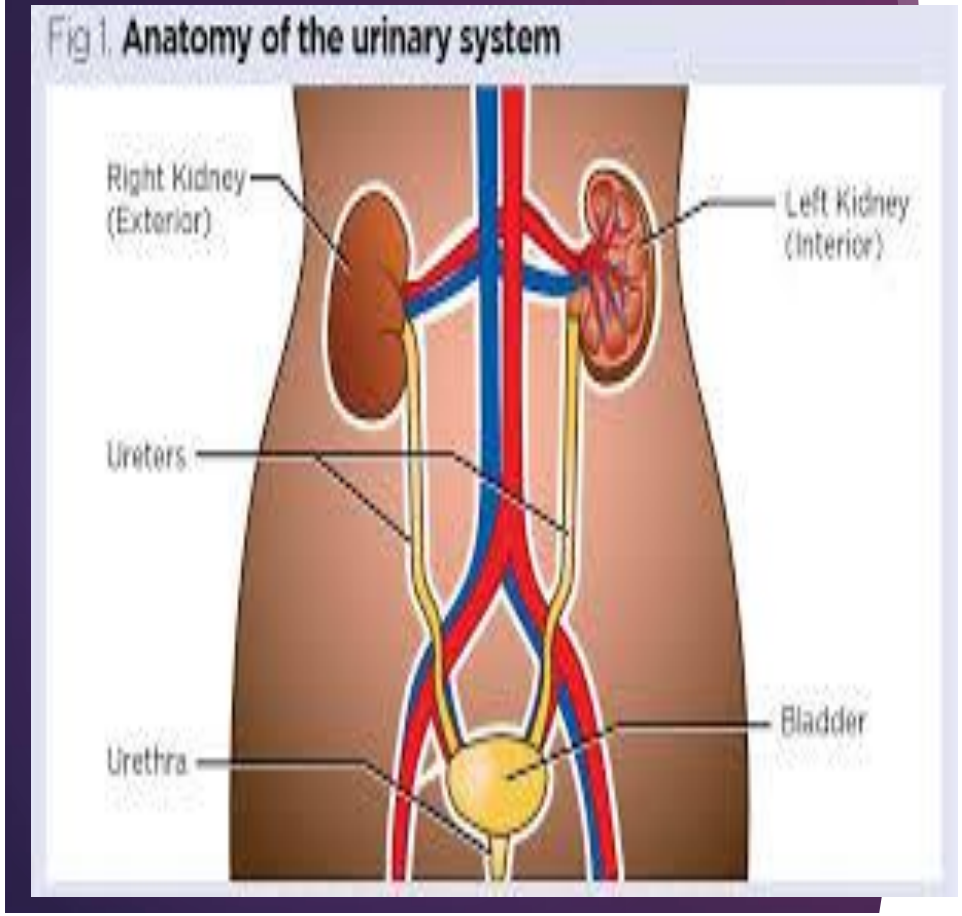
They get rid of waste products from the body and control the amount of salts and water in your blood

They help to regulate your blood pressure

They help to keep your bones healthy

They help to make red blood cells that carry oxygen around the body

To function, kidneys need….



Adequate blood pressure/blood volume (pre-renal)

Dehydration, sepsis, acute heart/liver failure, bleeding, shock

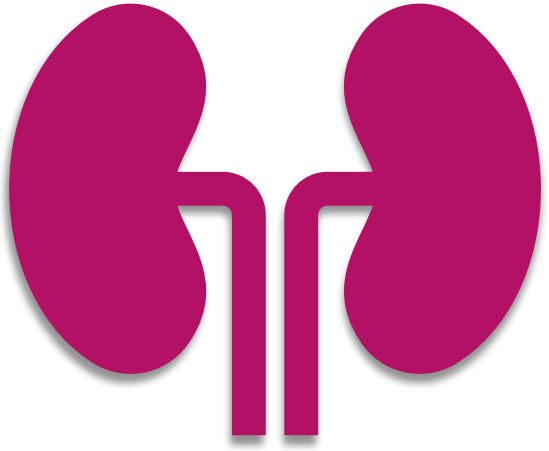
To be healthy, rather than damaged or inflamed by disease process (intrinsic)

Eg, vasculitis, glomerular nephritis

To drain urine freely through a functioning urinary tract (post-renal)

eg, kidney stones, enlarged prostate, pelvic cancers, constipation

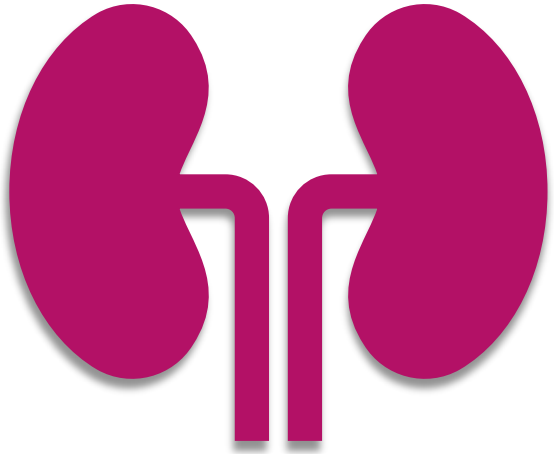
Acute Kidney Injury (AKI)



- **AKI** is the sudden deterioration in kidney function that present over a period of hours or days.
- Renal function will continue to deteriorate unless AKI is recognised and its cause identified. Easily treatable but can be life-threatening.
- In the UK, up to 100,000 deaths each year are associated with AKI. Up to 30% could be prevented with the right care and treatment.
- Financial burden to the NHS estimated to cost £1 billion pa (1% of the NHS budget).
- 30% of patients with ileostomies experience high output and 20% of people are readmitted due to AKI
- Three stages of AKI 1-3 (mild-severe)

Chronic Kidney Disease (CKD)

- **CKD** is a long-term condition characterised by a gradual deterioration in kidney function occurring over months or years.
- Stages 1-5 (mild to severe)
- Main causes:
  - Poorly controlled diabetes
  - High blood pressure
  - Heart Disease
  - Inflammation within the kidneys (glomerular nephritis)
  - Family history of kidney disease (inherited causes)
  - Blockages to the flow of urine (enlarged prostates/stones/pelvic cancers)
  - Certain medications
  - **Repeated AKIs**



Causes of high output stomas >1.2L/24hrs

Newly formed stoma
Bowel affected by disease or treatment (eg, gastroenteritis, IBD, chemotherapy)
Short gut syndrome
Partial bowel obstruction
Non-compliancy with diet/medications such as loperamide.

Consequences of high output stomas/fistulas

- Dehydration –low BP/circulating volume – poor blood flow to the kidneys- AKI
- Medications may not be absorbed adequately due to fast transit time
- Under nourishment – weight loss.
- Electrolyte (salt) imbalance – heart rhythm problems

When and where to seek help if you have high output

Assessing your risk of developing AKI – seek help early the more risk factors you have

Adhere to the Medicine Sick Day Rules

Assess your symptoms

Risk Factors for AKI

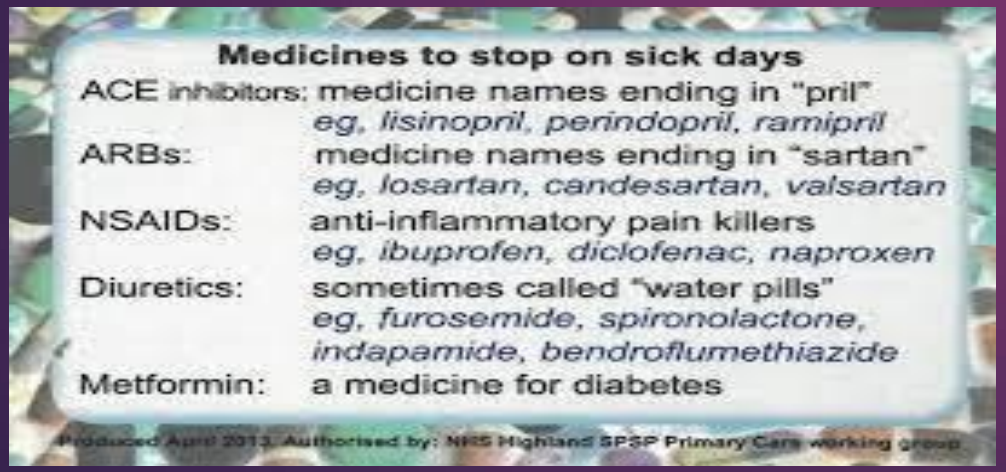
ILEOSTOMIES/ ENTERIC FISTULAS	SLOW GUT TRANSIT – CONSTIPATION	Diabetes	Heart failure	Chronic kidney disease
Liver failure	Age	Nephrotoxic medications	Enlarged prostate/pelvic cancers/stones	History of AKI

Medicine Sick Day Rules

- Dehydration can be a significant risk to people taking certain medicines.
- The Medicine Sick Day Rules have been produced to aid patients in understanding which medicines they should stop taking **temporarily** during any illness which can result in dehydration (e.g. vomiting, diarrhoea and fever).
- It is vital that patients **restart** the medication when they are well (normally 24-48 hours once illness settles and they are eating and drinking normally again)


NHS
Highland
Medicine Sick Day Rules
When you are unwell with any of the following:
Then STOP taking the medi
Restart when you are wel
of eating and drink
If you are in any doub
pharmacist, GP


Salford Royal NHS
NHS Foundation Trust
NHS
Salford Clinical Commissioning Group
Medicine sick day rules
When you are unwell with any of the following:
• Vomiting or diarrhoea (unless only minor)
• Fevers, sweats and shaking
Then STOP taking the medicines listed overleaf
Restart when you are well (after 24-48 hours of eating and drinking normally)
If you are in any doubt, contact your pharmacist, GP or nurse


Medicines to stop on sick days
ACE inhibitors: medicine names ending in "pril"
eg, lisinopril, perindopril, ramipril
ARBs: medicine names ending in "sartan"
eg, losartan, candesartan, valsartan
NSAIDs: anti-inflammatory pain killers
eg, ibuprofen, diclofenac, naproxen
Diuretics: sometimes called "water pills"
eg, furosemide, spironolactone,
indapamide, bendroflumethiazide
Metformin: a medicine for diabetes
Produced April 2013. Authorised by: NHS Highland SPSP Primary Care working group


ARGYLE
Medicine Sick Day Rules
When a patient has any of the following:
• Vomiting or diarrhoea (unless only minor)
• Fevers, sweats and shaking
Then STOP taking the medicines listed below
Restart when well
(after 24-48 hours of eating and drinking normally)
If in any doubt, contact your pharmacist or GP
Medicines to stop on sick days
• ACE inhibitors: medicine names ending in "pril"
eg, lisinopril, perindopril, ramipril
• ARBs: medicine names ending in "sartan"
eg, losartan, candesartan, valsartan
• NSAIDs: anti-inflammatory pain killers
eg, ibuprofen, diclofenac, naproxen
• Diuretics: sometimes called "water pills"
eg, furosemide, spironolactone,
indapamide, bendroflumethiazide
• Metformin & Gliclazide: medicine for diabetes
• SGLT-2: medicines for diabetes ending in "flozin"
• eg, Dapagliflozin, Canagliflozin, Empagliflozin
Produced by Dr Graham Stretch with thanks to NHS Highland

Medicine Sick Day Rules

- **Angiotensin Converting Enzymes Inhibitors** *(ending in 'pril')* – antihypertensive
- **Angiotensin Receptor Blockers** *(ending in 'sartan')* – antihypertensive
- **NSAIDS** – analgesic, *eg ibuprofen, diclofenac, naproxen*
- **Metformin** – diabetic drug
- **SGL2T Inhibitors** *(ending in 'flozin')* used in diabetes, heart failure and CKD
- **Diuretics** ('water tablets') *eg furosemide, Bendroflumethiazide, spironalactone*

GREEN (mild)

Symptoms

- You feel well
- Able to eat and drink normally
- Not excessively thirsty
- Passing normal volumes of urine

Actions

- Low fibre diet
- Titrate loperamide
- Oral rehydration such as Dioralyte/St Mark's solution
- Suspend drugs as per MSDR
- Stool sample if cause unclear
- Contact stoma nurse/health care provider if worried/deteriorate

AMBER (moderate)

Symptoms

- Passing reduced amounts of concentrated urine
- Feeling thirsty
- Dry mouth, skin, sunken eyes
- Excessive stoma output (emptying pouch >10 times/day)

Added actions

- Bloods to check renal function and electrolytes within 24 hours (stoma nurse, GP, walk-in centre)
- Bloods review
- Attend emergency portal if you deteriorate

RED (severe)

Symptoms

- Dizziness on standing
- Blood pressure drop on standing
- Muscle cramps/spasms/weakness
- Vomiting/nausea
- Drowsiness or confusion
- New fluids around ankles/calves
- New breathlessness
- Palpitations

Added actions

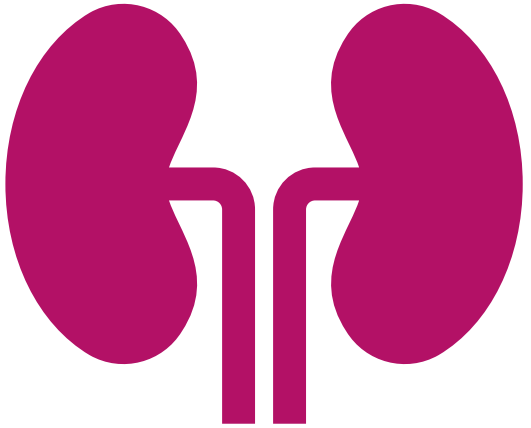
- Attend emergency unit (A&E, Surgical/medical emergency unit
- Likely to be admitted so bring all stoma equipment, medications, clothes, toiletries etc.

Management aims

- Establish a cause for high output and treat
- Re-establish effective bowel function
- Prevent poor skin integrity due to appliance leakage
- Restore circulating volume/rehydrate
- Maintain adequate BP for kidney blood flow
- Review medications
- Balance electrolytes
- Appropriate and timely intervention

Summary

- AKI is rapid onset and usually reversible if treated promptly.
- Having a bowel stoma/pouch is a risk factor for developing AKI.
- Identification of AKI and prompt treatment leads to better outcomes for patients with better prognosis and lower mortality.
- If you have a HOS, consider your other risk factors. Seek help in a timely manner. Attend the emergency department if clinically unwell.
- Obey the Medicine Sick Day Rules.



For more information

Think Kidneys:

- www.thinkkidneys.nhs.uk/aki/

Kidney Care UK:

- www.kidneycareuk.org