

## PRESCRIBING MEDICINES IN RENAL IMPAIRMENT

Estimated glomerular filtration rate (eGFR) and creatinine clearance (CrCl) are two estimates of renal function available to prescribers.

**ENSURE YOU USE THE APPROPRIATE ESTIMATE OF RENAL FUNCTION TO AVOID THE RISK OF ADVERSE DRUG REACTIONS.**

### ESTIMATED GLOMERULAR FILTRATION RATE (eGFR)

For most drugs and for most adult patients of average build and height, eGFR should be used to determine dosage adjustments.

eGFR, normalised to a body surface area of  $1.73\text{m}^2$ , can overestimate renal function compared with creatinine clearance in some patient groups or clinical situations.

This overestimation can result in patients receiving higher than recommended doses of their medicine in relation to their actual renal function.

### COCKCROFT-GAULT FORMULA

Creatinine clearance (CrCl) should be calculated using the Cockcroft-Gault formula to determine dosage adjustments for:

- Direct-acting oral anticoagulants (DOACs).
- Patient taking nephrotoxic drugs (examples include vancomycin and amphotericin B).
- Elderly patients (aged 75 years and older).
- Patients at extremes of muscle mass ( $\text{BMI} < 18\text{kg}/\text{m}^2$  or  $> 40\text{kg}/\text{m}^2$ ).
- Patients taking medicines that are largely renally excreted and have a narrow therapeutic index, such as digoxin and sotalol.

When dose adjustment based on CrCl is important and no advice is provided in the relevant BNF monograph, consult the **Summary of Product Characteristics**.

### PLEASE HELP TO REVERSE THE DECLINE IN REPORTING OF SUSPECTED ADVERSE DRUG REACTIONS!

Please report to the [Yellow Card Scheme](#) any suspected adverse reactions.

### REASSESSING RENAL FUNCTION

It is important to reassess renal function and drug dosing in situations where eGFR and/or CrCl change rapidly, such as in patients with acute kidney injury (AKI).

### CALCULATION OF CREATININE CLEARANCE

It is normal to calculate CrCl based on the Cockcroft-Gault formula rather than measuring it via 24-hour urine collection.

The [MDCalc](#) application can be used to calculate the Cockcroft-Gault CrCl value using either adjusted body weight, ideal body weight or actual bodyweight as appropriate.

Please note that if using the Renal Calculator in your clinical systems, it is important to UPDATE THE PATIENT PARAMETERS, including their current weight to give the most accurate result.

*Information in this newsletter is believed to be accurate and true. NHS Cambridgeshire and Peterborough CCG employees accept no liability for loss of any nature, to persons, organisations or institutions that may arise as a result of any errors or omissions.*

