

## Management of Chronic Kidney Disease-Mineral Bone Disorder (CKD-MBD) in Dialysis Patients

**CKD-MBD is a systemic disorder of mineral and bone metabolism due to CKD manifested by either one or a combination of the following:**

- Abnormalities of calcium, phosphorus, parathyroid hormone (PTH), or vitamin D metabolism.
- Abnormalities in bone turnover and mineralization.
- Vascular or other soft-tissue calcification.

### Targets and Monitoring

**Measure serum calcium, phosphate, intact PTH (iPTH). Agree local targets and frequency of monitoring.**

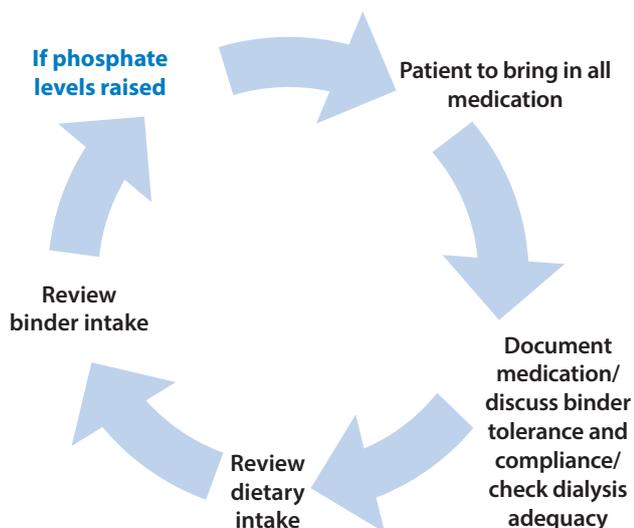
Biochemical Value	Target	Frequency of Monitoring
Phosphate		
Calcium		
iPTH		

### Management Considerations

- In patients with CKD G3a–G5D, treatments of CKD-MBD should be based on serial assessments of phosphate, calcium, and iPTH levels, considered together.
- We suggest that native vitamin D deficiency and insufficiency be corrected.
- In adult patients with CKD G3a–G5D receiving phosphate-lowering treatment, we suggest restricting and monitoring the dose of calcium-based phosphate binders.
- Each patient should be assessed by their medical team to develop an individualised care plan.
- This checklist is a general overview and approach to the management of CKD-MBD. More detailed guidelines and commentary from other professional organisations are available at [www.kdigo.org](http://www.kdigo.org)

### Management of High iPTH

#### STEP 1: Review phosphate lowering therapies



#### STEP 2: Add or increase vitamin D analogue and / or add calcimimetic

- 2.1** In patients with hypercalcaemia, vitamin D analogues should be reduced or stopped.
- 2.2** In patients with hyperphosphataemia, review vitamin D analogue dose.
- 2.3** Mild and asymptomatic hypocalcemia (e.g. in the context of calcimimetic treatment) can be tolerated in order to avoid inappropriate calcium loading in adults.
- 2.4** If the iPTH levels fall below two times the upper limit of normal for the assay, vitamin D analogs, and /or calcimimetics should be reduced or stopped.

More frequent monitoring of calcium is required after commencement or dose adjustment of a calcimimetic.

Vitamin D analogue, binder type and dose will also affect calcium levels.