

Follow **denosumab** flowchart

Is the patient at risk for hypocalcemia or have an eGFR <30?

Yes

No

- Correct risks for hypocalcemia
- Coordinate care with nephrology

Initiate **denosumab**

Click here to continue!

Follow denosumab flowchart

Is the patient at risk for hypocalcemia or have an eGFR <30?

Yes

No

- Correct risks for hypocalcemia
- Coordinate care with nephrology

Initiate denosumab

Obtain bone mineral density after 2 years.
Improving?

No

Yes

Follow **Teriparatide** or
Abaloparatide flowchart

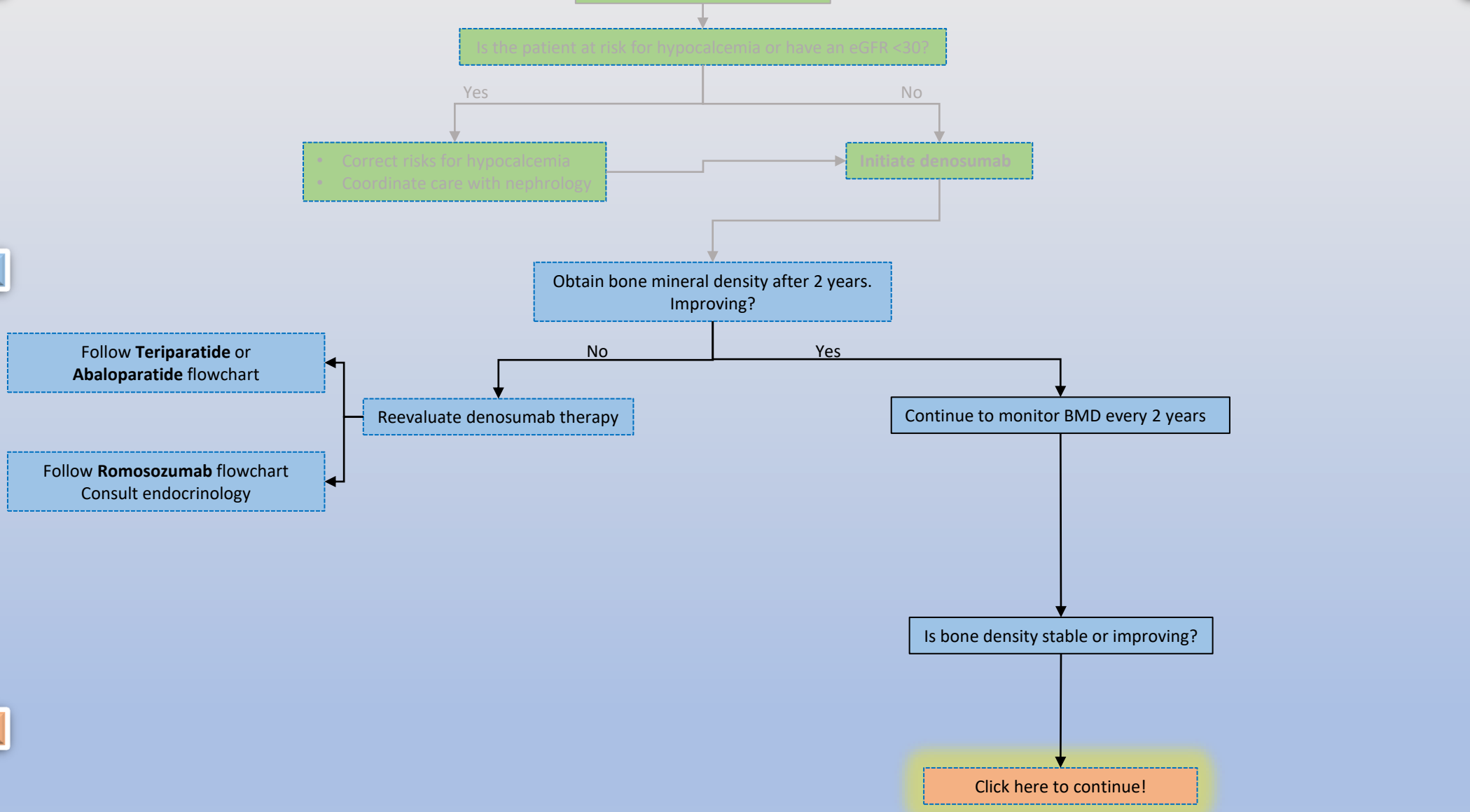
Follow **Romsozumab** flowchart
Consult endocrinology

Reevaluate denosumab therapy

Continue to monitor BMD every 2 years

Is bone density stable or improving?

Click here to continue!



Follow **denosumab** flowchart

Is the patient at risk for hypocalcemia or have an eGFR <30?

Yes

No

- Correct risks for hypocalcemia
- Coordinate care with nephrology

Initiate **denosumab**

Maintenance

Obtain bone mineral density after 2 years.
Improving?

No

Yes

Follow **Teriparatide** or
Abaloparatide flowchartReevaluate **denosumab** therapyFollow **Romosozumab** flowchart
Consult endocrinology

Continue to monitor BMD every 2 years

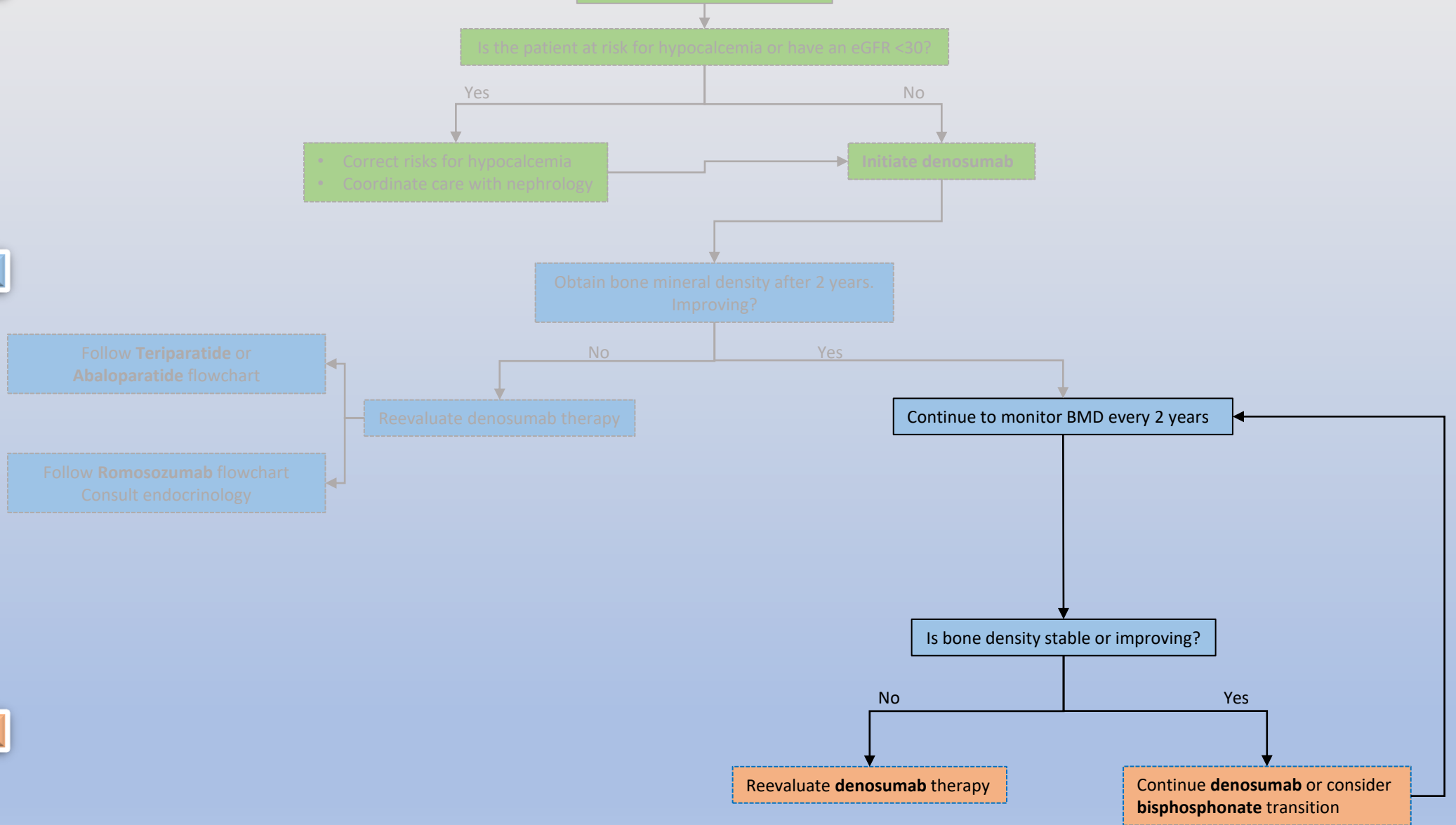
Is bone density stable or improving?

No

Yes

Reevaluate **denosumab** therapyContinue **denosumab** or consider
bisphosphonate transition

Reassessment



Follow **denosumab** flowchart

Is the patient at risk for hypocalcemia or have an eGFR <30?

Yes

No

- Correct risks for hypocalcemia
- Coordinate care with nephrology

Initiate **denosumab**

Maintenance

Obtain bone mineral density after 2 years.
Improving?

No

Yes

Follow **Teriparatide** or
Abaloparatide flowchartReevaluate **denosumab** therapyFollow **Romsozumab** flowchart
Consult endocrinology

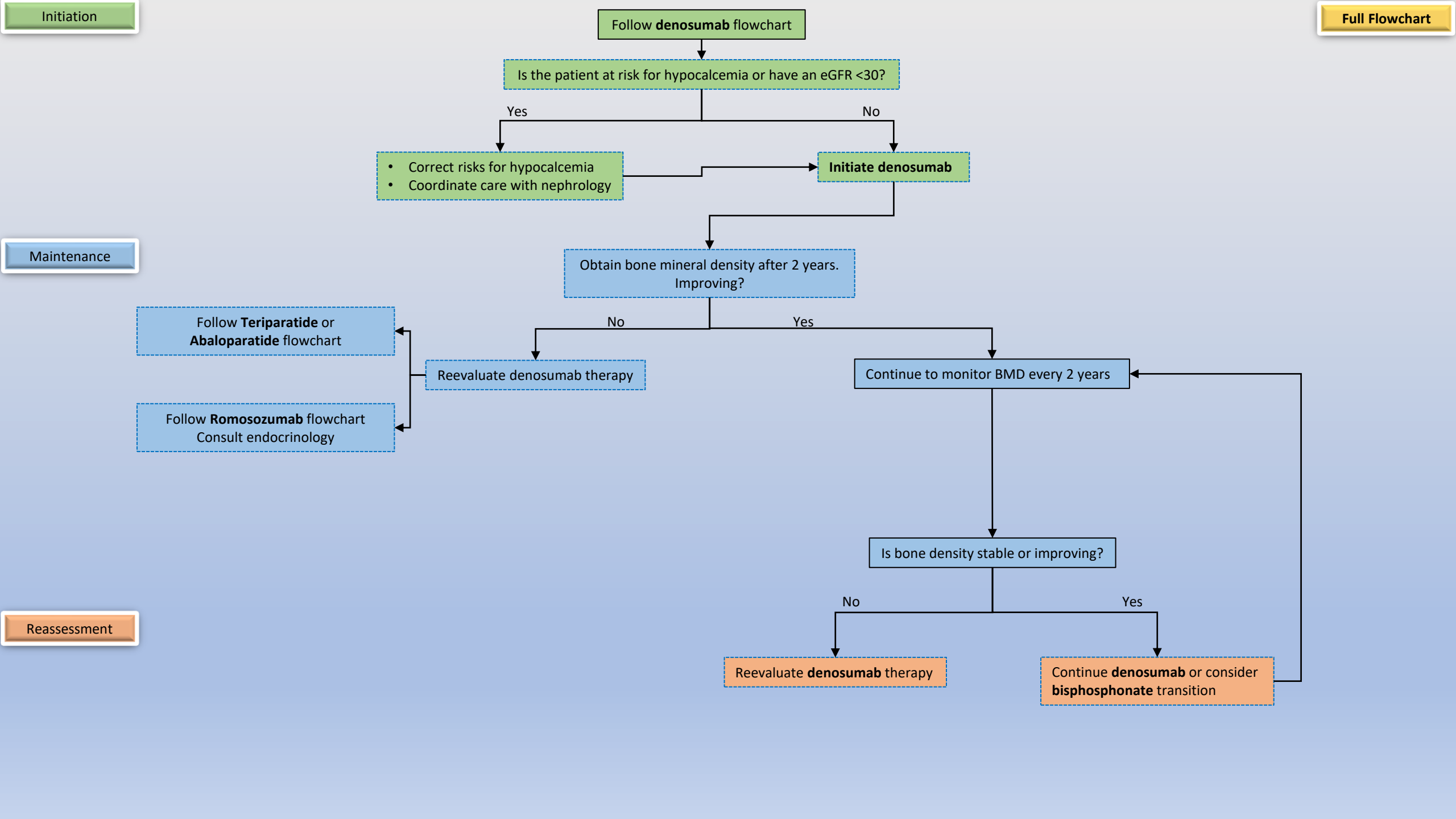
Continue to monitor BMD every 2 years

Reassessment

Is bone density stable or improving?

No

Yes

Reevaluate **denosumab** therapyContinue **denosumab** or consider
bisphosphonate transition

Is the patient at risk for hypocalcemia or have an eGFR <30?

PEARL: Denosumab carries risk of hypocalcemia particularly in those with low serum calcium, abnormal mineral metabolism, hypovitaminosis D, or advanced renal disease

Risk factors for hypocalcemia upon starting denosumab:

- Low serum calcium
- Abnormal mineral metabolism (ie, hypoparathyroidism, hypothyroidism)
- Hypovitaminosis D (25 hydroxyvitamin D)
- Advanced renal disease (eGFR <30; due to low 1,25 hydroxyvitamin D)

[Click for more information on hypocalcemia with denosumab!](#)

- Correct risks for hypocalcemia
- Coordinate care with nephrology



Correct risks for hypocalcemia by:

- Considering parathyroid, thyroid dysfunction, or malabsorption
- Evaluating calcium and vitamin D intake and supplementing as needed
- Coordinating care with nephrologist in advanced renal disease (eGFR <30)
 - While there is no absolute CrCl cutoff, we urge STRONG caution with a CrCl <20)

[Click for more information on correcting risk of hypocalcemia with denosumab!](#)

Initiate denosumab

Initiation: denosumab at 60 mg SQ every 6 months for 5-10 years 

- Each dose must be administered by healthcare professional.
- Should be given in the upper arm, upper thigh, or abdomen.
- If at risk for hypocalcemia, obtain labs within 14 days of each dose: Ca, mag, phos
- Each dose must be given every 6 months +/- 1 month to avoid rebound risk of vertebral fractures
- Note risk of infection and dermatitis

[*Click for more information on initiating/administering denosumab!*](#)

Obtain bone mineral density after 2 years.
Improving?



PEARL: BMD should be rechecked when the results influence clinical management or at the point of an expected significant change in bone density.

- There is no consensus on the optimal frequency of BMD monitoring!
- Our expert opinion is to recheck BMD after 2 years on denosumab

[Click for more information on checking BMD after starting denosumab!](#)

Reevaluate denosumab therapy

PEARL: If the BMD is worsening (outside the margin of the least significant change), this should prompt a reevaluation of denosumab therapy

- Consider evaluating/addressing for secondary causes of osteoporosis
- Consider medication nonadherence
- Consider alternative antiresorptive: Teriparatide or Abaloparatide, or Romosozumab
- Consider endocrinology consultation

[Click for more information on reevaluating denosumab therapy!](#)

PEARL: Denosumab is generally continued indefinitely. If a drug holiday is desirable, one could consider transitioning to bisphosphonates. ✕

There is limited data beyond 10 years, but most continue denosumab indefinitely.

If fracture risk improves and transition to bisphosphonate with potential consideration of holiday is desired, follow [bisphosphonate flowchart](#)

[Click for more information on continuing or transitioning denosumab!](#)

Continue **denosumab** or consider **bisphosphonate** transition

PEARL: If the BMD is worsening (outside the margin of the least significant change), this should prompt a reevaluation of denosumab therapy ✕

- Consider evaluating/addressing for secondary causes of osteoporosis
- Consider medication nonadherence
- Consider alternative antiresorptive: Teriparatide or Abaloparatide, or Romosozumab
- Consider endocrinology consultation

[Click for more information on reevaluating denosumab therapy!](#)

Reevaluate **denosumab** therapy