### Management of Vitamin D in Adults

The quick guide adopted from NOS (for use in conjunction with full guideline www.nos.org.uk/professionals/publications)

#### WHO TO TEST

1. Patients with diseases with outcomes that may be improved with vitamin D treatment e.g. confirmed osteomalacia, osteoporosis
2. Patients with symptoms that could be attributed to vitamin D deficiency, e.g. chronic widespread pain
3. Patient who will be commencing on a bisphosphonates oral or intravenous therapy if they are not going to be co-prescribed vitamin D containing supplements.

#### 25OH vitamin D (nmol/L)

<table>
<thead>
<tr>
<th>Level</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;50</td>
<td>(Sufficient)</td>
</tr>
<tr>
<td>30-50</td>
<td>(Inadequate)</td>
</tr>
<tr>
<td>&lt;30</td>
<td>(Deficient)</td>
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</tbody>
</table>

**Maintain vitamin D through safe sun exposure and current diet/supplement use**

If one or more of following applies:
- Fragility fracture/osteoporosis/high fracture risk
- Drug treatment for bone disease
- Symptoms suggestive of vitamin D deficiency
- Increased risk of developing vitamin D deficiency e.g.
  - Reduced UV exposure
  - Raised PTH
  - Treatment with anticonvulsants or glucocorticoids
  - Malabsorption

#### Treat

**Rapid treatment**

Initiate high dose Vitamin D supplement treatment; the principle is to deliver approximately 300,000IU over the course of 6 - 10 weeks.

1. 50,000IU weekly for 6 weeks
   - Or
2. Oral solution 50,000IU once a week for 6 weeks (for patients unable to swallow capsules)

**Maintenance** dose should be considered after completion of rapid treatment.

**Invita D3** is the formulary choice at the time of review available in capsule form at 800 and 25000IU and a 25000iu oral solution. Prescribe by brand.

#### TREAT

**Ensure calcium replete**

- Recheck vitamin D profile & bone chemistry at 4 months after start of treatment or 4 weeks if rapid treatment (high dose). If calcium is raised check PTH. If PTH is abnormal refer to endocrinologist. **Vitamin D repletion may unmask primary hyperparathyroidism**

**Routine repeat vitamin D testing is not required**

### Guideline: Vitamin D in adults

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Guideline: Vitamin D in adults Created 05/2019 Updated 05/2021 Review 05/2023 V1.0
Lifestyle advice
- Safe exposure to sunlight is the main source of vitamin D. Aim to spend 20-30 minutes on the face and forearms at midday on safe summer days three times weekly without sunscreen if in the United Kingdom.
- Dietary source of vitamin D includes oily fish, cod liver oils, dairy products, liver and egg yolk

Primary care guidance
- If being prescribed on FP10 then vitamin D preparations should be prescribed using the brand name to ensure the correct licensed preparation is dispensed in line with local formulary choice.
- Vitamin D preparations are available as a health food supplement and can be purchased from community pharmacy, health stores or supermarkets.
- Patients with CKD 4 and 5 may require additional monitoring (IPTH, Calcium) as determined by clinical need. Monitoring will be requested by, and the results will be interpreted by the initiating Consultant.

Risk factors*
Population groups at higher risk of having a low vitamin D status include:
- All pregnant and breastfeeding women, particularly teenagers and young women
- Infants and children under 5 years
- People over 65
- People who have low or no exposure to the sun. For example, those who cover their skin for cultural reasons, who are housebound or confined indoors for long periods
- People who have darker skin, for example, people of African, African–Caribbean and South Asian origin

In Secondary Care
In frail over 75’s with fragility fractures:
- All those not already on vitamin D supplementation (assuming compliance) should have 100,000IU stat dose of vitamin D followed by 800 IU daily (as an over the counter (OTC)purchase normally).
- If already taking a form of vitamin D, but poor compliance suspected, then treat as if not on vitamin D (i.e. as above).
- If calcium is normal or low then this could be combined with calcium (e.g.Calc-D).

Use in Pregnancy
- The current recommendation in pregnancy is for routine supplementation of vitamin D at doses of 400units (10micrograms) per day. If treatment is required (due to deficiency shown by laboratory results), higher doses of vitamin D may be considered.
- For oral treatment of vitamin D deficiency in pregnant women, the Royal College of Obstetricians and Gynaecologists (RCOG) suggest colecalciferol 2,800units daily, colecalciferol 20,000units weekly, or ergocalciferol 10,000units twice a week should be used for 4-6 weeks
- Higher doses may be required in certain conditions as recommended by specialists.

Renal Patients
- Patients with CKD can still be prescribed Colecalciferol for Vitamin D deficiency in primary care.
- Alfacalcidol should ONLY be initiated on the advice of a nephrologist for certain patients.

References
2. Pearce SHS, Cheetham TD. Diagnosis and management of Vitamin D deficiency. British Medical Journal 2010;340:b566
4. Sheffield Guidance of optimising Vitamin D for adult Bone Health Guidance document
5. Sheffield Guidance algorithm
6. Vitamin D: increasing supplement use in at-risk groups http://www.nice.org.uk/guidance/ph56
7. Dosing and monitoring for treatment of Vitamin D deficiency in pregnancy – SPS - Specialist Pharmacy Service – The first stop for professional medicines advice

Acknowledgements to NOS for allowing to adopt guidance.
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