Vitamin D Information and Recommendations

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

Vitamin D is a vital nutrient, helping the body to control calcium and phosphate at the right concentrations to support healthy bone growth and maintenance and ensure muscles and teeth remain strong.

This guideline is for use by the following staff groups :

Lead Clinician(s)

Dr C Shetty	Consultant Chemical Pathologist
Approved by *Pathology GP user meeting* on:	22nd January 2019
Review Date This is the most current document and should be used until a revised version is in place:	22nd January 2022

Key amendments to this guideline

Date	Amendment	Approved by:
22nd January 2019	New Document approved	Pathology GP User Group

Risk factors for vitamin D insufficiency and deficiency

- Pigmented skin (non-white ethnicity)
- Lack of sunlight exposure
- Skin concealing garments or strict sunscreen use
- Multiple, short interval pregnancies
- Elderly or housebound
- Vegan / vegetarian or high phytate consumption such as in chapatis
- Malabsorption (e.g., inflammatory bowel disease, coeliac disease, pancreatic insufficiency)
- Use of anticonvulsants, rifampicin, cholestyramine, anti-retrovirals

Clinical features of vitamin D deficiency

- Muscle pain
- Proximal muscle weakness
- Rib, hip, pelvis, thigh and foot pain are typical
- Fractures

Testing for Vitamin D status:

Due to the high prevalence of Vitamin D deficiency, routine testing of Vitamin D is not recommended.
Estimating Vitamin D levels is recommended in the following groups with decreasing relevance:

- Patients with bone diseases (a) that may be improved with vitamin D treatment or (b) where correcting vitamin D deficiency prior to specific treatment would be appropriate
- Patients with musculoskeletal symptoms that could be attributed to vitamin D deficiency
- Asymptomatic individuals at higher risk of vitamin D deficiency
- Asymptomatic individuals.

Clinical assessment supplemented with measurement of serum 25OHD is the best way of estimating vitamin D status, usually combined with renal profile, FBC (anaemia in malabsorption), Bone profile and PTH with TFTs(if Hypoparathyroidism is suspected)

Treatment of Vitamin D deficiency:

There are three sources of vitamin D:

- from sensible sunlight exposure (atleast 10-20 mins a day without suncream, longer for darker skin types)
- from food and drink containing vitamin D, either naturally or fortified
- from vitamin D supplements

The new advice from Public Health England (PHE) is that adults and children over the age of one should consider taking a daily supplement containing 10mcg of vitamin D, particularly during autumn and winter.

10 micrograms (400IU) is the recommended dose of vitamin D but this may be doubled if a bone condition such as osteoporosis.
People who have a higher risk of vitamin D deficiency are being advised to take a supplement all year round. SACN's review concluded that these at-risk groups include people whose skin has little or no exposure to the sun, like those in care homes, or people who cover their skin when they are outside. People with dark skin, from African, African-Caribbean and South Asian backgrounds, may also not get enough vitamin D from sunlight in the summer. They should consider taking a supplement all year round as well.

Treatment regimes:

Treatment of deficiency (25-OHD <25 nmol/L):

Split-dose loading regimen up to a total of approximately 300,000 IU given either as weekly or daily split doses followed by a maintenance phase

Treatment of insufficiency (25-OHD: 25-50 nmol/L):

800 – 2,000 IU daily (occasionally up to 4,000 IU daily)

The exact regimen will depend on the local availability of vitamin D.

Special patient groups like Elderly Patients:

It is recommended that calcium and vitamin D supplements should be prescribed routinely for mobile frail, elderly individuals who are housebound or care home patients by prescribing one of the following according to patient preference.
Adcal D3 or Adcal D3 dissolve (effervescent tablets) – 1 tablet twice daily
Calcichew D3 Forte 1 tablet twice daily

Monitoring
Routine monitoring of serum 25OHD is unnecessary but may be appropriate in patients with symptomatic vitamin D deficiency or malabsorption and where poor compliance with medication is suspected but only after alteast 6 months of treatment.
Adjusted serum calcium should be checked 1 month after completing the loading regimen or after starting vitamin D supplementation in case primary hyperparathyroidism has been unmasked or if Vitamin D toxicosis and hypercalcaemia is suspected.
It is a waste of resources to measure vitamin D levels too soon after the therapy has started. A minimum of 3 months treatment must be given and it may be more prudent to wait until 6 months have passed.

Vitamin D toxicity:

Overt vitamin D toxicity manifests itself through chronic hypercalcaemia. It is rarely seen unless the vitamin D dose is very high, either through inappropriate high-dose treatment or accidental overdosing
Manifests itself in Hypercalcaemia, hypercalciuria and renal stones.

- Stop any calcium containing vitamin D supplements.
- Delay further vitamin D loading, and repeat calcium levels 2 weekly until normalises.
- If calcium levels are persistently elevated despite stopping calcium containing supplements check PTH and refer to endocrinology (possibly unmasked primary hyperparathyroidism).

References

1) https://www.nhs.uk/news/food-and-diet/the-new-guidelines-on-vitamin-d-what-you-need-to-know/
2) Vitamin D and Bone Health: A Practical Clinical Guideline for Patient Management. National Osteoporosis Society April 2013
3) https://www.gov.uk/government/groups/scientific-advisory-committee-on-nutrition

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
Dr Mike Cornes (MC), Consultant Clinical Scientist, Biochemistry
Louise Hawke (LHa), Clinical Scientist, Biochemistry

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Pathology GP user group

Supporting Document 1 - Equality Impact Assessment Tool

.To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy / guidance affect one group less or more favourably than another on the basis of:**		
	Age	No	
	Disability	No	
	Gender reassignment	No	
	Marriage and civil partnership	No	
	Pregnancy and maternity	No	
	Race	No	
	Religion or belief	No	
	Sex	No	
	Sexual orientation	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and / or justifiable?**	No	
4.	**Is the impact of the policy / guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	No	
6.	**What alternatives are there to achieving the policy / guidance without the impact?**	No	
7.	**Can we reduce the impact by taking different action?**	No	

NB:
Where an inappropriate, negative or discriminatory impact has been identified please proceed to conduct a Full Equality Impact Assessment and refer to Equality and Diversity Committee, together with any suggestions as to the action required to avoid / reduce this impact.

Advice can be obtained from the Equality and Diversity Leads in HR and Nursing Directorates (details available on the Trust intranet).

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.