# VITAMIN D DEFICIENCY- MANAGEMENT IN PREGNANCY AND NEONATAL PERIOD

<table>
<thead>
<tr>
<th>Cross References (including NSW Health/SES LHD policy directives)</th>
<th>SGSHHS CLIN_W&amp;CH 2012 Antenatal Investigations and Screening SGSHHS CLIN_W&amp;CH 2013 Pathology and Ultrasound electronic ordering by Midwives Brochure: Vitamin D information for women. 2009 SGSHHS CLIN_W&amp;CH 2015 Obese women management of in pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What it is</td>
<td>This is a guideline for screening and management of vitamin D deficiency in pregnancy and the neonate</td>
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<td>2. Risk Rating</td>
<td>Medium</td>
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<td>3. Employees it Applies to</td>
<td>Obstetric and Paediatric Medical Officers, Midwives, Endocrinologists</td>
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</table>

## 4. PROCESS

### 4.1 Antenatal:
- Perform vitamin D level with the booking blood tests
- Women with a vitamin D level ≤ 15 nmol/L at booking should have a referral to an endocrinologist
- Women with a vitamin D level ≤ 50 nmol/L at booking should be advised to take an oral dose of 2000IU of cholecalciferol (e.g. 2 x Ostelin 1000™) daily for the remainder of pregnancy and given an information brochure. Women on Halal diet can take Ostevit tablets instead.
- If vitamin D level ≤ 50 nmol/L at booking, women should have repeat vitamin D levels checked at 28 weeks. Do not recheck if Vitamin D was normal at booking
- If vitamin D level ≤ 25 nmol/L at 28 weeks, women should be referred to an endocrinologist (SGH)
- No not recheck Vitamin D at any other times.

### 4.2 Birth and Postnatal:
- Do not check Vitamin D levels on cord blood at delivery
- If a woman has not had Vitamin D checked antenatally, check maternal Vitamin D during her admission and manage as per below
- Women who had vitamin D level ≤ 50 nmol/L at 28 weeks should have their babies reviewed by the paediatric medical team and treat their babies with Vitamin D - 1000IU per day for 3 months following discharge from hospital.
- A letter is given to the mother by the Paediatric Medical Officer (MO) for the GP with instructions to arrange a repeat neonatal Vitamin D test level after 3 months of treatment and further management as required (see letter to GP)
- Mother to continue to take oral vitamin D at pre-birth dosage until levels rechecked by GP at 6 weeks postpartum

### 4.3 Potential Risks
- Neonatal hypocalcaemia
- Bony changes/limb pain
4.3 Documentation
- Antenatal Notes
- ObstetriX (eMaternity)
- Information brochure “Vitamin D in pregnancy”
- Standard neonatal observation chart neonatal / under 1 month (corrected)
- Personal Health Record (Blue Book)

4.4 Educational Notes
- Vitamin D deficiency (<25 nmol/L) is seen in 15% of pregnant women, more commonly in younger mothers, those born overseas and those women with dark skin and/or minimal skin exposure
- Although routine Vitamin D screening for all women is not part of the national antenatal guidelines, St George and Sutherland hospitals have decided to routinely screen due to the incidence and our demographics
- The effects on the fetus/baby of mild deficiency is not certain nor what effect supplementation in pregnancy has on mother and/or baby
- Vitamin D deficiency is an established risk factor for osteoporosis in the mother. There is evidence that vitamin D deficiency is harmful to the developing skeleton \textit{in utero} and may have long lasting effects on bone health in childhood
- Women with high BMI may require increased doses of Vitamin D
- Vitamin D levels do not need to be checked on umbilical cord blood at birth

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<tr>
<th>5. Keywords</th>
<th>Vitamin D, Deficiency, Neonate</th>
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<td>6. Functional Group</td>
<td>Women’s and Children’s Health</td>
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<p>| 8. Consumer Advisory Group (CAG) approval of patient information | Online W&amp;CH CAG |</p>
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<tr>
<th>Brochure (or Related Material)</th>
<th>The revised CIBR will be distributed to all medical, nursing and midwifery staff via @health email. The CIBR will be discussed at ward meetings, education and patient quality and safety meetings. Education will occur through in-services, open forum and local ward implementation strategies to address changes to practice. The staff are asked to sign an audit sheet in their clinical area to acknowledge they have read and understood the revised CIBR. The CIBR will be uploaded to the W&amp;CH intranet page on the intranet and staff are informed how to access the page.</th>
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<tr>
<td>9. Implementation and Evaluation Plan</td>
<td>Including education, training, clinical notes audit, knowledge evaluation audit etc.</td>
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</table>
| 10. Knowledge Evaluation | Q 1. Should all women be screened for Vitamin D levels at booking?  
A 1. Yes, all women should be screened at booking  
Q 2. If Vitamin D level ≤ 50nmol/L at booking what advice should you give the women?  
A 2. Commence oral dose of 2000IU of Ergocalciferol (2 x Ostelin 1000™) daily for the remainder of pregnancy. Women on Halal diet can take Ostevit tablets instead.  
Q 3. Is cord blood collected if the mother has had low Vitamin D levels during pregnancy?  
A 3. No |
| 11. Who is Responsible | W&CH Midwifery Managers  
Medical Director W&CH |
### Approval for VITAMIN D DEFICIENCY – MANAGEMENT IN PREGNANCY AND NEONATAL PERIOD

**N/A where appropriate**

| **Specialty/Department Committee** | Committee title: Women's & Children's Protocols Committee  
Chairperson name/position | Louise Everitt CMC  
Date: 15.08.16 |
|-------------------------------|----------------------------------------------------------------------------------|
| **Specialty/Department Committee** | Committee title: Women’s & Children’s Protocols Committee  
Chairperson name/position | Dr Trent Miller O&G Staff Specialist  
Date: 15.08.16 |
| **Nurse/Midwifery Manager SGH** | Name/position Lorena Matthews Midwifery & Nursing W&CH  
Date: 15.08.16 |
| **Nurse/Midwifery Manager, TSH** | Name/position Kate Camac, Midwifery & Nursing Manager W&CH  
Date: 15.08.16 |
| **Medical Head of Department** | Name /position Dr Michael Chapman, Medical Director W&CH  
Date: 15.08.16 |
| **Medical Head of Department, TSH** | Name /position Dr Andrew Zuschmann, Medical Director W&CH  
Date: 15.08.16 |
| **Drug and Therapeutics Committee (SGH)** | Chairperson’s Name: A/Prof Winston Liauw |
| **Drug and Therapeutics Committee (TSH)** | Chairperson’s Name: Dr Justine Harris  
Date: 12.08.16 |
| **Executive Sponsor** | Name /position Dr Michael Chapman, Medical Director W&CH  
Date: 15.08.16 |

**Contributors to CiBR development**  
E.g. CNC, Medical Officers (names and position title/specialty)  
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- Amanda Reilly, CMC, SGH  
- Dee Sinclair, CMC, SESLHD  
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- Gaye Napper, Midwifery Manager, Maternity, MSP & SCN, TSH  
- Lyndall Nuttall, Clinical Midwifery Educator, Birthing Unit & Antenatal Clinic, TSH  
- Michelle Culshaw, Clinical Midwifery Educator, Maternity, MSP & SCN TSH  
- Paul Martin, Acting Midwifery Manager, Antenatal, Postnatal & MSP, SGH  
- Maria Bulmer, Midwifery Manager, Birthing Services, SGH  
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Dr Maria Craig, Paediatrician, SGH
Dr Scott Dunlop, Paediatrician, SGH
Dr Christopher Elliot, Paediatrician, SGH
Dr Ana Dosen, Paediatrician, SGH

Revision and Approval History

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision number</th>
<th>Author (Position)</th>
<th>Revision due</th>
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<tbody>
<tr>
<td>2008</td>
<td>1</td>
<td>Christine Caitlin Paul</td>
<td>2011</td>
</tr>
<tr>
<td>April 2011</td>
<td>2</td>
<td>Louise Everitt (CMC)</td>
<td>April 2014</td>
</tr>
<tr>
<td>Nov 15</td>
<td>3</td>
<td>Louise Everitt (CMC)</td>
<td>Nov 2015</td>
</tr>
<tr>
<td>August 2016</td>
<td>4</td>
<td>Louise Everitt (CMC)</td>
<td>August 2019</td>
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General Manager Ratification

Name: Leisa Rathborne, SGH  Date: 26.08.16
Name: Karen Becker, TSH    Date: 01.09.16

Approved by: Clinical Governance Documents Committee  Date: August 2016

THIS SGH-TSH DOCUMENT BECOMES UNCONTROLLED WHEN PRINTED.
DISCARD PRINTED DOCUMENTS IMMEDIATELY AFTER USE.
Dear Dr

Re: Vitamin D deficiency in Newborn Infant

This baby’s mother was identified to have Vitamin D deficiency during pregnancy and may or may not have received treatment.

The child’s mother has been advised to:
- treat the baby with 1000IU / day Vitamin D for 3 months and
- have a follow up 25OH Vitamin D blood test performed by you after 3 months.

The blood test results can be reviewed prior to the baby’s 4 month immunisation to consider if ongoing Vitamin D treatment is required.

Additional treatment thereafter is recommended to be:

<table>
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<tr>
<th>25 OH Vit D level</th>
<th>Treatment*</th>
<th>Treatment Duration</th>
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<tbody>
<tr>
<td>0-25</td>
<td>Cholecalciferol 1000iu PO daily then Pentavite 0.45mls PO daily</td>
<td>3 months 9 months</td>
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<tr>
<td>26-50</td>
<td>Pentavite 0.45mls daily</td>
<td>3 months</td>
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<td>&gt;50</td>
<td>Breastfed infants of dark-skinned or minimally sun exposed mothers should be supplemented with 400 IU vitamin D daily (eg, 0.45mL Pentavite)</td>
<td>Until weaned to formula or 12 months of age</td>
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If you have any further questions, please contact the paediatric team on the numbers listed below.

Yours sincerely

on behalf of St. George and Sutherland Hospital Department of Paediatrics

St George Hospital
9113 1111
Ask to page Paediatric SRMO on 650
or registrar on 942

Sutherland Hospital
9570 7111
Ask to page paediatric registrar