**Vitamin D - Lifestyle advice**

**Safe sun exposure**. Advise that:

* Exposing commonly uncovered areas of the skin (such as the forearms and hands) for short periods when in

strong sunlight provides vitamin D. Longer periods of exposure may be needed for those with darker skin.

* Many people will have experienced sunburn. They can use this experience to know what their skin looks like normally, how it reacts to sunlight, how long they can be exposed without risking sunburn, and how to protect their skin accordingly.
* Advise that skin that is not usually exposed to sunlight (for example the back, abdomen and shoulders) is particularly likely to burn, so extra care is needed.
* Prolonged exposure to strong sunlight (for example leading to burning or tanning) does not lead to excess

production of vitamin D, as a regulation mechanism exists to destroy excess vitamin D, but increases the risk of skin cancer.

* Between March and October in the UK, people should protect their skin from burning by covering up with suitable clothing (such as long-sleeved tops, a broad-brimmed hat, or long skirts and trousers); seeking shade (especially between 11am and 3pm); and applying sunscreen, which should:
* Meet minimum standards for ultraviolet A (UVA) protection - the label should have the letters 'UVA' in a circle logo and should preferably state that it provides good UVA protection (for example at least '4-star UVA protection').
* Provide at least sun protection factor (SPF) 15 to protect against UVB.
* Be applied liberally and frequently, according to the manufacturer's instructions. If the sunscreen is applied too thinly, the amount of protection it gives is reduced.
* Sunbeds are not an effective method of protecting against vitamin D deficiency because they emit high levels of UVA, which do not contribute to vitamin D synthesis but increase the risk of skin cancer.

**Dietary intake of vitamin D**. Advise that:

* It is important to maintain dietary intake of vitamin D by taking vitamin D supplements, especially during the winter months, as it is difficult to obtain sufficient vitamin D from food sources alone because they are limited.
* Rich sources include cod liver oil (this also contains vitamin A which can be harmful in high doses and should be avoided in pregnancy), oily fish (such as salmon, mackerel, and sardines). Egg yolk, meat, offal, milk, mushrooms, and fortified foods (such as fat spreads and some breakfast cereals and yoghurts) contain small amounts.

**Dietary intake of calcium**. Advise that:

* It is also important to maintain dietary intake of calcium, as both calcium and vitamin D are needed to prevent long-term adverse effects on the bones.
* Rich sources of calcium include dairy foods (milk, cheese, and yoghurts) and tinned sardines with bones.

**Adherence to long-term supplementation.**

* Explain that long-term supplementation with vitamin D and, where necessary, calcium should be adhered to in order to prevent recurrence of deficiency and to maintain bone health.

**Sources of additional information.**

The British Dietetic Association has useful factsheets on Vitamin D and Calcium (available at www.bda.uk.com). The NHS choices website has a useful publication on Vitamins and minerals - Vitamin D (available

at www.nhs.uk). The Met Office (www.metoffice.gov.uk) provides information on the UV index, which is an indicator of the sun's strength for a given location, date and time. This information, combined with skin type and

behaviour, can be used to assess someone's risk of sunburn.