

Supplemental Material 1

Questionnaire

Vitamin D knowledge, perceptions and practices questionnaire

Note: For questions asking for "all correct answers", correct answers indicated in **BLOLD**.

Section 1: Demographics

1. What age are you?

_____ years

2. Are you:

Male

Female

3. Where do you currently live?

Scotland

Wales

England

Northern Ireland

4. Are you currently menopausal, breastfeeding or pregnant?

Yes

No

- If you selected yes, please specify:

Menopausal

Pregnant

Breast-feeding

5. What is the highest level of education you have completed?

Didn't finish high school

High school

Trade School

Undergraduate/Bachelor's degree

Postgraduate degree (PGDip)

Master's degree

Doctoral degree (PhD)

Other

- If you selected other, please specify:

- If you selected undergraduate/Bachelor's, please specify:

- If you selected postgraduate degree (PGDip), please specify:

- If you selected master's degree, please specify:

- If you selected doctoral degree (PhD), please specify:

6. Do you have any nutrition-related qualifications or are you studying to get a nutrition-related qualification (i.e. BSc/MSc dietetics or nutrition)?

Yes

No

- If you selected yes, please specify:

7. Which ethnicity best describes you?

Caucasian (white)

Black or African America

Asian

Middle eastern

Latino

Native American

8. Based on the Fitzpatrick Scale, which skin type best describes yours? (choose ONE of the following)

Light or pale white- Always burns, never tans

White, Fair- Usually burns, tans with difficulty

Medium, between white to moderate brown- Moderately burns, moderately tans

Moderate brown- Rarely burns, tans more than average

Brown, dark brown- Rarely burns, tans very easily

Very dark brown to black, black- Never burns, tans very easily, deeply pigmented

9. What height are you?

- Specify units:

feet and inches m cm

10. What weight are you?

- Specify units:

stone (st) and pounds (lbs) lbs kg

Section 2: Vitamin D Knowledge

11. Have you previously heard of vitamin D?

Yes

No

12. If yes, where did you receive this information? (Select ONE OR MORE of the following)

Health professionals (doctor, nurse, dietitian, nutritionist)

University

Media (TV, newspaper, radio, internet, magazine)

Book

Leaflets/Posters

Family/Friends

Other

- If you selected other, please specify:

13. Which of the following are sources of vitamin D? (select ONE OR MORE of the following)

- I don't know
- Food**
- Supplements**
- Sunlight**
- Water
- Air
- Exercise

14. What is the best source of vitamin D? (please select ONE answer)

- I don't know
- Sunlight**
- Food
- Water
- Air
- Exercise
- Supplement

15. What are the best food sources of vitamin D? (select ONE OR MORE of the following)

- I don't know
- Oily fish**
- Egg yolks**
- Fortified foods**
- Red meat**
- Dairy products
- Fruit
- Vegetables
- Chicken
- Nuts

16. Do you think dietary sources are sufficient to maintain vitamin D levels?

- Yes
- No
- Unsure

17. Vitamin D can be produced/synthesized in the skin, what factors affect this vitamin D production/synthesis? (select ONE OR MORE of the following)

- I don't know
- Skin pigmentation**
- Cloud cover**
- Pollution**
- Time of day**

Latitude **Season** Smoking **Sunscreen use** High-fat diet None of the above

18. According to research, what are the health benefits of vitamin D? (select ONE OR MORE of the following)

 I don't know **Bone health** **Prevention of rickets** Vision Hair growth Skin health **Prevention of osteoporosis** None of the above

19. Are you aware of the new updated vitamin D recommendations in the UK?

 Yes No

20. What is the recommended daily amount of vitamin D supplementation for adults?
Where μg = microgram and IU = International units (please select ONE answer)

 5 μg /200IU **10 μg /400IU** 20 μg /800IU 50 μg /2000IU 100 μg /4000IU

21. Who are most at risk of vitamin D deficiency? (select ONE OR MORE of the following)

 I don't know **Individuals not often outdoors (i.e. not out during daylight hours)** **Institutionalized individuals (i.e. care home)** **Individuals who cover up majority of their skin when outdoors** **Individuals with dark skin** Individuals who don't eat fish None of the above

22. When do we get sufficient Vitamin D synthesis from sunlight exposure in the UK?
(please select ONE answer)

 All Year **March or early April to September** October to March Unsure

Section 3: Attitudes towards Sun Exposure

23. Those with darker skin pigmentation are more at-risk of Vitamin D insufficiency
<input type="checkbox"/> Agree
<input type="checkbox"/> Unsure
<input type="checkbox"/> Disagree
24. Skin pigmentation affects vitamin D status
<input type="checkbox"/> Agree
<input type="checkbox"/> Unsure
<input type="checkbox"/> Disagree
25. If I regularly protect my skin from the sun, I may be in danger of not getting enough vitamin D
<input type="checkbox"/> Agree
<input type="checkbox"/> Unsure
<input type="checkbox"/> Disagree
26. When spending time outdoors in the sunlight during March to end of September, do you usually:
<input type="checkbox"/> Seek direct sun
<input type="checkbox"/> Shade
<input type="checkbox"/> Cover-up or wear clothing
<input type="checkbox"/> Don't go outside
- If you chose to cover up, how do you cover up (choose closest match to habitual attire)?
<input type="checkbox"/> Minimal coverage (exposure of shoulders and above the knee)
<input type="checkbox"/> Moderate coverage (exposure of forearms, below knee and face)
<input type="checkbox"/> Maximal coverage (exposure of only hands and face)
<input type="checkbox"/> Total coverage (no skin exposure)
27. When sunny from March to end of September, how often do you wear sunscreen/sun protection?
<input type="checkbox"/> Never
<input type="checkbox"/> Rarely
<input type="checkbox"/> Usually
<input type="checkbox"/> Always
<input type="checkbox"/> Sometimes
<input type="checkbox"/> Only for planned exposure/tanning
- If never why not?

28. Regarding typical daylight exposure from the March until end of September, how many days per week on average would you spend outdoors (Please select ONE answer that best describes average sun-exposure)
<input type="checkbox"/> 1 day <input type="checkbox"/> 2 days <input type="checkbox"/> 3 days <input type="checkbox"/> 4 days <input type="checkbox"/> 5 days <input type="checkbox"/> 6 days <input type="checkbox"/> 7 days
29. On these days of daylight exposure, how long on average would you spend outside each day?
<input type="checkbox"/> 1 hour <input type="checkbox"/> 2 hours <input type="checkbox"/> 3 hours <input type="checkbox"/> 4 hours <input type="checkbox"/> 5 hours <input type="checkbox"/> 6 hours

- 7 hours more than 7 hours

30. On these days of daylight exposure, what time of the day would you most often be out?
(select all that apply)

- All day
 Evening hours
 Afternoon hours
 Morning hours

Section 4: Attitudes towards vitamin D

31. Are you concerned that your vitamin D levels may be too low?

- Yes
 No
 Unsure

32. Have you ever had your vitamin D levels tested?

- Yes
 No
 Unsure

- If yes, why?

- Healthcare professional advised me to
 Concerned about levels
 Friend or family advised it
 Other

If you selected other, please specify:

33. Are you interested to know more about vitamin D?

- Yes
 No

Section 5: Perceptions to food fortification and supplementation

34. Do you think there is any harm in taking fortified foods?

- Yes
 No
 Unsure

- If yes, why?

- Fear of vitamin overdose
 Lack of choice
 Other

If you selected other, please specify:

35. Would you be willing to purchase/consume fortified foods?

- Yes
 No
 Unsure

36. Do you take a vitamin D supplement?

- Yes
 No

37. If yes, why?

- Healthcare professional advised me too
 Good for my health
 Updated guidelines recommended me
 I don't think I get enough from food
 I don't think I get enough sun exposure
 Friend and/or family advised me
 Other

If you selected other, please specify:

38. If yes, which type of vitamin D supplementation do you use?
(select ONE OR MORE of the following)

- Vitamin D capsule
 Vitamin D oil
 Vitamin D drops
 Combined vitamin D and calcium tablet
 Multivitamin
 Cod liver oil
 Other

If you selected other, please specify:

39. If yes, how often do you take your vitamin D supplement?

- I don't know
 Daily
 Weekly
 Less than weekly
 Other

If you selected other, please specify:

40. If yes, without referring to the supplement packaging, are you aware of the dosage of vitamin D you receive from each supplement consumption?

- Yes
 No

If yes, what is the exact dosage?

_____ International units (IU) microgram (μg)

41. If no, why not?

- Unaware of the benefits of taking them
 Too expensive

I don't know which one I should take

I don't know how I can get them

I think I get enough

I don't think it's important

Other

If you selected other, please specify:
