

## Online Supporting Material

**Supplemental Table 1.** The monthly mean and population distribution of plasma 25-OHD in adults in Scotland throughout the year.

Month	<i>n</i>	25-OHD, <i>nmol/L</i>	25-OHD, <i>nmol/L</i>											
			> 80		≥50 and <80		≥40 and <50		≥25 and <40		≥12.5 and <25		< 12.5	
			<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<b>Jan</b>	139	26.5 ± 16.25	2	1.4	10	7.2	12	8.6	46	33.1	45	32.4	24	17.3
<b>Feb</b>	164	30 ± 18.5	4	2.4	17	10.4	14	8.5	52	31.7	52	31.7	25	15.2
<b>Mar</b>	182	32.5 ± 24.25	2	1.1	11	6.0	20	11.0	52	28.6	57	31.3	40	22.0
<b>Apr</b>	103	39.75 ± 19.5	3	2.9	11	10.7	13	12.6	27	26.2	28	27.2	21	20.4
<b>May</b>	150	43 ± 17.25	2	1.3	22	14.7	23	15.3	47	31.3	43	28.7	13	8.7
<b>Jun</b>	271	52 ± 21	9	3.3	61	22.5	51	18.8	84	31.0	49	18.1	17	6.3
<b>Jul</b>	201	43.25 ± 21	11	5.5	56	27.9	35	17.4	65	32.3	25	12.4	9	4.5
<b>Aug</b>	216	32 ± 26	32	14.8	77	35.6	35	16.2	41	19.0	21	9.7	10	4.6
<b>Sep</b>	187	36.25 ± 22.75	11	5.9	49	26.2	35	18.7	56	29.9	28	15.0	8	4.3
<b>Oct</b>	232	28.25 ± 20.25	6	2.6	36	15.5	31	13.4	53	22.8	69	29.7	37	15.9
<b>Nov</b>	225	36 ± 18.5	4	1.8	52	23.1	26	11.6	80	35.6	42	18.7	21	9.3
<b>Dec</b>	165	28.25 ± 22	6	3.6	9	5.5	19	11.5	43	26.1	49	29.7	39	23.6
<b>ALL</b>	2235	36 ± 22.25	92	4.1	411	18.4	314	14.0	646	28.9	508	22.7	264	11.8

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**Supplemental Table 2. Plasma 25-OHD concentrations in adults in Scotland by level of total vitamin D intake (from food and supplements) and quartile of outdoor activity <sup>1</sup>.**

Total vitamin D intake quartile	Total activity quartiles, <i>h/wk</i>			
	<7	≥7.0 and <12.5	≥12.5 and <21.1	≥21.1
<b>&lt;3.3 µg/d</b>				
<i>n</i>	130	129	108	128
25-OHD median, <i>nmol/L</i>	21.7	27.5	26.6	29.6
25-OHD <25 nmol/L, %	58	45	44	35
<b>≥3.3 and &lt;4.9 µg/d</b>				
<i>n</i>	129	129	128	108
25-OHD median, <i>nmol/L</i>	26.6	27.8	25.9	31.3
25-OHD <25 nmol/L, %	47	41	45	33
<b>≥4.9 and &lt;8.0 µg/d</b>				
<i>n</i>	129	131	136	99
25-OHD median, <i>nmol/L</i>	29.3	30.9	35.8	31.9
25-OHD <25 nmol/L, %	38	34	24	32
<b>≥8.0 µg/d</b>				
<i>n</i>	105	102	127	161
25-OHD median, <i>nmol/L</i>	33.0	35.1	33.4	37.8
25-OHD <25 nmol/L, %	27	26	27	26

<sup>1</sup> In total 274 participants were excluded from this analysis due to missing data regarding outdoor activity and vitamin D intake from supplements and food

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**Supplemental Table 3. Plasma 25-OHD concentrations in adults in Scotland by level of vitamin D intake from food only and quartile of outdoor activity <sup>1</sup>.**

Food vitamin D intake quartiles	Total activity quartiles, <i>h/wk</i>			
	<7	≥7.0 and <12.5	≥12.5 and <21.1	≥21.1
<b>&lt;2.9 µg/d</b>				
<i>n</i>	136	125	113	121
25-OHD median, <i>nmol/L</i>	26.3	28.9	29.9	30.8
25-OHD <25 nmol/L, %	48	40	36	36
<b>≥2.9 and &lt;4.1 µg/d</b>				
<i>n</i>	122	127	115	130
25-OHD median, <i>nmol/L</i>	25.8	31.3	30.1	30.6
25-OHD <25 nmol/L, %	48	35	36	32
<b>≥4.1 and &lt;5.8 µg/d</b>				
<i>n</i>	116	121	148	110
25-OHD median, <i>nmol/L</i>	28.1	27.6	29.7	34.6
25-OHD <25 nmol/L, %	42	40	34	26
<b>&gt;5.8 µg/d</b>				
<i>n</i>	119	118	123	135
25-OHD median, <i>nmol/L</i>	30.8	31.7	32.4	34.8
25-OHD <25 nmol/L, %	34	32	31	31

<sup>1</sup> In total 274 participants were excluded from this analysis due to missing data regarding outdoor activity and vitamin D intake from supplements and food