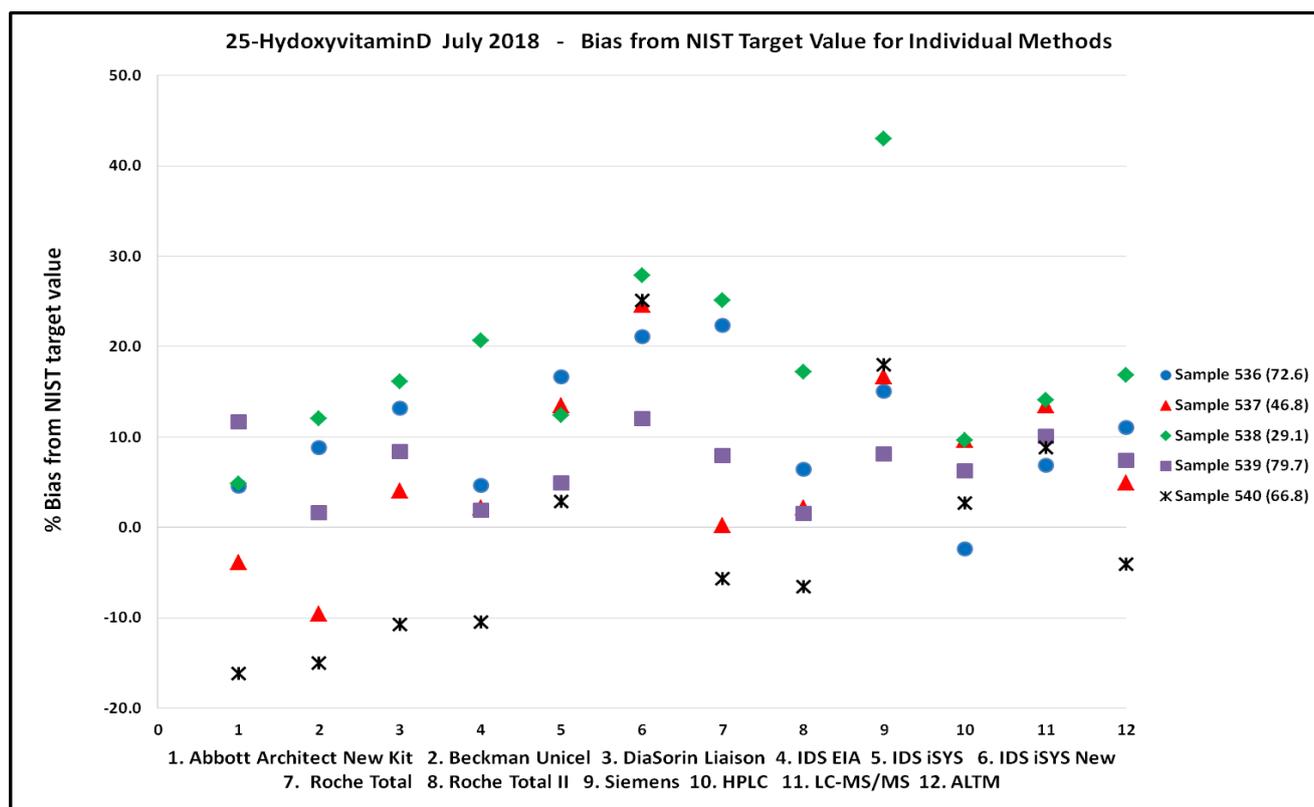


# NOTES TO ACCOMPANY THE JULY 2018 25-HYDROXYVITAMIN D REPORT

## Chart showing between-sample variability of % bias from the target value



Legend; Sample numbers (target values nmol/L)

### Sample 540

Sample 540 contained endogenous 25OHD<sub>2</sub>, 44.2% of the total 25OHD (NIST Target value 66.8 nmol/L). The respective levels of 25OHD<sub>2</sub> and 25OHD<sub>3</sub> in this sample, for participants using HPLC or LC-MS/MS assays, are given below.

These results have been calculated using only the data from participants who have returned numeric results for both metabolites; 25OHD<sub>2</sub> and 25OHD<sub>3</sub>. Not all HPLC and LC-MS/MS users returned results for the individual metabolites. A few participants only measure 25OHD<sub>3</sub> and these values have been entered as total 25OHD in the main table of results. As a result, the total 25OHD values recorded below may differ from those in the method mean data for this sample in the final report, particularly for the HPLC method group where a higher proportion of labs have only reported a result for 25OHD<sub>3</sub>.

The results have been subjected to the usual trimming process. The results were ranked in order of concentration and 5% of results removed from the top and bottom before calculating the mean, SD and CV%.

	HPLC (n=8*)			LC-MS/MS (n=112*)		
	25OHD <sub>2</sub>	25OHD <sub>3</sub>	Total 25OHD	25OHD <sub>2</sub>	25OHD <sub>3</sub>	Total 25OHD
<b>Mean</b>	32.9	43.6	74.3	31.8	43.9	74.9
<b>SD</b>	4.88	4.52	8.76	4.01	3.36	6.65
<b>CV</b>	14.8%	10.4%	11.8%	12.6%	7.7%	8.9%
<b>Target Value</b>	29.5	37.3	66.8	29.5	37.3	66.8
<b>Bias from TV</b>	11.5%	16.9%	11.2%	7.8%	17.7%	12.1%

\* Number of results remaining after trimming

### 3-epi-25-hydroxyvitamin D3 results for samples 536 – 540

DEQAS Lab No.	Method	Sample 536 3-epi-25OH-D3 nmol/L	Sample 537 3-epi-25OH-D3 nmol/L	Sample 538 3-epi-25OH-D3 nmol/L	Sample 539 3-epi-25OH-D3 nmol/L	Sample 540 3-epi-25OH-D3 nmol/L
105	LC-MS/MS	6.0			5.0	
188	LC-MS/MS	<2.5	<2.5	<2.5	5.9	3.1
189	LC-MS/MS				2.8	
255	LC-MS/MS	4.2	4.2	1.9	5.0	3.4
528	LC-MS/MS	4.0	<3.75	<3.75	5.0	<3.75
804	LC-MS/MS	<5	<5	<5	<5	<5
1097	LC-MS/MS	<4	<4	<4	<4	<4
1479	LC-MS/MS	4.1	3.0	1.7	4.2	2.6
1864	LC-MS/MS	<2.8	<2.8	<2.8	<2.8	<2.8
1919	LC-MS/MS	<6.25	<6.25	<6.25	<6.25	<6.25
1970	LC-MS/MS	4.9	3.8	<2.1	6.3	4
2004	LC-MS/MS	5.3	3.6	1.9	6.3	3.9
2017	LC-MS/MS	38.0	30.0	16.0	54.0	20.0
2123	LC-MS/MS	4.6	3.1	1.7	5.1	3.0
2204	LC-MS/MS	4.9	0.2	1.5	5.6	3.4
2211	LC-MS/MS	5.9	4.2	2.3	5.4	3.7
2258	LC-MS/MS	4.3	3.3	2.0	4.8	2.9
Median		4.9	3.6	1.9	5.1	3.4
Mean		4.9	3.6	1.9	5.3	3.4
SD		0.70	0.49	0.26	0.65	0.41
CV%		14.3	13.7	13.9	12.2	12.1
NIST value		4.8	3.5	1.9	5.2	3.2

**Comment:**

The statistics were calculated on the numeric results only and on trimmed data. Where there were more than 10 results the data has been trimmed using our usual trimming process. For samples 537 and 538, aberrant results have been removed before calculating the statistics. Clearly, with such a small number of results the summary statistics may be unreliable.

This data is for information purposes only.

### 24,25-dihydroxyvitamin D results for samples 536 – 540

DEQAS Lab No.	Method	Sample 536 24,25(OH)2-D3 nmol/L	Sample 537 24,25(OH)2-D3 nmol/L	Sample 538 24,25(OH)2-D3 nmol/L	Sample 539 24,25(OH)2-D3 nmol/L	Sample 540 24,25(OH)2-D3 nmol/L	Sample 540 24,25(OH)2-D2 nmol/L
52	LC-MS/MS	5.1	2.5	1.6	6.0	2.7	
528	LC-MS/MS	7.7	3.8	1.8	7.6	3.1	
1455	LC-MS/MS	6.2	3.0	1.9	6.8	2.9	2.8
1479	LC-MS/MS	10.2	3.1	2.9	5.8	3.2	
1751	LC-MS/MS	7.8	4.5	2.7	8.5	4.0	
1864	LC-MS/MS	7.8	3.6	1.4	9.2	4.5	
2004	LC-MS/MS	7.6	3.5	2.1	8.8	4.3	
2123	LC-MS/MS	6.5	2.9	1.9	7.1	3.0	
2211	LC-MS/MS	5.3	2.9		5.9	3.1	
2258	LC-MS/MS	6.0	3.0	2.1	7.1	3.2	
Median		7.1	3.1	1.9	7.1	3.2	
Mean		6.9	3.2	2.0	7.2	3.4	
SD		0.98	0.35	0.35	1.05	0.51	
CV%		14.3	11.0	17.3	14.5	15.2	
n		8	8	7	8	8	

**Comment:**

The statistics have been calculated on trimmed data. Clearly, with such a small number of results the summary statistics may be unreliable.

This data is for information purposes only.

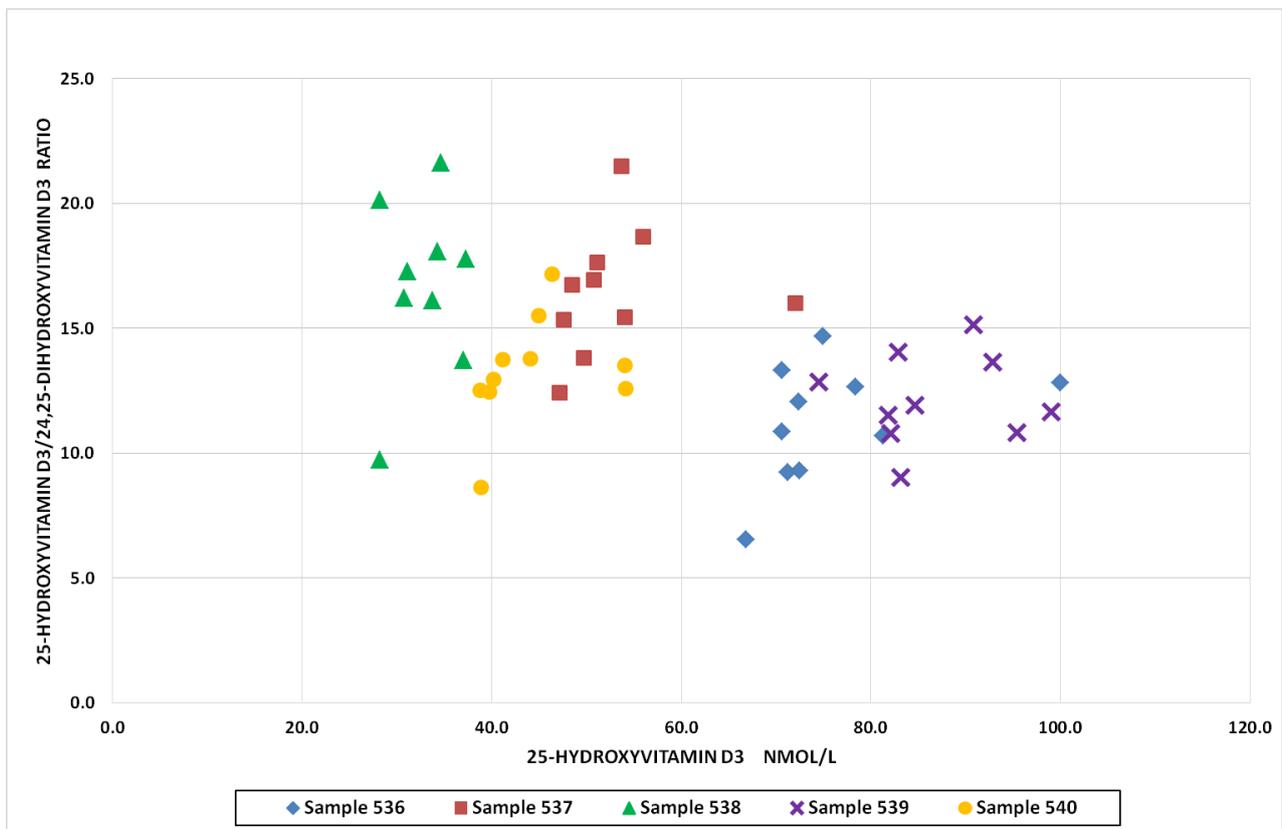
Lab Code	536			537			538			539			540		
	25OH-D3	24,25-D3	Ratio												
	nmol/L	nmol/L		nmol/L	nmol/L		nmol/L	nmol/L		nmol/L	nmol/L		nmol/L	nmol/L	
52	74.9	5.1	14.7	53.7	2.5	21.5	34.6	1.6	21.6	90.8	6.0	15.1	46.4	2.7	17.2
528	71.2	7.7	9.2	47.2	3.8	12.4	31.1	1.8	17.3	82.1	7.6	10.8	38.8	3.1	12.5
1455	78.4	6.2	12.6	56.0	3.0	18.7	34.3	1.9	18.1	92.8	6.8	13.6	45.0	2.9	15.5
1479	66.8	10.2	6.5	47.6	3.1	15.4	28.2	2.9	9.7	74.5	5.8	12.8	39.8	3.2	12.4
1751	100.0	7.8	12.8	72.0	4.5	16.0	37.0	2.7	13.7	99.0	8.5	11.6	54.0	4.0	13.5
1864	72.5	7.8	9.3	49.7	3.6	13.8	28.2	1.4	20.1	83.1	9.2	9.0	38.9	4.5	8.6
2004	81.3	7.6	10.7	54.0	3.5	15.4	37.3	2.1	17.8	95.4	8.8	10.8	54.1	4.3	12.6
2123	70.6	6.5	10.9	48.5	2.9	16.7	30.8	1.9	16.2	81.8	7.1	11.5	41.2	3.0	13.7
2211	70.6	5.3	13.3	51.1	2.9	17.6				82.9	5.9	14.1	40.2	3.1	13.0
2258	72.4	6.0	12.1	50.8	3.0	16.9	33.8	2.1	16.1	84.6	7.1	11.9	44.1	3.2	13.8
Median	72.5	7.1	11.5	51.0	3.1	16.4	33.8	1.9	17.3	83.9	7.1	11.8	42.7	3.2	13.3
Mean	74.0	6.9	11.4	51.4	3.2	16.3	32.8	2.0	17.0	86.7	7.2	12.2	43.7	3.4	13.4
SD	3.95	0.98	1.58	2.91	0.35	1.51	2.95	0.35	2.00	5.43	1.05	1.23	4.96	0.51	1.02
CV%	5.3	14.3	13.9	5.7	11.0	9.2	9.0	17.3	11.7	6.3	14.5	10.1	11.3	15.2	7.6

**Comment:**

The statistics have been calculated on trimmed data. Clearly, with such a small number of results the summary statistics may not be reliable.

This data is for information purposes only

**Relationship between the ratio of 25OH-D3:24,25-D3 and 25OH-D3 for the results reported for each sample**



**Comment:**

This chart shows the 25OH-D3/24,25(OH)2D3 ratio plotted against the 25OH-D3 value obtained by each participant. The significance of the ratio is discussed in Professor Glenville Jones's abstract for the ACB Southern Region meeting held in July 2016. The abstract can be found on the DEQAS website ([www.deqas.org](http://www.deqas.org)) in the Document Library.

**Free 25-hydroxyvitamin D results for samples 536 – 540 in pmol/L**

<b>DEQAS Lab No.</b>	<b>Method</b>	<b>Sample 536</b>	<b>Sample 537</b>	<b>Sample 538</b>	<b>Sample 539</b>	<b>Sample 40</b>
368	DIAsource ELISA	19.1	10.9	10.3	21.7	20.5
2215	In-house ELISA	16.0	10.3	7.3	17.3	13.0
2262	DIAsource ELISA	19.7	12.9	11.1	20.2	15.9

**Comment:**

This data is for information purposes only.