

## Analysis of the effect of age on the development and duration of anti-anthrax post-vaccination immunity (Age vs. PA titers).

Statistical analysis was performed using a Two-way ANOVA with Tukey's multiple comparison (determination of significance and confidence intervals). The histograms show the mean and the confidence interval (CI) as an interval estimate of the general frame.

	Months after Vaccination				Nonvaccinated
	1-3	4-8	9-11	>12	
<b>Titers in the group ages 20-40</b>	200	800	0	50	100
	100	0	400	50	400
	800	25	100	25	200
	100	400	1600	200	400
	1600	800	200	0	0
	800	25	200	0	50
	800	100	100	0	100
	100	25	0	25	25
	800	400	50		50
	400	0	100		0
		100	25		
		100			
<b>Titers in the group ages 40-60</b>	800	400	50	50	0
	800	400	50	25	0
	1600	100	400	100	50
	400	400	200	100	200
	800	25		100	400
	400	50		200	0
		100		100	400
				400	100
				100	50
					25
					200

<b>Two-Way ANOVA</b>						
<b>Table Analyzed</b>	<b>Age vs. PA titers</b>					
	<b>Ordinary</b>					
<b>Alpha</b>	0,05					
<b>Source of Variation</b>	<b>% of total variation</b>	<b>P value</b>	<b>P value summary</b>	<b>Significant?</b>		
<b>Interaction</b>	1,868	0,693	ns	No		
<b>Row Factor</b>	33,82	< 0,0001	****	Yes		
<b>Column Factor</b>	0,404	0,4888	ns	No		
<b>ANOVA table</b>	<b>SS</b>	<b>DF</b>	<b>MS</b>	<b>F (DFn, DFd)</b>	<b>P value</b>	
<b>Interaction</b>	200109	4	50027	F (4, 79) = 0,5591	P = 0,6930	
<b>Row Factor</b>	3623000	4	905650	F (4, 79) = 10,12	P < 0,0001	
<b>Column Factor</b>	43282	1	43282	F (1, 79) = 0,4838	P = 0,4888	
<b>Residual</b>	7068000	79	89472			
<b>Number of missing values</b>	31					

<b>ANOVA Multiple Comparison</b>								
<b>Number of families</b>	1							
<b>Number of comparisons per family</b>	10							
<b>Alpha</b>	0,05							
<b>Tukey's multiple comparisons test</b>	<b>Mean Diff,</b>	<b>95% CI of diff,</b>	<b>Significant?</b>	<b>Summary</b>				
<i>20-40 years</i>								
<b>1-3 vs. 4-8</b>	338,8	-18,81 to 696,3	No	ns				
<b>1-3 vs. 9-12</b>	334,6	-22,97 to 692,1	No	ns				
<b>1-3 vs. &gt;12</b>	526,3	130,1 to 922,4	Yes	**				
<b>1-3 vs. Nonvaccinated</b>	437,5	64,04 to 811,0	Yes	*				
<b>4-8 vs. 9-12</b>	-4,167	-345,1 to 336,8	No	ns				
<b>4-8 vs. &gt;12</b>	187,5	-193,7 to 568,7	No	ns				
<b>4-8 vs. Nonvaccinated</b>	98,75	-258,8 to 456,3	No	ns				
<b>9-12 vs. &gt;12</b>	191,7	-189,5 to 572,8	No	ns				
<b>9-12 vs. Nonvaccinated</b>	102,9	-254,6 to 460,5	No	ns				
<b>&gt;12 vs. Nonvaccinated</b>	-88,75	-484,9 to 307,4	No	ns				
<i>40-60 years</i>								
<b>1-3 vs. 4-8</b>	589,3	124,7 to 1054	Yes	**				
<b>1-3 vs. 9-12</b>	625	85,96 to 1164	Yes	*				
<b>1-3 vs. &gt;12</b>	669,4	229,3 to 1110	Yes	***				
<b>1-3 vs. Nonvaccinated</b>	670,5	246,6 to 1094	Yes	***				
<b>4-8 vs. 9-12</b>	35,71	-487,7 to 559,1	No	ns				
<b>4-8 vs. &gt;12</b>	80,16	-340,7 to 501,0	No	ns				
<b>4-8 vs. Nonvaccinated</b>	81,17	-322,6 to 484,9	No	ns				
<b>9-12 vs. &gt;12</b>	44,44	-457,4 to 546,3	No	ns				
<b>9-12 vs. Nonvaccinated</b>	45,45	-442,1 to 533,0	No	ns				
<b>&gt;12 vs. Nonvaccinated</b>	1,01	-374,3 to 376,3	No	ns				
<b>Test details</b>	<b>Mean 1</b>	<b>Mean 2</b>	<b>Mean Diff,</b>	<b>SE of diff,</b>	<b>N1</b>	<b>N2</b>	<b>q</b>	<b>DF</b>
<i>20-40 years</i>								
<b>1-3 vs. 4-8</b>	570,0	231,3	338,8	128,1	10	12	3,741	79
<b>1-3 vs. 9-11</b>	570,0	235,4	334,6	128,1	10	12	3,694	79
<b>1-3 vs. &gt;12</b>	570,0	43,75	526,3	141,9	10	8	5,245	79
<b>1-3 vs. Nonvaccinated</b>	570,0	132,5	437,5	133,8	10	10	4,625	79
<b>4-8 vs. 9-11</b>	231,3	235,4	-4,167	122,1	12	12	0,04825	79
<b>4-8 vs. &gt;12</b>	231,3	43,75	187,5	136,5	12	8	1,942	79
<b>4-8 vs. Nonvaccinated</b>	231,3	132,5	98,75	128,1	12	10	1,090	79
<b>9-11 vs. &gt;12</b>	235,4	43,75	191,7	136,5	12	8	1,985	79

<b>9-11 vs. Nonvaccinated</b>	235,4	132,5	102,9	128,1	12	10	1,136	79
<b>&gt;12 vs. Nonvaccinated</b>	43,75	132,5	-88,75	141,9	8	10	0,8846	79
<b>40-60 years</b>								
<b>1-3 vs. 4-8</b>	800	210,7	589,3	166,4	6	7	5,008	79
<b>1-3 vs. 9-11</b>	800	175	625	193,1	6	4	4,578	79
<b>1-3 vs. &gt;12</b>	800	130,6	669,4	157,6	6	9	6,005	79
<b>1-3 vs. Nonvaccinated</b>	800	129,5	670,5	151,8	6	11	6,246	79
<b>4-8 vs. 9-11</b>	210,7	175	35,71	187,5	7	4	0,2694	79
<b>4-8 vs. &gt;12</b>	210,7	130,6	80,16	150,7	7	9	0,752	79
<b>4-8 vs. Nonvaccinated</b>	210,7	129,5	81,17	144,6	7	11	0,7937	79
<b>9-11 vs. &gt;12</b>	175	130,6	44,44	179,7	4	9	0,3497	79
<b>9-11 vs. Nonvaccinated</b>	175	129,5	45,45	174,6	4	11	0,3681	79
<b>&gt;12 vs. Nonvaccinated</b>	130,6	129,5	1,01	134,4	9	11	0,01063	79

