

## Analysis of the effect of age on the development and duration of anti-anthrax post-vaccination immunity (Age vs. Spores 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	200	0	200	200
	200	400	200	400	0
	400	1600	800	400	50
	800	800	400	200	100
	1600	1600	200	200	800
	1600	200	200	0	400
	800	200	0	400	50
	400	100	25	200	50
	1600	800	100		25
	400	50	100		0
		400	100		
	200				
<b>Titers in the group ages 40-60</b>	1600	400	100	200	100
	1600	400	50	200	0
	3200	800	200	100	200
	3200	3200	400	0	50
	800	100		200	0
	800	400		1600	0
		200		200	100
				800	50
				0	25
					0
					100

<b>Two-Way ANOVA</b>						
<b>Table Analyzed</b>	<b>Age vs. Spores 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>	5,43	0,1513	ns	No		
<b>Row Factor</b>	34,33	< 0,0001	****	Yes		
<b>Column Factor</b>	2,019	0,1124	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>	2220000	4	555003	F (4, 77) = 1,733	P = 0,1513	
<b>Row Factor</b>	14030000	4	3508000	F (4, 77) = 10,96	P < 0,0001	
<b>Column Factor</b>	825600	1	825600	F (1, 77) = 2,578	P = 0,1124	
<b>Residual</b>	24660000	77	320222			
<b>Number of missing values</b>	33					

ANOVA Multiple Comparison								
Number of families	1							
Number of comparisons per family	10							
Alpha	0,05							
Tukey's multiple comparisons test	Mean Diff,	95% CI of diff,	Significant?	Summary				
<i>20-40 years</i>								
1-3 vs. 4-8	298,6	-398,4 to 995,7	No	ns				
1-3 vs. 9-12	641,9	-84,37 to 1368	No	ns				
1-3 vs. >12	594,4	-173,7 to 1363	No	ns				
1-3 vs. Nonvaccinated	658,3	-86,85 to 1404	No	ns				
4-8 vs. 9-12	343,3	-333,5 to 1020	No	ns				
4-8 vs. >12	295,8	-425,7 to 1017	No	ns				
4-8 vs. Nonvaccinated	359,7	-337,3 to 1057	No	ns				
9-12 vs. >12	-47,5	-797,3 to 702,3	No	ns				
9-12 vs. Nonvaccinated	16,39	-709,9 to 742,7	No	ns				
>12 vs. Nonvaccinated	63,89	-704,2 to 832,0	No	ns				
<i>40-60 years</i>								
1-3 vs. 4-8	871,4	26,47 to 1716	Yes	*				
1-3 vs. 9-12	1470	478,8 to 2460	Yes	***				
1-3 vs. >12	1290	493,8 to 2087	Yes	***				
1-3 vs. Nonvaccinated	1605	853,3 to 2357	Yes	****				
4-8 vs. 9-12	598,2	-392,6 to 1589	No	ns				
4-8 vs. >12	419	-377,6 to 1216	No	ns				
4-8 vs. Nonvaccinated	733,6	-18,18 to 1485	No	ns				
9-12 vs. >12	-179,2	-1129 to 770,8	No	ns				
9-12 vs. Nonvaccinated	135,4	-777,2 to 1048	No	ns				
>12 vs. Nonvaccinated	314,6	-382,5 to 1012	No	ns				
Test details	Mean 1	Mean 2	Mean Diff,	SE of diff,	N1	N2	q	DF
<i>20-40 years</i>								
1-3 vs. 4-8	844,4	545,8	298,6	249,5	9	12	1,692	77
1-3 vs. 9-11	844,4	202,5	641,9	260	9	10	3,492	77
1-3 vs. >12	844,4	250	594,4	275	9	8	3,057	77
1-3 vs. Nonvaccinated	844,4	186,1	658,3	266,8	9	9	3,49	77
4-8 vs. 9-11	545,8	202,5	343,3	242,3	12	10	2,004	77
4-8 vs. >12	545,8	250	295,8	258,3	12	8	1,62	77
4-8 vs. Nonvaccinated	545,8	186,1	359,7	249,5	12	9	2,039	77
9-11 vs. >12	202,5	250	-47,5	268,4	10	8	0,2503	77

<b>9-11 vs. Nonvaccinated</b>	202,5	186,1	16,39	260	10	9	0,08914	77
<b>&gt;12 vs. Nonvaccinated</b>	250	186,1	63,89	275	8	9	0,3286	77
<i>40-60 years</i>								
<b>1-3 vs. 4-8</b>	1657	785,7	871,4	302,5	7	7	4,074	77
<b>1-3 vs. 9-11</b>	1657	187,5	1470	354,7	7	4	5,86	77
<b>1-3 vs. &gt;12</b>	1657	366,7	1290	285,2	7	9	6,4	77
<b>1-3 vs. Nonvaccinated</b>	1657	52,08	1605	269,1	7	12	8,434	77
<b>4-8 vs. 9-11</b>	785,7	187,5	598,2	354,7	7	4	2,385	77
<b>4-8 vs. &gt;12</b>	785,7	366,7	419	285,2	7	9	2,078	77
<b>4-8 vs. Nonvaccinated</b>	785,7	52,08	733,6	269,1	7	12	3,855	77
<b>9-11 vs. &gt;12</b>	187,5	366,7	-179,2	340,1	4	9	0,7451	77
<b>9-11 vs. Nonvaccinated</b>	187,5	52,08	135,4	326,7	4	12	0,5862	77
<b>&gt;12 vs. Nonvaccinated</b>	366,7	52,08	314,6	249,5	9	12	1,783	77

