Two Way Analysis of Variance   Thursday, May 25, 2017, 12:10:30

Data source: sirius red in Notebook

General Linear Model

Dependent Variable: Col 13

Normality Test: Passed   (P > 0.200)

Equal Variance Test: Passed   (P = 0.049)

Source of Variation	DF	SS	MS	F	P
time2	3	632.236	210.745	30.420	<0.001
diet2	1	402.507	402.507	58.100	<0.001
time2 x diet2	3	340.063	113.354	16.362	<0.001
Residual	16	110.845	6.928		
Total	23	1545.989	67.217		

The difference in the mean values among the different levels of time2 is greater than would be expected by chance after allowing for effects of differences in diet2. There is a statistically significant difference (P = <0.001). To isolate which group(s) differ from the others use a multiple comparison procedure.

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The effect of different levels of time2 depends on what level of diet2 is present. There is a statistically significant interaction between time2 and diet2. (P = <0.001)

Power of performed test with alpha = 0.0500: for time2 : 1.000
Power of performed test with alpha = 0.0500: for diet2 : 1.000
Power of performed test with alpha = 0.0500: for time2 x diet2 : 1.000

Least square means for time2 :
Group	Mean	SEM
3M	12.952	1.075
6M	23.265	1.075
9M	23.127	1.005
12M	27.222	1.201

Least square means for diet2 :
Group	Mean	SEM
CD	17.482	0.806
HF	25.800	0.736

Least square means for time2 x diet2 :
Group	Mean	SEM
3M x CD	8.637	1.520
3M x HF	17.267	1.520
6M x CD	13.200	1.520
6M x HF	33.330	1.520
9M x CD	19.913	1.520

9M x HF   26.340   1.316   12M x CD   28.180   1.861
12M x HF 26.263   1.520

All Pairwise Multiple Comparison Procedures (Tukey Test):

Comparisons for factor: **time2**

Comparison	Diff of Means	p	q	P	P<0.050
12M vs. 3M	14.270	4	12.521	<0.001	Yes
12M vs. 9M	4.095	4	3.697	0.080	No
12M vs. 6M	3.957	4	3.472	0.106	Do Not Test
6M vs. 3M	10.313	4	9.598	<0.001	Yes
6M vs. 9M	0.138	4	0.133	1.000	Do Not Test
9M vs. 3M	10.175	4	9.780	<0.001	Yes

Comparisons for factor: **diet2**

Comparison	Diff of Means	p	q	P	P<0.050
HF vs. CD	8.317	2	10.780	<0.001	Yes

Comparisons for factor: **diet2 within 3M**

Comparison	Diff of Means	p	q	P	P<0.05
HF vs. CD	8.630	2	5.679	0.001	Yes

Comparisons for factor: **diet2 within 6M**

Comparison	Diff of Means	p	q	P	P<0.05
HF vs. CD	20.130	2	13.247	<0.001	Yes

Comparisons for factor: **diet2 within 9M**

Comparison	Diff of Means	p	q	P	P<0.05
HF vs. CD	6.427	2	4.521	0.006	Yes

Comparisons for factor: **diet2 within 12M**

Comparison	Diff of Means	p	q	P	P<0.05
CD vs. HF	1.917	2	1.128	0.437	No

Comparisons for factor: **time2 within CD**

Comparison	Diff of Means	p	q	P	P<0.05
12M vs. 3M	19.543	4	11.503	<0.001	Yes
12M vs. 6M	14.980	4	8.817	<0.001	Yes
12M vs. 9M	8.267	4	4.866	0.016	Yes
9M vs. 3M	11.277	4	7.421	<0.001	Yes
9M vs. 6M	6.713	4	4.418	0.030	Yes
6M vs. 3M	4.563	4	3.003	0.188	No

Comparisons for factor: **time2 within HF**

Comparison	Diff of Means	p	q	P	P<0.05
6M vs. 3M	16.063	4	10.571	<0.001	Yes

Comparison						Comparison				
6M vs. 12M	7.067	4	4.650	0.022	Yes	6M vs. 9M	6.990	4	4.917	0.015 Yes
9M vs. 3M	9.073	4	6.383	0.002	Yes					
9M vs. 12M	0.0767	4	0.0539	1.000	No					
12M vs. 3M	8.997	4	5.920	0.004	Yes					

A result of "Do Not Test" occurs for a comparison when no significant difference is found between two means that enclose that comparison. For example, if you had four means sorted in order, and found no difference between means 4 vs. 2, then you would not test 4 vs. 3 and 3 vs. 2, but still test 4 vs. 1 and 3 vs. 1 (4 vs. 3 and 3 vs. 2 are enclosed by 4 vs. 2: 4 3 2 1). Note that not testing the enclosed means is a procedural rule, and a result of Do Not Test should be treated as if there is no significant difference between the means, even though one may appear to exist.