

Stat 4620: Sample data spreadsheet

A 2-week study on the effects of an adrenaline drug on Basal Metabolic Rate (BMR) was conducted. Of the fifteen volunteers for the study, ten were randomly selected to receive 20 mg adrenaline pills (Drug), five volunteers received sugar pills (Placebo) that looked like adrenaline pills. BMR was measured at the start of the study (Week 0) and at the end of the study (Week 2). In addition, the safety variable Hemoglobin (Hemo) was measured at Week 0 and Week 2 to monitor possible side effects of the drug. Hemoglobin was recorded as either falling within normal laboratory ranges (N) or outside normal lab ranges (AB). The data follows:

Subject	Group	BMR Week 0	BMR Week 2	Hemo Week 0	Hemo Week 2	BMR Week 2
1	Drug	220	255	N	N	Normal range
2	Drug	218	220	AB	N	Low
3	Drug	270	260	N	AB	Normal range
4	Drug	245	250	N	N	Normal range
5	Drug	230	244	N	N	Normal range
6	Drug	210	275	N	AB	High
7	Drug	230	289	N	AB	High
8	Drug	238	250	N	AB	Normal range
9	Drug	225	295	N	N	High
10	Drug	230	254	N	N	Normal
11	Placebo	221	243	N	N	Normal range
12	Placebo	232	240	N	N	Normal range
13	Placebo	245	238	N	N	Normal range
14	Placebo	230	272	N	AB	High
15	Placebo	228	220	N	N	Low

Investigator's questions:

1. Is there a drug effect? How large? (Calculate an estimate, standard error, and p-value for assessing statistical significance.)
2. Is the drug effect larger than placebo effect? By how much? (Calculate an estimate, standard error, and p-value for assessing statistical significance.)
3. For the drug group, are the rate of hemoglobin abnormalities different between Week 0 and Week 2?
4. At Week 2, are there more *High* than *Low* BMR for the drug group?