**Interpretation of Results – An Easy Guide**

**A) What are we interpreting?**

Experiments are conducted to see if changing one thing (the variable) causes a difference between groups.

*Example*: Brand X Cholesterol Lowering Drug (expensive) *versus* Brand Y Cholesterol Lowering Drug (cheap) : Which one worked better? Was there any difference at all between the two drugs?

Epidemiological studies are conducted to see if a difference in one thing (the variable) is related to a difference in a fixed other thing (the outcome).

*Example*: The people of Scienceland country have very low rates of breast cancer compared to Canada (the outcome). How much fish do they eat (the variable)?

Statistics are done to tell us whether a difference *likely* really exists. If p<0.05, then we as scientist agree to accept that a difference seen likely is actually a difference (not just a fluke).

**B) How is it done? (a step by step guide for full marks)**

**Step 1**

*Is there a* ***significant*** *difference between two treatments (or groups)?*

(i) if P is + or > 0.05 then **NO**

(ii) if P is ANY number <0.05 then **YES**

IF YES: **TELL US WHAT THE P VALUE IS!**

**Step 2**

*If a difference exists: In what direction is the difference?* **UP**  or **DOWN**

i.e. Did the treatment result in an increase or a decrease?

**Step 3**

*What groups or treatments are you comparing?* Tell us about it and BE SPECIFIC!!

e.g. Cholesterol Lowering Drug Brand X versus Brand Y

Mean daily fish consumption by the people of Scienceland versus the people of Canada

**Step 4**

*What difference was compared?* READ THE LEGEND!!

e.g. *The fasting plasma total cholesterol level* in subjects on the Brand X drug versus fasting plasma total cholesterol level in subjects taking the BRAND Y drug

e.g. *The change from baseline in fasting plasma total cholesterol level* in subjects taking BRAND X versus subjects taking BRAND Y.