1.4 Type of medical study

The medical study divides according to clinical case that deal with firstly, so its divided to several phase:

1. **Discovery study**
2. **Chemical and physical Study**
3. **In vivo study (inside laboratory)**
4. **Preclinical study**
5. **clinical study**

The medical study has several type of experimental design, most important of them:

1. **Comparative experiment**
2. **Single case experiment**
3. **Questioner experiment**
4. **Quasi experiment**
5. **Evidence-based medicine (EBM)**

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1. **Comparative experiments:**

Its type of study that is compare between two groups or more, includes a control group, placebo or standard treatment and is "blinded.")

- Medicine: New drug vs. placebo
- Education: New teaching method vs. traditional
- Agriculture: Fertilizer A vs. Fertilizer B
- Consumer: Brand X vs. Brand Y
- New method group vs. Traditional method group

- **Now we can see the REAL difference!**

Without comparison → We're guessing

With comparison → We have evidence

We have, in our study, two forms of experiments: on human and on lap animals.

For human experiments we have to compare between:

– Stander treatment groups

– No treatment (a control group)

– A placebo (another form of treatment)

While for lap animals:

– Treatment groups (may be one or more than one group)

– No treatment (a control group)

- **Placebos**: In a drug trial, the placebo might be a completely inert drug that looks exactly like the experimental drug and is administered in the same way.
- **Experimental Group:** In your study, you will give one group your new wonder-drug. This group is called the experimental group.

- **Blinded:** If the patients doesn't know if they are in the experimental group or in the control group, the study is said to be 'blinded'.
- **Double-Blinded:** When both the subject AND the people involved in carrying out the experiment (e.g. researcher, nurses, etc.) don't know

who is in the control group and who is in the experimental group. Double-blinded studies are much more ideal than single-blinded studies.

- **Randomization:**

  The choice randomly is very important in the design of the experiment where it gives you an integrated idea of the community you want to be search. For example, if you are comparing a new cancer treatment against the 'older' treatment, which patients get the new treatment and which get the older treatment must be decided at random.

- **Stratification:**

  Individuals (or observations) in a study must be properly stratified (grouped) to try and ensure that no one of people/observations is over-represented in the control group or in any of the experimental group(s).