Random Sampling & Random Assignments

**Population**

Controlled Experiment

Sample is divided into similar groups called experimental blocks.

Some members' blocks get a treatment at varying levels. Other blocks get no treatment, possibly a placebo.

Group members experimental units.

Blinding members don't know if they get treatment or placebo.

Double blinding: When people who work with members don't know who gets treatment or placebo.

When an experimental block that receives a treatment is significantly different from control group blocks, then we infer that the treatment is effective.

Replication: If independent researchers can replicate the result, the study is validated.

Treatment and control groups are "experimental blocks."

When groups are created by random assignment we employ randomized block design.