

Analysis of Variance (ANOVA)

Types of ANOVA (3 Types)

① One Way ANOVA : One factor with atleast 2 levels, these levels are independent

Eg: Doctor wants to test a new medication to decrease headache.

They split the participants in 3 conditions [10mg, 20mg, 30mg]

Doctors ask the participants to rate the headache [1-10]

Medication → factor

| 10mg | 20mg | 30mg |
|------|------|------|
| 5 | 7 | 2 |
| 3 | 4 | 6 |
| — | — | — |
| — | — | — |

② Repeated Measures ANOVA : One factor with atleast 2 levels, levels are dependent.

Running → Factor

| levels → | Day 1 | Day 2 | Day 3 |
|----------|-------|-------|-------|
| | 8 | 5 | 4 |

7

4

9

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③ Factorial ANOVA : Two or more factors (each of which with atleast 2 levels, levels can be independent and dependent

| Running → Factor | | | | |
|-----------------------|-------------|-------|-------|-------|
| Gender ↓ Factor | Levels ↓ | Day 1 | Day 2 | Day 3 |
| | | 8 | 5 | 4 |
| | Male | 9 | 4 | 3 |
| | | 2 | 4 | 6 |
| | Female | 7 | 8 | 3 |