Random assignment of participants into two groups

Random assignment ensures very similar distribution of factors that influence health. E.g., the proportions who are men, who have pre-existing health conditions, who smoke or who are overweight will be the same.

The AVERAGE vitamin D level will be very similar in the two groups.

Monthly VITAMIN D tablet  

AVERAGE vitamin D level in blood goes up

Monthly PLACEBO tablet  

AVERAGE vitamin D level in blood stays the same

Both groups followed forward in time to measure the PROPORTIONS that get diseases such as cancer or heart disease

If the proportions that get disease differ, this is because we increased the AVERAGE vitamin D level in one group but did not change it in the other group.

The random group assignment ensured that all other factors that could influence health (such as genetic predisposition to low vitamin D or low sun exposure) were evened out between the groups.