

# Effectiveness of Apple Cider Vinegar on Serum LDL and HDL

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## ABSTRACT

Obesity is one of the major problems in worldwide. Serum cholesterol level has no significant relation with body weight of the person, even a thin person can have more serum cholesterol level. Many dietary supplements have come now days which has been claims to decrease the serum cholesterol level. Many of them are in Ayurveda as well as naturopathy. The focus of the study is to assess whether the apple cider vinegar is effective in minimizing the LDL.

An study has done on forty samples selected. The population consists of individual living normal life style, without having any strict fat reduction intervention. The sample were selected by using random sampling and divided by giving random allocation into control and experimental group. Blood profiles (including, total cholesterol and LDL) of all 40 subjects were noted on monthly basis. Both the groups were undergone pre test and Effectiveness of apple cider vinegar therapy was determined by using T-Test (posttest comparison) between both the groups showed that, out of 40 subjects, 80% were non vegetarian & 20% were having only green food in experimental group and 72% were non-vegetarian and 28% were vegetarian in control group. In experimental & control group, majority of subjects (84%) were having body weight as more than there BMI

## Keywords

Apple cider vinegar, Low Density lipoprotein and High-Density Lipoprotein

## INTRODUCTION: AIM

- To assess the effect to apple cider vinegar on serum LDL level.
- To determine the association between serum cholesterol level with socio demo graphical data.

## Hypothesis

**H0:** There is no change in serum cholesterol level of experimental and control group.

## METHODOLOGY

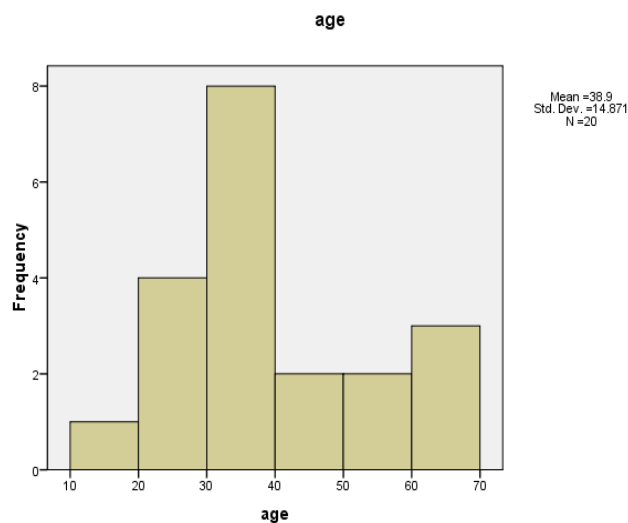
- Research design: Experimental
- Sampling technique: Purposive sampling
- Sample size: 40

## RESULTS

**Table1:** Demographical Data Related to Age

Age in Years	Frequency
18	1
20	2
21	1
29	1
31	1
32	1
34	2
36	1
38	1

39	2
41	1
44	1
54	1
56	1
62	2
68	1
Total	20



**Figure 1**

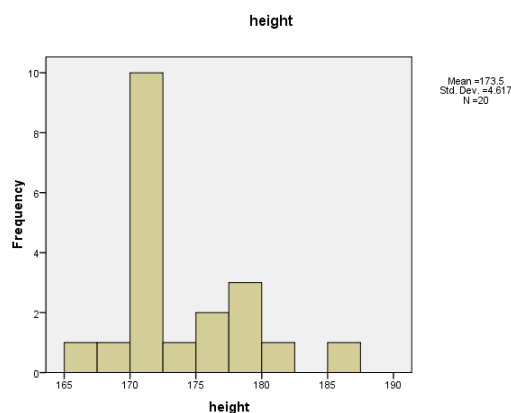
**Table 2:** Frequency, As Per Their Diet Pattern, N=20

Diet Pattern	Frequency
Non Veg	9
Veg	11
Total	20

**Table 3:** Demographical Data, As Per Their Height, N=20

Height in cm	Frequency
167	1
168	1
170	5
172	5
174	1
175	2
178	1
179	2
180	1
185	1
Total	20

Table 3 depicts that, majority (65%) was having height between, 170-175 cm and 20% have height between 176-180cms and 5% have height between 181-185cms

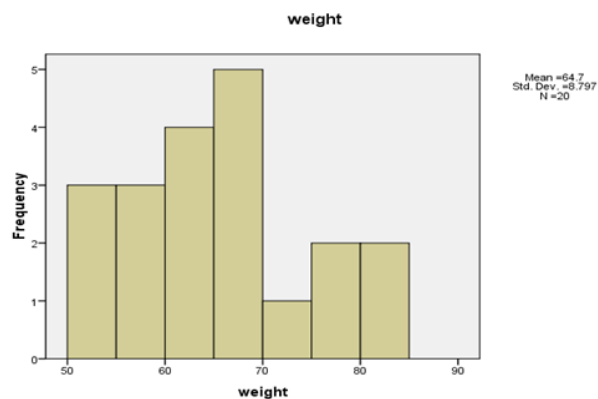


**Figure 2**

**Table 4: Frequency, As Per Their Weight, N= 20**

Weight in kg	Frequency
52	1
54	2
56	2
59	1
60	2
62	1
64	1
65	2
66	1
67	1
68	1
73	1
75	1
77	1
80	1
81	1

Table 4, indicates that 15% sample have body weight between 50- 55 kg, 25% subjects have body weight between 56-60 kg, 20% have body weight between 61-65 kg, 15% have body weight between 66-70 kg, 10% have between 71-75 kg and 10% have body weight between 76-80 kg.



**Figure 3**

**Table 5:** Mean, Median and SD Score of Total Cholesterol N= 40

	Paired Samples Statistics			
	Mean	N	SD	SDEM
Experimental Grp	132.0	20	18.8	4.2
Control Grp	141.0	20	23.3	5.2

Table 5 depicts that the Mean and SD of experimental group is  $132 \pm 18.8$  with standard error of 4.2 on the other hand control group has  $141.0 \pm 23.3$  with standard error of 5.2

**Table 6:** Mean difference Score of Serum LDL

	X	SD	SDEM	95% Confidence Interval of the Difference				
EXPERIMENTAL (cholesterol)								
CONTROL (cholesterol)	9.000	6.325	1.414	6.040	11.960	6.364	19	.002

**Funding:** Self

**Ethical Clearance:** Taken from IRC Symbiosis College of Nursing

**Conflict of Interest:** None

## REFERENCES

- [1] Jenkins DJ proved that consumption of Almond reduce LDL-cholesterol concentrations and increase HDL-cholesterol concentrations in hyper lipidaemic individuals
- [2] Jenkins DJ, Kendall CW, Marchie A, et al. (2002) Dose response of almonds on coronary heart disease risk factors: bloodlipids, oxidizedlow-densityli poproteins, lipoprotein(a), homocysteine, and pulmonary nitricoxide: arandomized, controlled, crossovertrial. Circulation 106, 1327–1332 [PubMed]
- [3] Wojdylo A., Oszmianski J., Laskowski P. Polyphenolic compounds and antioxidant activity of new and old apple varieties. J. Agric. Food Chem. 2008;56:6520–6530. doi: 10.1021/jf800510j.[PubMed][CrossRef]
- [4] Koutsos A., Lovegrove J.A. An apple a day keeps the doctor away: Inter-relationship between apple consumption, the gut microbiota and cardiometabolic disease risk reduction. In: Tuohy K., Del Rio D., editors. Diet-microbe interactions in the gut: Effects on human health and disease. Academic Press, Elsevier; London, UK:2015. pp.173–194.