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**Dr. P Kumari**  
Associate Professor,  
Department of Home Science,  
Sri Padmavathi Women's Degree  
& P.G College, Tirupati,  
Andhra Pradesh, India

## Lipid profile, elderly, cardiovascular diseases, cholesterol lipid profile status among the elderly of fishing communities

**Dr. P Kumari**

### Abstract

The present study was undertaken to investigate the changes in the serum lipids among the diseases are the leading cause of death globally. The underlying mechanisms vary depending fishing community of elderly people. A sample of 100 (50 males and 50 females) in the age group of 51-70 years were selected randomly. The lipid profiles assessed for fishermen subjects included estimation of serum total cholesterol (TC), High Density Lipo Protein – Cholesterol (HDCL-C) and triglycerides (TG). The other parameters were calculated based on the estimated values. Results of the study reveal that the lipid profiles of the fishermen subjects studies was normal. All the parameters were showed the normal levels. Very few subjects showed higher values which indicate risk.

**Keywords:** Cardiovascular, serum, cholesterol, lipid profile

### Introduction

Cardiovascular diseases have no geographic and racial boundaries. They occur throughout the world, in all races and in all strata of society through variations between sexes, ages and socio economic status do exist. The average life span of human beings in increasing and with the percentage of people entering the sixty five and older age group are growing rapidly and will continue to do so in the coming generations due to lot of health awareness. The term cardiovascular disease includes several diseases such as Coronary Heart Diseases (CHD), stroke, hypertension, peripheral artery disease, rheumatic heart disease and congenital heart disease. Elevated levels of blood lipids that is cholesterol and triglycerides are the major risk factors for heart disease. The triglycerides are also important, since they influence lipid deposition and clotting mechanisms.

Plasma lipids and lipoproteins are major risk factors for CHD. Clustering of multiple factors that have been recognized are elevated small, dense Low Density Lipoprotein cholesterol (LDL - C), low levels of HDL- C, high levels of plasma triglycerides and very Low Density Lipoprotein Cholesterol (VLDL - C) Kumar *et. al*, (2009) <sup>[4]</sup> Dietary n-3.

Associate Professor, Department of Home Science, Sri Padmavathi Women's Degree & P.G College, Tirupati – 517502.

LCPUFAs from fish oils exert beneficial effects by reducing platelet aggregation and improving blood lipoprotein profiles. Fish and fish oil consumption have been consistently associated with triglyceride (TG)-lowering effects. The risk factors may be absolute or relative in coronary heart diseases. It is a multifactorial disease. Risk factors are not only additive in their effects but also can be interactive. Clustering of multiple risk factors that have been recognized are age, sex, smoking, hypertension, diabetes, elevated small dense LDL-C, low HDL –C, hypertriglyceridemia, obesity, stress and sedentary life style. This paper attempts to asses the lipid profiles status of the elderly people.

### Objective

To assess the lipid profile status of the elderly fishermen community.

### Methodology

The sample of the study comprised of 100 elderly men and women (50 Men and 50 women) of the fishing community in the age group of 51 to 70 years.

**Correspondence**  
**Dr. P Kumari**  
Associate Professor,  
Department of Home Science,  
Sri Padmavathi Women's Degree  
& P.G College, Tirupati,  
Andhra Pradesh, India

General back ground information of the total sample was recorded. It includes occupation, literacy, economic status, family size, non- nutritional habits and obstetric history of men and women subjects. The methods followed to assess lipid profile are for serum cholesterol – Parekh and Jung (1970), Serum triglycerides- Fletcher method modified by Foster and Dunn (1973), HDL- C Heparin Manganese precipitation method, LDL –C By calculation TC/HDL-(Tg/5), VLDL- By calculation TC- (LDL+HDL), TC/HDL-C Ratio – By calculation.. The results of the study were tabulated and subjected to statistical analysis. Mean and S.D

were calculated, t- test was done to assess the level of difference between two variables and the results are analysed.

### Results and discussion

The lipid profiles assessed for fishermen subjects included estimation of serum total cholesterol, high density lipo protein, cholesterol and triglycerides. The other parameters like TC/HDL ratio, Low density lipo protein –cholesterol and very low density lipo protein were calculated based on the estimated values.

**Table 1:** Shows Lipid Status of The Elderly Fishermen Population

Sex	n	Total Cholesterol mg/dl.		HDL-C mg/dl.		TC/HDL-C Ratio		Triglycerides Mg/dl.		LDL-C Mg/dl.		VLDL-C Mg/dl	
		Mean±SD	T	Mean±SD	T	Mean±SD	T	Mean±SD	T	Mean±SD	T	Mean±SD	T
Males	50	136.33 ±41.29		39.63 ±8.54		3.52 ±1.38		74.47 ±21.75		81.7 ±41.5		15.13 ±1.2	
Females	50	151.33 ±41.97	-1.41@	45.30 ±8.63	-2.56@	3.41 ±1.20	0.34@	86.47 ±21.89	-2.08@	88.8 ±42.9	0.65@	17.33 ±1.6	-1.86@
Normal		<200		>50		<4		<150		<130		8 to 28	

@Not Significant = <1.96 \*P<0.05 = >1.96 \*\*P<0.01 = >2.58 \*\*\*P<0.001 = >3.29

From the above table it is clear that the mean total cholesterol levels of the male subjects is 136.33mg/100ml and for females it was 151.53mg/dl. The difference between males and females was statistically not significant. The female subjects shows the higher range of cholesterol than males. The mean value of total cholesterol for subjects of both sex were in the desirable range that is < 200mg/100ml. The mean HDL-C levels of the males were 39.63 mg/dl and for the females 45.3mg/dl and no significant difference was observed. Though the HDL-C levels are not in desirable range (> 50 mg/dl) they are in the levels of out of risk level that is < 35 mg/dl. TC/HDL-C ratio increases with age and similar situation was observed in the present study also. It was 3.52 and 3.41for men and women respectively.

The mean triglyceride levels for the males and females were 74.47 and 86.47 mg/100ml respectively. When compared with normal levels, these means were in the desirable range that is < 150 mg/dl. The males are showing lesser values than females. The mean TC/HDL-C ratios for males and females were 3.52 and 3.41 respectively for which difference was not significant. All the TC/HDL-C ratios recorded for the study sample were normal as TC/HDL-C ratio of > 4-5.0 indicates risk of CHD. The low density lipo protein - cholesterol (LDL-C) levels for males and females were 81.7 and 88.8 mg/100 ml, respectively. The normal values of VLDL were 8 to 28 mg/dl. There was no significant difference between the two sexes. The study population is within the range.

The overall picture of lipid profiles of the fishermen subjects studied was normal. All the parameters showed normal levels. Very few subjects showed higher values which indicate risk. But the number of subjects who showed such higher values were less. Few subjects showed low levels of HDL-C for Indians these lower levels are stated to be the most important coronary risk factor. The dietary carbohydrate is inversely associated with HDL-C. Indian diets are cereal based diets and carbohydrates on an average supply 75-80% of total calories in the diet. The diet of fishermen population is also cereal based diet, which contributes more carbohydrates through cereals. Therefore this reason might also have influenced the HDL-C levels and these are slightly lower than optimal. The LDL-C and V LDL levels of the fishermen were within the normal range except in few subjects. The EPA and DHA content of fish is shown to reduce remarkably the high triglycerides levels and other lipid fractions. The menu of the fishermen population consists of fish regularly taken that is 50

to 150g per day. This might be the reason for lower levels of lipid profiles in these groups. Habitual fish consumption reduces the lipid levels and simultaneously the risk of cardiovascular diseases The omega 3 fatty acids present in the sea foods reduces the risk of CVD. In some of the people the life style factors of smoking and drinking also might have exerted a minor influence on the HDL-C levels of the sample in the present study. Thus the cumulating effect of a host of factors, especially in a susceptible individual play a crucial role in influencing the coronary profile of a person either favorable or adverse.

### Conclusion

The differences in the lipid profile values of males and females were not significant. Normal and lower levels of lipid profiles were observed in the community. This might be due to the regular consumption of fish by these community. Fish being a rich source of omega -3 fatty acids protects against cardiovascular diseases.

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