The Great Plains Laboratory, LLC

Advanced Cholesterol Profile

Total Cholesterol

Patient Value mg/dL	Reference Range mg/dL	High/Low Flag
12.00	160.00 - 200.00	L

Total Cholesterol Interpretation

High and low values are flagged based on clinical studies that generally indicate significant health impairment with cholesterol values below 160 mg/dL or greater than 200 mg/dL. Values between 160-200 mg/dL are flagged as optimal. Population based reference ranges are given below.

Cholesterol is an essential fat needed for production of steroid hormones and bile salts. In addition, cholesterol is needed for the function of cell membranes and is especially important for myelin, the insulating material for the nerves in the peripheral nervous system and the brain. Cholesterol is needed to maintain serotonergic brain function and helps to modulate GABA (gamma-aminobutyric acid) receptors. In addition, cholesterol is an essential activating factor for the developmental protein called sonic hedgehog. Since there are mixed benefits from both high and low cholesterol, all related factors should be considered in the interpretation of results. All values should be examined in light of the patient's history, not only those flagged as high or low.

Age -years	Males 5 percentile	Males 95 percentile	Females 5 percentile	Females 95 percentile
0-4	114	203	112	200
5-9	121	203	126	205
10-14	119	202	124	201
15-19	113	197	119	200
20-24	124	218	122	216
25-29	133	244	128	222
30-34	138	254	130	230
35-39	146	270	140	242
40-44	151	268	147	252
45-49	158	276	152	265
50-54	158	277	162	285
55-59	156	276	172	300
60-64	159	276	172	297
65-69	158	274	171	303
>70	144	265	173	280

Population based reference ranges for normal people. These values are not used for interpretive range.
Source: Lipid Research Clinics Population Studies Data Book, NIH publication no. 80-1527

Testing performed at Quest Diagnostics, Lenexa, KS

Formation of cholesterol
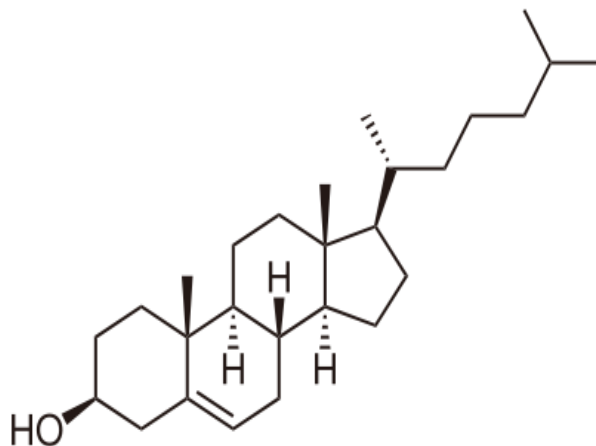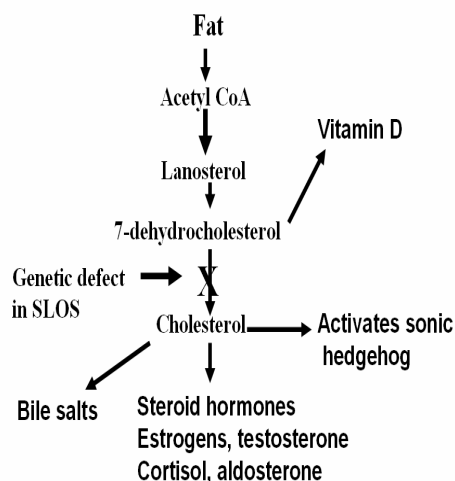
Low total cholesterol values (less than 160 mg/dL) are associated with genetic diseases of cholesterol metabolism such as Smith-Lemli-Opitz syndrome (SLOS), Tangier's disease, and abetalipoproteinemia. Low values are more common in vegetarianism, hyperthyroidism, liver disease, use of statin drugs, malabsorption, malnutrition, autism, violent behavior, celiac disease, anxiety, bipolar disease, alcoholism, lung cancer, suicide, depression, and obesity associated with human adenovirus-36 infection. Total serum cholesterol was positively associated with measures of affect, cognitive efficiency, activation, and sociability, suggesting a link between low cholesterol and bad mood. Children with low cholesterol were three times more likely to be suspended from school for disruptive behavior.   The number of men whose cholesterol was lower than 160 and who had died from AIDS was four times higher than the number of men who had died from AIDS with a cholesterol above 240.

Optimal cholesterol values (between 160-200 mg/dL) Values in this range are generally considered optimal for cardiovascular health. However, higher cholesterol values may be protective against infections. Values within this range may be associated with increased death risk in the elderly (age greater than 70 years). Individuals with frequent infections may want to consider the possible benefits of increasing dietary cholesterol.

High total cholesterol values (greather than 200 mg/dL) are associated with porphyrias, cardiovascular disease, cholestasis, nephritic syndrome, hypothyroidism, oral contraceptives, normal pregnancy, and lipoproteinemias. Many medical authorities recommend serum cholesterol for adults be less than 200 mg/dL based on concerns about cardiovascular health but ignore all of the benefical effects of cholesterol on brain function and prevention of mental disease. High cholesterol appears to be potective against respiratory illnesses like tuberculosis and a high cholesterol diet has been shown to significantly decrease length of tuberculosis infections.   LDL cholesterol protects against Staphylococcus infections. In an elderly group, people with cholesterol levels less than or equal to 175 mg per dL were twice as likely to die as those with cholesterol levels greater than 226 mg per dL.