

Problem 1: Elevated Cholesterol Levels

A patient had very elevated plasma cholesterol levels, but her triacylglycerol levels were within normal limits. Response to diet and drug therapy was minimal, however cholesterol levels fell to within 20% of the normal values following liver transplant. What is this patient's problem?

Problem 2: Elevated Cholesterol Levels

A patient had very elevated plasma triacylglycerol levels, but her LDL levels were low. Administration of insulin did not significantly reduce her triacylglycerol levels. Triacylglycerol levels decreased to the normal range after a blood transfusion. Suggest two possible causes for this patient's problems and explain how you could distinguish between the two.

Problem 3: Elevation of Chylomicron and VLDL Remnants

Lipoprotein electrophoresis from a twenty eight year old male recovering from a myocardial infarct shows a broad band in the beta region. This is reported as an elevation of chylomicron and VLDL remnants. Plasma cholesterol and triacylglycerol levels are elevated.

Suggest a biochemical mechanism for his problem.

Problem 4: Elevated VLDL Levels

A patient has elevated levels of triacylglycerol and cholesterol. Lipoprotein analysis shows that VLDL is elevated. The patient is fifty pounds overweight and sedentary. His blood glucose levels have been slightly elevated on several occasions over the last two years.

Suggest a biochemical mechanism for his problem.