

Optimal strategies for monitoring lipid levels in patients at risk or with cardiovascular disease: a systematic review with statistical and cost-effectiveness modelling

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Plain English summary

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Plain English summary

There is a clear relationship between cholesterol levels and the risk of heart disease (including heart attack and stroke). It is common that, together with other factors such as blood pressure, cholesterol levels are measured at regular intervals to determine a person's risk of heart disease and hence decide whether or not cholesterol-lowering drugs (statins) should be prescribed. There are several alternative cholesterol measures ('lipids'). Over short time periods, cholesterol measures may vary more by chance than by any real change in health status. Therefore, we studied which cholesterol measures are most strongly associated with future heart disease, and the appropriate length of time to leave between one cholesterol test and the next.

First, we compiled information from previous studies and found that, in general, combinations of cholesterol measures (e.g. the ratio of two types of cholesterol) show stronger associations with heart disease than single measures. We used similar methods to study the effects of statins on cholesterol. This confirmed that effects are greater at higher doses. Finally, we used computer models based on routine general practice data to estimate the levels of treatment, financial costs and rates of outcomes such as heart disease, if cholesterol is measured every 1, 2, 3 or 5 years. Based on our models, the shorter the interval, the larger the number of people that will be eligible for treatment.

Within limitations, including the difficulty of fully quantifying harms and benefits of statins in a computer model, we estimate that this is both beneficial and cost-saving.

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