# Person—low-density lipoprotein cholesterol level (calculated), total millimoles per litre N[N].N

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# Person—low-density lipoprotein cholesterol level (calculated), total millimoles per litre N[N].N

## Identifying and definitional attributes

| | |
|---|---|
| **Metadata item type:** | Data Element |
| **Short name:** | Cholesterol—LDL (calculated) |
| **METEOR identifier:** | 270402 |
| **Registration status:** | Health, Superseded 01/10/2008 |
| **Definition:** | A person's calculated low-density lipoprotein cholesterol (LDL-C). |
| **Data Element Concept:** | Person—low-density lipoprotein cholesterol level |
| **Value Domain:** | Millimoles per litre N[N].N |

# Value domain attributes

## Representational attributes

| | | |
|---|---|---|
| **Representation class:** | Total | |
| **Data type:** | Number | |
| **Format:** | N[N].N | |
| **Maximum character length:** | 3 | |
| | **Value** | **Meaning** |
| **Supplementary values:** | 99.9 | Not stated/inadequately described |
| **Unit of measure:** | Millimole per litre (mmol/L) | |

# Data element attributes

## Collection and usage attributes

**Guide for use:**

Formula:

LDL-C = (plasma total cholesterol) - (high density lipoprotein cholesterol) - (fasting plasma triglyceride divided by 2.2).

**Collection methods:**

The LDL-C is usually calculated from the Friedwald Equation (Friedwald et al. 1972), which depends on knowing the blood levels of the total cholesterol and HDL-C and the fasting level of the triglyceride.

Note that the Friedwald equation becomes unreliable when the plasma triglyceride exceeds 4.5 mmol/L.

Note also that while cholesterol levels are reliable for the first 24 hours after the onset of acute coronary syndromes, they may be unreliable for the subsequent 6 weeks after an event.

- Measurement of lipid levels should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authorities.
- To be collected as a single venous blood sample, preferably following a 12-hour fast where only water and medications have been consumed.

**Comments:**

High blood cholesterol is a key factor in heart, stroke and vascular disease, especially coronary heart disease (CHD).

Poor nutrition can be a contributing factor to heart, stroke and vascular disease as a population's level of saturated fat intake is the prime determinant of its level of blood cholesterol.

The majority of the cholesterol in plasma is transported as a component of LDL-C. Thus, the evidence linking CHD to plasma total cholesterol and LDL-C is essentially the same.

## Source and reference attributes

**Submitting organisation:** Cardiovascular Data Working Group

**Origin:** National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand, Lipid Management Guidelines - 2001, MJA 2001; 175: S57-S88.

## Relational attributes

**Related metadata references:**

Has been superseded by Person—low-density lipoprotein cholesterol level (calculated), total millimoles per litre N[N].N
Health, Standard 01/10/2008

Is formed using Health service event—fasting indicator, code N
Health, Standard 21/09/2005

Is formed using Person—cholesterol level (measured), total millimoles per litre N[N].N
Health, Superseded 01/10/2008

Is formed using Person—high-density lipoprotein cholesterol level (measured), total millimoles per litre [N].NN
Health, Standard 01/03/2005

Is formed using Person—triglyceride level (measured), total millimoles per litre N[N].N
Health, Superseded 01/10/2008

Is re-engineered from Cholesterol-LDL calculated, version 1, Derived DE, NHDD, NHIMG, Superseded 01/03/2005 .pdf (19.7 KB)
*No registration status*

**Implementation in Data Set Specifications:**

Acute coronary syndrome (clinical) DSS
Health, Superseded 07/12/2005

Acute coronary syndrome (clinical) DSS
Health, Superseded 01/10/2008

Cardiovascular disease (clinical) DSS
Health, Superseded 15/02/2006

***DSS specific information:***

Many studies have demonstrated the significance of blood cholesterol components as risk factors for heart, stroke and vascular disease.

Scientific studies have shown a continuous relationship between lipid levels and Coronary Heart Disease (CHD) and overwhelming evidence that lipid lowering interventions reduces CHD progression, morbidity and mortality.

There are many large-scale, prospective population studies defining the relationship between plasma total (and Low-density Lipoprotein (LDL)) cholesterol and the future risk of developing CHD. The results of prospective population studies are consistent and support several general conclusions:

- the majority of people with CHD do not have markedly elevated levels of plasma total cholesterol or LDL-C,
- there is a continuous positive but curvilinear relationship between the concentration of plasma total (and LDL) cholesterol and the risk of having a coronary event and of dying from CHD,
- there is no evidence that a low level of plasma (or LDL) cholesterol predisposes to an increase in non-coronary mortality.

The excess non-coronary mortality at low cholesterol levels in the Honolulu Heart Study (Yano et al. 1983; Stemmermann et al. 1991) was apparent only in people who smoked and is consistent with a view that smokers may have occult smoking related disease that is responsible for both an increased mortality and a low plasma cholesterol.

It should be emphasised that the prospective studies demonstrate an association between plasma total cholesterol and LDL-C and the risk of developing CHD. (Lipid Management Guidelines - 2001, MJA 2001; 175: S57-S88 and Commonwealth Department of Health & Ageing and Australian Institute of Health and Welfare (1999) National Health Priority Areas Report: Cardiovascular Health 1998. AIHW Cat. No. PHE 9. HEALTH and AIHW, Canberra pgs 14-17).

In settings such as general practice where the monitoring of a person's health is ongoing and where a measure can change over time, the service contact date should be recorded.

Cardiovascular disease (clinical) DSS
Health, Superseded 04/07/2007
***DSS specific information:***

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Cardiovascular disease (clinical) DSS
Health, Superseded 22/12/2009
***DSS specific information:***

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