

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

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## Identifying and definitional attributes

<b>Metadata item type:</b>	Data Element
<b>Short name:</b>	Cholesterol—LDL (calculated)
<b>METEOR identifier:</b>	359262
<b>Registration status:</b>	<a href="#">Health</a> , Standard 01/10/2008
<b>Definition:</b>	A person's calculated low-density lipoprotein cholesterol (LDL-C) in millimoles per litre.
<b>Data Element Concept:</b>	<a href="#">Person—low-density lipoprotein cholesterol level</a>
<b>Value Domain:</b>	<a href="#">Millimoles per litre N[N].N</a>

## 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

<b>Guide for use:</b>	Formula:  $\text{LDL-C} = (\text{plasma total cholesterol}) - (\text{high density lipoprotein cholesterol}) - (\text{fasting plasma triglyceride divided by 2.2}).$
<b>Collection methods:</b>	<p>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.</p> <p>Note that the Friedwald equation becomes unreliable when the plasma triglyceride exceeds 4.5 mmol/L.</p> <p>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 8 weeks after an event.</p> <ul style="list-style-type: none"><li>• 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.</li><li>• To be collected as a single venous blood sample, preferably following a 12-hour fast where only water and medications have been consumed.</li></ul>

**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. Recent trials support a target LDL-C of <2.0 mmol/L for high risk patients with existing coronary heart disease.

## 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.

National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand, Position Statement on Lipid Management - 2005, Heart, Lung and Circulation 2005; 14: 275-291.

## Relational attributes

**Related metadata references:** Supersedes [Person—low-density lipoprotein cholesterol level \(calculated\), total millimoles per litre N\[N\].N](#)  
[Health](#), Superseded 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

**Implementation in Data Set Specifications:** [Acute coronary syndrome \(clinical\) DSS](#)  
[Health](#), Superseded 01/09/2012

[Acute coronary syndrome \(clinical\) DSS](#)  
[Health](#), Superseded 02/05/2013

[Acute coronary syndrome \(clinical\) NBPDS 2013-](#)  
[Health](#), Standard 02/05/2013

**Implementation start date:** 01/07/2013

[Cardiovascular disease \(clinical\) DSS](#)  
[Health](#), Superseded 01/09/2012

**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 \(clinical\) NBPDS](#)

[Health](#), Superseded 17/10/2018

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