



Newborn Screening Programme for  
Inborn Errors of Metabolism  
Information leaflet series (No. 25)

# Methylmalonic acidaemia and homocystinaemia, cb1C type (cb1C)

For general queries on Newborn Screening Programme for Inborn Errors of Metabolism,  
please call: ☎ 5741 4280 (Department of Clinical Genetics, Hospital Authority)



醫院管理局  
HOSPITAL  
AUTHORITY

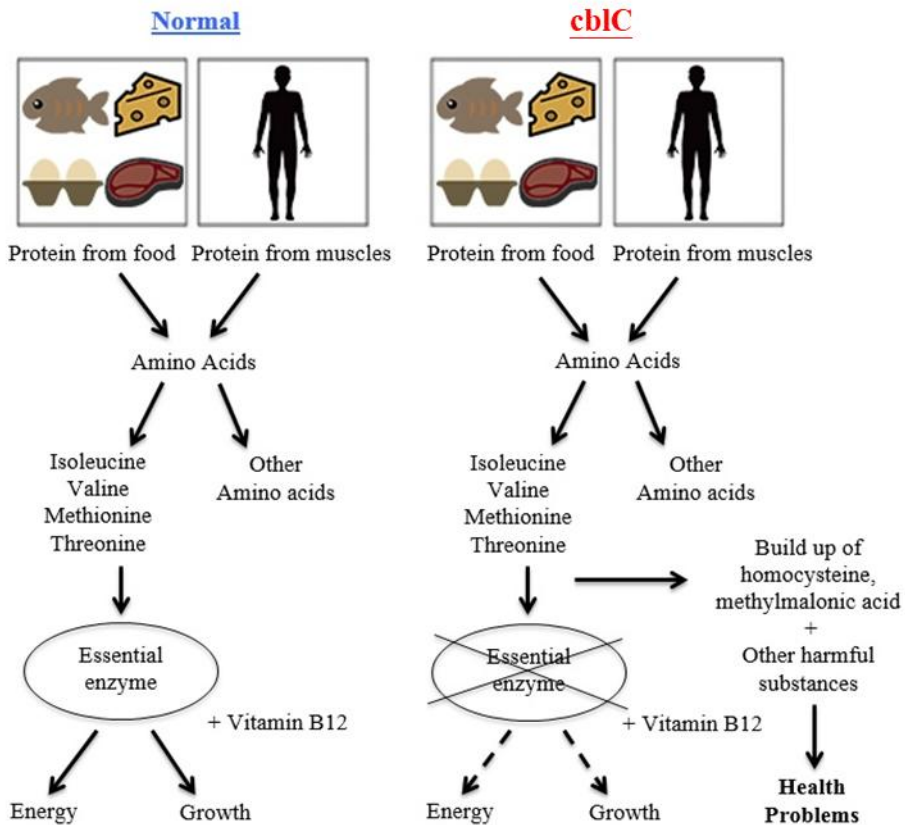
# What is Methylmalonic acidaemia and homocystinaemia, cb1C type (cb1C)?

Methylmalonic acidaemia and homocystinaemia, cb1C type (cb1C) is a rare but treatable organic acid disorder. People with organic acid disorders cannot process amino acids, the building blocks of protein.

Our body breaks down protein in food into amino acids when we eat, and breaks down protein in our muscle into amino acids during prolonged fasting and stress. Amino acids are then processed by special chemicals called enzymes so that the body can use them. Different enzymes target specifically at different amino acids.

Babies having cb1C lack specific cofactors and enzymes which are essential to process four amino acids, namely isoleucine, valine, methionine and threonine. These amino acids cannot be utilized. Methylmalonic acid, homocysteine and other harmful substances thus build up in the body, and lead to health problems.

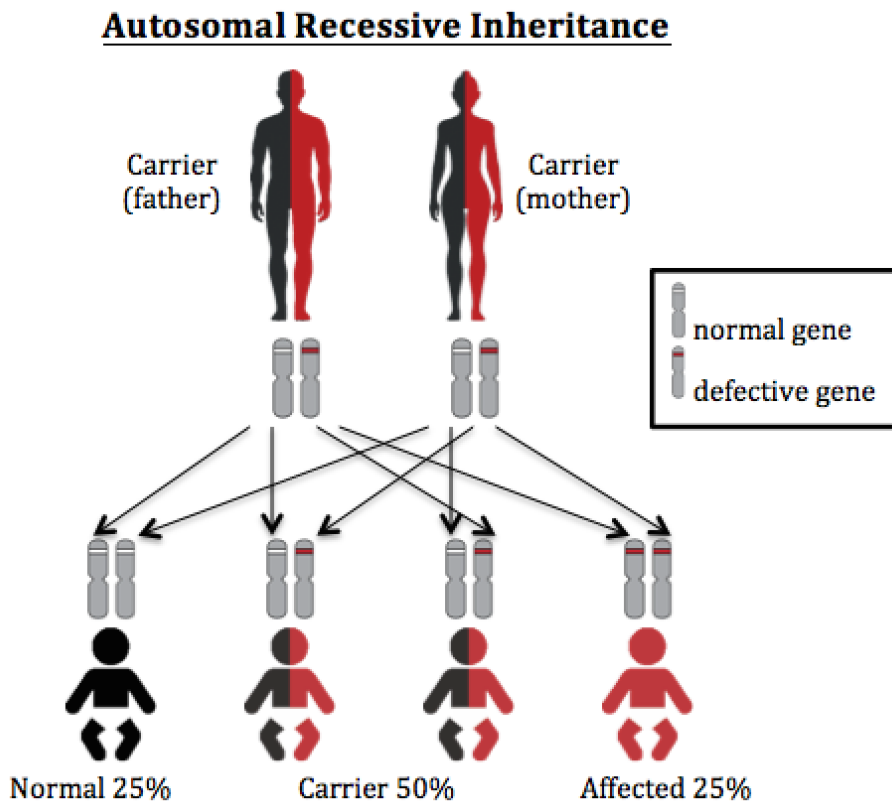
## Methylmalonic Acidaemia and homocystinaemia, cb1C type (cb1C)



## How is cblC inherited?

Everybody has two copies of genes, one from each parent, which tell the body how to make specific enzymes.

cblC is an autosomal recessive disease. Only when babies inherit two faulty copies of the gene for cblC from parents, the enzyme made does not work properly or is not even made at all.



## What may happen if your baby has cblC?

Babies having cblC are usually healthy at birth but they can develop metabolic crisis within the first few days of life due to the build-up of toxic substances in the body.

Metabolic crisis is a period of time when a metabolic disorder makes the baby seriously ill. Babies tend to develop metabolic crisis when they do not have food for long periods of time, or when they have infection, fever or stomach upset. Left untreated, they deteriorate with seizure and coma which can be life threatening.

## ***Signs and Symptoms of cblC***

- ✚ Poor feeding; nausea & vomiting; poor growth
- ✚ Irritability or sleepiness; floppiness and weakness
- ✚ Muscle spasm; abnormal posture or movements
- ✚ Coldness; breathing difficulties; fast breathing
- ✚ Stroke; seizures; coma

Symptoms vary from person to person. Some children have very mild or no symptom, and do not develop symptoms of metabolic crisis until they are older. Some develop health problems even if they have never had a metabolic crisis. They may have brain damage and intellectual disabilities, poor growth, frequent infections, heart, kidney dysfunction, and visual impairment.

## **What is the treatment for cblC?**

Babies having cblC benefit from early treatment and can have healthy and active lives.

Some patients with cblC can be treated with regular vitamin B12 injections. Medications and special diet may also be given. It is important to feed regularly and not to go for long periods without eating.

Babies having cblC need to see their specialist metabolic team regularly even when they do not have symptom. It is important to discuss and design a possible care plan with your doctor and dietician beforehand, in order to provide extra sugary foods during illness or other times when baby is not feeding well to prevent metabolic crisis.

## ***When should I seek immediate help? What should I do?***

If you are worried that your baby is ill, it is important to follow medical advice. Bring your baby to your local accident and emergency department immediately. Take any information that you have been given about cblC, including this pamphlet, to the hospital with you.