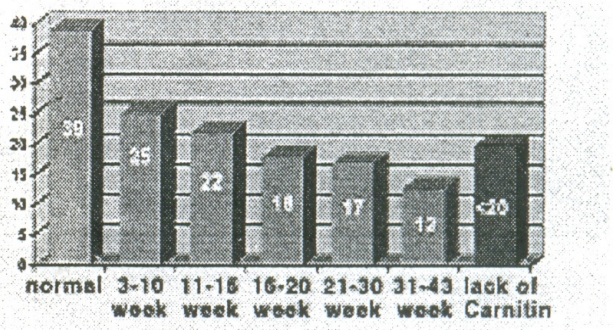
Carnitine During Pregnancy

The Swiss based company Lonza announced that a new study observed that supplementation with L-Carnitine during pregnancy can significantly reduce the increased level of plasma free fatty acids, which is considered the main cause of insulin resistance, a major factor in gestational diabetes in pregnant women. This company-supported study conducted at the University of Vienna (Austria) was published in Chemical Monthly 136, 1523-1533 (2005).

Already by the 12th week of pregnancy, plasma L-Carnitine levels are significantly decreased, with a further reduction up to birth. This reduction of total L-Carnitine is mainly caused by a significant decrease of free L-Carnitine levels. Similar low levels of free L-Carnitine are only found in patients with a Carnitine deficiency.

Graph of plasma carnitine in micromol/l during pregnancy



This graph below records a drop of carnitine blood levels from a normal of 39 umol/L to 22 by 11 - 15 weeks of pregnancy down to a very low 12 by the time of delivery. ie Carnitine levels in the expectant mother have halved in the first trimester of pregnancy and are one third of their starting levels by the end of the pregnancy. More recent studies also confirm this drop of carnitine levels in pregnancy. Any level from around 25 - 30 is considered carnitine deficient. Polio survivors and their descendents need levels of 50 + to alleviate fatigue.

I have been recommending for years that any children/ grandchildren of polio survivors pregnant or contemplating pregnancy (male or female) should be taking carnitine supplementation up to 12 months prior to conception if possible and certainly through the pregnancy and while breastfeeding in order to avoid passing this problem on to successive generations. This is borne out with the new information available on Epigenetics (see page 5).

We currently have a child of a WA polio survivor who having used carnitine to recover from debilitating fatigue herself some years ago, since married and had 2 children who have no sign of carnitine deficiency. However she stopped taking carnitine before having her third child and now finds that child has poor muscle tone and delayed milestones consistent with carnitine deficiency. This is likely to be a life-long problem now for that child.

We have the power to turn off this epigenetic switch by ensuring parents have adequate nutritional status before pregnancy so that we have healthy children not affected by the problems besetting their polio parents. **Tessa Jupp RN**

Taurine for Heart and BP

Taurine is your heart's most abundant free amino acid. Research has shown that it prevents arrhythmia (irregular heartbeat) and has many anti-hypertensive effects. It relaxes blood vessels by enhancing endorphin production, resulting in lowered blood pressure.
In a double-blind, placebo-controlled study - the gold standard for medical research - 19 patients with borderline hypertension got 6 grams of taurine daily for seven days. Their systolic blood pressure decreased an average of 9 mm Hg and their diastolic blood pressure decreased an average of 4 mm Hg. Part of taurine's effect might be also be due to the fact that it decreases plasma epinephrine but not nor-epinephrine levels. And people with hypertension tend to have higher epinephrine compared to people with normal blood pressure.

Ref: Okatawia P et al, *The potential protective effects of taurine on coronary heart disease,* Artheriosclerosis, National Institute of Health,2010

"I haven't been good so I was hoping you could bend the rules?"

Taurine and Cardiovascular Disease

by Michael Lam, MD, MPH www.DrLam.com

Taurine is found mostly in our central nervous system, skeletal muscle, and in greater concentration in our heart and brain.
In the cell, taurine keeps potassium and magnesium inside the cell while keeping excessive sodium out. In this sense it works like a diuretic. But unlike prescription diuretics, it is not a cellular poison. It does not act against the kidney, but improves kidney function instead. Taurine is very useful in fighting tissue swelling and fluid accumulation. People with heart failure, liver disease and congestive heart failure frequently have unwanted fluid accumulation inside their bodies and people who take long plane flight usually have slight fluid retention. Taurine has been very successfully used to treat people with high blood pressure.

When excessive fluid ie oedema is normalised, blood pressure becomes normalised too.

Taurine functions to dampen the sympathetic nervous system, thereby relieving arterial spasm. When blood vessels relax, the body's blood pressure will fall. Aside from having diuretic properties, taurine is able to strengthen the heart muscles and maintain proper calcium balance. Together with Co Q10 and carnitine, taurine is able to regulate the heart's contractility

Working with magnesium, taurine is able to regulate heart rhythm and help to stabilise it. Because taurine aids the movement of potassium, sodium, and calcium in and out of the cell, it has been used for people who have uncontrollable facial twitches.
Usual dose of taurine 500 mg - 3,000 mg daily.
Taurine available from **Polio Office $30 for 100G** plus postage.