



# EXERCISING WITH Gestational Diabetes Mellitus (GDM)

**G**estational diabetes mellitus (GDM) is defined as the onset signs of glucose intolerance during pregnancy. It is one of the most common pregnancy complications, with research showing that women with hypertension, who are overweight and those with higher level of abdominal fat are at a higher risk of developing GDM (Barakat et al, 2012; Padayachee et al, 2015). Although the diabetes goes away after giving birth in most women, the potential complications of untreated GDM during pregnancy can affect both the baby and the mother in the short and long term. Acute short term hyperglycaemia may lead to hypertension and preeclampsia in the mother and the development of foetal macrosomia (big baby).

In the long term, the risk of developing Type 2 Diabetes (T2DM) increases seven-fold for the mother; and babies of GDM pregnancy are also associated with obesity with T2DM in the later part of their lives. Those born with macrosomia have also been linked to an increased risk of developing cardiovascular disease and leukaemia over their lifetime. Exercise has shown to be a safe and effective medicine in preventing and managing GDM before conception and during pregnancy with practically no side effects.

The benefits of exercise in pregnant women are well documented (Barakat et al, 2012; Padayachee et al, 2015). For women already engaging in regular moderate-intensity physical activities, the chance of developing GDM during pregnancy are shown to be lower. During pregnancy, regular physical activity may prevent developing GDM and improve postprandial control of hyperglycaemia in women diagnosed with GDM. Other benefits of regular exercise during pregnancy include reduced risk of other pregnancy complications (eg preeclampsia), maintained or increased cardiovascular fitness and greater ease of labour and delivery.

A chronic or longer term physical activity programme is needed for optimal effect on GDM (Dempsey et al, 2004; Barakat et al, 2012). Recent studies that lasted throughout the pregnancy comparing diet and exercise intervention generally agrees that those receiving exercise therapy were found to have greater glycaemic control with lower fasting glucose level and postprandial glucose concentration. In contrast, a study (Lesser et al., 1996) that measures the postprandial glucose and insulin concentration following a single bout of moderate intensity exercise (60% Vo<sub>2</sub>max) did not show any positive effects of exercise on glycaemic response in six GDM subjects.

# SHAPE UP

Ray Loh



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Current exercise prescriptions mostly emphasise aerobic exercises then resistance training. However, research shows that resistance training can provide additional benefits not seen in aerobic training such as increase in muscle mass which enhances blood glucose uptake. Exercise should be carried out in a well ventilated room ideally with temperature control to reduce the risk of increasing foetal temperature. Thus, aerobic exercise within 45 minutes is recommended, or shorter if exercising in higher temperatures and humid environment.

When selecting sports and performing exercise movements, precautions should always be observed to protect the mother and child. Sports that involve contact (eg basketball); risk of falling (eg horseback riding, gymnastics); exercises in supine

positions; motionless standing; and scuba diving should be avoided (Padayachee et al, 2015). Exercise should be terminated if symptoms of vaginal bleeding, dizziness, headache, chest pain, muscle weakness, preterm labour, decreased foetal movement, amniotic fluid leakage, calf pain or swelling and dyspnoea without exertion (Parayachee et al, 2015).

In general, exercise benefits both mother and child with little adverse effect when precaution measures are practised. A longer term exercise plan starting from second trimester is recommended for consistency and optimal effect. Exercise should target low impact moderate intensity aerobic activities adding some weight training and body weight conditioning exercises. Adequate warm-up and cool down stretching exercises are important to prepare the body for upcoming activity and for recovery after exercise. Avoid prolonged exercise under the sun and high body temperature.

**About the author:** Ray Loh is an exercise physiologist at the Sports Medicine and Surgery Clinic, Tan Tock Seng Hospital.