

Yoga Therapeutics for Diabetes

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Despite researchers identifying the benefits of yoga for decades, only recently has yoga been suggested as a reputable and beneficial practice to incorporate into a diabetes management program. Type 1 diabetes is an auto-immune condition where the immune system destroys cells in the pancreas that produce insulin, whereas type 2 diabetes is caused by three potential biological complications. The first is when the pancreas fails to produce sufficient insulin, the second is where the body is unable to use insulin effectively and the third is when cells within the body ineffectively respond to insulin, which is known as insulin resistance.

Causative factors of type 1 are currently unknown. It is not caused by poor diet or lack of activity; however, the condition is exacerbated by poor lifestyle choices. Type 2, on the other hand, is known to be caused by a combination of genetic, environmental and lifestyle factors. Despite evidence suggesting a strong genetic predisposition, the risk of type 2 is significantly increased in the presence of a poor nutritional diet and insufficient physical activity.

Diabetes Australia estimates that up to 60 per cent of type 2 diabetes diagnoses could be prevented by following a healthy lifestyle, and this

is now being shown to delay, and even reverse, the chronic disease.

Gestational diabetes is a condition in which women exhibit high blood glucose levels during pregnancy, predominantly caused by hormones secreted by the placenta for fetal development.

Diabetes Australia has identified that five to eight per cent of pregnant women are diagnosed usually around the 24th to 28th week of pregnancy and that symptoms tend to stop post pregnancy. Pre-natal yoga from week 13 may support and facilitate digestion, and also help in the regulation of blood sugar levels.

WHAT DOES THE RESEARCH SAY?

A variety of research articles highlight regular yoga practise as being beneficial for the prevention of diabetes, as well as for minimising causal factors such as weight reduction, increased cardiovascular health, lowered blood pressure, decreased cholesterol levels, and an increase in overall fitness efficiency

Research has also identified a direct link between high levels of stress hormones such as epinephrine and cortisol contributing to increased blood glucose levels. Consistent yoga practice has shown to significantly reduce these stress hormones.

Furthermore, stress hormones increase overeating, leading to increased visceral fat that secretes a protein called retinol-binding protein 4, which has been shown to increase insulin resistance.

RECOMMENDED YOGA PRACTICE

Students should seek medical permission prior to commencing a yoga practice, preferably with a fully qualified yoga teacher who has a thorough understanding of diabetes and its associated complications. In the initial stages, a restorative yoga practice including pranayama (breathing exercise), relaxation and meditation would be preferable.

It may also be favourable to work with an individualised prescription of yoga practices identifying specific

needs rather than attend a generic public class.

It is not recommended that diabetic students practice a hot style of yoga as this elevates the hormone glucagon, which in turn raises the concentration of glucose in the blood.

Any style of yoga that is strenuous or beyond the current students' capabilities also increases aforementioned stress hormones. Although this is a normal biological reaction, caution is advised for overexertion in the initial stages post diagnosis until strength and endurance has increased over a consistent period of time.

The intensity of yoga practice may also influence blood glucose, with research suggesting intensity and duration of exercise most influences glucose levels.

A dynamic, strong, heated yoga practice is also more likely to cause ketoacidosis, which is characterised by dangerously high blood sugar levels that are intensified if a student's blood sugar levels are high at the beginning of the class. This re-emphasizes the need for a more restorative style of practice, particularly in the early stages.

HOW MUCH YOGA PRACTICE IS ENOUGH?

Although yoga is far more than exercise, the physical postures combined with yogic breathing are certainly enough to raise your heart rate and respiration.

Diabetes Australia recommends 30 minutes of exercise every day, whereas the American Diabetes Association advises engaging in just over 20 minutes per day.

Whichever duration you choose, make sure you start with a time frame that you can commit to long term ensuring the intensity is realistic.

Yoga increases both muscular strength and stretching simultaneously while boosting endocrine function, relaxing the nervous system, boosting

metabolism and digestion as well as increasing your overall sense of wellbeing which leads to healthier choices off the mat.

YOGA THERAPY – DIABETES MANAGEMENT PLAN SURYA NAMASKAR – SUN SALUTATIONS

A 2011 research article showed that Surya Namaskar rebalanced pancreatic function and therefore may contribute to health management and regulation of insulin and glucagon while supporting the function of the digestive system, strengthening abdominal muscles and reducing adipose tissue held around the waist.

SEATED FORWARD BENDS

Seated forward bends in general increase relaxation, soothe the nervous system, reduce the experience of fatigue, stabilise blood pressure and reduce stress hormones. They also reduce abdominal bloating as well as massaging the pancreas and regulating blood sugar levels.

SEATED & SUPINE SPINE TWISTS

Spine twists massage the digestive system, including the pancreas, and increase tone of the gastrointestinal organs, increase assimilation of food and breakdown of fats in support of the liver/gall bladder, transport of nutrients and relaxation of the enteric nervous system that governs digestion.





PRANAYAMA

Breathing practices such as Kapalabhati and Bhastrika aim to increase the tonicity of the digestive organs and increase the function of peristalsis while stimulating metabolism.

MEDITATION

Research suggests that meditation benefits a variety of physiological processes and systems including the management of diabetes and its associated complications including lowering insulin resistance, reduce stress hormones, rebalance glucose and insulin and normalise metabolic syndrome.

TOP TIPS & CONSIDERATIONS

- It is usually recommended that students practice on an empty stomach and not eat or drink (except water) two to three hours prior to each practice; however, for students with diabetes it is recommended that a light carbohydrate snack be consumed just prior to practice as well as having a sugary drink to hand during class to avoid hypoglycemia.
- If required, assess blood glucose levels in the early stages of and after class to identify if sugar is required.
- Always ensure you are well hydrated prior to and during your practice as dehydration exacerbates hypoglycemia.
- Observe the changes that may occur when undertaking a new

form of physical activity. Studies identified that students with type 2 who start a yoga practice have their medication either lowered or eliminated altogether. Every person reacts differently, so it is encouraged that students monitor these changes as their practice progresses.

- Do not practise a hot style of yoga as this increases the risks of ketoacidosis. A restorative style would be more beneficial.
- Diabetes interferes with the retinal vascular system and therefore all postures that invert the torso, including gentle variations such as Adho Mukha Svanasana (downward facing dog) or Uttanasana (intensive standing forward bend), should be avoided. Students with diabetes are at risk of bleeding, bruising and retinal detachment, which occurs when scar tissue found



on the surface of the retina contracts and causes the retina to pull away from the back of the eye. It is recommended that students seek the advice of their ophthalmologist to determine suitability to practise.

- Diabetic neuropathy is a condition that causes nerve damage throughout the body and is often established over time. Some cases are asymptomatic while others experience pain, numbness and tingling in the limbs as well as damage to internal organs of digestion, reproduction and the cardiovascular system. It is recommended that students avoid jump backs/through, standing and arm balancing asana and to transition slowly with conscious slow breathing throughout the sequence to avoid exacerbating blood pressure.
- If ketones are present in the blood or urine it is recommended to refrain from a yoga practice until safely advised to resume.

CONCLUSION

What is evident through the research of yoga and diabetes management is that through this ancient practice there certainly is light at the end of the tunnel post diagnosis. Through the education of yoga and consistency of practice alongside the inclusion of healthy nutrition, we can take ownership and responsibility of our own journey of health and do all that is possible to live life to the fullest. ●