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DIABETES

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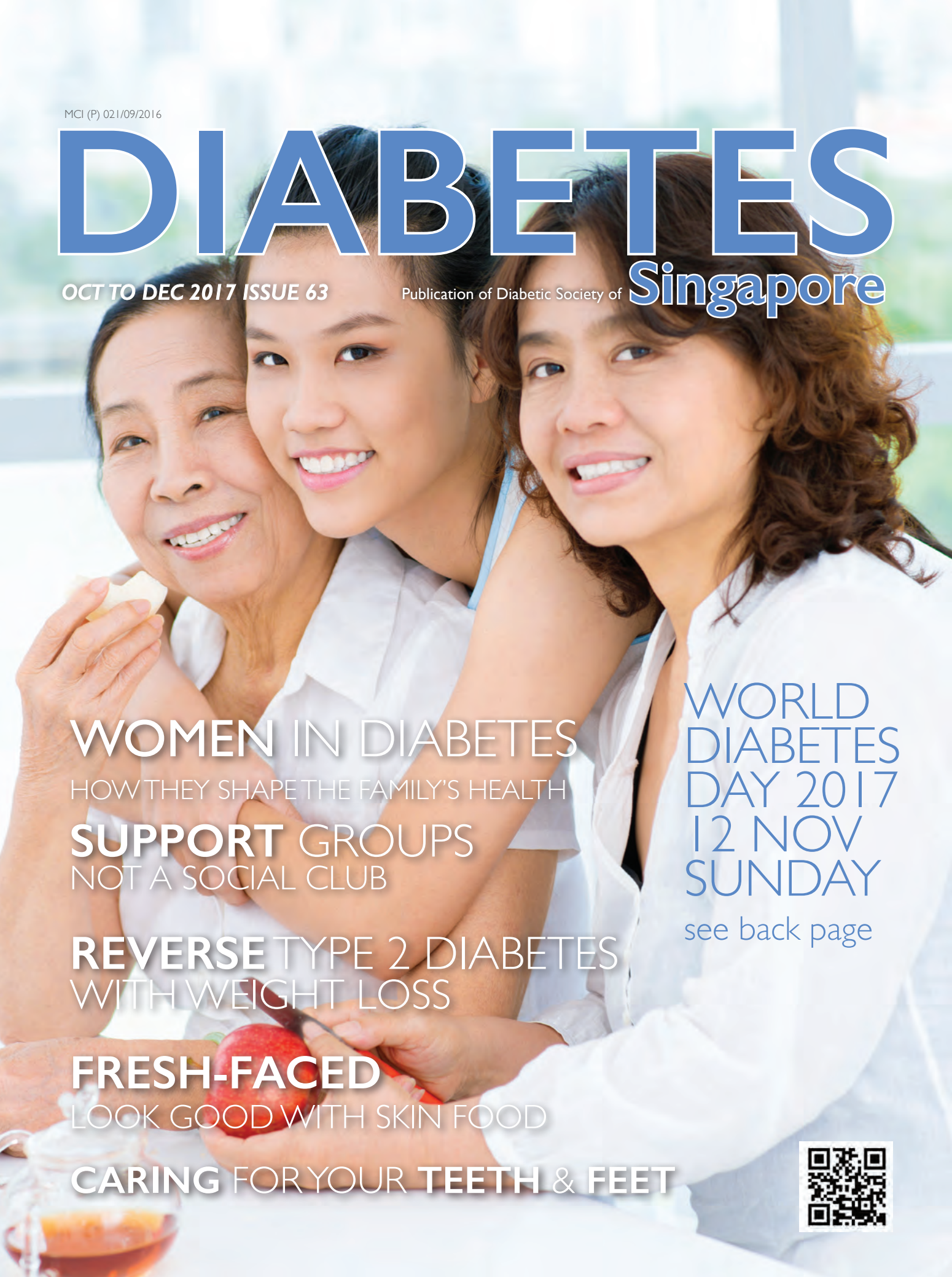

WOMEN IN DIABETES
HOW THEY SHAPE THE FAMILY'S HEALTH

SUPPORT GROUPS
NOT A SOCIAL CLUB

REVERSE TYPE 2 DIABETES
WITH WEIGHT LOSS

FRESH-FACED
LOOK GOOD WITH SKIN FOOD

CARING FOR YOUR TEETH & FEET

WORLD DIABETES DAY 2017
12 NOV SUNDAY

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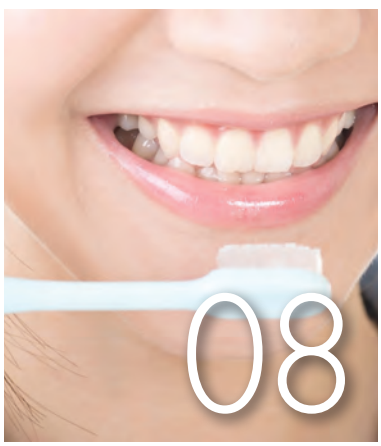

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The previous World Wars 1 and 2 lasted four and six years respectively, the Iraq war eight years and the Vietnam war 20 years. The war declared on diabetes by the Minister for Health last year would likely take even take longer. To win this war, habits and lifestyle which are sometimes already ingrained culturally need to be changed. And these changes need to start with the individual in order for social change to take place.

Despite this sombre truth, it is still appropriate and timely that the government harnesses all the resources under its control, co-ordinates all efforts within the country to fight this escalating epidemic. You could say that if anyone could get things done, it would be Singapore!

Singapore does not need the dubious honour of being the developed country with the second highest prevalence of diabetes. At one time, Singapore was also in the top 10 list of countries with the highest prevalence of diabetes in the world!

In a sense, the Diabetic Society of Singapore has been waging a quiet war against diabetes over the last 47 years. It is therefore timely to bring it to a higher and more visible level, on a national scale.

One event in which DSS has helmed over the years is World Diabetes Day. This year, WDD Singapore will be held on Sunday, 12 November, at Suntec City, once again as a full day, free-for-all event. The theme is in line with that adopted by the International Diabetes Federation—Women and Diabetes' with the tagline 'Act today to change tomorrow'. It sets you thinking about the important role women play in society even in the context of diabetes. Women are traditionally entrusted (though this is evolving in modern society) with care of children, nutrition of family and shaping of cultural values and these factors, if inappropriate, can influence the development of diabetes. Moreover, diabetes in pregnancy or gestational diabetes is increasingly prevalent in Singapore and this can influence the rates of diabetes in the next generation.

This year's commemoration of World Diabetes Day Singapore and its theme should therefore serve as an important focus point in the War on Diabetes. On behalf of the Management Committee of DSS and the WDD organising committee, we ask for your support in attending this event and spreading the news about it. See you on 12 November at Suntec City!

Dr Kevin Tan
Vice-President
Diabetic Society of Singapore

Diabetic Society of Singapore (DSS) was founded by Dr Frederick Tan Bock Yam on 25 September 1971 to help diabetes patients manage their condition.

DSS is a non-profit organisation affiliated to the International Diabetes Federation and the National Council of Social Service. DSS gratefully accepts donations of any amount to help fight diabetes. **All donations are tax-deductible.** Please make **cash donations** in person at any of our centres. **Cheque donations** should be made payable to 'Diabetic Society of Singapore'.
You may also make **online donations** via **www. sggives.org/diabetes.**

Juliana Lim

2 SEP 2017
DSS-DSG GATHERING

DSG's Third Quarter Gathering with DSS members was held at DSS-Bedok Activity Room. Mr Lim, a dietitian from Abbott Singapore, kick-started the event by speaking on the nutritional aspects in various food and diet. He also spoke on their product, Glucerna, which can be served as a breakfast drink, snack or meal replacement. Members were then encouraged to have their blood sugar level taken before consuming a cup of the prepared supplement and to check their sugar level at the end of the event .

Dr Kalpana from Temasek Polytechnic spoke about meal replacements as a useful and nutritious way to kick-start a weight loss program or for people who find it difficult to cook or find healthy meals, etc. However, meal replacements are not for long-term use and not recommended for people with kidney problems and allergies or pregnant women.

Dr Tan Hwee Huan spoke on "Why Numbers are important in Good Diabetes Care" using colourful slides on the numbers 4, 7, 8 and 10; we are to keep our sugar levels between 4-7 before food and 8-10 two hours after food. Diabetics need to practise the "D(iet)E(xercise)S(upport/Stressor) M(onitoring)M(edicines) approach to Diabetes" in order to have healthy sugar levels and to delay/prevent complications.

Patrick Ho, with Dr Tan assisting him, spoke on the ease of the use of the Libre Freestyle Sensor and Reader monitoring devices. It provides continuous monitoring of sugar levels for 14 days without the need for daily pricking of fingers to test blood sugar. They can then scan and monitor their sugar levels with the accompanying reader at any time of the day. Four recipients got to try the devices out for 14 days.

DSS OUTREACH PROGRAMS MAY - AUG 2017

20 May 2017
Talk on Lifestyle Management of Diabetes @ Singapore Heart Foundation

25 May 2017
Diabetes Talk at YTL PowerSeraya

29 May 2017
Diabetes Talk at Lions Befrienders Senior Activity Centre @ Tampines Blk 434

3 June 2017
Diabetes Talk at The Sovereign

20 August 2017
Community Outreach @ Hong Kah North CC

9 SEP 2017
COMMUNITY CHEST HEARTSTRINGS WALK

Twenty cheerful DSG members turned up in their blue tees to participate in the Community Chest Heartstrings Fun Walk 2017 at Marina Bay Sands. At about 7.20am we tagged along the various groups from different organisations walking towards the Event Plaza for the start of the event. Each of us present was given a Fun Walk kit.

A massive crowd of about 8,000 participants had already assembled, enjoying the pulsating music. The Master of Ceremony encouraged everyone to gather closer to the stage as he prepared to welcome Mr Tan Chuan-Jin to give his opening speech.

Following a short speech by Mr Tan, we all joined him in the warm-up exercise before he and the organisers flagged off the Fun Walk, while participants in wheelchairs were allowed to move off first.

Our DSG members joined in the Fun Walk of 4km with great enthusiasm and the DSG flag was proudly held up high by Juliana, our team leader. This event demonstrated great bonding and unity among all walk participants.

The brisk walk lasted approximately 1 hour and 15 minutes. We all started walking from Crystal Pavilion North and ended at Crystal Pavilion South. At the finish line, our members took turns taking photos to affirm their completion, after which members redeemed their goodies bags. With satisfied smiles and flushed faces, members dispersed at around 9.35am. The hungry ones proceeded to the food court in Marina Centre which was another 1km away.

A heartfelt "thank you" to Shahid from DSS who joined us in the Fun Walk and DSS for rendering their support to DSG.

DSS Support Group Meet & Share

Join us for our next support group event today! Call Juliana at 9278 2084 for more details or to register.

14 October 2017 (Sat)
DSG Healthy Cooking – Session 1
Time: 9.00am – 12.00pm
Venue: DSS HQ @ Bedok Reservoir Activity Room
Maximum number of pax: 40

28 October 2017 (Sat)
Walk @ Bishan Park & Lower Peirce Boardwalk
Time: 3.30pm – 6.30pm
Meeting Point: Bishan MRT
Maximum number of pax: 40
Dinner: Nearby eateries

25 November 2017 (Sat)
Walk @ Sungei Buloh
Time: 3.30pm – 6.30pm
Meeting Point: Kranji MRT
Maximum number of pax: 40
Dinner: Nearby eateries

2 December 2017 (Sat)
DSG 4th Quarterly Gathering with DSS Members
Time: 2.30pm – 5.00pm
Venue: TBC

23 December 2017 (Sat)
Walk @ Pasir Ris Town Park
Time: 3.30pm – 6.30pm
Meeting Point: Pasir Ris MRT
Maximum number of pax: 40
Dinner: White Sands

All meals at own expense unless otherwise stated

Dr Ang Chee Wan

DIABETES: THE ORAL HEALTH SCOURGE

Diabetes is a growing problem in Singapore. In 2014, around 440,000 residents aged 18 and above suffer from diabetes. World Health Organization (WHO) studies have proven diabetes leads to worsening of gum disease. Since scientific studies have shown a strong correlation between oral health and heart function, this serves as a double whammy for diabetes patients, who are already at risk of cardiovascular events.

Diabetes can cause other oral complications, such as tooth loss which in turn may lead to a compromise in lifestyle and dietary restrictions. This will, in turn, negatively impact diabetic control. In short, it creates a vicious cycle of poor health for the patients. Conversely, good gum health and/or properly treated gum disease can lead to better diabetes control. So treating both diseases has positive effects on each other.

So, what is gum disease? What does this mean for the man in the street and people with diabetes?

FACT 1

Gum disease, the silent assassin, is one of the two most common diseases that affects our oral cavity. It does not produce obvious signs and symptoms until it has progressed to an advanced stage.

FACT 2

Why do I bleed easily when brushing my teeth? Bacteria can attack our gums and cause injury, resulting in spontaneous bleeding or upon touching, pain, redness, and sometimes swelling. At this stage, a tell-tale sign may be bleeding gums after gentle brushing of teeth. Diabetes patients suffer worse as their existing conditions inhibit recovery from bleeding.

FACT 3

What has my tooth got to do with my health? It seems ridiculous that a small structure like the gums and teeth can affect the overall body. Research has shown that bacteria can either enter the bloodstream directly, or send chemicals into the bloodstream through injured gums. These harmful substances have been shown to increase insulin resistance, worsen the diabetic conditions, increase the risk of cardiovascular events, diabetes, pre-term low birth rate babies, etc.

FACT 4

Gum disease destroys bone and causes tooth loss. Left untreated, bacteria can spread deeper towards the bone and cause destruction of the bone. In the advanced stage of gum disease, the tooth has lost so much bone that it becomes shaky and may drift out of position. The tooth can no longer be kept and has to be extracted.

TAKING CARE OF OUR GUMS

Since gum disease is usually silent and does not trouble patients until the disease has progressed to an advanced stage, it is easy for patients to ignore their presence. In particular for diabetic patients, it is important to increase the awareness of the silent effects of gum disease on their health.

About the author: Dr Ang Chee Wan is a dental specialist in periodontics and clinical director, T32 Specialist Division and visiting faculty at National University of Singapore. Dr Ang spent years intensively training with the operating microscope and is the first periodontist in the region to incorporate the operating microscope into his surgical practice.

Toh Lynn Li

CARING FOR YOUR FEET

Do you have numbness in your feet? Do you get sharp pains in your legs after walking the distance of one bus-stop? If you do, you may be experiencing diabetes-related foot complications.

HOW DOES DIABETES AFFECT YOUR FEET?

People with poorly controlled diabetes or have had diabetes for a long time are at risk of developing foot complications such as nerve damage and reduced blood flow in the feet. People with these foot complications are at a higher risk of developing a foot ulcer and if treatment is delayed, this can result in a lower leg amputation. Singapore has one of the highest rates of lower leg amputation in the world, with four amputation procedures in a day and about 85% of major amputations are preceded by foot ulcers.

WHAT ARE DIABETIC FOOT COMPLICATIONS?

Nerve damage (peripheral neuropathy)

People with nerve damage are at risk of developing foot ulcers as they have lost protective sensations in their feet. They are unable to feel if their toe is rubbing against the shoe that is too tight or if they have stepped on something sharp, leading to blisters or cuts. As they cannot feel pain, they may not notice these blisters or cuts and delay seeking treatment until an infection has occurred.

Signs and symptoms of nerve damage in the feet include:

- Numbness
- Pins and needles
- Tingling
- Burning pains, usually at night
- Changes to foot shape (Charcot foot deformity)

Charcot foot deformity

Charcot food deformity is a type of bone deformity and occurs in people with significant nerve damage. It starts when an injury to the foot goes unnoticed due to the lack of sensation. The person then continues to place pressure on the injured foot through walking and the injury could worsen, leading to bone fractures in the foot. With multiple bone fractures, the foot could collapse giving an appearance of a rocker bottom foot.

Poor blood supply to the feet (peripheral arterial disease)

People with reduced blood supply to the feet have poor wound healing. As there are limited oxygen and nutrients going to the wound, the skin will start to die leading to gangrene. If badly infected, an amputation of the toe, foot or part of the leg is necessary to prevent the infection from spreading to the rest of the body.

Signs and symptoms of poor blood supply to the feet include:

- Leg cramps after walking for short distances
- Pain in feet at rest
- Coldness in feet
- Feet that appear shiny and reddish
- Absent hair growth
- Cuts that are slow to heal

FOOT SCREENING

If you have diabetes, ensure that you get your feet checked at least once a year by the foot screening nurse, doctor or the podiatrist. A foot screening consists of checking the feeling and the pulses in your feet. Detecting foot complications early on is important in preventing foot ulcers and thus amputation

HOW TO CARE FOR YOUR FEET?

Good foot care is necessary in preventing a foot ulcer from occurring. Here are some simple steps to take when taking care of your feet.

1 Foot hygiene Basic foot hygiene is the first step in maintaining good foot care. Clean feet help to keep the skin healthy and prevent infection. The following tips can help you maintain good foot hygiene.

- Wash your feet with soap in warm water twice daily.
- Ensure that the spaces between the toes are also cleaned as these areas trap dirt easily.
- After cleaning, use a towel to dry feet especially between the toes. If the spaces between the toes are not properly dried, this can lead to the skin being too wet, causing a break in the skin. This will allow fungus and bacteria to enter the skin, causing an infection.
- Use foot powder sparingly between the toes to help the skin stay dry.

2 Daily inspection Check your feet every day to detect problems early before they get worse. You may have foot problems but not feel any pain in your feet if you have lost sensation. If you are unable to reach your feet, use a mirror to aid you. If you have trouble with your eyesight, feel your feet for any abnormalities or ask someone else to help you look at your feet. It is important to check the top of the foot, the sole, around the heels, between the toes and around the toenails. Look out for:

- Cuts
- Blisters
- Abrasions
- Corns or calluses
- Ingrown toenails
- Swelling
- Changes in colour or shape

3 Skin care Dry skin cause itchiness and cracks easily, exposing the skin to fungal and bacterial infections. In the elderly, the skin is usually thin and fragile. A small scratch can cause an ulcer. Therefore, it is important to maintain skin moisture for the skin to be smooth, elastic and resilient. Do this by applying daily a cream that contains urea or white soft paraffin. Do not put cream between the toes as this can cause the skin to become too moist and lead to an infection.

Hard skin such as corns and calluses may form at certain areas of the foot if there is too much pressure against the skin. These corns and calluses can break down to form ulcers. Use a callus file to gently file away the hard skin after showering while the skin is still soft. Do not cut corns and calluses yourself or use corn pads as this can damage the skin and cause an infection. A podiatrist can help you remove the corns and calluses and give you advice on how to prevent the corns and calluses from recurring.

4 Nail care Improper nail care plus thickened toenails in the diabetic foot can cause an ingrown toenail to become infected. Here are some proper nail care techniques:

- Use clean nail clippers to trim toenails after shower, as they are softer.
- Trim nails straight across and not too short to prevent ingrown toenails.
- Do not cut down the corners of the nails. Use a nail file to gently file down any sharp corners.
- If the toenails are thick and difficult to cut, file down the nail first using a nail file.
- If you cannot see, feel or reach your feet, get a family member, friend or a podiatrist to help with toenail care.

5 Footwear Footwear is important to protect the feet, especially if you have nerve damage. Wear covered shoes when outdoors and wear soft cushioned slippers at home. Always wear socks with shoes for extra protection and to absorb moisture. Here are some tips on getting a good pair of shoes:

- Sport shoes or diabetic shoes are ideal as they provide good support, good cushioning, extra depth and width and laces or straps to secure the shoe to the foot.
- Correct sizing of the shoes is vital. Ensure that there is one thumb's width from the end of the shoe to the longest toe. The front of the shoe should also be as wide as the front of your foot.
- If you have any deformity in the toes, you may need extra wide or extra deep shoes.

If you have corns or calluses underneath your feet, you may need special diabetic insoles to redistribute pressure away from these areas to prevent an ulcer from forming.

6 First Aid If you notice an open lesion on your feet, it is important to immediately treat it to prevent it from getting worse.

- Clean the lesion thoroughly with a cleaning solution (normal saline) and dry it well.
- Apply an antiseptic solution (iodine) to the lesion and cover with a plaster.
- Change the dressings daily until the lesion is completely healed.
- Monitor for signs of infection such as redness, warmth, swelling, pus, pain and fever. See a doctor immediately if any of these signs appear.

About the author: Toh Lynn Li is a principal podiatrist at The Sole Clinic. Formerly a senior podiatrist at National University Hospital, she focussed on diabetic and vascular-related foot ulcers and worked alongside vascular and orthopaedic surgeons with interests in limb salvage. Lynn is also an exco member of the Podiatry Association (Singapore).

EMBARRASSED?

Gabrielle, a polytechnic student with Type 1 diabetes, hides in a corner to inject herself with insulin because she does not want her classmates to find out.

MISUNDERSTOOD?

Mr Singh looked at his appointment card filled with various medical appointments. He recall his supervisor's comments about him going for too many medical appointments. and felt really misunderstood. He does not want to have diabetes nor to be absent from work. He bottled up his feelings and continued working.

FRUSTRATED?

Madam Rafiza looked at her blood glucose level; it was still high. She felt frustrated. She had already made some changes to her diet and started exercising, yet there was still no progress. Some of her friends and family would console her; others are just as lost as she is. She knows that she can always check with healthcare professionals and find out what else she can do. Yet she cannot help but feel alone and isolated.

SUPPORT GROUPS
How do they help?

You may have similar experiences to some of these individuals. And even if you have not, you probably have encountered some of the emotions of feeling alone, unsupported, lost and misunderstood.

Most of the time, individuals with diabetes know what they want. If they want to know more about diet, they turn to dietitians. If they want to know about managing diabetes, they turn to doctors. If they wanted to manage their moods, they turn to a mental health professional. But sometimes even though their family and friends are supportive and encouraging, they just want to talk to another individual with diabetes to feel more connected and understood.

Although it is not substitute for psychotherapy or medication, connecting with others with similar conditions has great benefits. Mdm Rafiza was hesitant about joining a support group but after attending, she remarked, "I was surprised at how good I felt after I attended the support group. The sense of camaraderie helped me to keep trying to stay healthy."

"You get to hear the struggles of others and how they overcame it. It gives you hope," said Gabrielle who considered for a long time before she attended a support group. "I was also surprised that what I shared could touch others."

"I saw no point in going at first, but after they tried to persuade me to go many times, I thought I would go and take a look," Mr Singh commented. "What they share are very practical tips and how they have adapted the doctor's recommendations to their own lifestyle. I could relate to their experiences". In fact, the group brainstormed with Mr Singh and came up with some possible solutions to manage his supervisor.

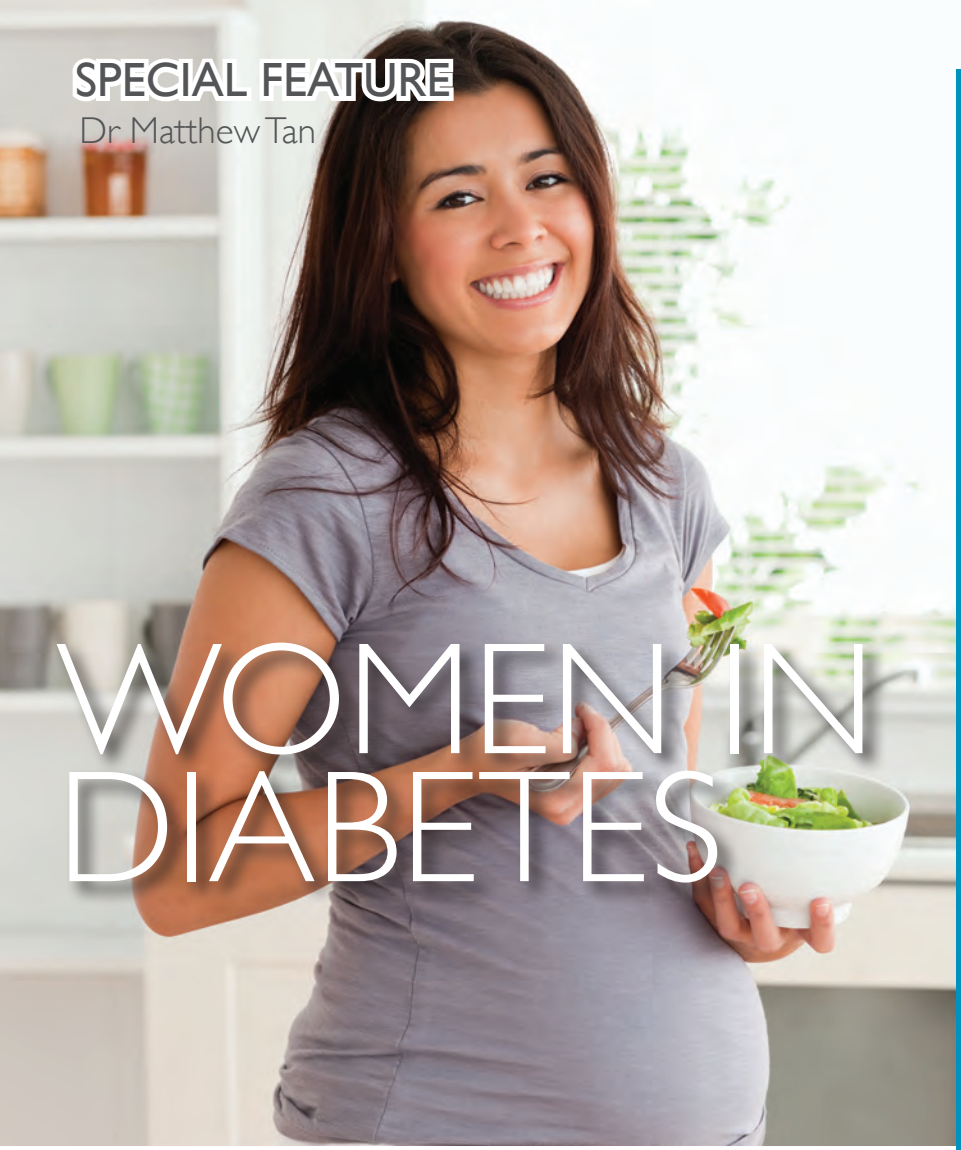
Very often, participants not just learn from other people's sharing. They feel empowered when they find that their own experiences can actually make a difference to others. And they get to air very practical issues, like Mr Singh's, on managing work and medical appointments. They may not solve the "problem" on the spot, but the sense of connection fosters a sense of community that energises them to persevere and keep going, in spite of the challenges. Instead of continuing to feel frustrated and lost, you may start to feel motivated, understood, and less embarrassed.

Support groups for individuals with diabetes are invaluable and they are not just social groups. Research has proven that support groups help individuals with diabetes to cope better with the toils of managing diabetes. What differentiates a support group from a social group is that it has a structure and purpose and the discussions are usually facilitated by someone trained or experienced individuals.

Support groups may not be for everyone, but if you have not been to one, I urge you to go with an open mind. If you have been to one and find that it is not your cup of tea, I still urge you to be open to trying out other groups, as you may eventually find one that fits you. And if you are a already a regular member of a support group, congratulations! You have already found the treasure of connection and support. (See page 7 for information on DSS Diabetes Support Group and its activities.)

About the author: Henry Lew works as a psychologist and enjoys coming up with creative ways to engage his patients and readers.

Dr Matthew Tan



WOMEN IN DIABETES

The war on diabetes has been ongoing for the past year, and unlike national service where largely only men are conscripted, the Ministry of Health has recognised that to win the war, women have to be involved as they are key stakeholders.

In April this year, a campaign was launched targeting women. The goal was to educate them on healthy cooking and eating habits, in the hope that with their great influence on the dietary habits of their families and friends, great positive change would result.

Women play numerous roles in society—they are wives, mothers, daughters, sisters, employers and employees. They are indeed great influencers and powerful change makers, and I am privileged to share three stories to illustrate several points.

1 WRESTLING WITH DIABETES

HEALTHY PREGNANCY AND HEALTHY BABY

Mdm O has polycystic ovarian syndrome (PCOS) and type 2 diabetes mellitus, and was planning to start a family. She was struggling with poorly controlled diabetes mellitus, with a glycated haemoglobin (Hba1c) of 9.1% with metformin alone.

Risk of foetal malformations increases in mothers with poorer glycaemic control. Hence it is standard of care to optimise diabetes control prior to conception.[1] She was motivated to make significant changes to her lifestyle, and reduced her carbohydrate intake and spent 30 minutes each day brisk walking. Once-daily basal insulin was added to optimize diabetes control. Within a few months, her Hba1c improved to 6.9%, which was a fairly good level of control.

Her menses, which had previously been irregular and spaced as far apart as 60 days (due to PCOS) became regular as a result of her purposeful lifestyle changes. To her great joy, she was able to conceive naturally without the need for in-vitro fertilisation.

STEADFAST COMMITMENT

Mdm O's commitment to her health and that of her unborn child remained steadfast throughout her pregnancy, and she kept on a strict diet throughout, not giving in to the random cravings most women experience when pregnant. She also remained active and energetic.

Most impressive of all, she endured the pain of pricking her fingertips to check her capillary blood glucose as much as seven times a day. As pregnancy progresses, one's requirement for insulin will increase, and it was inevitable that she had to increase her insulin injections from one to four times a day to keep her glucose levels in the normal range.

I last saw her in August this year. She had delivered a healthy baby boy the month before, and was enjoying every day of new motherhood. The child was born full term and healthy, with no health problems at all, due in no small part to her unwavering commitment. Mdm O truly inspired me, and showed me the great sacrifices women are willing to make for their children, the great love they have for their children, even before they are born.

2 GENES VERSUS LIFESTYLE
PREVENTION OF DIABETES

You cannot choose your genes but you can choose your lifestyle. Type 2 Diabetes Mellitus does run in families; however, it is not a definite "cast in stone" destiny that awaits all whose parent or parents have diabetes.

Diabetes runs in my family. Both my grandmothers have the disease, and my maternal grandmother passed away some years back from diabetic complications. I have a maternal uncle with the disease, and three years ago my own dad was diagnosed with it. You do not need to be a doctor to appreciate that I am at significant risk of developing diabetes.

In 2014 I was awarded the Healthcare Manpower Development Award to pursue a Fellowship in Endocrinology at the Garven Institute of Medical Research in Sydney, Australia. My wife, who is an eye surgeon, had just delivered our younger daughter, and was on maternity leave. Our family relocated to Sydney for a six-month period for me to pursue my fellowship.

ENVIRONMENTAL IMPACT

The significance of this introduction is to highlight the impact that environment and stage of life have on lifestyle. We were young parents in a foreign land with no help, and had to balance both family and work commitments. "Stress-eating"—eating as a way of life became the norm for us, and coupled with little time for exercise, our weight ballooned. This is a strong risk factor for diabetes development.

The reality check came in 2015 when we returned to Singapore and could no longer get into any of our previously well-fitting work clothes.

Lifestyle changes take time, patience and discipline. My wife downloaded a calorie counter app onto her smart phone and began tracking her calorie intake. She joined a gym near to work and exercised regularly. She modified not just her own but also the entire family's diet—the usual stash of calorie-laden snacks was replaced with fresh fruits and vegetables. Her influence had a positive effect on the whole family, especially me, and I was motivated to start jogging again with friends. I have since completed a couple of half-marathons and one full marathon. Both my wife and I achieved our weight goal within a year, but more importantly, my annual national service check-up showed no signs of diabetes for the last few years.

An observational study suggests that the risk of a husband developing diabetes increases with increasing spousal BMI.

My personal take to that study is that the wife or spouse does play an important influential role at home and can lead by example. I can personally testify to that major influence. It allows me to empower my patients who are pre-diabetic or diabetic to take major steps towards healthy eating and an active lifestyle to reverse risk of diabetes, or to effect better control of diabetes, in addition to appropriate medications.

3 AGEING GRACEFULLY WITH DIABETES

The silver tsunami is upon us and it is not surprising that many patients are living to the eighth and ninth decade. I had the opportunity to review one of my oldest patients in July last year.

Mr B was 99 years old then and had had diabetes for at least 10 years. He was able to ambulate into clinic without a walking aid or assistance. His wife accompanied him for this routine specialist clinic check-up. I noted his diabetes control was excellent with Hba1c 6.4%, and this level of control had been maintained for many years. I was curious how he managed to maintain this relatively good health.

He attributed it to the strong support of his wife who still does the home cooking and also reminds him daily to take his medications, particularly the ones for diabetes, which he has to take three times a day. This was a wonderful snapshot of how it is possible to age gracefully even with diabetes to a ripe old age!

A 20-year follow-up study suggests that group-based lifestyle interventions (diet, exercise or diet plus exercise) can decrease incidence of diabetes by 43% over the 20-year period. [3]

Data plus this snapshot of a 99-year-old diabetes patient suggest that a combination of influence, support and lifestyle choices can make a difference in the trajectory of one's life—preventing diabetes if possible and controlling diabetes when it occurs.

There are many more similar stories of women who wrestle with diabetes personally or who support their family or friends in their lifelong journey with diabetes or diabetes prevention. Such stories are encouraging to us caregivers and doctors and serve as stimulus to galvanise more change makers to step up in this war against diabetes.

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About the author: Dr Matthew Tan will be Medical Director and Consultant Endocrinologist at Dr Matthew Tan Diabetes and Endocrine Care, with effect from 1 November 2017. His clinical interests include diabetes mellitus, thyroid, general endocrinology and sub-specialty interests in osteoporosis and calcium disorders. Dr Tan also enjoys jogging and spending time with his two daughters.

Phoi Yan Yin

Warm Rice Salad

SERVES 4

Ingredients

1 medium sweet potato (130g)
1 tbsp olive oil
1 clove garlic, minced
2 shallot, minced
½ tsp cumin seeds
1 red pepper, chopped (150g)
400g minced beef
1 tbsp olive oil
3 tbsp orange juice
2 cups brown rice, cooked
¼ cup almonds, slivered
8 dried apricots, minced
4 tbsp plain low-fat yoghurt
Salt and pepper, to taste

Nutrition Information Per Serving

Energy	555kcal
Carbohydrate	49g
Protein	38g
Total fat	23g
Saturated fat	3.9g
Cholesterol	1.2g
Dietary fibre	15.2g
Sodium	120mg

Carbohydrate exchange ~ 3.2 exchanges

Method of preparation

1. Roast sweet potato in the oven for 30 minutes at 180°C. No pre-heating is required. After roasting, chop into 2 to 3cm chunks.
2. Heat olive oil in a pan over medium heat.
3. Add garlic, shallot, and cumin seeds and sauté for 1 minute. Add in red peppers and sauté for 2 minutes. Lastly, add minced beef and sauté for 10 minutes until cooked through. Remove from heat.
4. In a separate small bowl, prepare salad dressing. Mix olive oil, orange juice and flavour with salt and pepper to taste.
5. In a large salad bowl, mix brown rice, sweet potato, beef mixture, salad dressing, almonds and apricots.
6. Place the rice salad into 4 bowls and top each bowl with 1 tablespoon of plain low-fat yoghurt. Serve immediately.

About the author: Phoi Yan Yin is a dietitian at Changi General Hospital. She enjoys travelling to explore different cultures and their cuisines, reading a good book, and trying out different recipes in the kitchen from time to time.

Creamy Broccoli & White Bean Soup

SERVES 4

Ingredients

1 tbsp olive oil
2 garlic cloves, minced
1 shallot, minced
½ tsp chili flakes
1 head of broccoli (450 grams), cut into florets
1 can cannellini beans (400 grams), drained and rinsed
3 cups low sodium vegetable stock
¼ cup cheddar cheese, shredded
4 tbsp sunflower seeds
Salt and black pepper, to taste

Method of preparation

1. Heat the oil in a large pan over medium heat and sauté the garlic, shallot and chilli flakes for 1 minute until fragrant.
2. Add the broccoli, beans and vegetable stock. Cover the pan and let the soup simmer until the broccoli is tender, for about 5 minutes. Season with salt and pepper.
3. Using a hand-held blender or food processor, blend the soup until completely smooth.
4. Separate soup into 4 bowls. Divide the cheddar cheese and sunflower seeds among the 4 bowls, and top as garnish. Serve immediately.

Nutrition Information Per Serving

Energy	227.6kcal
Carbohydrate	24.8g
Protein	12.1g
Total fat	10.6
Saturated fat	2.5
Cholesterol	8
Dietary fibre	8.3
Sodium	282
Carbohydrate exchange	~1.5 exchange

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Phoi Yan Yin

SKIN FOODS

Blood vessels under the surface of the skin supply many nutrients to maintain the health of our skin. A healthy diet can help to provide many essential nutrients that play a role in improving the overall integrity, texture and look of our skin, and speeding up recovery from acne or other skin conditions!

Free radicals in our body cause oxidation, which damage cells in our body, including skin cells. They are generated during energy production and from exposure to UV-containing sun rays, environmental pollutants, and cigarette smoking.

Antioxidants slow or prevent this process by absorbing free radicals that accumulate in our body. On top of their anti-oxidative properties, these vitamins and minerals also play crucial roles in our body that will contribute not just to the quality of our skin, but our health! Here are some important antioxidants and their properties:

- Vitamin A aids cell growth and differentiation, which is important for the continuous development of healthy skin cells that are constantly shed.
- Vitamin C is essential for the synthesis of collagen, which is part of connective tissue and is crucial for wound healing. Vitamin C also helps with regeneration of vitamin E.
- Vitamin E boosts the immune system and the health of our blood vessels, allowing for essential nutrients to be carried to our skin.
- Selenium is involved in DNA synthesis during skin cell production, ensuring the production of healthy skin cells.
- Zinc, like selenium, is involved in DNA synthesis and cell division of skin cells. It is also important in wound healing and recovery, thus play a role in repairing damaged skin.

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In combination, these antioxidants prevent pre-mature ageing of the skin. This table shows food sources rich in these nutrients:

Nutrient	Food Sources
Vitamin A	Sweet potato, spinach, carrots, pumpkin, cantaloupe, red peppers, mangoes, apricots, broccoli
Vitamin C	Red peppers, orange, grapefruit, kiwi, broccoli, strawberries, Brussels sprouts
Vitamin E	Wheat germ, sunflower seeds, almonds, hazelnuts, peanuts, spinach, broccoli
Selenium	Brazil nuts, fish, beef, poultry, wholegrain products, spinach
Zinc	Oysters, beef, poultry, pork, fortified cereal, yoghurt, beans

In addition to antioxidants, essential fatty acids also contribute to skin health. They consist of polyunsaturated omega-3 and omega-6 fats that are not made by our bodies, and are required in our daily diet. They make up healthy cell membranes that form the skin's natural barrier, creating healthier looking skin that is supple, moist, and less likely to develop inflammatory conditions.

Deep sea fish such as salmon, tuna, sardine and mackerel (tenggiri) are rich in omega-3 fatty acids, and two servings per week are recommended. Vegetarian sources of omega-3 fatty acids include canola oil, flax seeds and chia seeds.

Lastly, because your skin holds plenty of water, dehydration may cause skin to appear dry or wrinkled. Therefore, adequate hydration creates plump and tender skin for a healthy look. Ensure that you drink six to eight glasses of fluid/day. Plain water, iced or warm, should be your first choice of fluids. For variety, moderate amounts of milk, fresh juice, black tea or coffee may be included to meet your daily fluid requirements.

The nutrients you require for healthy skin can simply be obtained by consuming a Healthy Plate at every meal. A varied, balanced diet should be consumed daily, consisting of five to seven servings of whole grains, two servings of fruit, two servings of vegetables, and two to three servings of meat and alternatives a day.

Kohila Govindaraju

SOY SOY GOOD!

According to statistics by the International Diabetes Federation (IDF), diabetes is a leading cause of death among women. Women with Type 2 diabetes are almost 10 times more likely to have heart disease and women with Type 1 diabetes have an increased risk of miscarriage or having a baby with malformations. However, up to 70% of cases of Type 2 diabetes by 2040 could be prevented through lifestyle interventions.

Reserachers have identified the molecular pathway that allows foods rich in soy bioactive compounds called isoflavones to lower diabetes and heart disease risk. Eating soy foods has been shown to lower cholesterol, decrease blood glucose levels and improve glucose tolerance in people with diabetes.

Soy protein, a good source of polyunsaturated fatty acid, helps bring down triglyceride levels and LDL, which is viewed as important for reducing chronic heart disease. 85% of the fat in soybeans are unsaturated. Omega–6 is the predominant fatty acid in soybeans, 55% and Omega-3 in soybean is around 6%. American Heart Association advocates that consuming soy protein to replace animal foods rich in saturated fats may prove beneficial to heart health. Soybeans contain a mix of slow-digesting carbohydrates that help control the blood sugar.

Genistein, a predominant isoflavone in soybean, may have antioxidant properties that inhibit the growth of cancer cells. Isoflavones in soybean also help reduce the bone loss and increase the bone mineral density during menopause.

Soy is also gut-friendly. The fibre along with the starches promote the growth of healthy bacteria in the gut. The iron and zinc in soybean are easily absorbed by the body compared to other vegetarian sources. Zinc is needed for the growth and development of cells.

The purest form of soy is edamame—soybeans usually served in their pod. They're good in salads or by themselves. So, go for organic edamame and tofu, tempeh, and miso. Take note that one serving equals 1 cup (240ml) of soymilk, 1 cup edamame (155g)and ½ cup of tofu (130g

Edamame contains protein, calcium, vitamin C, folate, choline iron, and zinc. Like meat and dairy products, it provides all essential amino acids. Folate and iron in edamame promote the fertility in pregnant women. Edamame is also a good source of choline that plays a vital role in muscle functioning, learning, memory and promotes good sleep.

Tofu, which is nicknamed 'meat without bone' is made by curdling the soymilk. Firm tofu is higher in protein. Soft tofu is used in recipes which call for blended tofu, and silken tofu is a good replacement for sour cream in dip recipes. Yuba, a thin layer or sheet, formed above the hot soymilk, is high in protein.

Tempeh, is an Indonesian food with a nutty flavour. Whole soy bean fermented with rice or millet to form a chunky soybean cake. It can be marinated and grilled and added to soups and salads. Protein in tempeh is good for diabetic patients who often have problems with animal protein sources. Protein and fiber in tempeh can also prevent the rise in blood sugar and keep blood sugar levels under control.

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www.medicalnewstoday.com
http://www.mayoclinic.org/

SOY PRODUCTS

Soy yoghurt contains healthy bacterias and is fortified with calcium and vitamin D. People with diabetes need to manage high blood sugar. Consuming low glycaemic foods, such as soy yoghurt, helps you to control your blood sugar levels because you slowly absorb sugar from these foods into your blood. Choose plain soy yoghurt with no sugar added.

Soy cheese made from soymilk, is creamy in texture and makes an easy substitute for the most fatty cheeses and sour cream. It comes in various flavours, too. While dairy cheese contains between 180 calories per ounce, soy cheese contains between 50 and 80 calories. Furthermore, soy cheese is low in fat and is cholesterol-free, making it a good weight loss food. Soy cheese contains less sodium than dairy cheese, and the sodium is often of a higher quality (many soy cheese manufacturers enhance their product with sea salt, which is often unrefined and contains many of the trace minerals lacking in the table salt beloved by commercial dairy cheese manufacturers).

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Ray Loh

REVERSING TYPE 2 DIABETES BY WEIGHT LOSS

Obesity is strongly associated with insulin resistance and the development of Type 2 diabetes and exercise seems to have a preventive effect. There are many sports where size matters. Athletes such as shot-putters, sumo wrestlers, weightlifters and American football players are usually huge and obese but they remained healthy and very few of them suffer from insulin resistance. The one big difference from the non-athletic overweight individuals lies in the fact that these athletes have very low levels of visceral fat and higher levels of muscle mass.

Fat is stored under the skin (subcutaneous fat) or around the organs (visceral fat). One can look slim with low level of subcutaneous fat but unhealthy with high level of visceral fat or look fat with high level of subcutaneous fat but healthy with low level of visceral fat. Visceral fat has been thought to be highly related to insulin resistance and it is believed that reducing visceral fat may reverse diabetes. Interestingly, it was shown that Type 2 diabetes can be reversed by losing just 1g of fat in the pancreas (Roy Taylor, 2016).

Studies by Dr Roy Taylor of Newcastle University had demonstrated that through a strict 600 to 700 Calories diet, patients with up to 10 years of Type 2 diabetes who managed to lose enough weight to remove fat out of the pancreas had regained normal insulin production even though the patients may still remain overweight or obese. The researcher believed that excessive fat in the pancreas is specific to Type 2 diabetes as fat deposition reduces the pancreas' ability to secret insulin. However, he does agree that the amount of excess fat in the pancreas a person can tolerate before becoming diabetic is very individual.

Through MRI scan, researchers exhibited that people with Type 2 diabetes were usually found with abnormally high level of fat buildup in the pancreas as compared to other obese individuals without diabetes. The research compares healthy obese individuals with obese individuals with Type 2 diabetes who managed to lose weight.

They found that individuals without diabetes did not show any change in pancreas fat while those with diabetes who managed to lose an average of 1.2g of fat from the organ had their insulin secretion returns to normal and become diabetes free.

However, it is not as easy as losing body weight to lose that 1g of fat from the pancreas. We cannot select which part of the body to lose fat and we still do not know how much body weight to lose to remove 1g of fat from the pancreas. Existing data shows losing an average of about 10% of body weight can see some effects. However, the good news is that appropriate exercise enhances the mobilization of visceral fats as a fuel source for energy production. Moreover, losing weight through exercise has more benefits such as cardiovascular health and sustainability than just diet alone.

Exercise expends energy and in conjunction with dietary control, it induces deficit calories leading to weight loss. Current trends point towards high intensity interval training for better results and time efficient. Systematic review on earlier researches had shown that aerobic exercises were more effective in inducing visceral fat loss than resistance training (Ismail et al., 2011).

Studies (Bateman et al., 2011; Ho et al., 2012; Paoli et al., 2013) combined traditional protocols of aerobic plus weight training and produced moderate weight loss (~-3.5%) and waist and hip reduction (~2.5%) in overweight individuals after 12 weeks of exercise intervention. Coker and colleagues (2009) found that higher intensity aerobic exercise was more effective in reducing abdominal fat in elderly adults regardless of weight loss. Later studies (Lee et al., 2012, Zhang et al., 2015) applied high intensity interval training and reported a higher success in weight loss (-4% to -8%) and waist and hip reduction (-4 to -6%) after 12 to 14 weeks of training. However, HIIT for non-trained individuals can be difficult, less tolerable, and less affective especially to the older folks (Boutcher, 2011).

Recently, more research interest and emphasize on resistance or strength training has been observed. Strength training was documented to play an important role in the management and treatment of diabetes (ADA, 2012). Resistance training has also been shown to improve hepatic insulin sensitivity while aerobic training improves peripheral insulin sensitivity only (Gert-Jan van der Heijden et al., 2010). More training ideas and protocols with the integration of strength training combined with aerobic and anaerobic components has been designed and promoted aiming to provide a more enjoyable and yet effective training system.

HIGH INTENSITY FUNCTIONAL TRAINING

One of the examples of this type of training system is Crossfit®. Some researchers called this type of training as high intensity functional training (HIFT). It is believed that it is able to improve cardiovascular fitness and functional strength while reducing training durations by more than 50%. Babiash and colleagues (2013) measured the calories expenditure of two Crossfit® exercises named FRAN and DONKEY KONG and recorded approximately 169.6 Calories burned in about eight minutes for men and 117.2 Calories expended in about nine minutes for women. This is equivalent to about 2.5km or 30 minutes of brisk walking. Heinrich and colleagues (2015) then demonstrated an impressive 15% reduction of fat mass after just five weeks of HIFT in cancer survivors.

Crossfit® exercises are mainly complex gymnastic movements and power exercises involving heavy weights. In my recent study (Loh, 2017), I modified the exercises to make it more tolerable and doable for the less athletic obese individuals and observed the results. Six middle-aged obese patients (three male and three female, average age of 44) were recruited for the study. They performed a modified version of the high intensity functional training (HIFT), three times per week for an average of about 30 minutes each session for four weeks.

Participants were asked to maintain their current diet. The training consists of exercises such as power clean and snatch exercises, lunges, squats, sit-ups and kettlebell swings in performed in 10 minutes bout with periodic intervals in between sets (Figure 1). Participants were told to select manageable weights and take their time to complete the exercises. In the beginning, most participants require about 40 minutes to complete all exercises with rest intervals lasting as long as six minutes between stations.

Ray Loh

Around the fourth week, all participants were able to complete all exercises within 30 minutes with rest interval between stations as short as 60 seconds. Weights selected for the exercises also increased by 20% and they are able to run faster and further. Exercise effects on body composition after four weeks of training recorded a reduction of an average of about 2.2% of body weight and 5.4% of waistline with the highest waistline drop recorded at about 7.8cm. Participants remained highly motivated throughout the four weeks with no dropouts and over 95% attendance.

Overall, there is enough evidence showing the effects of exercise on abdominal fat and insulin resistance. Optimal results is observed in individuals who train both aerobic and anaerobically. Both energy system can be combined and trained concurrently in a training session. High intensity functional training can be safe and tolerable for beginners and those with chronic diseases when programmed appropriately. However, adequate mobility, stability and proper exercise techniques are essential before embarking onto this type of exercises routine.

	Monday	Wednesday	Friday	Remarks
	Morgan	**Wagon**	**Fred**	5 mins warmup • Foam roll • Stretch • movement prep 5 mins warmdown + stretching
1	**Clean, press (eMOM)** 8,8,8,8,8, (10 mins) clean + press dumbbell plank row (Score by time/set)	**Snatch, squat (eMOM)** 8,8,8,8,8, (10 mins) Dumbbell scissors crunch (Score by time/set)	**Deadlift (eMOM)** 8,8,8,8,8, (10 mins) Deadlift Barbell biceps curl (Score by time/set)	
2	10 mins AMRAP 15 air squats 10 kettlebell swings 5 machine seated chestpress (Score as many rounds)	10 mins AMRAP 4 rounds Treadmill 2-min run 30 secs walk (Score by distance)	10 mins AMRAP 15 back lunges 10 push ups 5 Kettlebell goblet squat (Score by rounds)	
3	1 Round 20 medicine ball situps 20 TRXrow Single leg bridge (Score by time)	1 Round 20 Double leg lowering 20 TRX push up 20 Side hip raise (Score by time)	1 Round 20 Oblique scissors crunch 20 TRX T-spine rotation 20 Mountain climbers (Score by time)	

Figure 1. Exercises and workout routine for the four- week study. There were three stations, each with a different set of circuit exercises and different type of scoring matrix. Between each station, there will be a passive rest period. Subjects can rest till they feel ready to move on to the next station. eMOM=every minute on the minute; AMRAP = As many repetitions as possible; AFAP = As fast as possible.

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