ISSUE 5 | September 2018 | FRENCH INTERNATIONAL SCHOOL

the med

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How does psychology link with dieting?

Dieting:

Is it safe to be vegan?

Hunger:

Can it be controlled?

All about diet and nutrition!

EDITOR'S NOTE

Dear Medical Journal Readers,

I would like welcome you back to the fifth and final issue of this edition of The FIS Med. Thanks for checking us out!

As a united team of Year 12 students, the FIS Medical Journal's aims are to provide a light-hearted magazine-style medical journal for all FIS students, to create opportunities for research and collaboration within the FIS community, to raise awareness of medical issues in the FIS community, to spark inspiration and interest in younger students and to provide Medical School guidance and advice.

Both diet and nutrition play vital roles in our lives. It is obvious that diet and nutrition are essential for our health, but both can be clearly linked with our mental health and wellbeing. I recently read a research paper by *The Canadian Paediatric Society*, claiming that many teenagers have misconceptions about dieting and typically have lower self-esteems, 'feel fat' when they are healthy and even feel less control of their own lives. Quite alarming!

This brings us to this issue's line-up of fantastic articles on this topic, featuring a wide-range of articles on the topic, hopefully giving you, the readers, a wider perspective on the topic.

I would also like to announce that The FIS Med will continue on with our successors, Archibald Davies and Robin Lacoste, who will lead a new team of Year 12s. We have been working hard over the summer for a smooth handover, which I can guarantee will bring an exciting future for the magazine.

One last thank you to FIS for its continued support. Now please dig in and enjoy!

Hadrian Wong
Editor-in-Chief
Year 13

PREFACE

Nutrition and Diet

BY MRS RODENBECK

Herring's Law of Cure states "All cure starts from within out, from the head down and in reverse order as the symptoms have appeared or been suppressed." As an Iridologist and Wellness Coach I believe this is the basis of all healing, and where diet and nutrition come into play.

When we analyse a client's iris we start the analysis from the inside out – from the pupil outwards. The organs that immediately surround the pupil are the stomach and intestines, which can affect our whole system. When a stomach does not receive or is unable to break down the right nutrients and they cannot be absorbed by the intestines, every organ and cell in the system is impacted.

Our brain and body need sufficient quantity and quality of nutrients to perform effectively. This is particularly necessary for adolescents to meet their continuous growth and learning needs.

Of course, every child's dietary needs are different. To ensure students receive appropriate nutrients to suit their unique metabolism, there are a few areas to consider:

- Food allergies and intolerances – when crafting a student's diet, it is important to learn what the body dislikes and cannot metabolise. These foods can be aggressive and damaging to the gut, which then creates a plethora of problems in the system;

- Microbiome – if bacteria, yeast and parasites start to colonise and dominate the environment things will go off balance. An optimal diet must address possible yeast overgrowth in the system, which is common nowadays given that most diets include plenty of processed foods and hidden sugars. Yeast overgrowth creates issues with the gut linen, which then impacts the gut's health and ability to absorb nutrients;

Parasites and bacteria – for optimal absorption, it is important to make sure the system is clear of parasites, worms and bacteria which also create harm and imbalances to the gut by releasing toxins in the system. We want a gut full of good bacteria to help our digestion and gut health, and not the contrary.

- Fibre – To focus and function well at school, children need to poop! Processed foods, which can feature heavily in students' diets, have little, if any, fibre content, which make them automatically 'glue' to the walls of our intestines thus compromising its ability to absorb nutrients. If we are not eliminating well the colon starts accumulating and the big toxins that should be leaving the body are sent back to the system as they have nowhere else to go. Raw, wholemeal, greens and sprouts are every meal's friends not foe. (Good luck with telling your child that!)

- Probiotics and prebiotics – fermented foods and food for good bacteria support our microbiome - the community of trillions of bacteria that live within our body - helping it function at optimal health. When friendly bacteria predominate, our metabolism hums, our energy overflows, and we feel optimistic, clear, and focused.

In a nutshell: when we look into diet we need to make sure it is welcomed by the body, easy to digest, healing to the gut and supporting its ability to absorb and eliminate. An imbalanced gut is an imbalanced system prone to low immunity, disease and low performance.

Head down and in reverse order as the symptoms have appeared or been suppressed.

Mindful eating is a huge part of a healthy diet. Given students' demanding study schedules and extracurricular activities we see a lot of 'eat on the go' and 'with a gadget in hands' - this is when we gulp down our food without proper chewing or appreciation for the nutrients we are bringing to our body. We don't even realize what we are eating, we just soothe the hunger.

Mindful eating is about connecting with our foods, with their nutrients, chewing well to start the digestive process and allowing the food to peacefully take its natural course.

Hence, our mind-set is a great component of our diet and nutrition which should not be overlooked.

Lastly, "We heal in reverse order as the symptoms have appeared or been suppressed". This means that most of the time the last problem someone has is the first problem to be dealt with by the body in the reversal process.

For instance, let's say you have regular bloating, gas and stomach aches and a suppressive medication was used to stop any symptoms. To ensure the digestive system is working at its optimal level, we need to address the core of the problem. Could it be food intolerance, yeast overgrowth, fermentation and bad digestion, perhaps?

Today, thanks to the sophistication of functional health exams (IgG, IgE, CP, CSAP, DNA to name a few), we have a wealth of knowledge and information at our fingertips - something our generation and our parents' generations did not have. We can certainly empower ourselves with more information, so diet and nutrition not only support our children but help them thrive – physically, mentally, emotionally and academically. Why wait?

Cristina Rodenbeck, parent of a Y8 student at FIS
Executive and Wellness Coach & Certified Wellness Practitioner
Manipura Wellness Practice

About Cristina:

Cristina, founder of Manipura Wellness Practice, believes that healing and change should address the complete self: emotional, mental, physical and spiritual. To this effect, she is a Certified Executive and Wellness Coach (ACC, ICF), Iridologist (IIPA), Bach Remedy Practitioner (BFRP), and Crystal Healer (Katrina Academy), available for consultations at wellness center Integrated Medical Institute (IMI) Hong Kong. She also hosts monthly Kirtan sessions - ancient chanting so powerful they can help to heal hearts and soul.

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SEPTEMBER 2018

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What's The Deal With

Featured Articles

Diagnosis of the Month

FIS Community Survey

University Guidance

ON THE COVER:

Diet and Nutrition artwork by Andrea Tam (Year 13)


THE
MED

WHAT'S THE DEAL WITH

Diet and Nutrition

What is Nutrition?

By Madhavi Chakravorty (Year 10), Haruto Iguchi (Year 10) and Maya Rodenbeck (Year 8)

Teenage Dieting and Nutrition by Madhavi Chakravorty (Year 10)

The Energy Balance: Food is converted to energy which is used by the body to function and to grow. Balancing the energy taken in through food and beverages with the energy used for growth, activity and daily living is called "energy balance". Achieving energy balance is vital for maintaining health. Energy balance is the key goal of a healthy diet. The adjacent chart shows the energy balance daily calorie consumption for teenagers.

The Teen Calorie Energy Balance Table (daily calorie intake)

Age	Boys	Girls
13	2,000-2,600	1,600-2,200
14	2,000-2,800	1,800-2,400
15	2,200-3,000	1,800-2,400
16-18	2,400-3,200	1,800-2,400
19	2,600-3,000	2,000-2,400

The range of calories is based on activity level. Low is SEDENTARY and high is VERY ACTIVE

Fig. 1

Impact of Poor Diet: Poor diet has been identified a one of the most important risk factors for ill health and premature death. As high as 20% of global deaths can be linked to bad diets. Common diseases caused by poor diet include cardiovascular disease (coronary heart disease, stroke and hypertension), diabetes, some kinds of cancer (colorectal cancer, breast

cancer) and bad bone health (osteoporosis, low bone mass).

Status of Teenage Diet and Nutrition: Eating habits are established in childhood and adolescence. The eating habits of young people are given a prominent part in PSHE in secondary schools. Sadly, studies from many different countries, including Hong Kong seem to indicate that the levels of obesity in young people are increasing rapidly (see the references). The adjacent chart shows the levels of obesity in rich OECD countries and Hong Kong.

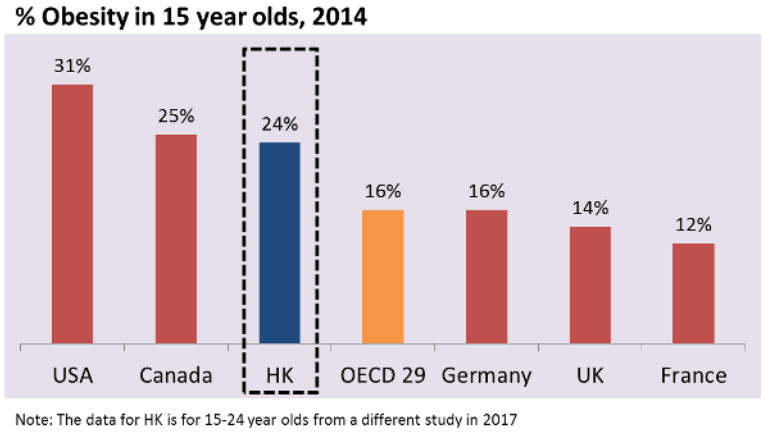


Fig. 2

Teenagers typically diet badly resulting in negative consequences: The main reasons given by teenagers for dieting are the desire to be thinner and dissatisfaction with their body image. Media exposure equates thinness to beauty, success and health. Most teenagers face cultural pressure to be thinner than they need to be for good health. Dubious dieting methods could cause severe physical consequences including nutritional deficiency, growth deceleration, osteoporosis and negative psychological consequences such as low self-esteem. The adjacent chart shows the kind of bad practices that a study in Canada found.

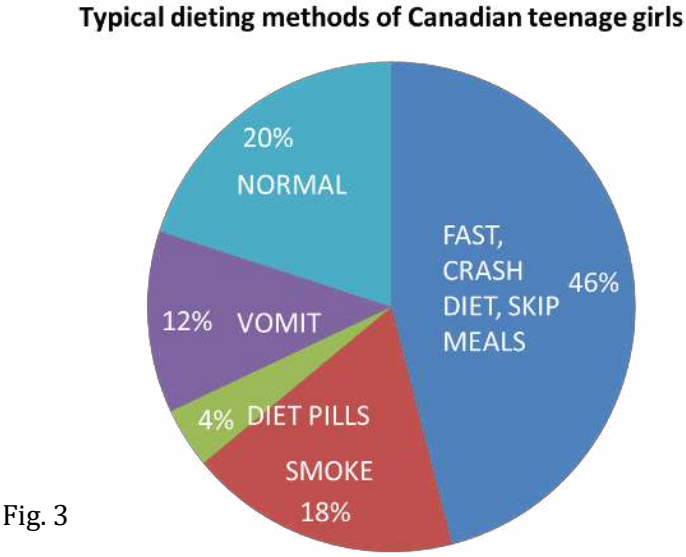


Fig. 3

The components of a healthy diet and practical tips: There are five components to a healthy, well-balanced diet. They are fruits, vegetables, grains, protein foods and dairy. The table below shows how much of these you should eat daily as a teenager.

	Nutrients	Daily consumption	Some tips
	Dietary fiber, vitamin C, folate, potassium	1½ cups (girls) and 2 cups (boys)	Eat whole fruits; choose whole fruits more often than 100% fruit juice
	Dietary fiber, vitamin A, vitamin C, potassium, folate	2½ cups (girls) and 3 cups (boys)	Vary your veggies, including dark green, red and orange and starch
	Carbohydrates (energy), vitamin B, several minerals (iron and magnesium), dietary fiber	6 oz (girls) and 8 oz (boys); 1 ounce equals 1 slice of bread, 1 cup of cereal or ½ cup of rice or pasta	Make half of your grains whole grains.
	Protein, vitamin B, vitamin E, iron, zinc and magnesium. Proteins are the building blocks for bones, muscles, cartilage, skin and blood.	5 oz (girls) and 6½ oz (boys) 1 ounce = 1 potion of meat poultry of fish, 1 egg, ¼ cup of cooked beans; 8 ounces of seafood a week	Vary your protein routine including different kinds of meat and fish, nuts, beans and peas, seeds and soy products
	Calcium for building bones, vitamin D	3 cups (girls) and 3 cups (boys)	Use low fat or skimmed milk and low fat cheese and yogurt

In addition, some practical tips that will serve us well include:

- Eat three meals a day – always eat breakfast
- Decrease the use of salt and avoid drinks that are high in sugar
- Eat fruit or vegetables for a snack
- Eat when you are hungry and stop when you are full
- Don’t snack to make yourself feel better when you are bored, sad or upset.
- Physical activity is an important part of staying healthy and feeling good

Nutrients

Haruto Iguchi Y9B

Nutrients: a substance that provides nourishment essential for the maintenance of life and for growth

The essential nutrients needed for growth are carbohydrates, protein, fats, vitamins, minerals, fibre and water. These are important for living a good, healthy lifestyle as well as in maintaining a balanced diet.

Carbohydrates

There are 2 different types of carbohydrates, simple and complex. Simple are those found in sugar. Complex can be found in starch and dietary fibers. Carbohydrates are used to fuel muscles and the brain. Most calories come from Carbohydrates, around 55% - 60%. These can be found in grain products and rice, fruits and vegetables.

Fibers

There are also 2 different types of fibers. Insoluble and soluble fibers.

Insoluble Fibres: These fibers are difficult to digest. The difficulty of digestion can help you carry food through your digestive system faster. As it moves faster, it can lower the risk of getting Colon Cancer.

Soluble Fibres: These fibers are the complete opposite of insoluble fibres as they are easily digested and lower your cholesterol. It also keeps your blood sugar stable.

Protein

These are broken down into amino acids by the digestive system. These acids are essential key to repairing muscles, red blood cells, hair and other tissues, and for making hormones. Protein intake is also important for a good immune system. These nutrients can be found in dairy products and meat.

Fats

There are 2 different types of fat, saturated and unsaturated fat. Animal-based foods including meat and milk products are higher in saturated fat. Most vegetable oils are higher in unsaturated fat. Other than providing necessary energy, fat also helps to maintains skin, hair, surrounds vital organs with a soft protecting layer, and absorbs certain vitamins and hormones.

Vitamins

Vitamins helps chemical reactions happening throughout the body. There are 4 different types of vitamins.

Water-soluble vitamins

Vitamin B1 (Thiamine)

- Insufficient thiamine: weakness in joints, increased heart rate, swelling, anorexia, nausea, fatigue, and gastrointestinal problems.
- Can be found in: asparagus, lettuce, mushrooms, beans, spinach, peas, eggplant, brussels sprouts, tomatoes, tuna, wheat and soybeans.

Vitamin B2 (Riboflavin)

- Insufficient riboflavin: fissures and sores at corner of mouth and lips, dermatitis, conjunctivitis, photophobia, glossitis of tongue, anxiety, loss of appetite, and fatigue.
- Toxicity: too much Riboflavin breaks your DNA strands. This can turn your urine bright yellow.
- Can be found in: almonds, soybeans, mushrooms, spinach, wheat, yogurt, mackerel, eggs and animal liver.

Too much vitamin B2, B3, B6 can lead to dermatitis.

Vitamin B3 (Niacin)

- Insufficient niacin: dermatitis, diarrhea, dementia, and stomatitis
- Toxicity: supplemental nicotinic acid may cause flushing of skin, itching, gastrointestinal upset. Intake of 750 mg per day for less than 3 months can cause liver cell damage. High dosage of vitamin B3 can cause nausea and liver toxicity.
- Can be found in: mushrooms, asparagus, peanuts, rice, corn, green vegetables, potato, carrots, almonds, celery, turnips, peaches, meat, tuna, salmon.

Vitamin B5 (Pantothenic Acid)

- Insufficient pantothenic acid: severe malnutrition includes tingling of feet.
- Toxicity: nausea, heartburn and diarrhea
- Can be found in: broccoli, peas, avocado, wheat, mushrooms, potato, cauliflower, green vegetables, eggs, strawberries and animal liver

Vitamin B6 (Pyridoxine)

- Insufficient pyridoxine: cheilosis, glossitis, stomatitis, dermatitis, nervous system disorders, insomnia, confusion, nervousness, depression, irritability, interference with nerves that supply muscles and difficulties in movement of these muscles, and anemia.
- Toxicity: overdose on pyridoxine can lead to painful neurological illnesses
- Can be found in: wheat, rice, green vegetables, sunflower seeds, potato, beans, banana, trout, spinach, tomatoes, avocado, walnuts, peanut butter, tuna, salmon, bell peppers and chicken meat.

Neurological illness include stroke, epilepsy, migraine etc.

Vitamin B9 (Folic Acid)

- Insufficient folic acid: one may notice anemia, sprue, leukopenia, thrombocytopenia, weakness, weight loss, cracking and redness of tongue and mouth, and diarrhea.
- Can be found in: green vegetables, asparagus, broccoli, brussels sprouts, citrus fruits, peas, spinach, beans, grains, avocados, peanuts, lettuce, tomato juice, bananas, papaya, organ meats.

Vitamin B12 (Cobalamin)

- Insufficient cobalamin: pernicious anaemia, neurological problems and sprue.
- Toxicity: unlikely
- Can be found in: cereal, animal liver, trout, salmon, tuna and egg.

Vitamin H (Biotin)

- Insufficient biotin: eating too much raw egg whites can lead to Biotin deficiency. This is because eggs contain the protein avidin which binds to Biotin, hence preventing absorption into the body through in the small intestines. This is why eggs should be cooked properly to denature the avidin protein.
- Can be found in: green vegetable, nuts, bread, avocado, raspberries, cauliflower, carrots, papaya, banana, salmon and eggs.

Vitamin C (Ascorbic Acid)

- Insufficient ascorbic acid: bruising, gum infections, lethargy, dental cavities, tissue swelling, dry hair and skin, bleeding gums, dry eyes, hair loss, joint pain, pitting edema, anemia, delayed wound healing, and bone fragility. Long-term deficiency results in scurvy.
- Toxicity: kidney stones, scurvy, oxidative stress, excessive iron absorption, erosion in dental enamel and diarrhea.
- Can be found in: guava, pepper, kiwi, orange, grapefruit, strawberries, Brussel sprouts, cantaloupe, papaya, potato, broccoli, pineapple, cauliflower, lemon juice and parsley.

Fat soluble vitamins

Vitamin A (Retinoids)

- Insufficient retinoids: seeing dim light and dry skin
- Toxicity: hypervitaminosis A is caused by consuming excessive amounts of preformed vitamin A, not the plant carotenoids. Preformed vitamin A is rapidly absorbed and slowly cleared from the body. Nausea, headache, fatigue, loss of appetite, dizziness, and dry skin can result.
- Can be found in: carrots, sweet potato, pumpkin, green leafy vegetables, squash, cantaloupe, bell pepper, chinese cabbage, beef, eggs, peaches

Vitamin D (Calciferol)

- Insufficient calciferol: deformed bones, retarded growth, soft teeth, osteomalacia, softened bones, spontaneous fractures, and tooth decay.
- Toxicity: elevates blood calcium levels, loss of appetite, nausea, vomiting, thirst, excessive urination, itching, muscle weakness, joint pain.
- Can be found in: sunlight, mushrooms, salmon, mackerel, sardines, tuna, eggs

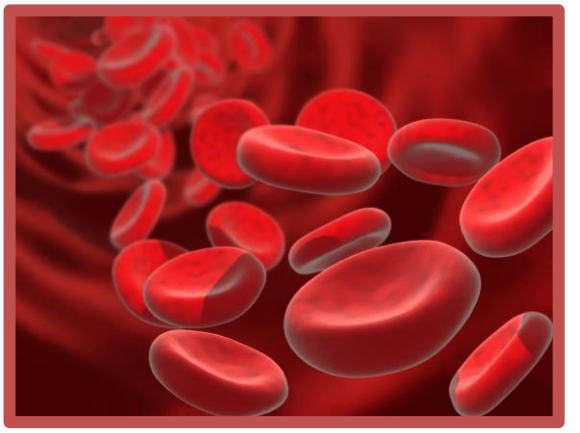
Too much vitamin D, B5, B3 and A causes nausea and lack of Vitamin B1 causes nausea as well

Vitamin E (tocopherol)

- Insufficient calciferol: none
- Toxicity: blood clotting
- Can be found in: vegetables, almonds, sunflower seeds, olives, blueberries, most nuts, most seeds, tomatoes, avocados

Vitamin K

- Insufficient vitamin K: tendency to bleed or hemorrhage and anemia.
- Toxicity: can interfere with glutathione, a substance in the body which helps to repair tissues.
- Can be found in: broccoli, green leafy vegetables, parsley, watercress, asparagus, brussels sprouts, green beans, green peas, carrots.



Too little Iron can lead to Less haemoglobin and fewer RBCs leading to less oxygen throughout your body

Minerals

Minerals are components of foods that are involved in many body functions. For example, calcium and magnesium can improve bone structure, and iron is needed for our red blood cells to transport oxygen.

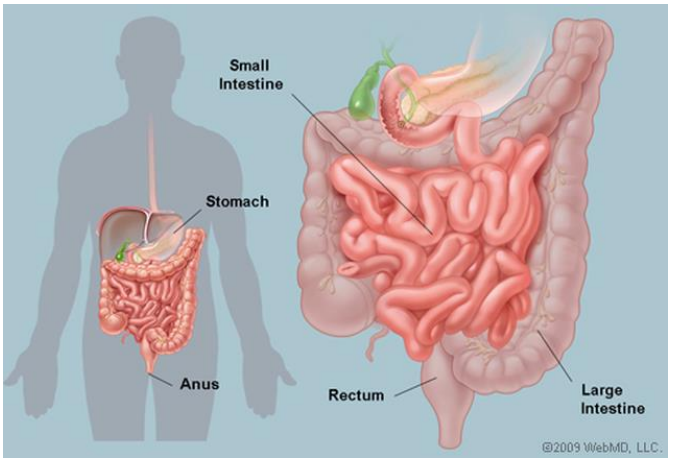
Water

Most of our body weight (60-70%) is made up of water. Water helps control our body temperature, carry nutrients and waste products from our cells, and is needed for our cells to function. It is recommended an average adult drink 8 glasses of fluid daily (or more in hot weather or during physical activity). This fluid does not have to be water alone. It can also be obtained from juice, milk and soup. Caffeine-containing beverages has adverse effects as it is diuretic, hence making us lose water.

Digestion

By Maya Rodenbeck

Intestines



Where it is in the body

The intestines are located right underneath your rib cages, in the abdomen area.

Types of intestines

There are two types of intestines: the small intestine, also called the small bowel, and the large intestine, also called colon or large bowel.

The small intestine is around 20ft long, that's almost 6 meters long! Its job is to absorb most of the nutrients from what we eat and drink. While the large intestine is about 5 feet long and is also responsible in absorbing nutrients but also converting the indigestible foods into waste; our stools. As stool enters the final bit of the digestive system called rectum, its nerves there create the urge to eliminate. This is when we aim for the toilet!

Why it is there

Their functions are to digest food and to enable nutrients into the bloodstream, to feed all our cells and organs. They are connected to the stomach and great part of our digestive system to nurture and feed the body.

A type of disease

Since there are many types of intestinal diseases say from diarrhoea, stomach flu to serious forms of cancer, I chose to focus on one; Leaky Gut. The hidden and tricky one!

Leaky Gut is very common, most people don't even know they have it. Leaky gut is when your small intestines get inflamed, then they are unable to process all the nutrition, absorb the nutrients and nurture the body to become healthy. The body starts complaining and if you don't pick up the signs things can get complicated and you end of with conditions like Crohn's disease.

Symptoms

- Chronic diarrhoea, constipation, gas or bloating.
- Nutritional deficiencies.
- Poor immune system.
- Headaches, brain fog, memory loss.
- Excessive fatigue.

What is known to inflame the small intestines

- Candida
- Sugar
- Gluten
- Food intolerances
- Allergies

Candida is a fungus, which is a form of yeast. It's one of the main culprits causing Leaky Gut. It is normal and we all have a small amount in our mouth and intestines. Its job is to aid with digestion and nutrient absorption, but when it overgrows things go off! It breaks down the wall of the intestine and penetrates the bloodstream, releasing toxic by-products into our body and causing leaky gut. And more, what makes it overgrow is sugar and carbohydrates! And there no medication that kills or controls candida, only diet. You basically have to starve it!

What you can do to take care of your intestines

First consult a doctor or naturopath to understand your food allergies and hidden food intolerances. You need to know what your body likes and dislikes.

Secondly, work with a nutritionist to have a better diet in place.

Your body needs nutrients and your intestines are really important to support your body.

Difficult at first, but creative at second!

It may sound really difficult and challenging at first, but at the end it is healthy, and brings out our culinary creativity! You just need to think outside the box, do your research and be flexible to experiment new options.

Here's a gluten and sugar free recipe for you as a starter!

Please check if you are not intolerant or allergic to any of these ingredients before you start. Source: Sarah + Claire's sugar-free nut cheesecake … (http://www.sarahwilson.com/2015/07/the-best-sugar-free-gluten-free-and-dairy-free-desserts/)

First make the base (meals and nuts can be substituted for any others you have lurking in the cupboard):1

- 100g of desiccated coconut
- 110g of shelled pistachios
- 150g of almond meal
- 4 "generous" tbls of butter

Preheat the oven to about 160 C. Stab-mix or blend pistachios until they are semi-fine chunks, add to a mixing bowl with the coconut, almond meal, and room temperature butter and rub until the mixture is an even, thick consistency. Then press into a baking paper lined spring form pan. cover the base and sides with your mixture to an even thickness – you may need more or less of the mixture depending on the size of your pan. Try to keep it an even thickness – about 1/2-1 cm.
Place in oven for 8 minutes or until slightly firm. Don't wait for the base to brown as it will continue to cook once the filling is in. We made this mistake…but not before dropping the whole tin on the floor and repressing it back into place. This recipe is bombproof, I tell you!

Then the filling:

- 2-3 boxes (250g each) of Philadelphia cream cheese
- one egg
- a dash of natural vanilla essence or vanilla powder
- 2 tbls of natural yogurt
- 1/4 cup coconut cream
- 1/2 cup of rice syrup (or add more/less to your individual taste). And, yes, rice syrup is fructose-free.

In a large bowl add the cream cheese (room temp), egg, vanilla, coconut cream and rice syrup and yogurt. Mix until it's an even, thick consistency. Don't over mix and try and keep aeration to a minimum while stirring – it will make the thing puff up, then collapse. Add your mixture to the base and return to the slow oven for 20-30 mins or until the mixture is puffy on the edges and the centre slightly soft and custard-like – (don't overcook). Put in the fridge until it's firm, otherwise it's way too egg-y. We made this mistake in our impatience.

Enjoy, stay healthy, and eat better!

HUNGER

HUNGRY: to be or not to be

BY SARAH PAGE

Hunger-suppressing stimulants, bariatric arterial embolization and gastric bands can be convenient, effortless strategies for curbing hunger and reducing energy intake. However, taking into account the health risks and side effects they can pose, it may be worth paying attention to the often-underrated, challenging methods of dealing with hunger, which seem to involve will-power and self-awareness. Simply considering small lifestyle choices can make a massive impact on your desire for delicious food.

Humans intake energy through their diets and energy expenditure is enacted by the functioning of your organs and systems, vital metabolic processes and movement. The regulation of appetite to keep your energy stores at a comfortable level is primarily monitored and controlled by the hypothalamus in the brain. As the energy stored in our body begins to fall, the concentration of 'the hunger hormone' ghrelin increases, stimulating an increase in our food intake and energy storage. This is homeostatic hunger due to an imbalance of energy in our body. Once we begin to eat, we feel satiated (full), and leptin is secreted, which suppresses food intake and stimulates metabolic processes to use up excess energy stores.

Hedonic hunger is explained as follows: there is a proposed theory that due to evolution, humans are predisposed to gravitate towards highly-palatable foods, and hence, in a modern society where delicious but unhealthy, high fat and sugar content foods are readily available, we will want to eat not for the nutritional content but for the taste, regardless of our satiety. Our ancestors lived off

very basic foods with no additives, coagulants and preservatives and the physiology of our body still resembles that of our ancestors. So, the introduction of intensely flavourful processed foods is registered in a 'reward-system pathway' as supposed to in the homeostatic pathway. It works similarly to drugs; continual consumption of unnaturally delicious foods trains the brain to want to eat more as you need a larger concentration of chemicals to produce the same pleasure.

When your body is abundant in energy, hedonic regulation hunger can override the homeostatic system if tempted by the sight, smell, taste or thought of highly-palatable food.[2]

Identifying the difference between homeostatic and hedonic hunger is vital for impeding cravings. Homeostatic hunger is best treated with a nutritious, healthy meal whilst hedonic hunger should be prevented by reducing temptations of overconsumption. Following tips like buying and snacking on organic, non-processed foods, not attending buffets, asking yourself whether you are genuinely hungry, and when and what you ate during the last meal can help you recognise when your body needs a replenishment of energy. Over time, as the body decreases its expectation of highly-palatable

foods, then it should be easier to control the cravings.

Long-term stress causes your adrenal glands to release cortisol, which promotes overeating and increases motivation. Cortisol can release glucose in the body by breaking down protein stores in the liver to increase blood sugar levels. Insulin suppression means your cells are deprived of glucose and as a result, signals are sent to your brain indicating cravings for high-energy density foods, like fats and carbohydrates. Once ingested, glucose and fatty acids inhibit cortisol-releasing hormones, countering your stress and reducing the emotions of panic and anxiety. In addition, cortisol can transport triglycerides from storage to visceral fat cells, the deep fat under muscle that is much harder to lose. Managing prolonged stress is the key to preventing stress-eating.

Sleep deprivation disrupts the normal cyclic release of ghrelin and leptin. Specifically, the fewer the hours you bank in REM sleep, the higher the irregular release of ghrelin, increasing your hunger and energy intake even if your body doesn't need the energy. So get those hours of sleep in! 8-10 hours is recommended for teenagers.

Eating fruits, fibre & plant proteins can satisfy your hunger without donating lots of calories to your diet. Fruits have a low energy density (number of calories per gram) as a result of their high-water content. Humans habitually eat the same mass of food each day, however, the energy content of the foods they consume can differ - so it's entirely possible to eat more healthy, low-energy density foods and feel less hungry.

Fibre is a variety of plant polysaccharides, such as cellulose and lignin, with resistance to digestion by gastrointestinal enzymes in the human body. Examples include fruits, vegetables, grains, oats and legumes. Due its complex varying structure of crisscrossing long chains of polysaccharides with ß-glyosidic linkages, regular polysaccharide networks are insoluble and have increased water-retention, whilst irregular polysaccharide networks are soluble and have been recorded to decrease the concentration of glucose and cholesterol in the blood postprandial (after a meal). In short, fibre slows down the digestive process by absorption nutrients and increasing the viscosity of the contents in the digestive tracts that inhibit effective motility of enzymes to substrates for digestion and bile salts for

emulsification of fats, thus allowing your body to absorb the nutrient molecules over a longer period of time, stalling gastric emptying and delaying the need for another meal to replenish your nutrients and energy. Furthermore, the texture of fibre usually requires time and effort to chew, this extended oral exposure allows time for signals to be generated that invoke satiety sensations. So, enjoy your meal by ingesting it slowly and you will find yourself feeling full faster, for an extended period of time. Moreover, higher fibre intake has been associated with lower risk of cardiovascular disease, type-2 diabetes, colon and renal cancer and obesity.[7]

Eating plant protein could keep you fuller for longer and may reduce your food intake during the following meal. A Study in Denmark surveyed 43 men who alternatively ate high-protein meat, high-protein vegetable and low-protein vegetable meals. The results concluded that the men reported the high-protein vegetable meal as the most filling and they consumed 12-13% fewer calories at lunch when they ate the meal at breakfast. Surprisingly, the high-protein meat meal and low-protein vegetable meal were ranked the same in terms of satisfying hunger. The digested polypeptides of protein we eat bind to MU-opioid receptors (the same receptor for the molecule morphine, which plays a role in opium addiction), which signals the brain to release anorexigenic hormones, like leptin, that suppress the desire to eat.

10 Foods to avoid for a Healthy lifestyle

BY Aarmann Mohan

According to a study by McGill university, linking psychology and sciences, it shows that more calorie-dense dietary options are generally chosen by consumers. In Hong Kong where there are often savouries and fast-foods temptations right around the corner. It is best to avoid these foods in order to refrain from getting induced health issues. Here is an overview of the worst foods one can indulge and one should reduce or exclude.

1. White Bread: Bread is an everyday food and is very simple in taste, however it has very little nutritional value. White bread is made from refined white flour and contains minimal dietary fibre. These are meant to be essential to peristalsis in the digestive system and helps provide stable metabolism. White bread is packaged with sugar and is bleached with chemical agents, these wreak havoc on one's skin.
2. Alcohol: Alcohol is said to be hepatotoxic: the cells that cleanse your body treat alcohol as a poison and leaves a pasty complexion and causes liver damage. Alcohol also, by osmosis, dehydrates your skin, making it less moist and fresh the next morning.
3. Refined sugar: This is a close cousin of alcohol, as known sugar is one of the worse things one can eat. This sweet crystalline change your brain chemistry and psychological behaviour making you crave more of it. When one eats high amounts of sugar, your body breaks down these carbohydrates to glucose. This increases the hormone insulin in your blood streams in order to control blood sugar levels. When insulin spikes, one experiences inflammation throughout the body and this produces enzymes that break down collagen and 'elastic', a protein which snaps skin back together when pinched.

4. Processed meat: Sausages, bacon, hot dogs and other deli meats are also bad for your skin because they consist of artificial flavours, fat and salt. These make it hard for your body to digest the flesh. These also increase inflammation and other alternatives may be used to prevent high blood-sugar levels.

5. Self-stable condiments: such as ketchup, relish and pre-packaged coffee creamers do nothing for your health because they have been artificially engineered not to spoil they are packed with preservatives and additives. These chemicals include: colouring, salt and trans fats, which can lead to heart disease. So, think twice before loading up on single-serve condiments: the chemicals they host are a better asset in home improvement materials than your body.

6. MSG: That suspect staple of Asian cooking MSG (monosodium glutamate) consists of water, sodium and "glutamate", an amino acid used to make proteins in food and your body. It is important to be careful because some people are sensitive to the glutamate, which can spark symptoms such as nausea, vomiting, heart palpitations, blurred vision, even pain in the face, back or neck. The symptoms but can last for hours and be magnified if you eat MSG-laced food while drinking alcohol or on an empty stomach.

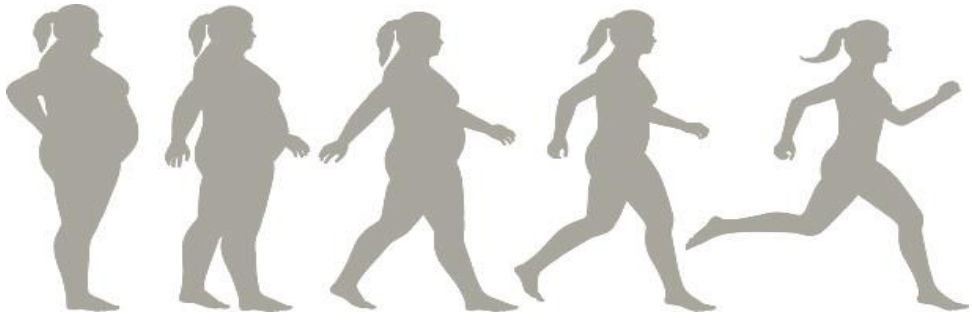
7. Soy sauce: Soy sauce is no better than MSG according to sports nutritionists, it should actually never be put into your body. One spoonful of soy packs 9,000 milligrams of sodium, which is far more than your daily requirements. High sodium can cause water retention and high blood pressure.

8. Diet soda: Soda is horrible for your body, it contains refined sugar and many calories. When diet soda debuted, everyone thought it would be a healthy alternative. Diet soda contains the artificial sweetener aspartame, which has been rumoured to cause seizures, brain cancer and kidney issues.

9. Stick margarine: These consists of consists of hydrogenated vegetable oil, which is high in trans-fat. Trans fat is bad for you because it induces bad cholesterol that causes inflammation and increases the risk of heart disease. Worse, it makes you vulnerable to diabetes.

10. Popcorn: its innocent image, even popcorn has a dark side to do with those dreaded trans fats. In particular, the cinema version is liable to be drenched in trans-fat-rich oil.

Saturated fat increases your risk of heart disease and stroke, and promotes migraines, arthritis and premature ageing: this proves just how much harm junk food can do and how changes can be made in our own lifestyles in order to avoid such conditions in our lives.



Diet Misconceptions

BY Ines Durand

With so much health and food advice floating around the internet nowadays, it can sometimes be hard to distinguish the real, helpful tips from the claims with no backing behind them. I will be addressing 3 common diet misconceptions in this article.

1. All fats are bad

Fats are essential to our diet, seeing that they are one of the 3 food groups that the body needs daily, which are carbohydrates, protein and fats. They provide essential fatty acids like linoleic and alpha-linolenic acid, both of which are not made in the body, to make omega-3 and omega-6 fatty acids that play important roles in the body. They also deliver fat-soluble vitamins to our body, like vitamin A, D, E and K which their main functions are turning light into nerve signals in the retina of the eye, helping with calcium absorption, removing dangerous free radicals in the body, and being part of the blood clotting process, respectively. Fats also supply much more energy than carbs and make sure the body is getting enough energy to be able to sustain itself properly: one gram of fat gives off 9 calories while the same mass of carbohydrate gives off 4 calories.

However, the origin of the myth that all fats are bad may have come from the fact that some types of fat, namely saturated fat and trans-fat, increase the risk of heart disease and stroke. They do this by increasing the levels of LDL cholesterol and decreasing HDL cholesterol. LDL cholesterol builds up in the walls of the arteries and can clog it up, preventing blood flow. In contrast, it decreases HDL cholesterol which actually removes the LDL cholesterol from the artery walls and has many other useful functions in the body.

So yes, fats must be consumed in moderation, and some avoided, but they still need to be part of our diet in order for us to be and remain

healthy. Some suggestions are to rely on fruits, vegetables, whole grains, poultry, dairy and nuts, and not to eat as much red meat, sugary foods/drinks and hydrogenated vegetable oils.

2. Microwaving food destroys all its nutrients

Nearly everyone has a microwave oven in their home, however some people think that cooking food in a microwave damages the nutrients in it and therefore we should not use microwaves at all. To disprove this myth, we first need to understand how microwave ovens work. They cook food by emitting “microwaves” which are a little shorter than radio waves, and while cooking the food, they excite and vibrate certain molecules that are electrically unsymmetrical, or polar- meaning one end of the molecule is positively charged and the other end is negatively charged (water is an example of this). Thus, these molecules gain heat energy and are “heated”.

Regarding whether microwave ovens destroy nutrients, all forms of cooking damages nutrients, whether it be roasting in an oven or steaming, and they break down. However, because the microwaving time is very short, more nutrients can actually be preserved using this method. Also, when cooking vegetables by boiling them, nutrients can leach out into the water, effectively making the vegetable lose its nutrients. Steaming, or even microwave steaming, can hold on to more nutrients this way. Therefore, it is pretty safe to say that microwaving food does not destroy all the nutrients in food.

3. Skipping meals makes you lose weight faster

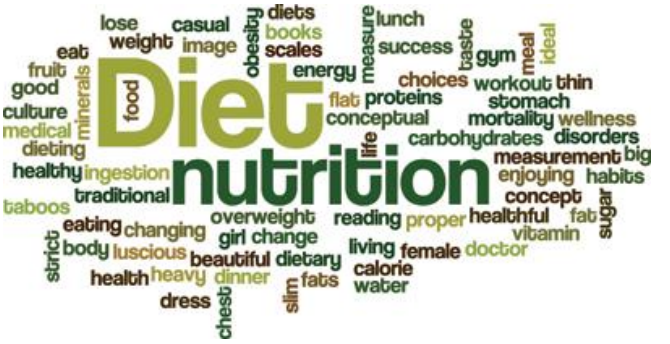
This is partly true, however there is also a combination of other factors that can actually make people do the contrary. It just depends on which meals you skip and how, and the amount you eat in the next meal. Firstly, one way it can help people lose weight is by intermittently skipping dinner. A study showed that participants who ate only 20 percent of their normal caloric intake after a day of normal meals, done for 2 months, lost 8 percent of their body weight. However, this was achieved through a controlled eating plan and consistently lower calorie intake, which are frequently not the case in many skipped meals.

A study found that skipping meals in the day and eating one large meal at night resulted in potentially dangerous metabolic changes, because there is suddenly so much glucose in the body after a long period of not eating. Researchers also found that the people who ate only dinner had delayed insulin responses, which means that the body is not as capable of immediately absorbing the glucose that came from the food, and this condition, if it continues, could lead to diabetes.

Another problem with skipping meals is that if you do not check your caloric intake throughout the various meals that you do eat, you could end up either having too little nutrients or overeating and gaining weight as a result, which is not ideal if the goal was to lose weight. It could also backfire when unhealthy snacking comes into the equation.

Therefore, skipping meals should be planned wisely and sticking to that plan is important as well. Skipping different meals also have different effects on the body: skipping dinner burns more calories than skipping breakfast, because metabolism and blood sugar control are better in the morning than at night.

In conclusion, the best way to evade all these health claims and food myths is simply to eat a balanced diet, one with plenty of fruits and vegetables, whole grains...I trust that you know the rest already by now!

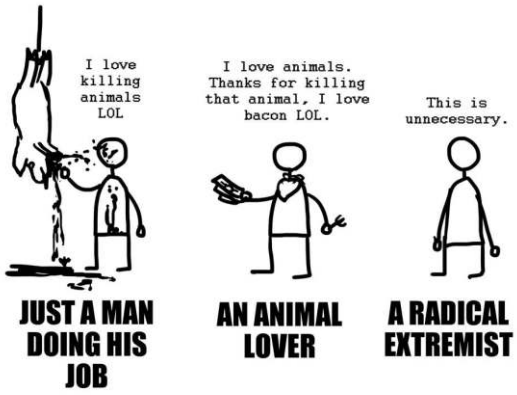


FEATURED ARTICLE 4

Is it safe to be vegan?

By Elena Meganck

Veganism is becoming increasingly popular these days. Celebrities including Jared Leto, will.i.am, Casey Affleck, Leonardo DiCaprio, Liam Hemsworth and Ariana Grande have also joined the movement.



But what is veganism? It's a lifestyle which "seeks to exclude, as far as is possible and practicable, all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose." People often make assumptions and stereotypes when they hear this vague word. Simply saying "No thanks, I won't have that, I'm vegan" doesn't educate or explain the reasons behind the choice. There are also 'radical' or 'extreme' connotations to the vegan lifestyle.

On the other hand, a whole-food, plant-based diet is more inclusive. It includes not only vegans, but also individuals gravitating towards veganism, individuals consuming very little animal-based derivatives or other such lifestyles. Wholefoods are defined as foods that have "been processed or refined as little as possible and are free from additives or other artificial substances", and a plant-based diet is defined as "a diet based on foods derived from plants, including vegetables, whole grains, nuts, seeds, legumes and fruits, but with few or no animal products."
This article aims to address frequent concerns about a plant-based lifestyle, not meal ideas,

alternatives, or anything to do with ‘what do you even eat?’. If you’re interested in this, you can do some research online (examples are suggested at the end of the article) or contact the Medical Journal Staff about any questions.

Plant-based diets ‘are appropriate for all stages of the life cycle’

The Academy of Nutrition and Dietetics, the world’s largest organisation of food and nutrition professionals, has claimed that a plant-based diet can not only provide many health benefits but also reverse diseases such as diabetes and hypertension. “Appropriately planned vegetarian, including vegan, diets are healthful, nutritionally adequate, and may provide health benefits for the prevention and treatment of certain diseases. These diets are appropriate for all stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence, older adulthood, and for athletes.”.4 You shouldn’t be thrown off by “well-planned” -- all diets must be “well-planned” in order to be healthy, and it doesn’t mean you should be documenting every little thing you eat and whether you’re getting all your dietary requirements every single day. Like for all individuals, it is recommended you do regular blood check-ups to ensure your blood-levels are adequate. If you’re still concerned, there are many plant-based advocates out there, both online and locally in Hong Kong, such as in The Round Clinic, which can help you understand the lifestyle better (examples are suggested at the end of the article). The paper, published in 2016, debunked the myth that anyone following a plant-based diet are, in any way, compromising their health or nutritional adequacy at any life stage from toddler to older adult.

What About Calcium?

It’s important to recognise, before all, that our bodies adjust to the amount of calcium in our diets. If it contains less calcium, our bodies become better at absorbing it. If it contains more, our bodies excrete more.5

It isn’t recommended to compensate with calcium supplements. According to a recent study, “Calcium supplements with or without vitamin D are associated with an increased risk for myocardial infarction (heart attack) and stroke, and this risk appears to apply across subgroups defined by important baseline characteristics. These findings suggest that targeted prescription of calcium supplements to specific population subgroups, such as younger people and those with low dietary calcium intake, should not be endorsed.”6

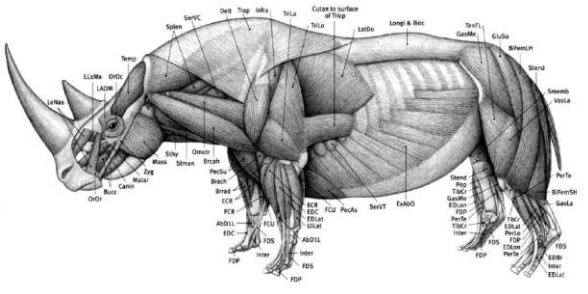
Without calcium and supplements, will your bones get brittle? Not according to a study from 2009 which showed that, “although vegans had lower dietary calcium and protein intakes than omnivores, veganism did not have adverse effect on bone mineral density and did not alter body composition.”

It’s currently recommended that adults take in 1,000 to 1,200 milligrams of calcium a day.8

However, experts believe this requirement is high for a reason: a diet high in animal protein has a high excretion rate (calcium excreted from the body to neutralise acidic products of the breakdown of dietary protein) so you must consume more calcium to make up the calcium excretion. On the other hand, on a whole-food, plant-based diet, calcium excretion rates are much lower, so a plant-based eater's calcium intake can also be much lower. A study published by the American Journal of Clinical Nutrition says that "individuals with low, but nutritionally adequate, intakes of sodium and protein may have calcium requirements as low as 500–741 mg/day."9

Meat = protein = muscle = athletic success?

With a plant-based diet containing less, but still entirely adequate amounts of protein, you might be asking yourself: "even if the amount is adequate, what about athletes, what if I want to gain muscle?". Well, you might be surprised to hear that most people following a plant-based diet exceed their protein requirements. Another surprising fact: one of the world record holders for weightlifting is vegan. His name is Patrik Baboumian. He successfully completed a 10 metre yoke walk of 550kg. After the challenge, he said: "It's a bit stupid to do things like that, it really hurts (...) but the point is to inspire people and break stereotypes that tough guys need to eat a lot of meat." There are many more examples of highly successful athletes following a plant-based diet, including Serena Williams (tennis), Wilson Chandler (basketball), Tia Blanco (surf), Mac Danzig (Mixed Martial Arts Cage Fighting), Scott Jurek (Ultramarathon Runner), and Torre Washington (professional bodybuilder).10



With both calcium and protein, it's significant to remember that the animal-based products from which you get these nutrients are consumed by the animals themselves by eating plants, they don't make them independently. Look at animals like the elephant and the rhinoceros -- they are some of the strongest animals on earth, and as you can imagine their bodies require

much protein to sustain their huge muscle mass. They're herbivores. Don't become a herbivore though, that wouldn't fulfill your dietary requirements!

"This is a message to all those out there who think that you need animal products to be fit and strong. Almost two years after becoming vegan I am stronger than ever before, and I am still improving day by day. Don't listen to those self-proclaimed nutrition gurus and the supplement industry trying to tell you that you need meat, eggs and dairy to get enough protein. There are plenty of plant-based protein sources and your body is going to thank you for stopping feeding it with dead-food. Go vegan and feel the power!"

What about B12?

B12 is a vitamin synthesised in the soil and dirt by bacteria. Fungi, animals and plants are incapable of producing B12 independently and have to obtain it in their diet. Due to the chemicals added to our soil today, bacterial diversity is reduced, so B12 content in soil is reduced as well, and as a result produce absorbs and contains less B12.11 On a non-plant-based diet, the animal-products consumed contain B12 due to 90% of B12 supplements being given to livestock.12 So you could either take the supplement directly (B12 supplements are very cheap!), or pay the animal industry to get it to you through a more complex chain with more drawbacks to your health. Additionally, if you supplement directly, you'll have higher B12 blood-levels than meat-eaters as B12 levels. On a plant-based diet, it's the only nutrient you need to supplement, just to make sure, even though it's possible to get all the B12 you need without supplementing.

It shouldn't be regarded as the fatal flaw though, and there are many reasons for this. For example, you might think supplementing is not 'natural'; while this is true, treating water or soil is not 'natural' either, which is where we got our B12 from in pre-industrial times. Or you might want to consider the fact that many people already take supplements, so it isn't that cumbersome. Or maybe the fact that other nutritional deficiencies than B12 are widely present amongst the general population, such as fiber-deficiency. Dietary fiber is the part of plant-foods that your body cannot break down or absorb and is not found in animal foods. Its primary function is to help bowel movement, but it makes important contributions to other health benefits, such as maintaining a healthy weight and lowering your risk of heart disease and diabetes.15 But 97% of Americans don't reach the minimum recommended daily of 30g. But that's America right, what about Europe? They consistently do not reach the minimum either.14

There are two types of B12 supplements, cyano and methyl B12. Nutritional doctors recommend cyano B12 simply because most studies are done with cyano and have been proven to achieve positive results. Studies suggest that you should supplement about 100 micrograms of B12 per day.

What about eating outside the house?

Depending on the region and the culture, it will be more or less challenging to find plant-based friendly restaurants. The most plant-based friendly countries in Europe include Austria and the United Kingdom. In Asia, you should experience very little difficulty. With some planning you won't have a hard time finding a restaurant that offers plant-based dishes. With some creativity and flexibility, you should be able to eat almost anywhere.

Some examples of plant-based restaurants in Hong Kong include MANA! VeggieSF (short for Veggie San Francisco), Loving Hut, Grassroots Pantry and Veg6. These are only the fully plant-based restaurants -- there are of course many, if not most, restaurants which will have plant-based dishes. Feel free to elaborate the list of examples with a quick Google search!

Isn't it expensive?

Whole grains, potatoes, beans and other basic foods are staples in a plant-based diet -- and they're amongst the cheapest products in food stores, as opposed to the animal-based counterparts.

You could save about HKD 6,000 a year. A study published in the Journal of Hunger & Environmental Nutrition calculated the savings by comparing government-recommended weekly meal plans (which include meat) with plant-based meal plans. Both plans amounted to 2,000 calories a day. The government plan suggests Hawaiian pizza for dinner on Day 6, whereas the plant-based diet recommends a recipe for Southwest lasagna. The government plans costed an extra HKD 112 per week. The plant-based diet had about 25 more servings of vegetables, 14 more servings of whole grains, and eight more servings of fruit per week.

You don't need to be a health guru to adopt a plant-based diet and it doesn't necessarily consist of expensive shopping lists containing superfoods like acai berries, spirulina powder or chlorella which will be more expensive (and are not only used by plant-based health gurus, but just health gurus in general). Things like mock meats or cheese will likely also be more expensive, but the money you save on your staples can be spent here. The same goes for fresh produce -- it will be more expensive than a McDonald's burger, but consider your health -- it's worth the extra dollars, and once again is compensated for by the less expensive staples. What's more, plant-based dishes are often less expensive than meat-based ones in restaurants. So, you'll probably end up saving money rather than going bankrupt!

FEATURED ARTICLE 5

Why we shouldn't reward ourselves with treats

BY Sasha Lee

Many of us resort to using treats, often in the form of food, as motivation after completing a specific task. Logically, this process should be viewed as effective, as the introduction of food as a motivation should increase the efficiency of working. However, the majority of these rewards are unhealthy junk food. Eating large amounts of such food will subsequently have a negative effect on a person's health and even a person's mentality.

When a person eats food, it releases a chemical in the brain called dopamine. Dopamine is a chemical, associated with feelings of happiness, which acts as a neurotransmitter that helps control the brain's reward and pleasure centers. (Psychology Today) This chemical explains the feeling of reward and contentment we receive when indulging in treats. Nevertheless, the long-term effect of using this method of reward is a negative one.

"A lot of studies have shown that eating foods high in sugar and fat actually changes the chemical activity of the brain making it more dependent on such foods" (NDTV Food)

The university of Montreal conducted a study, using rats as test subjects, investigating the effects of eating unhealthy food. The rats exhibited withdrawal symptoms when their supply of junk food was removed, and this reaction is mirrored in humans. These withdrawals can result in a person being unable to cope with the constant pressures and stress and can even result in a person experiencing feelings of depression.

"Also, by consuming too much fast food you may lose out on essential nutrients like amino acid tryptophan, the lack of which can increase feelings of depression."

On top of causing a decrease in mental health, having a routine of eating junk food in your diet will also deteriorate your physical health. Foods which are high in trans fats (which can be found in baked goods, snacks and fried food), such as cakes, pies and cookies, all increase cholesterol levels in the body.

"Unlike other dietary fats, trans fat — also called trans-fatty acids — both raises your LDL ("bad") cholesterol and lowers your HDL ("good") cholesterol. A diet laden with trans-fat increases your risk of heart disease" (Mayo Clinic)

On top of putting yourself at risk of heart disease, eating junk food can also lead to weight gain which can again lead to high blood pressure or heart disease. Frequently eating foods high in sugar will also result in an increasing resistance to insulin. Insulin is a hormone produced in the pancreas which controls fluctuating glucose levels in the body. This can result in a person acquiring type 2 diabetes.

"Type 2 diabetes is a progressive condition in which the body becomes resistant to the normal effects of insulin and/or gradually loses the capacity to produce enough insulin in the pancreas." (Diabetes Australia)
Although many of these consequences are extreme, the sequential consumption of unhealthy foods as a reward for completing tasks, will only result in negative effects on the body and the mind, despite the short-term contentment one may experience when ingesting the treat. Therefore, next time you decide to reward yourself with unhealthy food, ask yourself whether the short-term effect is worth the long-term consequences.

WHEN YOU
TRULY UNDERSTAND
THAT YOUR FOOD CHOICES
ARE POWERFUL
AND LIFE AFFIRMING,
YOU CAN EXERCISE
CONTROL AND RESTRAINT
WITHOUT
DEPRIVATION

Marlene Adelmann

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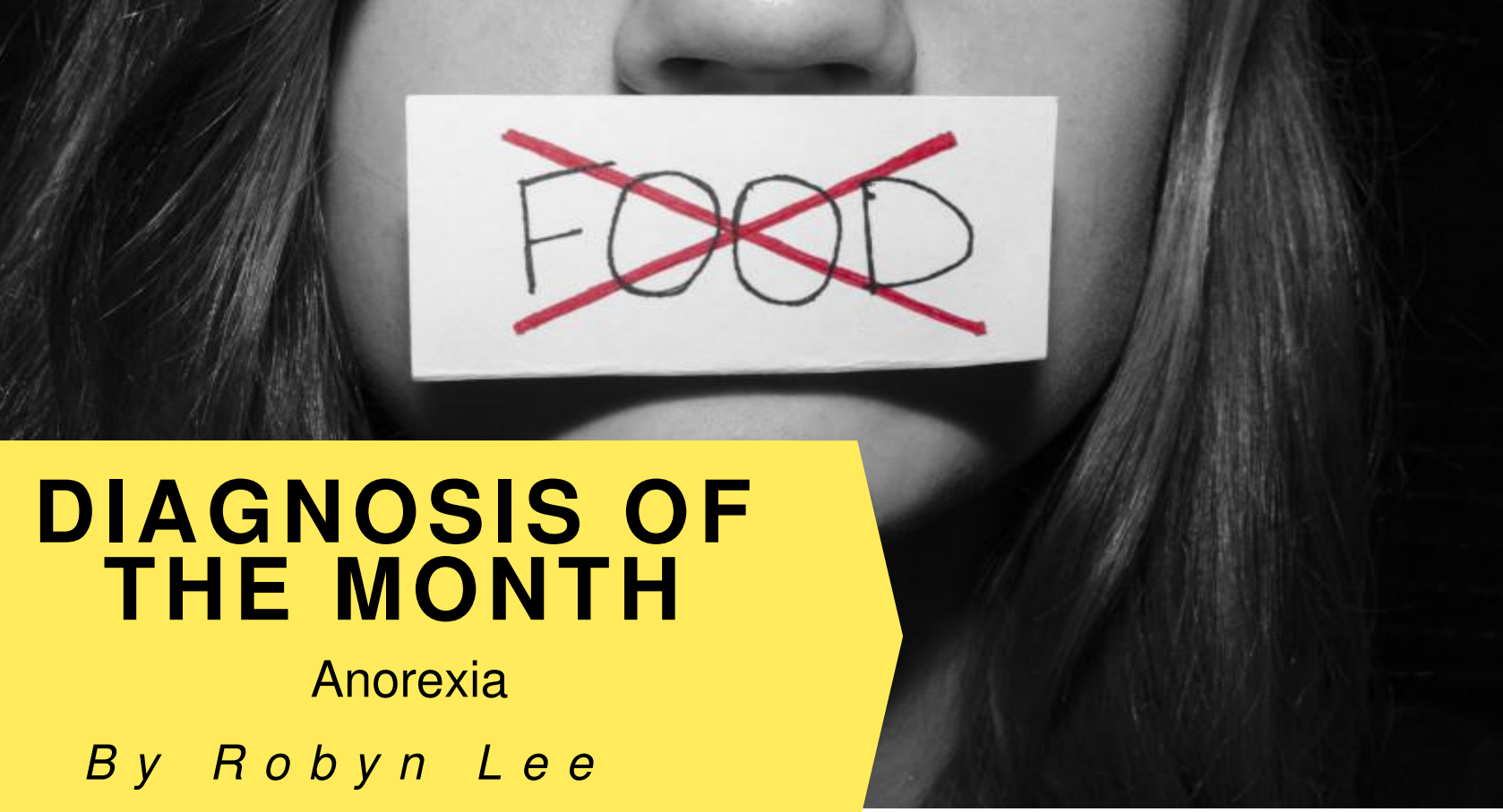

DIAGNOSIS OF THE MONTH

Anorexia

By Robyn Lee

What is Anorexia

Anorexia nervosa, or more commonly known as 'anorexia' is an eating disorder, where those affected are so overly obsessed with their weight, appearance and food intake that it often leads them to self-imposed starvation. Anorexia nervosa, along with bulimia nervosa are the most common forms of eating disorders found today – with approximately 8 million people (3% of the population) suaffering from anorexia in the United States alone. If you believe that this isn't happening to the same degree in Hong Kong, you are largely mistaken, with just last year's statistics showing that "one in six hongkongers suffer from a diagnosable mental health illness".

How is anorexia characterised?

Anorexia is characterised by people, mainly adolescent girls and young adults, with extremely low weight, a 'need' to be thin and a fear of putting on weight. This constant fear and longing to be slim leads people with anorexia to excessively restrict the food they eat – essentially, starving themselves. Though it may be clear to others that those with anorexia appear emaciated and gauntly, people with anorexia often do not see themselves this way at all – an unrealistic body image residing, with most still believing that they look overweight instead of realising what is truly happening to them.

What are the symptoms of anorexia?

- Extreme weight loss or not making expected developmental weight gains
- Thin appearance
- Abnormal blood counts
- Fatigue
- Insomnia
- Dizziness or fainting
- Bluish discoloration of the fingers
- Hair that thins, breaks or falls out
- Absence of menstruation
- Constipation and abdominal pain
- Dry or yellowish skin
- Intolerance of cold
- Irregular heart rhythms
- Low blood pressure
- Dehydration
- Swelling of arms or legs
- Eroded teeth and calluses on the knuckles from induced vomiting (known as 'purging' – may be an indicator that they also suffer from bulimia)

What to look out for (warning signs)

- Preoccupation with food e.g. cooking elaborate meals for others but not eating them
- Skipping meals
- Denial of hunger or making excuses for not eating
- Eating “safe” foods that are low in fat and calories
- Adopting rigid meal or eating rituals e.g. spitting food out after chewing or cutting it up into small pieces
- Not wanting to eat in public
- Lying about quantity eaten
- Constantly weighing themselves
- Frequent checking in the mirror
- Complaining about being overweight
- Wearing baggy/oversized clothing
- Lack of emotion
- Social withdrawal
- Exercising excessively

What causes anorexia?

There is still a lot of research going into the causes behind anorexia. Causes can stem from biological, social and psychological factors – thus, making it very difficult to come to a concrete explanation. With the acknowledgment that all humans are different, a cause and effect relationship can never truly be established. That being said, psychologists and scientists have formulated a list of potential causes that could lead to the development of anorexia. As with many eating disorders, low self-esteem is often associated with such radical behaviours, this could be due to feelings of neglect or abuse. Moreover, obsessive or addictive personality types are able to latch onto strict diet regimens and routines more so than those without these characteristics. It is important to note that people with anorexia should not be stereotyped as those that are less intelligent or lack common sense, in fact anorexia is often found amongst high achieving student’s’ due to their perfectionist traits and a need to achieve their goals. Though these are mainly psychological and social causes, low levels of serotonin in the brain is often linked to anorexia as it is the main chemical involved with depression. In addition, genetically, those with a parent or sibling that have had or are still suffering from the disorder are more likely to develop it themselves.

What are the complications of anorexia?

Anorexia can result in death for a number of reasons. Even though a person may not be classified as severely underweight, sudden death can occur due to arrhythmias (abnormal heart rhythms) or an imbalance of electrolytes. When a person becomes malnourished, each and every one of their organs is at risk of shutting down – a process that once it occurs, is irreversible even when the anorexia itself is under control. Other complications may include: heart problems, bone loss (osteoporosis) and muscle loss. In addition to these physical complications, many suffering from anorexia also have other accompanying mental health issues such as: mood disorders (e.g. depression and anxiety), personality disorders, obsessive-compulsive disorders, alcohol and substance misuse, self-injury, suicidal thoughts or may even have attempted suicide.

Media Influence

With the increasing usage of social media, cases of mental health issues and eating disorders are sky rocketing. Nowadays, there is the ability to Photoshop images, making those appear thinner and taller than they actually are – presenting an ‘ideal’ body type that very few actually have. Some adolescents may see pictures of models or people in the public eye and view them as role models, people they want to become – this is setting a rather poor example as the modelling industry has a reputation for sparking eating disorders. All of this media coverage often leaves many civilians with a low self-esteem and poor body image.

If you, or anyone you suspect is suffering from an eating disorder such as anorexia, feel free to contact the Hong Kong Eating Disorders Association’s helpline at +852 2850 4448

FIS SURVEY ANALYSIS

Diet and Nutrition

By Cloe Cheung and Esme Seaver

Diet and nutrition play a huge role in our daily lives. Much of our health depends on what our diet is composed of.

Daily Diet Composition

As seen in our survey, the majority of FIS students have a balanced diet. Most students in FIS have a daily diet of which 50% consists of meat. According to the NHS, the recommended amount of red or processed meat per day is 70g.

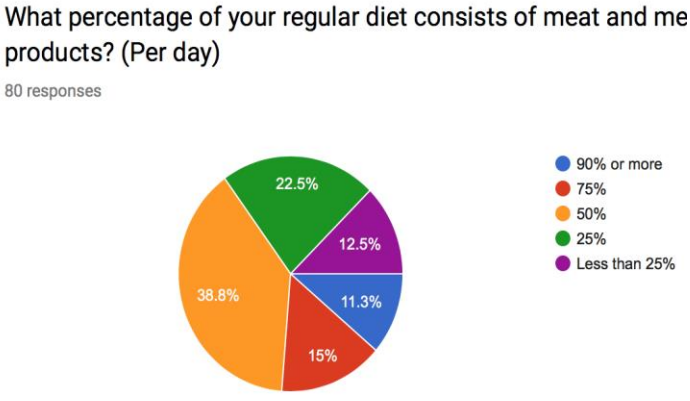

Fig. 1

Meat is a main source of protein, which helps build up muscles, bones, cartilage, skin, etc. Protein provides energy for our body and is also rich in vitamins and minerals. For example, Vitamin B12 is found commonly in meat and/or meat products, which is essential for a healthy nervous system. Red meat, in particular, is abundant in the mineral iron - a major component in haemoglobin. A deficiency in iron may result in anaemia. Symptoms of anemia include fatigue, headaches, shortness of breath and even irregular heartbeats.

However, eating too much meat can also be unhealthy because a study done by a team of scientists from the Harvard School of Public Health have shown that consuming high amounts of red meat is associated with type 2 diabetes, coronary heart disease, stroke and cancers.

Vegetables are an essential aspect of eating healthily. Most people who took part in the survey eat a good proportion of vegetables, with around 82.7% of people having a diet that composes of at least 50% of vegetables. The NHS recommends eating at least 400g of vegetables and fruits per day.

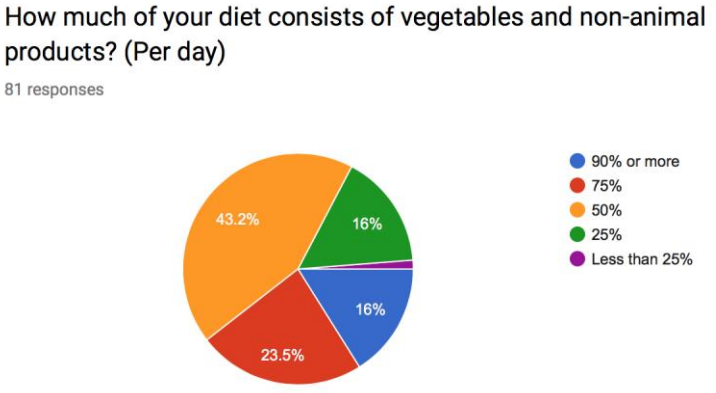

Fig. 2

So what benefits does eating vegetables and fruit bring? There are three main health benefits. First, fruits and vegetables contain many vitamins and minerals, which play a large role in keeping our body healthy. Second, fruits and vegetables contain dietary fibre, which helps stimulate peristalsis in our intestines, preventing constipation and other digestion problems. This also helps reduce the risk of colon and bowel cancer. Third, vegetables and fruits help reduce the risk of heart problems such as heart disease, stroke, etc.

Nutritional Supplements

From the survey, it can be seen that most FIS students do not take nutritional supplements. The most commonly taken nutritional supplements of those who do are shown below.

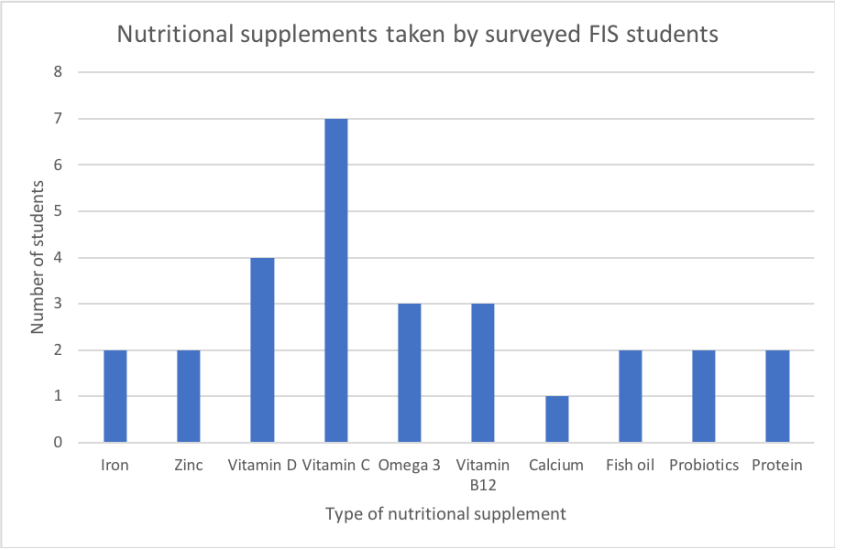

Fig. 3

From this bar graph, we can see that the most commonly consumed vitamin supplement by students is Vitamin C, followed by Vitamin D. Most of the nutritional supplements taken are either vitamins or minerals. How can we obtain these vitamins naturally? For example, Vitamin C is found in abundant amounts in fruits such as guavas, kiwis, oranges, strawberries, mangoes, etc. Not a fan of fruits? Vegetables such as bell peppers, broccoli, cauliflower and kale also contain Vitamin C. Vitamin C is needed for maintaining bones and teeth, healing wounds and also the growth and repair of tissues.

Nutrient	Food sources
Calcium	Milk, yogurt, sardines, tofu, fortified orange juice
Folic acid	Fortified cereal, spinach, lentils, beef liver
Iron	Oysters, chicken liver, turkey
Omega-3 fatty acids	Salmon, sardines, flaxseed, walnuts, soybeans
Vitamin A	Sweet potato, spinach, carrots, cantaloupe, tomatoes
Vitamin B6	Chickpeas, salmon, chicken breast
Vitamin B12	Clams, beef liver, trout, fortified breakfast cereals
Vitamin D	Salmon, tuna, yogurt, fortified milk
Vitamin E	Wheat germ oil, almonds, sunflower seeds, peanut butter

Vitamin D can be made naturally when our skin is exposed to sunlight. It can also be found in fatty fish such as salmon and tuna as well as in egg yolks.
Vitamin D is important in the prevention of bone diseases such as osteoporosis and rickets. It also helps to support the immune system, nervous system and brain functions.

Are supplements healthy?

Generally, it is best to get our vitamins and minerals from natural food sources. These food sources also have other nutrients we need to be healthy, while supplements do not. Also, with supplements there is a risk that people will over-consume a vitamin or mineral, which can be dangerous. For example, consuming too much vitamin A can lead to dizziness, nausea, headaches, and in extreme cases liver damage and coma.

Supplements are generally healthy if needed and consumed properly in the right amounts. However, one should not replace the intake of these vitamins and minerals from natural food sources with supplements. If in doubt, it is always best to consult a doctor.

Dieting

Living in a society where body image and health are of great importance, there is no doubt that many people have attempted some forms of dieting before. Of course, there are a multitude of other reasons why people may go on a diet - it is not limited to just trying to slim down. For example, there could be many health, environmental and other benefits to certain types of dieting.

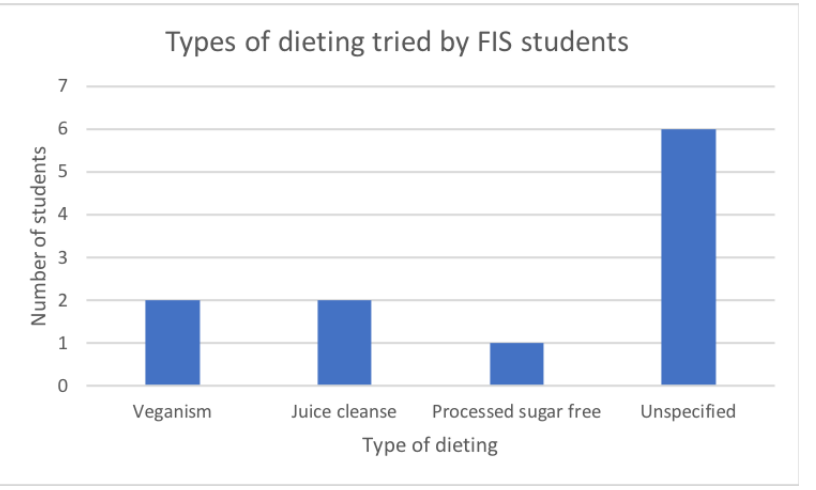

Fig. 4

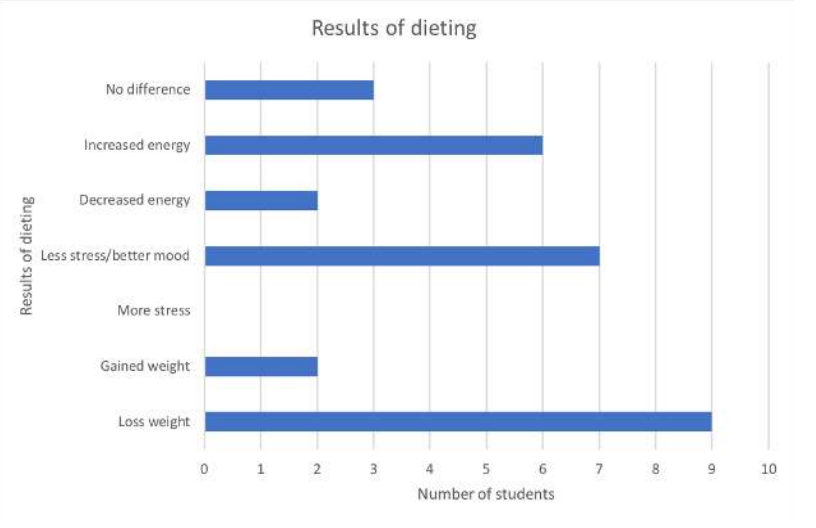

Fig. 5

The results of dieting are mostly positive. We can see that most students were able to lose weight, relieve their stress and also increase energy levels. These are all positive results, leading to the questions: is dieting healthy? What kind of diets are healthy, if any?

Overall, it is better to attempt to eat a more balanced and healthy diet to ensure your body is getting all the nutrients it needs, rather than trying any extreme diets that will likely only have short term effects.

How good do your GCSE grades need to be to study medicine?

By Alison Walker

Your exam grades, both actual and predicted, are an important part of getting an interview for medicine. Selecting your GCSE options wisely in year 10 can make a difference to which medical schools you can apply three years on. All medical school websites state their A level entry requirements, or equivalent for Scottish highers and the International Baccalaureate. Grades required at A level are generally AAA (IB = 666), or A*AA (IB = 766). But how much do GCSE grades count towards getting an offer? Do you really need As or A*s in everything, and does it matter if you score badly in certain subjects?

You can apply with Bs and Cs

It may surprise you to see that the websites of many medical schools show lower minimum grades than you might expect. Bs and even Cs are minimum requirements for some—although with caveats around science subjects. Yet how can that be, as so many applicants have A* grades?

Newcastle medical school does not in fact stipulate any GCSE grades. When I spoke to an officer at the student services she pointed out that schools generally do an excellent job of sifting out the good candidates for them and only put forward applicants for medicine with good GCSE grades. She explained that schools tend to specify early on the GCSE result needed to go on to study that subject in the sixth form—usually a B at GCSE, although in some schools it is an A. Consequently, Newcastle medical school places more emphasis on AS level results and UKCAT scores than it does on GCSE grades.

The University of Cambridge's minimum requirement for GCSEs for students wanting to study medicine is grade C or higher, with double award science and mathematics (or two single awards in biology and physics instead of double award science). However, an admissions officer at Cambridge told me that most students have at least five As or A*s at GCSE. Cambridge places less emphasis on GCSEs and more on A level grades—which does mean that students are still in with a chance if they get C in a subject they are not planning to study at AS level. As Cambridge's A level entry requirement is two A*s and an A, students have to do very well in their chosen subjects at both AS and A level.

Watch out for academic scoring systems

Some medical schools narrow down the applicants they select for interview by creating an academic score sheet. This score includes the grades at GCSE and AS level and, where available, A level. Keele medical school's scoring system is on their website. Although its minimum grades for GCSE are Bs, Keele will fast track applicants with better grades for interview. For the 2016 entry round, the admissions officer said that fast track means getting seven A*s at GCSE. So, although the stated GCSE minimum grades are genuine, with so many people applying those with higher grades will stand a better chance of being interviewed. As the admissions officer explained "academically, students have to cope with the demands of the course, and what really counts is getting the offer of three As at A level or A*AB."

The University of Aberdeen's medical school also has an academic scoring system, but unlike the one at Keele, Aberdeen's does not use GCSEs. An admissions tutor explained "we expect applicants to do well in their GCSEs, even though these are not included in the academic score." Aberdeen looks at AS grades (not actual marks) and A levels to calculate the academic score, or the equivalent for Scottish highers and the International Baccalaureate. The admissions tutor added that Aberdeen has a maximum academic score, so there is no advantage in studying lots of subjects, the recommendation therefore being to "go for the ones you will do well in."

How have the 2017 GCSE reforms affected entrance requirements?

From 2017, candidates sitting GCSE Maths and English will face a new, more rigorous syllabus and a revised grading system which will use the numbers 9-1 instead of A-G. Another 20 subjects will have 9 to 1 grading in 2018, with most others following in 2019. During this transition, students will receive a mixture of letter and number grades. GCSEs in Wales and Northern Ireland will not be reformed.

The Medical School Council says it is too early to comment on how the GCSE grading reform will affect medical school entrance requirements because the first cohort of students offering the reformed grades will not be applying to medical school until October 2018, for a September 2019 start. Revised entry requirements are not expected be published across all medical schools until Spring 2018.

Medical schools are considering how to compare candidates applying with grades from both the old and new systems, such as a candidate who have a mix of A-G grades and 1-9, candidates who will only have 1-9 grades and candidates who only have A-G grades. At the moment there is no indication that the required standard of GCSE grades will be lowered as a result of the reforms.

Medical schools that have already updated their entrance requirements to reflect the new grading system have equated a grade A at GCSE with a grade 7 and a grade B with a grade 6 but this could be subject to change, and other medical schools may take a different approach. These medical schools are: Aberdeen, Barts and London, Brighton and Sussex, Keele, Manchester, Norwich, Sheffield, St Andrew and St George's.

Conclusion

The advice about GCSE grades is to do well enough to be allowed to do the subject at sixth form. That's the first hurdle. The higher the grades at GCSE, the more chance a student has of being fast tracked for interview—at some medical schools, but not all. Although medical schools might genuinely have a minimum requirement for GCSE grades, they actually do expect more. All this advice might change in the future as school exams and GCSEs are revised by the government. For now, it seems that provided good candidates have chosen their subjects carefully, GCSE grades are not a barrier to getting an interview.

Commentary by Hadrian Wong

The IGCSE (International General Certificate of Secondary Education) is a major milestone in FIS secondary. It is an exam that culminates a two-year course in multiple subjects. Although this article published by the Student BMJ mainly focuses on GCSEs in the UK, the IGCSEs are recognised by UCAS (the online admission system for UK Universities) and Universities in the UK as equivalent qualifications.

Even though Universities mainly look at the IB grades, it is obvious that doing well in your IGCSEs is necessary to reference your academic potential since Medicine, as a subject, is so rigorous and competitive to get into. Another reason to do well that I found transitioning from doing IGCSEs to the IBDP (IB Diploma Programme) is that the IGCSE qualification provides a good foundation for Years 12 to 13. A lot of subject content covered in the IBDP is built upon prior understanding from the IGCSE course. When using a science subject as an example, many topics are repeated in the IBDP, however, they are covered in more depth and a deeper understanding about its context and application are required by IBDP students.

Other than the subject content, the skills, whether it be examination skills or time management, which are developed in Year 10 and Year 11 comes to use during the IBDP when juggling the 6 subjects, CAS, Theory of Knowledge and the Extended Essay. Without the two-years of experience with the IGCSE course, I would have found the IBDP much more challenging to manage and it would have been much more difficult to keep up with the never-ending workload!

The article also mentions making good subject choices in Year 9 prior to the IGCSE programme. It is worth noting that most medical schools in the UK will require a bare minimum of IGCSE qualifications in English Language and Mathematics, which are already compulsory at FIS, and in addition to that, at least two science subjects. The two science subjects would generally be Biology and Chemistry as these two subjects will be required at IB level and therefore a prior study of the subjects would be necessary. Despite Physics being not required at IB level for Medicine, I would still recommend taking the subject as it has proved useful in understanding new concepts in IB Biology and IB Chemistry, as well as in extra-curricular reading and research.

Overall, doing well and obtaining good IGCSE grades will always help with the future, whether it be for a university application or studying in the IBDP.