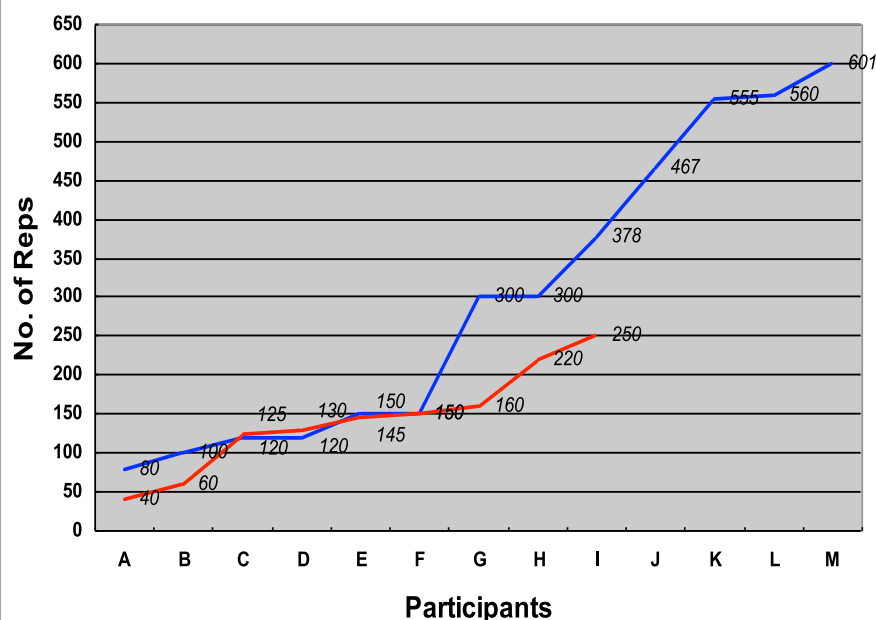


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The abdominals challenge was surely a very intense battle, not only between the participants, also for the participant themselves.

The table have our top 3 challengers from the male and female category. Their physical fitness and mental state got to be at the very peak level to beat their own record again and again. Admirable effort from every participants, congratulation!!

Final Results: 5th Challenge- Abdominals



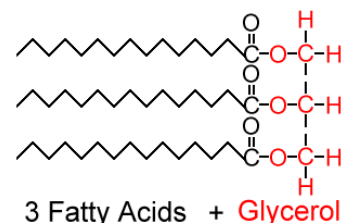
Male	Reps.	Female	Reps.
Paul Calder	601	Janice Tsui	250
Anthony Thompson	560	Estelle Xiang	220
Nicolas Chalumeau	555	Fiona Shum	160

— Male
— Female

The 6th challenge: back is already in progress. Don't underestimate the difficulty of chin up and lat pull down! we shall be anticipating some great results just like the previous challenges!

Fat & Lipid

Fats are essential nutrients in our healthy diet and provide the highest energy, 9 kcal/g, whereas only 4 kcal/g for carbohydrate and protein. The three main forms of fat found in food are glycerides (principally triacylglycerol/triglyceride, the form in which fat is stored for fuel), the **phospholipids**, and the **sterols (cholesterol)**.



Major functions of fat:

- It supplies essential nutrients such as fat-soluble vitamins and essential fatty acids (EFAs)
- EFAs must be supplied from the diet, and are thought to have a positive effect on heart health and the immune system
- It has a key role in membrane structure and production of hormones.
- It acts as a cushion, and so protects the internal organs
- It's stored beneath our skin, in adipose tissue, to act as a layer of insulator against the cold and as a long-term fuel reserve. Excess fat may also accumulate around your organs, especially in the abdominal cavity.
- It can often improve the flavour and perception of foods, increasing their palatability

It is not recommended to avoid all the fat from the diet because if you do, you are more likely to eat too much carbohydrate instead, and carbohydrate can be converted in to fat in our body, so the end results would be the same, gaining unnecessary weight and leading to many health problems.



Type of Fats	Example
Monounsaturated- Usually comes from nuts and seeds, and is in the form of liquid in room temperature	Olive oil Almond oil Avocado oil Peanuts oil Walnut oil
Polyunsaturated- Primarily from nuts, seeds and vegetable and also in liquid state at room temperature	Corn oil Safflower oil Rapeseed (Canola) oil Grapeseed oil Sesame oil Sunflower oil Vegetable
Saturated- Mainly animals fats and is in solid form at room temperature	Butter Lard Coconut oil Palm oil Cheese Whole milk Egg yolk Fatty meats



Essential Fatty Acid (EFA)

EFA are those that cannot be synthesized in the body and must be supplied in the diet to avoid deficiency. We often hear about the health benefits of Omega-3, Omega-6 and Omega-9, all of these are derived from linolenic, linoleic and oleic acids, which are all long chain polyunsaturated fatty acid.

There are many researches based on a high dietary intake of EPA have positive results in reducing the risk of coronary heart disease, asthma, eczema and rheumatoid arthritis. it is recommended to include two meals per week of fishes such as salmon, herring and mackerel, as they have high level of EPA. Nuts and seeds are also a good source of EPA, such as Walnuts, almonds, pumpkins and flaxseed

Food item	Common serving size	Total fat (g)	SFA (g)	MFA (g)	PFA (g)	Chol (mg)
Whole milk	1 cup (260ml)	4.0	2.4	1.1	0.1	12
Cheddar cheese	1/2 cup 120g	3.5	2.2	0.9	0.1	9
Wholemeal toast	1 slice (22g)	1.7	0.4	0.4	0.6	1
Egg	1 medium (49g)	11.6	3.4	4.6	1.2	225
Chicken breast (lean, no skin)	1 breast (192g)	5.5	1.7	2.5	0.6	66
Beef mince	1/2 cup (130g)	13.8	5.7	5.4	0.5	68
Palm oil	1 tbsp (14g)	98.7	44.7	41.1	8.2	0
Sunflower oil	1 tbsp (14g)	99.6	16.6	65.3	11.8	0
Olive oil	1 tbsp (14g)	99.7	11.7	21.1	61.9	0

SFA= Saturated Fatty Acid

MFA= Mono Fatty Acid

PFA= Polyunsaturated Fatty Acid

Chol= Cholesterol



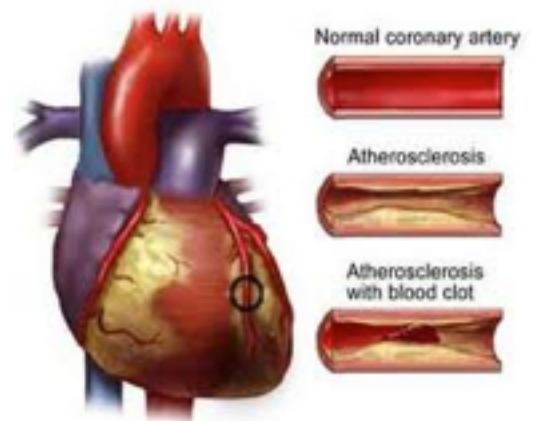
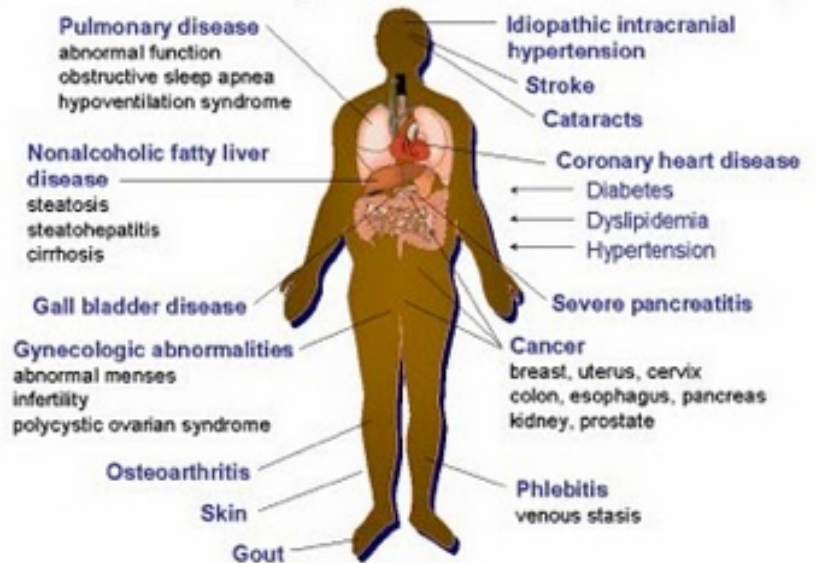
Effects of Excess Dietary-Fat Intake

The recommended intake of fats in our diet is to limit fats to below 30% of the total daily caloric intake. One-third of fats should come from saturated fats, with the other two-thirds split evenly between monounsaturated and polyunsaturated fat.

The consumption of excess amounts of saturated fats has been recognized as the most important dietary factor to increase levels of cholesterol. A high cholesterol level is detrimental to health and leads to a condition known as atherosclerosis. Atherosclerosis is the build-up of cholesterol on the walls of arteries, which may eventually result in the blocking of blood flow. When this occurs in the arteries of the heart, it is called coronary artery disease. When this process occurs in the heart, it can cause myocardial infarction, or heart attack.

Besides the cholesterol implications due to high fat intake, obesity is a factor in the causation of disease. Being overweight or obese is highly associated with increasing the risk of type II diabetes, gallbladder disease, cardiovascular disease, hypertension and osteoarthritis.

Medical Complications of Obesity



Cholesterol

This is a type of fatty acid found in animal foods. There is a difference between dietary cholesterol and serum cholesterol. Dietary cholesterol is found in the food themselves and serum cholesterol is found in our bloodstream.

When we have a blood test, a specific component called lipoprotein is how we determine our cholesterol level. Low density lipoproteins (LDL) are associated with an increased risk of cardiovascular disease and High density lipoproteins (HDL) helps to reduce the risk, since HDL can remove LDL from our blood.

Diets that are high in saturated fats and cholesterol raise the levels of LDL cholesterol in the blood. LDL is associated with an increased risk of coronary heart disease. LDL lipoprotein deposits cholesterol on the artery walls, causing the formation of a hard and thick substance called cholesterol plaque. Over time, cholesterol plaque causes thickening of the artery walls and narrowing of the arteries, a process called atherosclerosis.

Food item (100g)	Chol (mg)
Butter	215
Caviar (Fish Roe)	588
Liver	564
Pate, Foie Gras	255
Oysters, Clams and Mussels	105
Squid (Calamari)	260

Trans fats (Trans fatty acids)

Trans fat, also known as partially hydrogenated oils, are created in an industrial process that adds hydrogen to liquid vegetable oils to make them more solid.

We should try to avoid trans fat because it raises the LDL cholesterol levels and lowers HDL cholesterol levels. Trans fats can increase the risk of developing heart disease and stroke. It's also associated with a higher risk of developing type 2 diabetes.

Some of the foods to limit are fried foods like chips and donuts, baked goods including pastries, pie crusts, biscuits, pizza dough, cookies, crackers, and stick margarine and shortenings.

10 tips on how to reduce saturated fat intake

1. Eat more fish, chicken and turkey. Remove the skin and fats before cooking.
2. Eat leaner cuts of beef and pork, and trim as much visible fat as possible before cooking.
3. Avoid processed/fried food i.e. sausages, pies, and canned fish/meats, also biscuits, donuts, cookies, fried chips. A lot of oil/fat and salt are often added to extend the shelf life.
4. Bake, steam, or grill meats; avoid frying. Avoid breaded meats and vegetables.
5. Use fat-free or reduced-fat milk instead of whole milk. Instead of sour cream, try non-fat plain yogurt or a blend of yogurt and low-fat cottage cheese. Use low-fat cheeses.
6. Limit hydrogenated fats (shortening, lard) and animal fats (butter, cream) if you can. Use liquid oils, particularly canola, olive, safflower, or sunflower.
7. Eat more fruits and vegetables.
8. Read the nutrition labels on all products. Many "fat-free" products are very high in carbohydrates, which can raise your triglyceride levels.
9. Compare the fat content of similar products. Do not be misled by terms like "light" and "lite."
10. When eating in a restaurant, ask that the sauces and dressings be served on the side.
11. For flavoring and taste, try cooking with herbs, spices, lemon juice etc., instead of butter or margarine.

Healthy & Delicious Recipes

1. Salmon fillet with cucumber, tomato, avocado salad in a dill, lemon and virgin olive oil dressing
2. Chicken Tortilla Wraps with tomato, sweet onion and green leaf lettuce in a fat free ranch salad dressing
3. Fusilli with beans, pesto and pine nuts



A better diet and habit...

We should minimize our intake of saturated fatty acids, trans fats and cholesterol, which occur mostly in animal products. Trimming visible fats from beef and pork and removing the skin from poultry are good nutritional habits to develop. Avoiding processed/fried food and replacing with fresh poultry, vegetable and fruit would greatly reduce the over consumption of unnecessary fat and cholesterol. Another golden rule is to never overeat at any particular meal. Every time you overeat, the excess calories are stored as body fat. Excess body weight tends to increase blood cholesterol levels. We must engage in regular physical activity to help us lower LDL and increase HDL, as well as maintaining at a healthy weight for prevention of cardiovascular diseases, diabetes and osteoarthritis etc.