



“the NOT-FED study”

New Obesity Treatment- Easting, Exercise, Diet



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Obesity in Canada

- 48% of Canadians are overweight or obese (34% overweight BMI ≥ 25 ; 14% obese, BMI ≥ 30)
 - 58.1% of males
 - 40.6% of females
 - (Canadian Institute for Health Information 2004)
- Obesity places us at risk for: diabetes, high blood pressure, stroke, heart attacks
- Reversing obesity often reverses diabetes and high blood pressure



Some foods really add to our weight

- ▶ Most adult North Americans generally gain one pound per year
- ▶ That means in 40 years we may be carrying 40 extra pounds
- ▶ The most offending foods are:
 - ▶ Potato chips
 - ▶ Potatoes (including fries)
 - ▶ Sweetened pop drinks
- ▶ These all contain many calories from simple carbohydrates (sugars)



Fasting



- ▶ We are either in a fed state or a fasting state
- ▶ If we 'graze', we will remain in the fed state and body fat will accumulate
- ▶ If we intermittently fast, we give the body a chance to break down fat stores

- ▶ Typically we will be in the fed state from 6-12 hours after our last meal, so
- ▶ Fasting most days for 16 hours, gives the fat-breakdown (weight loss) process some time to kick in



Fasting

- ▶ Basically fasting 16 hours each day really means we do all our eating in an 8 hour window
- ▶ While 16 hours seems quite long, we will likely be sleeping through half of it.
- ▶ An example: complete eating by 8 pm in the evening
- ▶ By 8 am, we have only 4 hours left to fast to complete 16 hours




What about breakfast?

- ▶ Breakfast is still the most important meal of the day, we just eat it at lunchtime! If breakfast is a must-eat meal for you, then consider having an earlier supper to extend the time in the fasting state
- ▶ Fasting means: tea, coffee without milk or sugar, or water or zero calorie drinks. No food or drinks with calories
- ▶ This schedule means that at lunchtime, you need to be able to take the time to eat a good meal. If not this may not work for you.

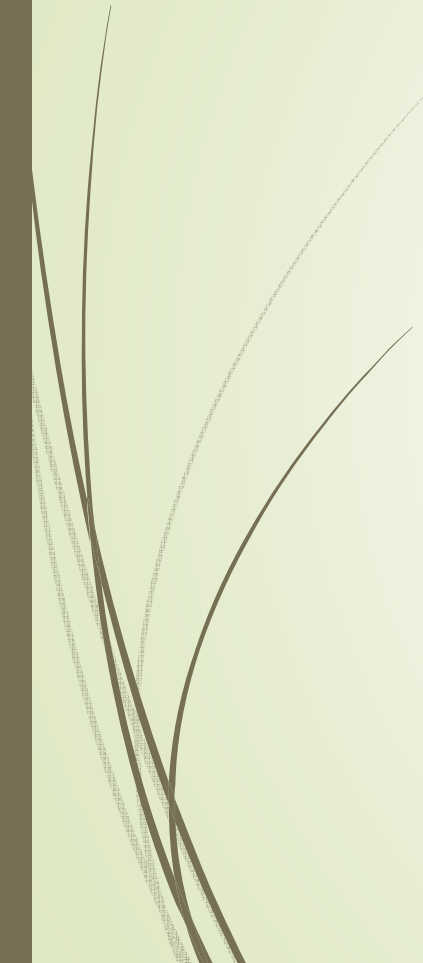


Fasting

- You can introduce the 16 hour fast by gradually adding one hour to the first twelve hours: eat in the morning at 9, then 10, then 11, then noon at a pace at which you are comfortable.
- If you get very hungry, then it may be time for you to eat; particularly in you are getting shaky and low in blood sugar.
- Headaches sometime occur, but can be treated with eating or taking a common headache medication



that's it

- ▶ That is all there is to a daily 16 hour fast.
 - ▶ You can vary the number of times per week, or the length of the fast.
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the theory behind fasting...

- ▶ The theory behind it is that if we spend some regular time in the 'un-fed state' (fasting), our body will have some time to burn up stored energy
- ▶ Otherwise, the body is spending most of its time in the building and energy storing process
- ▶ The proposed physiological mechanism is that eating (particularly sweets) causes an insulin release, which leads to storing the energy, eventually as fat
- ▶ Fasting is also a way of reducing daily calorie intake a bit
- ▶ Fasting alone may be sufficient for weight loss, with no other changes in your diet (assuming you are eating well to start with)



Exercise

- There is plenty of evidence that exercise promotes a longer and less diseased life.
- There is longstanding consensus that 150 hours per week of moderate exercise benefits us.
- This can be walking briskly or resistance training with weights or gym machines.

Exercise

- ▶ Here is some of the recent evidence on the health benefits of regular exercise from the American Heart Association, 2016:
- ▶ Cardiorespiratory fitness (CRF)
 - “is a potentially stronger predictor of mortality than smoking, b.p., chol., or T2DM”
- ▶ Maximal exercise testing (metabolic equivalent of task: MET) level:
 - ▶ < 5 Mets: ↑ all cause mortality x4; each ↑ of 1 MET capacity, decreases mortality 10-25%
 - ▶ >8-10 Mets associated with protection (e.g. treadmill at 2.4 mph and 10 degree incline = 7 METs of work);
- ▶ Recommend: 150 minutes/week; ≥10 minutes per workout
 - ▶ x 5d/wk moderate intensity ; x3/wk vigorous activity
 - ▶ Rhythmic, large muscles: vigorous walking, jogging, cycling, swimming, X-country skiing, but any amount and level is helpful..... (Circulation 2016;134:e1-50)



Exercise



- ▶ However, exercise as a weight loss technique is not effective
- ▶ Many studies have shown that exercise does not lead to long term weight loss. Many people who adopt an aggressive exercise program may initially lose some weight but typically re-gain it by the one year mark.
- ▶ We still recommend 150 minutes per week, as it doesn't make sense to lose weight, but become less health!




Diet

- ▶ Could there be any more confusing topic?
- ▶ Many trends and strongly held opinions.
- ▶ What most diet studies demonstrate is that calorie restriction (eating less) is not very effective for long term weight loss - most people regain the weight
- ▶ Partly because you feel hungry all the time, it does not succeed.




Diet- fat *(eating fat does not make us fat!)*

- ▶ Most diets discuss different balancing of the 3 major macronutrients: fats, proteins and carbohydrates (sugars)
- ▶ Somehow the accepted wisdom is that eating fat is bad for us.
- ▶ This may not be true
- ▶ NOT-FED dietary recommendations actually encourage fat consumption (within reason)
- ▶ Fat makes foods taste good and satisfies hunger
- ▶ So, eating fat does not make you fat, eating sugar does:




Diet- sugar

- Sugars, also called carbohydrates, are usually described as simple or complex
- Simple sugars (like sweetened pop, chocolate bars and candies) give us the most 'sugar rush', with which we are all very familiar
- These simple sugars also give our bodies the greatest insulin rise; insulin then takes this incoming sugar energy and stores it away as fat
- It makes sense to most of us that we need to avoid these simple carbs ...

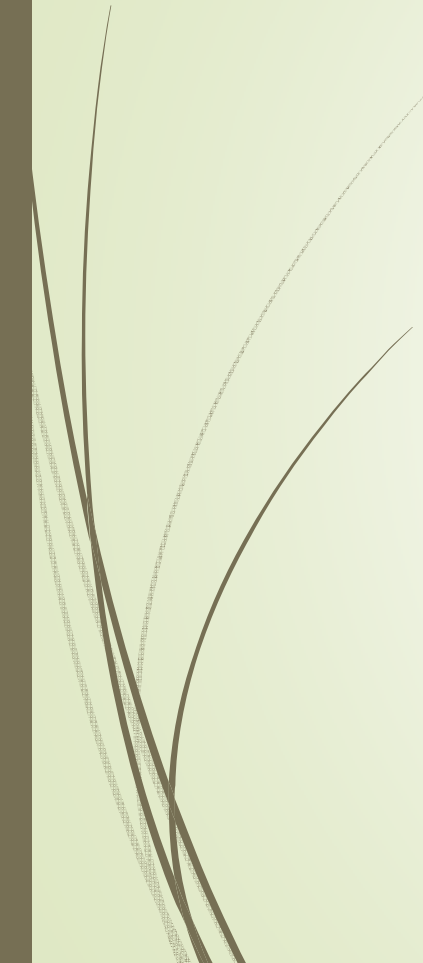


Diet- sugar

- Complex carbohydrates or sugars give us a slower insulin response in our blood, but still add to the energy stored in our bodies as fat.
- These are therefore called, low glycemic index carbohydrates
- A low glycemic index (under 55) food breaks down more slowly and gives less of an insulin surge. Since insulin is a growth hormone, the less of it we make, the better it is for weight loss.
- Examples of complex carbohydrates: breads, pasta, beans, most fruits
- Eliminating these common foods from your diet is obviously a big deal as they are staples of our diets.



Diet- sugar

- ▶ None the less, most modern diets use some form of 'low-carb' approach
 - ▶ Diets like weight watchers combine this with calorie restriction, which often makes people hungry and takes a very regimented approach to meal time.
 - ▶ Assuming we avoid the really sweet desserts and junk food, we can likely continue to enjoy meals with some complex carbs.
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Diet- low carb

- ▶ There are many names for a variety of low-carb diets:
 - ▶ **Atkins diet** is a 4 phase diet with some allowance for complex carbs in the maintenance phases. It was the original low-carb, high fat diet to facilitate weight loss.
 - ▶ **Mediterranean diet** encourages health fat consumption (olive oil) and lots of meat and fish protein and vegetables. This diet has been around for 40 years and has been shown to lessen heart disease and diabetes.
 - ▶ **Paleo** diet refers to eating only what was available to our hunter gatherer ancestors in the Paleolithic era: meat, fish, vegetables, eggs, butter. This Paleolithic era predates farming and avoids any flour, rice and most dairy products (butter is ok as is mostly fat and has little protein)
 - ▶ **Ketogenic** diet refers to a very low carb diet. It refers to ketogenesis, the process by which fat is broken down in the body. When we break down fat, we produce ketones as a by product and then excrete them. They recommend: meat, seafood, cheese, avocados, eggs, plain Greek yogurt, coconut oil and low carb vegetables.



Low carb diets

- ▶ Are arranged by the decreasing levels of carbs they contain, from low to very low carb content:
- ▶ Low carb diet (Atkins) → Paleo, Mediterranean diet → Ketogenic diet
- ▶ It is personal preference as to how many carbs you want to avoid in your diet and will be a gradual process for many of us. The rules need not be iron-clad and exceptions should be made when the situation arises.

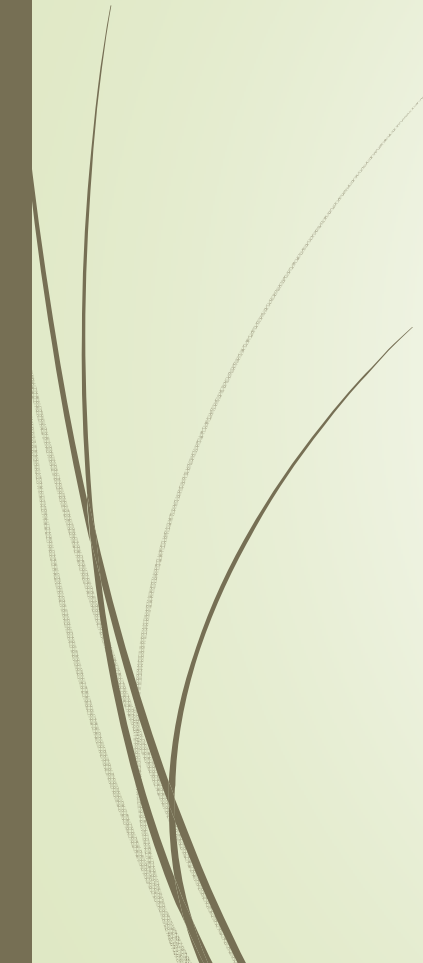


Protein

- Proteins are included in all low carb diets
- They also do give a rise to insulin levels, but nowhere near as much as carbs do. So they are better for us than carbs and the low carb diets all allow meats, poultry and seafood.
- The difference is what accompanies the protein: fat or carbs?
- It seems that fat is a better choice as it does not lead to an insulin rise and fat storage.



So...

- ▶ if we can decrease our fat stores by intermittent fasting
 - ▶ and decrease our fat production by limiting carb intake and increasing fat intake
 - ▶ we should stop gaining weight and begin losing it, particularly belly fat
 - ▶ that is why the NOT-FED study is measuring weight and waist circumference
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We encourage you to join in..

- ▶ Info and consent sheet are at www.hac@slmhc.on.ca
- ▶ Please fill in consent sheet and we will contact you for a brief intake session where we do your baseline measurements.
 - ▶ You can also participate from home if you wish, but will need to give us weight, waist and blood pressure measurements every three months. We can send you the 3 monthly blood requisitions for the hospital. Your family doctor will receive a copy of them.
- ▶ Entering the study will allow us to anonymously see how well this approach works. Your personal health information will be held as a confidential part of your medical chart, unless you tell us otherwise.