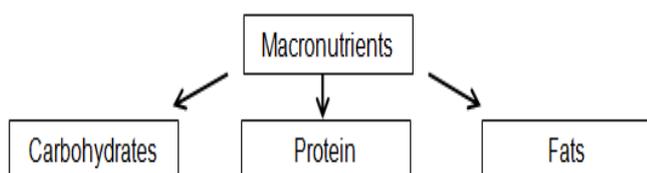


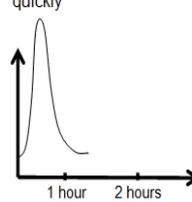
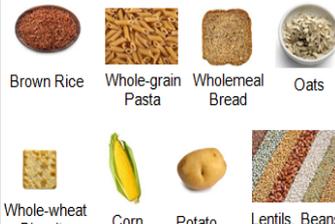
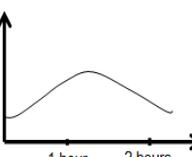
# Impact of Macronutrients on Blood Sugar Level

Our foods and drinks provide 3 main macronutrients in various quantities:



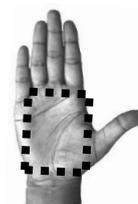
## Carbohydrates (CHO)

1. CHO are broken down into glucose (sugar) after digestion.
2. Both the amount and type of CHO you eat will affect your blood sugar level differently.
3. Eating too much CHO at one time will raise your blood sugar level.
4. Some CHO digest quickly (simple sugar) and others more slowly (complex CHO).
5. CHO is an important part of our diet as it is the main energy source for our body. CHO also provide vitamins, minerals & dietary fibre.
6. Spreading your CHO intake evenly throughout the day can help to prevent excessive fluctuation of blood sugar levels. It is also recommended to choose complex CHO!

Types of CHO	Examples	Impact on sugar level
Simple Carbohydrates	 <p>Honey    Sugars    Ice Cream    Cake Soft Drink    Fruit Juice    Chocolate    Sweets</p>	<ul style="list-style-type: none"> <li>• Quickly digested</li> <li>• Raise blood sugar level quickly</li> </ul> 
Complex Carbohydrates	 <p>Brown Rice    Whole-grain Pasta    Wholemeal Bread    Oats Whole-wheat Biscuits    Corn    Potato    Lentils, Beans</p>	<ul style="list-style-type: none"> <li>• Take longer time to digest</li> <li>• Raise blood sugar level slower</li> </ul> 

## Protein

1. Protein does not convert to glucose after digestion.
2. It has a minimal impact on your post meal sugar levels  
if you are eating a moderate amount of protein-based foods at a meal, e.g. 1 palm size of lean meat.
3. However, if you are eating a large portion of high fat and high protein meal (as a result of the meat type or cooking method), your blood sugar level will rise more slowly but possibly to a higher degree.



Example of protein foods that contain minimal or no carbohydrates:



Egg



Tofu



Fish



Prawns



Chicken (no skin)



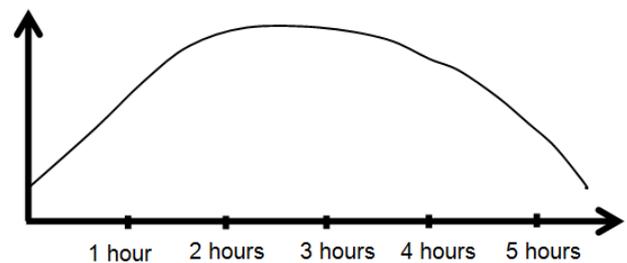
Lean Meat

## Fats

1. Fat does not convert to glucose after digestion. However, it may indirectly affect your blood sugar level trend because a high fat meal takes longer time to digest.
2. Fats can take 4-6 hours and sometimes even longer to be fully broken down. Hence, fats delay gastric emptying which delay the rise of blood sugar levels.
3. Excessive fat intake also increases the amount of free fatty acids in the blood which will lead to insulin resistance.

4. An occasional fatty meal is acceptable. However, excessive fat intake can make your sugar levels difficult to control.
5. Ways of cutting down your fat consumption:
  - Limit high fat foods to 2 times or lesser per week (e.g. fried noodles, fast-food, roti prata)
  - Go for soup-based food choices
  - Use less gravy
  - Remove animal skin (e.g. chicken skin)

Impact of Fat on Sugar Level



Take note:

- The impact of macronutrients on postprandial blood sugar will vary from person to person and situation to situation.
- Please monitor your blood sugar levels regularly to familiarise your individual responses to meals that you eat.

Please contact Call-A-Dietitian Hotline 983 22 983 if you have any nutrition-related queries.

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The information is correct at the time of printing and subject to revision without further notice.