

2018 Section B Q1

1. Calorie menu labelling in restaurants can help combat obesity even where only modest changes occur in consumer behaviour. *(Calories on menus in Ireland, FSAI)*

Sample Main Course Menu

Grilled Irish Salmon Irish salmon steak with pepper or basil butter or sticky honey, lime & chilli. Served with baby potatoes & peas. 387 calories	Chicken Tikka Masala Creamy tikka masala sauce over marinated chicken breast. Served with basmati rice, naan bread, mango chutney & poppadoms. 883 calories	Beer Battered Fish & Chips Fresh beer battered fish. Served with chips, mushy peas, lemon & tartare sauce. 880 calories
Chilli Con Carne Irish beef mince chilli. Served with basmati rice & tortilla chips. 662 calories	Roast Vegetable Pasta Tomatoes, courgettes and peppers in a tomato sauce over penne pasta, finished with cheddar cheese. Served with garlic bread. 747 calories	Fish Pie White fish, smoked haddock & salmon in a creamy white sauce topped with mashed potatoes & cheese. Served with fresh bread. 756 calories

(a) With reference to the sample menu above, comment and elaborate on the suitability of the menu options for a person on a weight reducing diet. In your answer, suggest modifications to the dishes for a healthier menu.

Chicken Tikka Masala

Suitability: This dish has the highest amount of calories of all the dishes. This dish would not be suitable to someone on a weight reducing diet due to the high levels of fat that the creamy sauce would contain. The mango chutney is high in sugar which would also not be suitable for a weight reducing diet. This dish is very high in starchy carbohydrates e.g. naan bread, rice. When too many starchy carbohydrates are consumed, they are converted to adipose tissue and stored as extra fat.

Modifications: I would use brown rice instead of white rice as I think it would be a healthier alternative as it provides a slow, steady release of energy. I would choose either the poppadoms or the naan bread. I would omit the cream in the sauce to ensure that there is less saturated fat.

Beer Battered Fish and Chips

Suitability: This dish contains 880 calories which is very high for someone on a weight reducing diet. The batter on the fish is high in saturated fat which would not be suitable for someone on a weight reducing diet.

Modifications: I would suggest serving salad instead of chips. I think grilling or baking the fish in a light batter would be a healthier alternative to a fried beer batter as it would contain less saturated fat.

Roast Vegetable Pasta

Suitability: This is a high calorie dish containing 747 calories and a high amount of carbohydrates and fat. The garlic bread and the cheese topping on the pasta would not be suitable for someone on a weight reducing diet. An excess of starchy carbohydrates can end up being stored as fat in the body.

Modifications: Serve whole meal pasta to increase fibre content. I would use a cheese that is lower in fat to keep some flavour in the dish but lower the saturated fat content. For a weight reducing diet, I would serve a smaller portion of garlic bread.

Fish Pie

Suitability: the white fish is suitable for a weight reducing diet as it contains 0% fat, B group vitamins and 17% HBV protein. The creamy white sauce is not suitable due to its high fat content. The serving of bread is high in carbohydrates and when eaten in excess, they can be stored in the body as excess adipose tissue.

Modifications: I would omit the cream from the sauce to reduce fat content. I would use a low fat cheese to add flavour to the potatoes while not adding a huge amount of extra fat. I would serve brown bread instead of white bread.

(b) In relation to lipids, state the elemental composition and describe the chemical structure of a triglyceride.

Elemental Composition: Carbon, hydrogen, oxygen

Chemical Structure: It's made of 1 glycerol and 3 fatty acids. The glycerol is a trihydric alcohol with 3 OH groups and the fatty acids all contain an R-COOH

(c) Describe the structure and give one example of each of the following:

• saturated fatty acids

Each carbon atom is fully saturated with its full quota of hydrogen atoms. No double bonds occur. There is a carboxyl group at one end and a methyl group at the other end. An example is butyric acid in butter.

• monounsaturated fatty acids

Each carbon atom is not fully saturated. There is one double bond between the carbon atoms. There is a carboxyl group at one end and a methyl group at the other end. An example is Oleic Acid in olive oil.

• polyunsaturated fatty acids.

Each carbon atom is not fully saturated. There is more than one double bond. There is a carboxyl group at one end and a methyl group at the other end. An example is linoleic acid

(d) Outline the significance of fatty acids in the diet

Omega 3 fatty acids: they reduce the risk of coronary heart disease. They prevent clots, heart attacks and strokes. They aid foetal brain development.

Essential Fatty Acids: aid cell membrane formation. They reduce the risk of coronary heart disease by removing cholesterol from the blood.

Cis Fatty Acids: they are naturally occurring in foods such as oily fish. They lower the levels of LDLs in the blood which means they decrease the risk of coronary heart disease.

(e) The aim of food labelling is to provide consumers with information which may influence their purchasing decisions. In addition to nutritional information, discuss the reasons why consumers consult food labels on pre-packaged food prior to purchase

Sugar/fat/salt content: consumers look to see how much sugar, fat or salt is in the food by consulting the packaging. This may be due to their health status e.g. high blood pressure, diabetic or someone with CHD. For these reasons, the labels are very important.

Use by/Best before: use by date found on the packaging of perishable foods tells the consumer when to use the food by. Best before dates tell them when the food is at its best.

Allergens: consumers look for allergens e.g. nuts. This is found on the food labelling and plays an important role in preventing any allergic reactions.

Cooking instructions: these tell the consumers how to cook the food in the way appropriate to the food that they have bought e.g. oven temperature, cooking time

Storage Instructions: these tell the consumer where to store the food e.g. in the fridge or in a cupboard. It also says how long they can be stored there for.