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Issue 13: October, 2014: This e-bulletin is aimed at personnel in fisheries & aquaculture, at fish packers, processors, distributors, retailers, and finally consumers.

Fighting obesity with fish

Obesity is reaching epidemic level in many developed countries. In Ireland about 40% of adults are overweight and about 25% are obese (IHF, 2014). One in four children in Ireland is overweight or obese but there are indications that the rate is stabilising (Keane et al, 2014) Obesity is defined as a disease in which excess body fat has accumulated to an extent that health is adversely affected. In most cases the causes are environmental and include lack of exercise, the ready availability of a plethora of foods, poor eating habits and consuming too many unpackaged calories such as those in sugary drinks and to an extent in fruit juices. Obesity predisposes many people to high blood pressure, abnormal blood fat levels, increased blood clotting tendency and to type 2 diabetes mellitus and these in turn to heart attacks and strokes with enormous costs to the health service. For example, 10,000 (36% of all deaths) persons died due to cardiovascular disease in Ireland in 2005. Over half of the Irish population aged over 50 have high blood pressure i.e. a reading equal to or greater than 140/90 mmHg and much of this is associated with overweight and obesity. Treatment for obesity includes reduced caloric intake, eating more healthily, and increased exercise. Fish has a major role to play in caloric reduction and in healthy eating and should be promoted at every opportunity by health professionals to overweight persons and to the general population.

Fish, fish preparation and fish products

White fish such as cod, whiting, hake, haddock, plaice and sole are low in energy (70-90 Calories/100g) and contain 16-18% good quality protein. They also contain minerals and vitamins and so can form the cornerstone of a reduced calorie diet. Oily fish such as mackerel, herrings, tuna and salmon are more calorific (150-300 Calories/100g) due to their oil content which may vary at different times of the season. They also contain vitamins and minerals and are a key source of omega-3s EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) which are very important for cardiovascular health. A prudent recommendation to those on reduced calorie diets would be oily fish once/twice per week and white fish two/three or more times per week.

Method of fish preparation and cooking is critical to those on an energy reducing diet. If possible choose unprocessed fresh fish from the retail ice counter (also pre-packed fillets/darnes from the chill counter) and steam or microwave and serve with modest/small portions of boiled potatoes, rice or pasta with accompanying salad or fresh lightly cooked vegetables. Whitefish is especially bland and most consumers require a sauce or garnish. A home prepared garnish without fat or salt is best and examples include Cajun, tomato & pesto, a touch of garlic/paprika/chilli pepper or individual/mixed herbs depending on consumer preference. Salad dressings should also be homemade and salt free and should be used sparingly, e.g. balsamic vinaigrette (3 parts balsamic vinegar; 1 part extra virgin olive oil; fresh-cracked black pepper). Many chefs including TV chefs serve fish with high-fat sauces such as hollandaise and advocate butter and pinches of salt during cooking. Such fish dishes are not suitable for those on a reduced calorie diet.

If using processed fish, choose frozen fish that is frozen without any additions such as breading. Such fish is available in most supermarkets. Breaded cod fillets and fish fingers have a Calorie content of 198 and 181, respectively, compared with 83 Calories/100g for steamed cod. Fish and chips are a no-no to those on a calorie controlled diet. Cod fillets in batter have 210 and French fries have 250 compared with 80 Calories/100g for boiled potatoes. Canned and smoked fish are less good than fresh fish for those on a calorie controlled diet. Canned fish are often canned with vegetable oil (highly calorific) or brine while smoked fish have a raised salt content.

Fish for cardiovascular and brain health

Another good reason for promoting fish consumption is the potential of fish for reducing blood pressure (via peptides), minimising the risk of blood clot formation (via EPA/DHA) and aiding brain development and cognitive function (via DHA). These aspects have been discussed in SeaHealth Issues 1, 2, 3, 6 and 12. Some fish components also have the potential to act as antioxidants and reduce the level and severity of inflammatory diseases in humans.

References

- IHF (Irish Heart Foundation). 2014. Obesity Facts Sheet.
- Keane et al. 2014. *BMC Public Health*, 14:974; doi:10.1186/1471-2458-14-974.

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