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## Salmon/Omega3

I just had my first fresh salmon meal of the season (Copper River, of course) and it was absolutely fantastic, as always. What can taste better than the rich but delicate flavor of grilled salmon with a dill with lemon or mustard or even a light mayonnaise sauce? Or how about just served right off the grill, swimming in it's own fatty juices? Fatty juices? Aren't we supposed to be discussing health here? Fat's not good for you, right? Well, that's the beauty of salmon, and other cold water fish species. They contain fat that is actually good for you. In fact it's the same fat that's responsible for the flavor that's also capable of preventing disease heart disease. We have known for some time that populations with high intake of fish in the diet (Mediterranean cultures, Eskimos) have a lower than average risk of heart attack. The exact mechanism of this preventive effect is still unknown, but we do have some hints from other experimental studies and research. Most fish contains at least some omega-3 fatty acids, a form of fat, which has for some time been thought to help prevent heart disease. Salmon, mackerel, sardines, herring and eel contain the highest amounts, while smaller amounts are found in tuna, trout and sea bass and other fish species. Among the many studies of omega-3's are those that show that life-threatening heart rhythm disturbances can be prevented in animals given this fat intravenously. Other studies have shown that eating 4 grams per day of omega-3 fatty acids can lower the triglycerides (a fat normally found in the blood which in large amounts can contribute to hardening of the arteries) by as much as 35%. This corresponds to about one 6-oz. serving of salmon, or one 4 oz. serving of mackerel per day. A recent focus of studies of the cause and prevention of heart attacks has been on the health and function of the lining cells of blood vessels, called endothelial cells. Disease or dysfunction of these cells is increasingly being shown to be an important factor in the cause of heart attacks. Fish oil (in this case taking fish oil capsules) was recently demonstrated to improve endothelial function, and thus at least theoretically prevent heart attacks. Other controlled studies comparing the "Mediterranean diet" which contains at least 3.3 oz. of fatty fish per day, with the typical Western diet, low in fish and high in animal fats, have shown a decreased risk of heart attack and sudden death in those who ate the higher fish diet. And in studies using fish oil capsules, death, hearth attack and stroke were all less common in those taking fish oil than in subjects given a placebo. How much fish is enough? We believe that one 4 oz. serving per week gives some benefit, and that one gram per day of fish oil may be equally effective. Whether increasing the "dose" of fish or fish oil increases the benefit isn't known. Of course, too much fish, like anything else that is high in calories can be a problem if one eats enough to cause weight gain. And too much fish oil can cause stomach upset and diarrhea, risk of bleeding, and even Vitamin A or D toxicity, besides making you smell like a fish. So for now I'm going to enjoy the experience of tasting the delicious flavor of Copper River salmon and knowing that my heart and blood vessels are actually going to thank me for the meal. Can't say that about too many other things I like. And by the way, I think I'll take my fish oil like it comes off the grill, not out of a bottle.