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Parallel session 9: Meat in nutrition

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It has been known for decades that there is a hierarchy in the satiating capacity of our nutrients. Protein consistently has been shown to have the most satiating properties, fat the least. The effects of carbohydrates may differ, since in many cases they are encapsulated in fibre structures resulting in a lower caloric density, a slower uptake in the gastrointestinal tract and hence an opportunity for satiating mechanisms to operate before overeating has taken place. The mechanisms of the effects of protein are several and include increased satiety related to diet-induced thermogenesis, effects on body composition and decreased energy-efficiency. Effects of proteins on the satiating properties of GLP-1 also play a role. The fat free mass, composed mainly of muscular proteins, is the main organ for thermogenesis and hence the provision of dietary protein provides the fat free mass with the essential substrate to build up this tissue. From a weight loss perspective high protein diets with a very high meat intake like Scarsdale and Atkins have been well known weight loss diets, in general useful for short term initial weight loss and in balance studies shown to be slightly more effective than other hypocaloric diets for up to six months. Long term studies of one to two years' duration however demonstrate that it is the energy deficit, however

obtained, which is the main driver of the weight loss process. There has been a concern that a high protein intake might compromise kidney function. Protein restriction is a key dietetic approach in renal insufficiency, but in subjects who have no renal problems, a high dietary protein content seems to be harmless. Of all recent trend diets the paleolithic diet, based on what has been assumed to be the diet our genes were adapted to, has received interest. This diet is very high in protein (up to 30%), low in fat, high in fibre rich carbohydrates and seems to have beneficial effects on weight control as well as Type 2 diabetes management. Very low calorie diets or also 'very low energy diets' (VLED) contain less than 1000 kcal/day, mainly of proteins with a minimal amount of essential fatty acids, carbohydrates but all essential vitamins, minerals and trace elements. Apart from the hypocaloric properties of VLED there is another satiating mechanism which seems to relate to the development of ketonaemia within a few days, generally adding to the loss of appetite and possibly also adding a certain euphoria, facilitating weight loss program adherence, since such ketons may effect brain function, when there is less of its favored substrate glucose available.