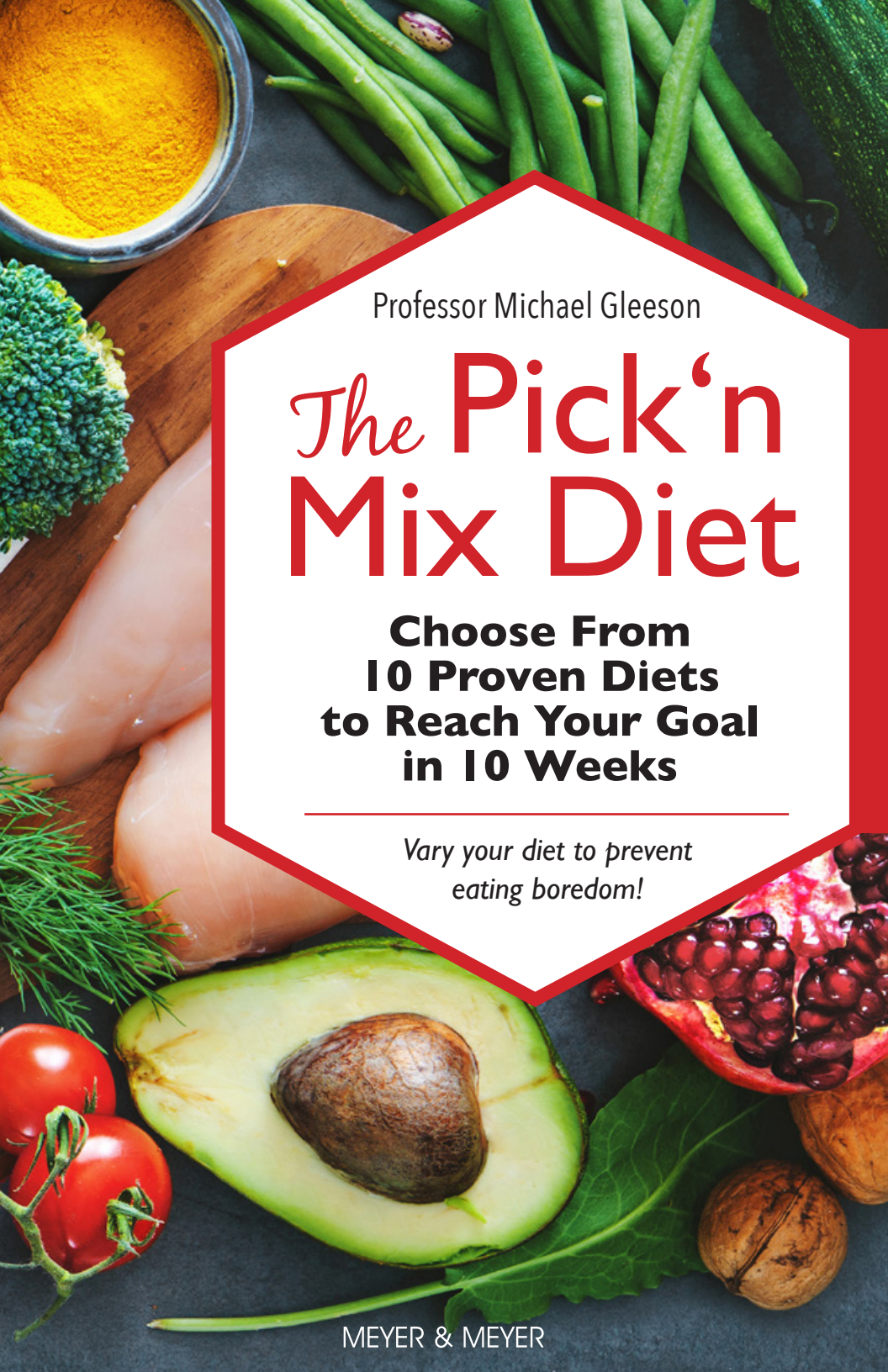

Professor Michael Gleeson

The Pick'n Mix Diet

Choose From 10 Proven Diets to Reach Your Goal in 10 Weeks

Vary your diet to prevent eating boredom!

MEYER & MEYER

The Pick ‘n Mix Diet

The contents of this book were carefully researched. However, readers should always consult a qualified medical specialist for individual advice before adopting any new nutrition or exercise plan. This book should not be used as an alternative to seeking specialist medical advice.

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Contents

Chapter 1

Introducing the Pick 'n Mix Weight Loss Plan

OBJECTIVES

After studying this chapter, you should:

- Understand the scope of this book
- Know something about the author
- Understand the concept of energy balance
- Know the average composition of the Western diet
- Know some important things about nutrition and nutrients
- Understand the journey your food takes through your digestive tract after you have eaten it
- Appreciate the potential long-term health problems caused by being overweight
- Understand the principles of the Pick 'n Mix weight loss plan
- Appreciate that you don't need to stick to just one diet to lose weight
- Understand the advantages of including multiple diets in a weight loss plan
- Understand the advantages of including exercise in a weight loss plan
- Understand that you can personalize the plan to suit your own food and physical activity preferences

INTRODUCTION

Firstly, I want to thank you for buying this book and congratulate you on your decision. I guarantee that my book and the advice I provide will help you lose weight quickly and safely. The title indicates that this is a book about a weight loss plan with a name that may sound familiar but is not usually associated with dieting to lose weight. A Pick 'n Mix weight loss plan sounds like it involves some variety in the choices that can be made. Well, it is just that. The Pick 'n Mix weight loss plan allows you to decide which diets (yes that's diets plural, not just one diet) and exercises (plural again) that you want to do to lose weight. Most people will be familiar with the Pick 'n Mix concept from the candy shop and buffet dinners in many restaurants and hotels. It means for the same price you can select a variety of candies/foods rather than just one particular candy/food item. In this book, I apply this Pick 'n Mix principle to the diets you can select for weight loss and also to the exercises you can do to burn fat to boost your weight loss.

Every year we hear about new ideas for diets and exercise programs that are designed to achieve weight loss and improve fitness, as well as the large number of books that have been published on the subject by authors, including nutritionists, dieticians, medics, sport scientists, personal trainers, and media celebrities including even some chefs. The vast majority of these books focus on the latest fad diet (e.g., Dukan, Intermittent Fast, Keto, Macrobiotic, Noncombination, Ornish, Paleo etc.) usually alone or sometimes in combination with the latest fad exercise regimen (e.g., Aerobics, Stepping, Spinning, Suspension exercise, Circuit training, High intensity interval training and even Pole dancing which I always associated with strip clubs – not that I ever attended such establishments you understand!) but rarely provide a scientific evidence-based rationale for their use, except in

very simplistic terms, nor indicate the range of other options available. The whole area of nutrition can be very confusing for many people because there is a lot of conflicting advice and seemingly opposite opinions on what are the best diets for weight loss. For example, some authors promote the use of very low-carbohydrate (keto) diets, whereas others try to convince us that cutting out as much fat as possible from our diets is the best route to weight loss. Yet others tell us that restricting the time period of daily eating to less than eight hours is good for weight loss while others believe the key is not combining certain nutrients or food groups in a meal or going for a more plant-based (vegetarian) diet. No wonder most people are at a loss to know what to do when they want to shed some pounds. People are very different in their goals, food preferences, physical capabilities and occupations, and this is often not taken into account, and some of these fad diets and exercise regimens are only suitable or effective for a limited number of people. My approach is different: it is the approach that we use in sport science. It is about understanding the relevant evidence that has been published in the scientific and medical literature and then applying that science to produce a plan – in this case for weight loss – that is simple, effective, and safe after taking into account what most people can achieve without too much disruption to their daily routine. In this book, I will provide you with a scientific evidence-based rationale for selecting certain diets and forms of physical activity that can help to achieve effective loss of body fat, and I will explain how to develop a personalized weight loss plan that will also improve your health and fitness.

Most important, though, I dispel the myth that you need to stick to one boring diet for weeks on end to achieve effective weight loss. "What?" I hear you say! Almost certainly every book you have read about dieting to lose weight has promoted just one single diet, usually to the exclusion of all others, and you are typically

expected to stick with that diet for 4-12 weeks to shed however many pounds (lbs.) or kilograms (kg) you want to lose. But that's just most diet book authors for you: they all want to sell you their idea or their take on one particular diet which is no doubt promoted as new and the best one available. But they can't all be the best, can they? In fact, most diets that are effective for weight loss are almost equally effective when it comes to body fat loss, and the amount of fat you lose largely depends on how many fewer calories per week you consume. Has anyone ever told you that you can vary your diet from week to week? No? Well I am not surprised but that is what I am going to try to convince you to do. The potential benefits are obvious: there will be far more variety in the meals you can eat, you will have fewer food cravings, it will be healthier because deficiencies of essential nutrients such as protein, vitamins and minerals as well as health-promoting but nonessential nutrients like fiber and phytonutrients are less likely, and – perhaps most importantly – you will be more likely to stick to your weight loss plan. Let me begin by telling you something about myself and what else is different about my book.

WHO AM I?

I am a recently retired university professor who has spent the last 40 years of his life teaching and researching in the field of exercise physiology, metabolism, immunology and health with a particular interest in sport nutrition. My last two academic positions have been at the University of Birmingham and Loughborough University, two of the top universities in the world for sport and exercise science. I have coauthored several books on the biochemistry of exercise

and training, immune function in sport and exercise, and nutrition for sport, and contributed chapters to more than 30 other books. I have published over 250 research papers in scientific and medical journals, and much of this has been focused on the well-being of athletes and the factors influencing their performance. So, essentially much of my research activity has involved examining the body's reactions to food and exercise. Now, as an aging member of the general public, I have turned my attention to the issue of living a healthy lifestyle (in part, to improve my own quality of life and longevity) and have spent the last year or so researching the literature on how best to lose weight by dieting and exercise. I rapidly came to the conclusion that there are very many diets out there but only some are effective for weight loss as well as being relatively safe and healthy when you have to stick to them for a month or more. Of those that are both effective and not harmful to health, the difference in weight loss that they claim to achieve compared with other diets is really rather small. Of course, each diet claims to be the best for weight or fat loss, or the healthiest, or the easiest to stick to, or provides the most variety, or even the tastiest but that is usually just the author's way of trying to get you to buy their book! Actually it soon became pretty obvious to me that for the same reduction in daily energy (calorie) intake, different diets do not make one iota of difference to the amount of weight you lose in the long-term (i.e., over several months), particularly if you are concerned with losing just body fat and not lean tissue or water.

Of course, one of the big problems with dieting is that people become bored with sticking to the same foods week after week. That is probably one of the biggest reasons that so many people give up dieting after only a month or two. But if one diet is pretty similar to another as far as weight loss goes why not switch your diet every week? Hey, presto! You have far more variety in your food choices

and menu options, you do not have to deprive yourself of certain food items for more than one week at a time, and you're not going to get fed up (pardon the pun!) with dieting, so you are much more likely to stick to your weight loss plan. You may be thinking that the downside is that you have to "learn" about lots of different diets, but that is not really the case. It is just a matter of following some recommended meal plans, and these and all that you will need to do are described in this book.

In addition to dieting, I also promote the use of exercise to boost weight loss. Why should you include exercise in a weight loss plan? Well the answer is quite simple: lots of research studies have consistently shown that including exercise in your weight loss plan is better than just dieting. In other words, people tend to lose more weight when they combine dieting and exercise than with dieting alone. Including exercise is also better for your health and fitness. Using some simple light to moderate intensity exercise to burn fat means that you don't have to cut your food intake as much, and it won't increase your appetite as much as it would if you tried to achieve your weight loss goals through dieting alone. And the exercise does not need to be hard, so you can forget about high intensity workouts and high intensity interval training (HIIT); the research shows that these forms of exercise are not effective for weight loss anyway – despite the claims of some fitness gurus. In this book, I will explain which the best forms of exercise are that you can do to burn fat. A big bonus is that these forms of exercise are also great for your health and fitness.

WHAT IS DIFFERENT ABOUT THIS BOOK?

A lot of people equate being healthy with being slim, and as the majority of the population in the Western world is overweight, there is much emphasis on how weight loss can be achieved. There are so many books out there on dieting to lose weight and some of those books also mention some exercises that can help with weight loss. Most of these books spend a few pages explaining the scientific basis of some new diet (though often only using selected evidence that favors the new idea and ignoring evidence that does not), and some may briefly cover the health benefits of weight loss, but almost invariably the rest of the book will contain pictures of appetizing dishes and recipes for meals. In fact, the difference between these books and the seemingly ever-popular cookbooks by celebrity chefs is really often rather small.

The books that focus more on exercise may provide a list of the health benefits and suggest which type of exercise is best for fitness and weight loss, but again the majority of the pages will mostly be filled with pictures; usually these will illustrate a series of supposedly suitable physical activities being performed by a young, slim, attractive person in minimal clothing! That is why I decided to write this book with a very different approach, with more emphasis on the science, and limiting recommendations and guidelines to those that are evidence-based. As my 40-year career has been as an educator of university students, I wanted to apply what I know about exercise and nutrition to the issue of weight loss and explain the science behind how this can be achieved without sticking to just one restrictive and boring diet.

So, this book is written with the aim of teaching the average, reasonably intelligent person about the nature of the food we eat, the concept of **energy balance** (**calories** in versus calories out) and how different diet and exercise strategies can help you lose excess **body fat**.

You will have noticed that some words are in **bold** font. Any word that appears in **bold** font in this book is defined in the glossary which you will find at the end of the book. I have tried to identify some of the key words or terms as well as words that may be unfamiliar to some readers, and other words that are just useful to know the exact meaning of.

Most importantly, you will learn about the Pick 'n Mix weight loss plan I have devised that is achievable for any moderately overweight but mobile adult who is between 18 and 70 years of age. This does not require sticking to the same boring diet for several months. In fact, the plan incorporates multiple diets that can be changed every week and combines this with exercise so that you will lose fat, not lean muscle. With this moderate but effective weight loss plan, you can lose, on average, about 10 kg of body fat in just 10 weeks. I'm going to begin by explaining what you should know about the units of **energy** and the concept of energy balance.

WHAT IS A CALORIE?

Our bodies need to take in energy in the form of food regularly in order to be able to expend energy to do useful work, which includes muscle contractions to allow us to move, sending messages via nerves to allow us to think, or biosynthetic processes to produce new

molecules and **cells**. Without an input of food energy, we would wither away and die. Energy is expressed in calories (the Imperial system) or joules (the metric system). One calorie represents the quantity of heat energy needed to raise the temperature of 1 g (1 mL) of water by 1 °C (1.8 °F). Thus, food containing 1,000 calories (that is one **kilocalorie**) has enough energy potential to raise the temperature of 1 liter of water by 1 °C (1.8 °F). In everyday language, kilocalories are often referred to as Calories (written with a capital C, although on many food items this is not done, and the energy is listed as calories). Because this may be a source of confusion, the term kilocalorie (abbreviated kcal) is used in this book. The SI (International System of Units) unit for energy is the **joule** (J), named after the British scientist Sir Prescott Joule (1818–1889). One joule of energy moves a mass of 1 g at a velocity of 1 meter per second (m/s). A joule is not a large amount of energy; therefore, kilojoules are more often used; one **kilojoule** (kJ) equals 1,000 joules. To convert calories to joules or kilocalories to kilojoules, the calorie value must be multiplied by 4.184. Nowadays food packaging labels indicate the energy content in both kcal and kJ, but most people still talk in terms of calories although it really should be kcal.

THE ENERGY BALANCE CONCEPT

Energy balance refers to the balance between energy intake and **energy expenditure**. Simply put, it is the difference between energy in and energy out. When energy intake is greater than energy expenditure (i.e., when more calories come in than go out), the energy balance is said to be positive, and weight gain will occur, as most of the excess energy gets converted into body fat. When energy intake

is below energy expenditure, the energy balance is negative, and weight loss will result. Therefore, to maintain energy balance and a stable body weight, energy expenditure must match energy intake (see figure 1.1). Over the long-term, energy balance is maintained in weight-stable individuals even though this balance may be either positive or negative on a day-to-day basis. Over 24 hours, a person's energy intake is simply the sum of all the energy consumed in food and drink. Daily energy expenditure is the sum of the **resting metabolic rate** (approximately 1,800-2,000 kcal/day for men and 1,600-1,800 kcal/day for women), plus the **thermic effect of food**, plus energy used in physical activity. The thermic effect of food (also known as **diet-induced thermogenesis**, DIT) is the increase in resting metabolic rate (RMR) that occurs after eating food and represents the energy needed to digest, absorb, and store the nutrients. On the average mixed Western diet (which consists of 50% carbohydrate, 35% fat and 15% protein), this adds about 10% to the RMR; in other words about 160-200 kcal per day. Even a sedentary person does some physical activity to carry out the normal tasks of daily living such as getting dressed, cooking food, going to the toilet, and walking around the home, and this amounts to about 100 kcal per day. So, the typical daily energy requirements of a sedentary man are about 2,100-2,300 kcal and about 1,900-2,100 for a sedentary woman. You can calculate your own personal RMR (it depends on your gender, age, weight, and height) and hence your daily energy needs. How to do this is explained in chapter 5. To achieve energy balance over a period of time (say weeks or months) and remain at a stable weight, your daily energy intake has to match your daily energy requirement.

You may not be surprised to learn that the most recent statistics on energy intakes of US adults indicate that people are generally consuming food calories far in excess of these requirements for maintaining energy balance. One recent report by the Food and

Agriculture Organization of the United Nations suggested that the average US adult consumes a whopping 3,600 kcal per day despite being not particularly physically active, so it is not surprising that there is an **obesity** epidemic in the US and many other developed countries.

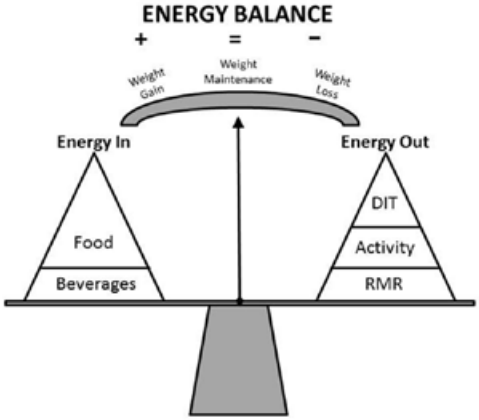

Figure 1.1 The concept of energy balance. DIT diet-induced thermogenesis; RMR resting metabolic rate.

People who want to lose weight should increase their energy expenditure relative to their energy intake, which can be achieved either by increasing energy expenditure (by exercising more), reducing energy intake (by eating less), or a combination of both. There is no escaping this fact, and there are no quick-fix solutions to losing excess weight after it has been gained over a period of positive energy balance. If anyone tells you anything different from this simple truth, they are lying, and you should ignore them. Unfortunately, the inventors of most fad diets still often claim some sort of quick-fix or miracle solution that will allow you to achieve rapid weight loss with seemingly minimal effort. Sadly, these claims are just not true. Although some fad diets – often requiring you

to follow a complex formula and various food restrictions – may promote quite impressive weight loss in the first few weeks, they become very difficult to sustain for much longer at which point most people give up. It really is about time that people should accept the reality that there is no magic bullet for weight loss that is effective, easy to sustain, and safe. However, there are some diets that have been proven to be effective for weight loss that are also non-extreme and easier to stick to, and I will explain which ones they are – and why – in chapter 3.

If you want to have a healthy diet and before you even think about restricting dietary energy intake to lose weight, it helps to know something about the nature of the food you eat. This will help you to decide which type of diet is best for you. It will also help to ensure that you choose healthy options and understand why you should never cut out any major **food group** or major nutrient from your diet whether trying to lose weight or simply maintain your current weight. It should also help you understand why "a healthy diet" is not just about the number of calories you eat, and that other aspects of the diet, such as the amount and quality of protein, the amount and type of fat you consume, and **vitamin** and **mineral** content in relation to your needs must also be considered in order to eat healthily.

SOME THINGS YOU SHOULD KNOW ABOUT NUTRITION

The food that we eat contains nutrients and is part of our nutrition. Nutrition is often defined as the total of the processes of ingestion

(eating and drinking), **digestion** (breaking down), **absorption** (moving nutrients from the gut into the blood), and metabolism (processing) of food, and the subsequent assimilation of nutrient materials into the **tissues** and organs. A **nutrient** is a substance found in food that performs one or more specific functions in the body. Nutrients are usually divided into six different categories: carbohydrates, fats, proteins, vitamins, minerals, and **water**. Functions of nutrients include promotion of growth and development, provision of energy, and regulation of metabolism. The energy we obtain from food is mainly supplied in the form of carbohydrates and fats. These are two of the **macronutrients** (nutrients that are ingested in relatively large – more than 10 g/day – quantities) in our diet; the other two are protein and water.

Carbohydrates

Carbohydrates (or carbs) include **sugars**, **starches**, and **fiber**, and we get almost all of our dietary carbohydrate from plants (photo 1.1). Carbohydrates provide 4 kcal of energy per gram. Common food sources of starch (a large molecule composed of many thousands of linked glucose molecules known as a **polysaccharide**) include cereal products, corn, potatoes, sweet potatoes, pasta, macaroni, rice, and bread. Sugars (also known as saccharides) are found in fruit juices, fruits, sweetened cereals, and baked goods, candy, sweets, soft drinks, energy drinks, sports drinks, milk, beet and cane sugar, brown sugar, table sugar, maple syrup, honey, and treacle. Also, many processed foods, including ready meals and sauces, tend to have high sugar content. Sugars in our diet include glucose, fructose, galactose, maltose, lactose and sucrose. Sources of fiber include whole-grain cereals and breads, oats, fruits, beans and peas, and other vegetables such as cabbage, zucchini (courgette),

celery, spinach and salad leaves (photo 1.2). Fiber cannot be digested by enzymes in the human stomach and small intestine, and so it passes into the large intestine (**colon**) largely unchanged. In the large intestine, most **soluble fiber** (that is fiber that dissolves in water) can be broken down into sugars by the resident population of bacteria (in total there is about one kilogram of bacteria in our colon) known as the gut **microbiota**. The bacteria rapidly ferment these sugars to produce **short-chain fatty acids** such as butyric acid which can be used as an energy source by both the bacteria themselves and the human cells that line the colon. Soluble fiber makes up about 70% of the fiber in our diet and has an energy value of around 1.5 kcal per gram. Most insoluble fibers (e.g., cellulose and lignins that form the structure of plant cell walls) are not digested or fermented at all and are excreted unchanged in the **feces** and hence have zero energy value to humans.

Photo 1.1: A variety of high-carbohydrate foods

Photo 1.2: A variety of high-fiber foods

Fats

Fats (also known as **lipids**) are compounds that are soluble in organic liquids such as acetone, ether, and chloroform but have very poor solubility in water. The term *lipid*, derived from the Greek word *lipos* (meaning fat), is a general name for oils, fats, waxes, and related compounds. Oils are liquid at room temperature, whereas fats are solid. For simplicity, and to avoid confusion, the term "fat" is used throughout this book. Fats provide more than twice the amount of energy as carbohydrates at 9 kcal per gram. There are several classes of fats, including fatty acids, triglycerides, cholesterol, and lipoproteins. **Triglyceride** (also known as triacylglycerol) is the main storage form of fat in the body and is also the most abundant form of dietary fat. If we consume more carbohydrate and fat than we need to meet our energy requirements, the excess is mostly stored as triglyceride in **adipose tissue**. Common food sources of fat include

fatty cuts of meat (e.g., beef, pork, lamb) and poultry (e.g., chicken, duck, turkey), animal liver, oily fish like mackerel, salmon and sardines, egg yolk, cream, cheese, butter, margarine, oils, nuts, and avocado (photos 1.3 and 1.4). Many processed foods including ready meals and creamy sauces plus any foods cooked in oil like French fries and fish in batter tend to be high in fat.

Triglycerides are made up of a **glycerol** molecule linked to three long-chain **fatty acids**. The chains are formed from repeating hydrocarbon units. Fatty acids can either be saturated (meaning they contain only single bonds between the carbon **atoms** in the chain) or unsaturated (meaning they contain at least one double bond between the carbon atoms in the chain). **Monounsaturated fatty acids** contain just one double bond in their hydrocarbon chain whereas **polyunsaturated fatty acids** (PUFA) contain two or more double bonds. Two of the PUFAs, **linoleic acid** and **alpha-linolenic acid**, are **essential nutrients** for humans. **Saturated fat** comes from animal products in our diet whereas most of our **unsaturated fat** comes from plants. The American Heart Association recommends limiting saturated fats because many studies have shown that a diet high in saturated fat can raise your "bad" **cholesterol** and put you at higher risk for heart disease.

Photo 1.3: A variety of not so healthy high-fat foods (junk foods)

Photo 1.4: A variety of healthier sources of dietary fat

Proteins

Proteins are composed of one or more chains of linked **amino acids**. Of the 20 amino acids normally found in dietary protein, humans can synthesize 11. Those that can be synthesized in the body are called **nonessential amino acids**. The nine amino acids that cannot be synthesized and must be derived from the diet are called the **essential amino acids**. Proteins that contain all the essential amino acids are called **high-quality proteins** or **complete proteins**. Proteins that are deficient in one or more essential amino acids are called low-quality proteins or incomplete proteins. Most animal food products contain high quality protein whereas several plant foods contain incomplete proteins. In order to produce new protein in our bodies we require the presence of all the essential amino acids in the foods we eat. Proteins provide structure to all **cells** in the human body. They are an integral part of the cell membrane, the **cytoplasm**,

and the organelles. Muscle, skin, and hair are composed largely of protein. Bones and teeth are composed of minerals embedded in a protein framework. When a diet is deficient in protein, these structures break down, resulting in reduced muscle mass, loss of skin elasticity, weakened bones, and thinning hair. Many proteins are **enzymes** that increase the rate of metabolic reactions; others act as transporters to help molecules like **glucose** move across cell membranes, some are **hormones** like **insulin**, receptors for hormones and **neurotransmitters**, antibodies that are important for immune function, and molecules involved in oxygen transport (**hemoglobin**) and its utilization in energy metabolism (cytochromes).

Protein contains 5 kcal of energy per gram, but after digestion, absorption, and metabolism only about 3 kcal per gram is available to use in the body, and it is not normally used as an energy source except when the body's carbohydrate stores become depleted and during periods of starvation. Unlike fat and carbohydrate, a high intake of protein is not usually linked with diseases such as **cancer**, tooth decay, type 2 diabetes, or **atherosclerosis**. Prolonged deficiencies of dietary protein, however, have devastating consequences for health that result in severely impaired immunity with a high risk of infection, fluid accumulation in the abdomen and limb extremities (known as **edema**), and muscle wasting; ultimately, organ failure or severe infection will result in death. The recommended daily protein intake is usually a minimum of 0.8 g protein per kilogram (kg) of body weight (so about 56 g for a person weighing 70 kg) with slightly higher requirements for growing children and pregnant or lactating women. Protein intake in the Western world is usually well in excess of the recommendations, averaging about 80 to 100 g/day with protein providing 10% to 15% of the total daily energy intake. Several foods with high-protein content include meat, poultry, fish, eggs and dairy produce (photo

1.5). Because animal products are the most common sources of protein, **vegetarians** and **vegans** could be at risk for marginal protein intake. Vegetarians often compensate by eating more grains (e.g., wheat, rice, oats, cornmeal, barley) and **legumes** (e.g., peas, beans, chickpeas, lentils), which both are excellent protein sources (photo 1.6). Any missing essential amino acid in one particular plant food can be compensated for by eating other plants that do contain it, and there are plenty of plant-based foods (e.g., lentils, chickpeas, beans, quinoa, nuts, and soy products like tofu) that do contain high-quality protein with all the essential amino acids.

Photo 1.5: A variety of high-protein foods

Photo 1.6: A variety of legumes (e.g., peas, beans, chickpeas, lentils) that are among the best sources of protein from plants

Essential nutrients

Some nutrients cannot be synthesized in the body but are needed for some critical functions throughout life, so they must be provided in the diet. These are called essential nutrients. Many are required for growth, health, and survival, and their absence from the diet or inadequate intake results in characteristic signs of a deficiency, disease, and ultimately death. Humans have an essential requirement for at least 46 nutrients. The essential nutrients include nine essential amino acids, two **essential fatty acids** (linoleic acid and alpha-linolenic acid), 13 **vitamins**, water, and several **minerals** and **trace elements**. Vitamins, minerals, and trace elements are collectively known as the **micronutrients**. Vitamins are organic compounds whereas minerals and trace elements are inorganic compounds. Many micronutrients are needed for the function of