Essential Nutrients

* Substances the body must get from food because it cannot manufacture them at all or fast enough to meet it’s needs.

Macronutrients – Essential nutrients required by the body in relatively large amounts.

Micronutrients – Essential nutrients required by the body in minute amounts.

必需的营养

人体必须从食物中获取物质，因为它根本不能制造这些物质，也不能以足够快的速度来满足人体的需要。

宏量营养素-身体所需的基本营养素，数量相对较多。

微量营养素-人体所需的微量必需营养素。

Macronutrients：

Protein

* An Essential nutrient that form important parts of the body’s main structures (muscle and bones) as well as blood, enzymes, hormones, cell membranes; also provides energy.

一种构成人体主要结构(肌肉和骨骼)以及血液、酶、激素、细胞膜重要部分的必需营养素;还提供了能量。

fats

* Usable energy, help insulate body, and support and cushion organs.
* Major fuel for body during rest and light activity
* 可用能量，帮助隔离身体，支持和缓冲器官。
* 休息和轻度活动时身体的主要燃料

Carbohydrates 碳水化合物

* An essential nutrient; sugars, starches and dietary fibres are all carbohydrates

必不可少的营养;糖、淀粉和膳食纤维都是碳水化合物

* Classified into two groups:
  + Simple carbs -provide sweetness in foods (sucrose, fructose, lactose)
  + Contain one or two units of sugar
  + Sources: fruit, juice, milk, sugar, jam, honey, candy, pop…
* 分为两组:
* 单糖——提供食物中的甜味(蔗糖、果糖、乳糖)
* 含有一到两个单位的糖
* 来源:水果、果汁、牛奶、糖、果酱、蜂蜜、糖果、汽水……

Carbohydrates

* During digestion broken down into:
  + Glucose – simple sugar that is body’s basic fuel
  + Glycogen – animal starch stored in the liver and muscles
* 碳水化合物
* 在消化过程中分解为:
* 葡萄糖-作为身体基本燃料的单糖
* 糖原-储存在肝脏和肌肉中的动物淀粉

Fibre纤维制品

* Non-digestible carbohydrates
* 不易消化的碳水化合物

Recommended Intake:

* 38 grams for adult men
* 25 grams for adult woman
* 推荐摄入量:
* 成人38克
* 成人女性25克

Complete protein – supply essential amino acids in adequate amounts (meat, fish, poultry, eggs, milk, cheese).

Incomplete Protein

* Good sources of most essential amino acids (plant sources).
* 完全蛋白质-提供足够数量的必需氨基酸(肉、鱼、家禽、蛋、牛奶、芝士)。
* 不完全蛋白质
* 大多数必需氨基酸(植物源)的良好来源。

Micronutrients Vitamins Minerals water

* Minerals most lacking Canadian diet are iron, calcium, magnesium, and potassium.

加拿大人饮食中最缺乏的矿物质是铁、钙、镁和钾。

* Composed of amino acids
  + Defined as building blocks of protein (20 in total, 9 are essential)
* 由氨基酸组成
* 定义为蛋白质的构建块(总共20个，9个是必需的)

Grain Products

* 3 – 8 servings
* Low in fat rich in complex carbohydrates, dietary fibre, and many vitamins
* Examples of single serving (slice of bread, ½ cup of rice or pasta)
* Recommended choose foods low in fat or sugar
* Maximum nutrition choose at least half servings from whole grains

(eg. Brown rice, whole wheat pasta)

粮食产品

3 - 8份

脂肪含量低，富含复合碳水化合物、膳食纤维和多种维生素

单一服务的例子(片面包,½杯米饭或面食)

建议选择低脂肪或低糖的食物

从全谷物中选择至少一半的营养

(如。糙米、全麦面)

Fruit and Vegetables

* Recommended 4 – 10 servings
* Rich in carbohydrates, dietary fibre, Vitamin A, and Vitamin C
* Low in Fat and sodium
* Vary in nutrients so advised consume variety for healthy diet
* Balanced diet recommended choose one serving from: dark green vegetables, deep yellow and orange, legumes, starchy vegetables,
* 水果和蔬菜
* 建议4 - 10份
* 富含碳水化合物、膳食纤维、维生素A和维生素C
* 脂肪和钠含量低
* 营养成分各不相同，建议健康饮食多吃
* 均衡饮食建议选择一种:深绿色蔬菜，深黄色和橙色，豆类，淀粉类蔬菜，

Dairy and Alternatives

* Recommended 2 – 4 servings
* High protein, carbohydrates, riboflavin, and Vitamin D
* Limit fat best choose servings low fat or non-fat
* Examples single serving (one cup milk, 50 g block cheese)
* 乳制品和替代品
* 建议2 - 4份
* 高蛋白、碳水化合物、核黄素和维生素D
* 限制脂肪最好选择低脂肪或非脂肪的食物
* 单份(一杯牛奶，50克奶酪)

Meat and Alternatives

* Recommended 2-3 servings
* Total amount servings equivalent 150- 300 g cooked lean meat, poultry, fish a day
* Source protein, niacin, iron, vitamin B6, Zinc, Thiamin
* Limit intake of fat, choose lean meats
* Example of serving : 2 eggs, ¼ cup nuts, ½ cup meat (75 ml)
* 肉和替代品
* 推荐2 - 3份
* 总份量相当于150- 300克熟瘦肉，家禽，鱼一天
* 蛋白质，烟酸，铁，维生素B6，锌，硫胺素
* 限制脂肪的摄入，选择瘦肉
* 服务的例子:2个鸡蛋,¼杯坚果,½杯肉(75毫升)

Vegetarian

- Wide variety of plan proteins since incomplete

* + Grain Products 5-12 servings
  + Fruit and Vegetables 5 - 10 servings
  + Milk and Alternatives 0- 4 servings

Dry Beans, Nuts, Seeds, Eggs, Meat Substitutes 2 – 3 servings

素食者

-计划蛋白种类繁多，自不完全

谷物制品5-12份

水果和蔬菜5 - 10份

牛奶和替代品0- 4份

干豆，坚果，种子，鸡蛋，肉类替代品2 - 3份

Food labels:

* Canadian Food Inspection Guidelines
* List nutrient content by weight
* Information based on 2000 calorie diet (percentage)
* Includes following:
* 加拿大食物检验指引
* 按重量列出营养素含量
* 资料基于2000卡路里饮食(百分比)
* 包括以下:

1. Serving size

* How many servings in package and compare to amount you actually eat

2. Calories and Calorie from fat

* Total amount of calories and whether serving is high calories from fat

3. Daily Values

* Daily value percentage based on 2000 calorie diet
* Tell you whether nutrients in serving of food contribute a lot or little to total diet
* 5% or less is low 20% or more high
* Canadian Food Inspection Guidelines
* List weight  养分 含量
* Information 基于 2000 卡路里 的 饮食 (percentage)
* Includes following:
* 1)用量
* υ How 许多 份 包 和 比较 数量 实际上 eat
* 2. 卡路里和来自脂肪的卡路里
* Total 数量 的 卡路里 和 服务 是否 高 卡路里 来自 脂肪
* 3.每天值
* Daily 值 百分比 基于 2000 卡路里 的 饮食
* Tell 你 是否 营养 的 食物 总 diet   contribute 很多 或 小
* 5%或少低20%或更高
* Recommended limit fat, saturated fats, trans fat, cholesterol and sodium
* Recommended find foods high in dietary fibre, Vitamin A, Vitamin C, Calcium and iron
* 建议限制脂肪、饱和脂肪、反式脂肪、胆固醇和钠
* 建议食用富含膳食纤维、维生素A、维生素C、钙和铁的食物

Purpose of Food additives

* Substances added to food for following reasons:

1) Maintain or improve nutritional quality

2) Maintain freshness

3) Help in process or preparation

4) Alter taste or appearance

* Make up less 1% food
* Most widely used sugar, salt, and corn syrup
* 食物中添加的物质，原因如下:
* 1)保持或改善营养质量
* 2)保持新鲜感
* 3)过程或准备方面的帮助
* 4)改变口味或外观
* 少吃1%的食物
* 最广泛使用的糖、盐和玉米糖浆
* Increased energy requirements if exercise regularly or vigorously

Recommended Intake:

* 60 -65% diet from carbohydrates
* Builds and maintains glycogen stores in muscle, resulting in greater endurance
* Recommended eat carbohydrates before exercise and after exercise to replenish glycogen stores
* 如果经常运动或剧烈运动，能量需求会增加
* 推荐摄入量:
* 60 -65%的饮食来自碳水化合物
* 建立和维持糖原储存在肌肉，导致更大的耐力
* 建议运动前和运动后食用碳水化合物，以补充糖原储存
* Required compensate for fluid loss during physical activity and

maximize performance

* Water good choice fluid replacement events 60-90 minutes
* Longer workout sports drink could be a good choice (contain carbohydrates and electrolytes provide extra energy, replace electrolytes lost in sweat)
* 需要补偿体力活动中液体的损失
* 最大化性能
* 水是更换液体的好选择事件60-90分钟
* 长时间的运动饮料可能是一个不错的选择(含碳水化合物和电解质提供额外的能量，取代在汗水中流失的电解质)

Ergonomics: *Matching the work to the employee who does the work*

*This includes looking at the demands of the job and the effects on the human being-both psychological and physiological.*

将工作与从事工作的员工相匹配

这包括研究工作的需求和对人的心理和生理影响。

***REPETITIVE STRAIN INJURY*: *An injury or condition that develops over time, but can be acute.*** *Involves muscles, tendons, nerves, joints of neck, shoulders, wrists, elbow, back.*

* *S****ymptoms***: Pain, swelling, numbness, burning sensations, difficulty gripping, difficulty with movement.
* ***Types***: Carpal tunnel syndrome, bursitis, epicondylitis (tennis elbow tears in tendon), tendonitis, ganglion cyst fluid wrist, joints, tension neck syndrome, thoracic outlet syndrome and low back strain.
* ***Treatment:*** Rest, ice, anti-inflammatory medication, physiotherapy, surgery.
* 重复性劳损:随着时间的推移而发生的损伤或状况，但可能是急性的。涉及肌肉、肌腱、神经、颈、肩、腕、肘、背的关节。
* 症状:疼痛、肿胀、麻木、灼烧感、抓握困难、行动困难。
* 类型:腕管综合征、滑囊炎、上髁炎(网球肘肌腱撕裂)、肌腱炎、节囊肿液腕、关节、张力颈综合征、胸出口综合征、下背部劳损。
* 治疗:休息、冰敷、消炎、理疗、手术。

***RISK FACTORS***

***REPETITION:* Activities done with a high rate of repetition (i.e. data entry-typing)**

***FORCE:* Activities which require excessive muscle force for a long time (i.e. lifting a heavy box, pulling against resistance)**

***AWKARD POSTURE AND STATIC LOADING*: Activities which involve sustaining a fixed and awkward posture for prolonged periods (i.e. using a mouse with an extended arm)**

***OTHER RISK FACTORS:* mechanical pressure (i.e. edge of desk-wrist), vibration, cold, stress**

**\*May be influenced by other factors (i.e. heredity, fitness level, health, 5% of population will get RSI regardless)**

风险因素

重复:重复率高的活动(即数据输入类型)

力:长时间需要过度肌肉力量的活动(如举起重物，逆阻力拉动)

笨拙的姿势和静态负荷:长时间保持固定和笨拙的姿势的活动(例如，使用伸直手臂的鼠标)

其他危险因素:机械压力(即桌腕边缘)、振动、寒冷、应力

\*可能受其他因素影响(如遗传、体能水平、健康，5%的人会患上肢体重复性劳损症)