Diets & Diabetes over the Decades

Prior to 1914

Believed conservatism was the most effective diabetes treatment. If the patient was doing well, they were left alone. Thought that changes in diet and lifestyle would result in a sooner death. Treated this way, a person with diabetes could live about 5 years. Type 1 diabetes was a death sentence. (1)

June 1914

The treatment of diabetes became easier because of undernutrition. Discovered that most cases of diabetes are preventable by avoiding excess weight. Found undernutrition and conservatism increased diabetes survival to 6 years. The "Starvation Diet" emerged where doctors believed their patients needed to be starved in order to become "sugar free". (1,9)

Dr. Edwin A. Locke's book of food values has been of much value in making up these diets.

The following shows the successive steps in building up a diet for a patient who starved six days before becoming sugar-free:

	Grams Protein	Grams Fat	Grams Carbohydrate	Total Calories
Day 1.....	2	+	5	30
" 2.....	15	12	4	189
" 3.....	23	18	8	294
" 4.....	36	30	11	471
" 5.....	18	48	9	560
" 6.....	51	44	17	688
" 7.....	52	51	15	750
" 8.....	46	51	19	740
" 9.....	49	78	20	1008
" 10.....	50	101	21	1230
" 11.....	49	123	19	1422
" 12.....	Starved because sugar came through			
" 13.....	15	12	3	185
" 14.....	34	32	10	478
" 15.....	53	100	15	1208

(9)

Early 1920's

Insulin invented in the early 1920's with the average insulin dose being 21 units per day (1). Professionals recommended the "line ration diet" where the aim was to have the same amount of carbs, protein, and fat everyday. Black portions were carb-containing foods and red portions included protein and fat. Early on, it was common to give equal portions of black and red portions. This provided about 1500 calories and 100g of carbs. (4)

Late 1920s

As insulin became more available, more black portions were given than red. For those on insulin, the starting diet was 15 black, 10 red portions. In 1929 RD Lawrence was the first to describe diet as the keystone of diabetes treatment. Found that diet alone often restored good health.(4)

Table 4. Comparison of nutrient composition of 1950's diet with 1990's diet

		1950s diet (15 black portions; 10 red portions)	1990s diet (BDA recommendations
Nutritional value per day:	Calories	1710	1710
	Fat	90 g	57 g
	Protein	75 g	64 g
	CHO	150 g	235 g

(4)

1950s

Low carb, prescriptive diet of 15 black portions, 10 red portions was used well into the 1970's. Canadian Diabetes Association, now Diabetes Canada, founded in 1953.(4)

1970s

Protein and fat containing foods became less restrictive as the effect on urine/blood sugars appeared to be minimal. (4)

1980s

Abandoned carb restrictive diets for diabetics, focused instead to limit fat intake and increase complex carbs and dietary fibre. Weight reduction was primary therapy for those with type 2 diabetes. Diabetic diet now described by health professionals as "healthy eating". Individualization and flexibility of each person's diet was encouraged. (3,4)

(3)

TABLE 2
Strategies for normalizing blood sugar in diabetic patients

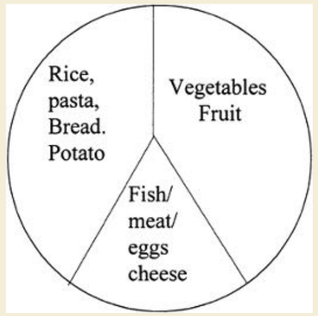
Type I diabetes (insulin-dependent diabetes; exogenous insulin required for survival)	Type II diabetes (sufficient endogenous insulin for survival; treatment focuses on maximizing efficiency of endogenous insulin)
Approximate frequency in the U.S.: 10% cases	Approximate frequency in the U.S.: 90% cases
Synchronize food intake and insulin action	Obese, approximately 80%
Frequent meals and snacks recommended for conventional therapy	Weight reduction is primary therapy
Consistency of eating time and meal composition emphasized for conventional therapy	Hypocaloric diet, low in saturated fat
Fiber-containing foods may minimize postprandial blood sugar rises	Regular exercise
Regular exercise encouraged	Nonobese, approximately 10%
	Small meals
	Fiber-containing foods may reduce postprandial blood sugar rise
	Regular exercise encouraged. If insulin treated the strategies for type I apply

1990's

Regular food intake emphasized, including carbs at each meal. Maintained focus on reducing fat and increasing complex carbs. Simpler method known as "plate model" was suggested. Found that the formal carb exchange systems were unnecessary in initial stages of diabetes. In 1992, the Canadian Diabetes Association developed the first Clinical Practice Guidelines. Dietitian's became able to expand their role to that of a diabetes educator. The 1998 Practice Guidelines state that all people with diabetes should be referred to a dietitian and that nutritional recommendations are the same as the general public: having a variety of the four food groups and reducing saturated fat intake to less than 10%. (2,4)

2000s

Main focus on reducing progression of diabetes through lifestyle modifications including low-calorie, low-fat diet, 150 minutes of activity per week, and moderate weight loss.(5)



(4)

2010s

Strong emphasis on individualized nutrition therapy. Now included alternative dietary patterns as options. (6)

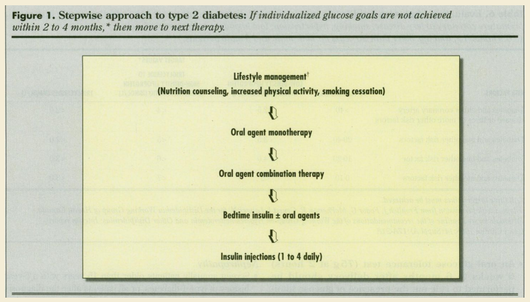
Today

Nutrition therapy with a Registered Dietitian is recommended and has been found to reduce A1C ~1-2%. Significant focus on replacing high Glycemic Index (GI) with lower GI carbohydrates, as well as encouraging regular carbohydrate consumption. (7,8)

(8)

Tips:	Reasons:
Eat three meals per day at regular times and space meals no more than six hours apart. You may benefit from a healthy snack.	Eating at regular times helps your body control blood sugar levels.
Limit sugars and sweets such as regular pop, desserts, candies, jam and honey.	The more sugar you eat, the higher your blood sugar will be. Artificial sweeteners can be useful substitutes.
Limit the amount of high-fat food you eat such as fried foods, chips and pastries.	High-fat foods may cause you to gain weight. A healthy weight helps with blood sugar control and is healthier for your heart.
Eat more high-fibre foods such as whole grain breads and cereals, lentils, dried beans and peas, brown rice, vegetables and fruits.	Foods high in fibre may help you feel full and may lower blood sugar and cholesterol levels.
If you are thirsty, drink water.	Drinking regular pop and fruit juice will raise your blood sugar.
Add physical activity to your life.	Regular physical activity will improve your blood sugar control.
Limit alcohol consumption.	Alcohol can affect blood sugar levels and cause you to gain weight.

Figure 1. Stepwise approach to type 2 diabetes: *If individualized glucose goals are not achieved within 2 to 4 months,* then move to next therapy.*



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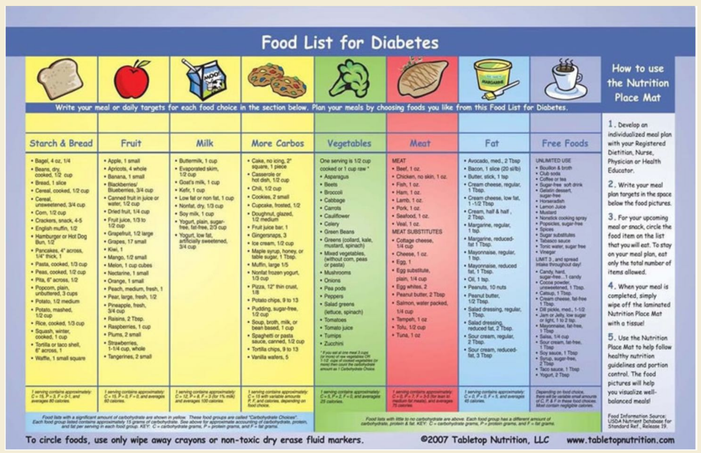

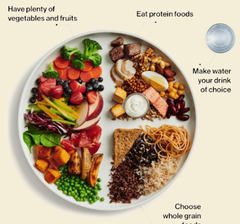

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