Review

Food habits of the Egyptians: newly emerging trends

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SUMMARY Accelerated changes are taking place in the food habits of the present day Egyptians. Examples are drawn from foods that continue to be consumed by those considered guardians of the Egyptian tradition (Coptic Christians and isolated farming communities) and from interpretation of archaeological evidence. Recent decades have witnessed the progressive erosion of the traditional Egyptian diet and the introduction of new foods and eating habits. Sociocultural and economic changes are accelerating this erosion. The main features of the traditional Egyptian way of eating are presented along with a review of the emerging trends and of some of the important factors underlying food consumption patterns. Attention is drawn to the potential risk to health that these new trends represent, in particular to child nutrition and development.

Background

This paper is derived from a longitudinal study that started 5 decades ago and which is aimed at identifying the ancient origins of the foods prepared and consumed by present-day Egyptians [H. Hassan-Wassef, unpublished document, 2005]. The study focuses on the inhabitants of the Nile valley and delta, and does not encompass the nomadic populations of the desert. The purpose of this investigation is to define and to make known what can be truly labelled Egyptian foods and food habits. It involved noting how the traditional dietary habits evolved in response to a host of external as well as internal factors.

For all long-standing food habits and culinary traditions that have developed through the ages, the end product is a balanced diet in harmony with the physiological needs of the people and their occupation, climate, agriculture, and natural resources [*1,2*]. The Egyptian has inherited an indigenous food system and traditional food habits that can guarantee a balanced diet.

Having a rich and fertile soil that is easy to cultivate, and benefiting from favourable climatic conditions, the Nile valley has since ancient times been renowned for an abundance of cereals and the variety of cultivated legumes and vegetables it produces [*3*]. Barring the occasional bad years when the floodwaters were low, food and agricultural production adequately provided for the nutritional and other needs of its people. The new food crops and fruit trees that were introduced into Egypt at various times did not significantly change the basic traditional crop composition, and consequently, food consumption patterns. The relative abundance and rich variety of foods available in Egypt in comparison to its neighbours resulted in waves of migrants, especially to rural areas, who easily adopted the Egyptian way of eating. They did not leave any appreciable mark on local food habits [*4*]. The case was different for the higher social classes and the rich urban dwellers who often copied the eating manners and foods of the succession of foreign rulers who occupied the country [*5*].

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The ancient agricultural methods and crop composition, which had remained unchanged over thousands of years, allowed ample time for food habits to take root and for the gradual emergence of a nutritionally balanced diet that is in harmony with the existing ecosystem and which satisfies the nutritional requirements of the people. Continuity was guaranteed through the keepers of culinary tradition, namely the *fellaheen* (farming community) women, and through the ritual foods of the Copts, the Orthodox Christians of Egypt. The traditional kitchens and earthenware utensils of the *fellaheen*, which have survived till today, have contributed to the perpetuation of many food habits.

Modernization of the ancient agricultural methods started only 200 years ago, thus initiating the first large scale modifications in the crop composition. This agricultural revolution marked the beginning of a series of major irrigation projects and efforts to control the Nile waters [*3*]. Up to the time of the Second World War, significant changes in food habits essentially followed changes in agricultural policy that determined land use and crop composition. Given the limited total cultivated area of the Nile valley and delta, important increases in land allocations to a particular crop was done at the expense of another, sometimes with repercussions that could potentially disrupt the balance of the traditional food system and led to the emergence of nutritional disorders in the long term. The widespread pellagra (vitamin B3 deficiency) that became manifest towards the end of the nineteenth century is a case in point. It was a consequence of the market driven decision to increase the production of cotton, which was done at the expense of wheat production. The growing dependence on maize flour in lieu of wheat in the making of bread, the staple food, soon led to the emergence of nutritional deficiency.

Methods

The period under review is from the early 1950s to the end of the 20th century. Changes in the food habits and in newly emerging food consumption trends were noted. Sources of information varied widely. Historical data and evidence were used to define the basic features of the traditional food system, and information collected from the field allowed the identification of current food habits and the emerging trends. The study of food habits included collecting information on foods eaten as well as on the way they were prepared, food associations and methods of food conditioning and conservation. The supply, availability and accessibility of foods, and other factors that influence food habits were taken into account.

Archaeological evidence and historical data

Archaeological studies and Egyptian collections in museums around the world yielded a wealth of information on the foods consumed by the ancient Egyptians and the evolution of eating habits [*6–8*]. Accounts made by travellers to Egypt through the ages provided valuable descriptions of foods and beverages and of food consumption patterns [*9,10*]. The ancient origins of foods and of their methods of preparation were identified through a "live" reading of historical evidence coupled with an intimate personal knowledge of current food habits. The ritual foods of the Copts, which have been transmitted from generation to generation for nearly 20 centuries, provide an insight into the culinary traditions of the ancients [*11*].

Historical events that significantly contributed to changes in food habits were studied and factors that influenced both the facilitation of and the resistance to change are described. The impact on the traditional

Egyptian food system was assessed in terms of food habits and situations where there was sustained exposure to alien foods and habits, e.g. through trade, conquest, occupation or the settlement of significant numbers of migrants from neighbouring countries.

Information collected from the field

Urban and rural communities were visited in the Nile delta, on the Mediterranean coast, in Middle and Upper Egypt and in the Nubian regions in the south (Fayoum, Beni-Suef, Minia, Luxor, Aswan, Qalyubia, Sharkia, Gharbia, Dakahlia, Beheira, Damietta, Alexandria and Cairo governorates). Data were collected over a period of 50 years, in all seasons. Interviews were conducted in > 40 households in each governorate (> 100 in Cairo and Alexandria governorates).

Food consumption and nutrition-related information was obtained through a 24-hour recall of food consumed the day preceding the interview, followed by in-depth inter-personal interviews lasting about 1 hour and group interviews attended by 8–12 housewives, neighbours and relatives from the same location, usually lasting for 1.5–2 hours. The respondent was mostly the housewife, who was responsible for feeding the family. The sample was, however, varied covering variations in age, sex, education, occupation, income and social echelon. Information collected was not only on types of food but also the ingredients used in preparing it, how it was served, and eating habits. This also included management of leftovers, food associations and other details about ritual foods, taboos, variations within the family and child feeding, and the composition of dry uncooked meals. Information was sought on eating outside the home, including the food consumed by schoolchildren during the school day and what labourers (e.g. peasants, factory workers, construction workers) ate at the workplace.

Inspection visits were then made to kitchens, gardens, and food storage facilities. Traditional methods for food preservation and food conservation still in use were recorded. The array of spices on the spice shelf was noted. The frequency of home baking and the use of the traditional oven were recorded, as well as the nature and form of the cooking utensils, in particular the presence and use made of the ancient traditional ones such as the *ghorbal* (sieve made of lamb gut), the *matraha* (long-handled wooden board for flattening dough) or the *salaya* (quern). Home production and consumption of protein-rich foods was investigated, and the practice of the age-old habit of gathering (or buying) and consuming edible wild plants was noted whenever relevant.

The proportion that the garden produce contributed to the total family vegetable consumption was estimated and the reasons underlying the choice of vegetables grown noted. The presence of yard animals and keeping of animals (especially rabbits and fowl) in urban settings, and the uses made of them, was also recorded.

The markets and food shops were visited and the degree of market dependence for some food items that contribute towards maintaining the integrity of the food system (e.g. dark green leafy vegetables and dairy products) was assessed. The growing increase in dependence on the local bread made from high extraction wheat produced by a wide network of state subsidized bakeries was investigated. The special foods consumed during feasts and religious fasts and rituals, both Muslim and Christian, were noted.

Special attention was accorded to urban dwellers, who represent about 45% of the total population [*12*] and who are more exposed to factors that can engender signifi-

cant changes in food habits. Changes in the geographic distribution of food consumption patterns and trends that developed over the past half century among the people living in Greater Cairo (which hosts nearly a quarter of the total population) were also noted. The foods and beverages consumed outside the home in the 1950s, from fast food outlets and ambulant vendors, were compared to the type of foods and beverages commonly consumed outside the home fifty years later. These included shops, kiosks, and sidewalk vendors who sell biscuits, candy and a variety of other food items and beverages to children outside school gates.

An attempt was made to identify factors that enhanced or precipitated changes in eating habits as well as those which helped preserve traditions and counteract change. Special attention was accorded to variations in the supply and demand for dark green leafy vegetables and to factors influencing their consumption. An overview is given of some of the significant changes in food consumption habits that occurred during the past half century. The emergence of manifestations of unbalanced dietary intake was monitored, in particular, among the more vulnerable child population. New trends and factors that undermine the food system and the potential health implications of such trends are reviewed.

Results

A balanced heritage

Certain characteristics of the Egyptian traditional food system are the outcome of the specific ecology of Egypt and the Nile valley. A crop composition that remained practically unchanged for many millennia allowed ample time for the development of a balanced food system over the ages. Because of the fertile and easily cultivated soil, Egypt stood out from its neighbours owing to the abundance of cereals and the wide range of edible vegetables that could be grown.

The Egyptian dietary pattern became structured around the flood cycle of the river Nile. The diet was more dependent on cereals, dried legumes and preserved foods when the land was under water. From necessity, Egyptians perfected a number of food preservation techniques over the ages. They preserved cheese, cereals, fruit, legumes, vegetables (including dark green leafy vegetables), fish, meat, grains, aromatic seeds and condiments. Onions and garlic were available all year round. This know-how has survived to the present time and is manifest by the important place that dried legumes, cereals and dried and preserved foods occupy in the diet of the modern Egyptian and in the composition of food stores in a traditional home.

The difference in food habits between the north and the south of Egypt is a function of factors such as climate, crop composition (conditioned by the type of irrigation and the agricultural cycle), the daily occupation of the inhabitants and the degree of exposure to and interaction with external influences. Certain eating habits are dictated by the extreme heat of the summer months where temperatures can reach well over 40 °C in the south.

Food analysis tables for prepared foods have shown that the traditional food associations and preparation methods contributed considerably to raising the nutritional value of the foods consumed [*13*]. The Egyptian food system is full of examples of the use of such mixtures and of food associations that compensate for the essential nutrients that may be deficient in 1 component of the meal. The classic example is that of the stewed *ful* (fava bean) meal, which is the most popular and most widely consumed food. Taken individually, bread and beans,

which are the main components, are deficient in a number of essential nutrients. However, the analysis of the prepared *ful* dish, as it is eaten, shows that the presence of the other ingredients has appreciably raised the nutritional value of the meal. The generous amounts of a mixture of dark green leafy vegetables and herbs that are commonly added to a variety of dishes in the last few minutes of preparation, e.g. to cooked colcasia (taro, *Colocasia esculenta* Schott) and some legumes, is another example. *Khodra* (greens), used in a proportion of about 1:5 of the dry weight of the legume, is a complementary source of a number of vital nutrients. Dark green herbs and leafy vegetables, eaten daily either fresh or cooked, are an essential ingredient in the Egyptian diet, and are associated with many dishes (Table 1). Dried chickpeas, sesame and fenugreek are some food items that can raise the nutritional quality of the foods they are associated with. The enhancement of the nutritional value of foods through germination (e.g. fava beans), sprouting (e.g. fenugreek), or fermentation is still commonly practised. The latter is used in the making of *kishk*, sun-dried balls of wheat fermented in sour milk.

Maintaining the nutritional quality of the Egyptian food system depended not only on the types of foods eaten, but also on the way they were consumed, on food associations, on methods of food preparation and conservation, and also on the quantities consumed. The food groups that are considered the pillars of the traditional Egyptian food system include cereals (unrefined), legumes, dark green leafy vegetables, other vegetables and fruits, cheese, oils and white and red meat.

Basic features of the Egyptian diet

Bread, the staple food, enjoys a very special place in the diet. It is still made from high extraction wheat flour or wheat mixed with other ingredients. It is the main component in all meals. Egyptians eat food with bread, and not bread with food. Food other than bread is colloquially referred to as *ghomous* (literally, a dip): a piece of bread is broken off and dipped in the *ghomous*. Food eaten with bread can be as simple as salt or a mixture of salt, cumin and sesame seeds, an onion, white radish leaves, some aged white cheese, or the more complete meal of cooked vegetables or legumes. More recently, the habit of eating bread in the form of sandwiches using European style white bread has taken hold, in particular among children. Cheese, processed, tinned or cooked meats, fried potatoes, pickled aubergines, eggs, and even bananas are some of the fillings that are used. For those who can afford them, the hamburger, pizza or the generously garnished composite modern sandwich are becoming popular.

Cereals and legumes constitute the mainstay of the diet in the population as a whole and are the main sources of calories and proteins [*14,15*]. The nutritional balance of a diet based on a cereal/legume mix is maintained through the regular intake of small amounts of white cheese or other dairy products, fresh dark green leafy vegetables, and less regularly eggs, poultry and birds, fish and occasionally red meat. Fresh and cooked vegetables and fruits complete the system. For the average Egyptian, fruit consumption is not meal-related and is usually dependent on seasonal availability. This was not a source of worry for the first generation of Egyptian nutritionists as long as the essential nutrients provided by a daily fruit intake were supplied from other sources, also consumed fresh. In this respect, the tomato was sometimes referred to as the poor man's apple since it was rich in vitamin C and was available all year round (A. Hassan, personal communication).

Table 1 **Dark green leafy vegetables commonly consumed by Egyptians**

Vegetable		Mode consumed		
Common name	**Latin name**	**Raw**	**Dried**	**Cooked**
Aromatic herbs				
Parsley	***Petroselinum sativum***	+	–	+
Coriander	***Coriandrum sativum***	+	+	+
Dill	***Anethum graveolens***	+	–	+
Chervil (***regl el ghorab***)	***Carum amioides***	+	–	–
Mint	***Mentha sativa***	+	+	–
Green leafy vegetables				
Romaine lettuce	***Lactuca sativa***	+	–	+
Garden rocket (***gargeer***)	***Eruca sativa***	+	–	–
Jew's mallow (***molokheya***)	***Corchorus olitorius***	–	+	+
Spinach	***Spinacea oleracea***	–	–	+
Mallow (***khobeza***)	***Malva parviflora***	–	–	+
Swiss chard (***sal'***)	***Beta vulgaris***	–	+	+
Purselane (***regla***)	***Portulaca oleracea***	–	–	+
Green leaves of roots/bulbs				
White radish	***Raphanus sativa***	+	–	–
Turnip	***Brassica rapa***	–	–	+
Onion (green onion)	***Allium cepa***	+	–	+
Egyptian leek	***Allium kurrat***	+	–	+
Celery	***Apium graveolens***	–	–	+
Leaves of edible plants[a]				
Garden pea	***Pisum sativa***	–	–	+
Cowpea	***Vigna sinensis***	–	–	+
Egyptian bean (***lablab*** or ***gashrangeig***)	***Dolichos lablab***	–	–	+
Okra	***Hibiscus esculentus***	–	–	+
Edible leaves of fruits				
Vine	***Vitis vinifera***	–	–	+
Edible wild plants[a]				
Hare's lettuce (***go'deid***)	***Sonchus oleraceus***	+	–	–
Rampion (***serees***)	***Campanula rapunculus***	+	–	–
Prickly goldenfleece (***galawein***)	***Urospermum picroides***	+	–	–
Sheep sorrel (***hommeid***)	***Rumex acetosella***	–	–	+
Wild lettuce (***lebbeen***)	***Lactuca virosa***	+	–	–
Purselane (***regla***)	***Portulaca oleracea***	+	–	+
Mallow (***khobbeza***)	***Malva parviflora***	–	–	+
Sprouted legumes				
Fenugreek sprouts	***Trigonella fœnum-græcum***	+	–	–

[a]Collected by the peasants from the fields (of clover, wheat and beans) and canal banks, these wild weeds as well as the tender leaves of edible crops are usually gathered for personal consumption. Common local names are given in italics.

Although there is no special penchant for excessive salt seasoning, Egyptians tend to consume more salt during the summer months through eating old white cheese, olives, pickled vegetables, and salted fish. The last is a regional habit popular in the very hot southern governorates. Salt, cumin and coriander seeds have been the main seasoning agents since ancient times. Till now, black pepper is absent from many of the kitchen shelves of the more isolated southern villages of the Nile valley. Egyptians are not lovers of hot chilli peppers like their western and southern neighbours. They tend to follow the Eastern Mediterranean countries in this respect. Vinegar and limes have been extensively used since ancient times [*16*] in food preparation and in particular in the making of pickled vegetables and olives.

Traditionally, the diet is low in saturated fats, and oil is commonly used for cooking rather than butter. Deep-frying is an imported habit that is less than 200 years old. At the present time, it is used in the cooking of the very popular fried fava bean patties known as *ta'ameyya* or *falafel*, a relatively new introduction. Recipes tend to be simple and straightforward, and ingredients are usually mixed raw and cooked in the oven in earthenware pots or boiled. Slow cooking overnight is used for stewing cereals and dried legumes such as wheat and fava beans. Steaming continues to be done in specially designed pots, metal now replacing the original earthenware utensils. Birds and fish are often grilled. Pigeon and quail can also be eaten stuffed with *fereek* (rubbed green wheat) or rice. Larger birds such as poultry, geese and ducks are usually boiled. The traditional method of searing the boiled bird or meat for a few minutes in a very hot traditional oven has now been replaced by frying in oil or clarified butter. The Egyptian is not traditionally renowned for having a sweet tooth. A wide variety of dry biscuits of all shapes that are salty or lightly sweetened, and containing a mixture of aromatic or oily seeds such as fennel, aniseed, caraway, sesame or linseed are widely consumed. Dried fruit pastes or cooked honey are the traditional sweet fillings for some of these biscuits. For the average Egyptian, sweetmeats and desserts are not a regularly consumed food item but are more related to religious feasts and various other celebrations. For the Prophet Muhammad's ﷺ birthday, a wide variety of sugar-based sweetmeats and colourfully decorated sugar dolls and knights on horseback are produced. This tradition, particular to Egypt, is a legacy of the Fatimid period (969–1171 AD) when the craftsmanship for cane sugar artistry flourished.

The heritage of ritual food habits and culinary traditions of the Copts [*11*] represents an unbroken continuity with ancient habits. The foods consumed during the meatless fasts that are observed for about two thirds of the year are derived with cereals, legumes, vegetables, green leafy vegetables and fruits. Given their pre-Christian origin, these foods are eaten by all Egyptians, though to a lesser extent by those urban dwellers who have adopted imported food habits.

The Muslim fasting month of Ramadan is associated with a set of traditions related to food that make many people eat a richer diet during the non-fasting hours that extend from sundown to sunrise. Consumption of dried fruits, all kinds of nuts, oriental desserts rich in fat and sugar, as well as a daily cooked meal for breaking the fast often adds up to a higher calorie content than the usual, non-fasting, daily intake. Meat and poultry consumption is increased as families tend to serve meat each day even if they did not usually eat that much meat. The government makes special provision for the nationwide increase in food consumption during Ra-

madan. Preparations for this month involve the import of large quantities of nuts and dried fruits, to which are added the local dates and peanuts. However, alongside this rich food, 2 traditional food items appear daily on nearly every table in rich and poor homes alike. These are *ful*, stewed fava beans, and all kinds of dark green leafy vegetables (Table 1).

A wide variety of drinks and beverages are an important component of the food system as they are consumed in considerable amounts during the hot summer months. Many of the traditional drinks based on natural products (e.g. *karkadeh* and fenugreek) are known to have a beneficial effect on health (Table 2). Their replacement by commercially produced carbonated drinks, other soft drinks and fruit nectars entailed a significant increase in the daily sugar intake apart from depriving the body of the health benefits of the natural beverages. The habit of consuming small glasses of sweetened black tea is also popular. It is an important source of ready calories for workers during the long interval between the waking up drink and the next meal. While tea drinking can be labelled a national habit, coffee drinking is less popular. Generally speaking, coffee is rarely consumed among the *fellaheen* and manual labourers; it is more common in urban populations. The serving of unsweetened coffee at a wake is, however, a traditional custom observed by most Egyptians.

It may be opportune to comment on the way that meat is perceived by Egyptians and its place in the diet. With plenty of fish in the river and poultry and pigeons in the back yard, red meat is not a regular element in the diet of the *fellaheen*, or for the average Egyptian with a limited income, or for the Copts who observe a meatless fast for more than half the year. Meat is more commonly consumed on Fridays (the religious

Table 2 **Some traditional non-alcoholic beverages still consumed in Egypt**

Traditional beverages
Cold infusions
Red sorrel (***karkadeh***) ***Hibiscus sabdariffa***
Tamarind
Carob (***kharrub***)
Licorice drink (***erq'soos***)
Dom ***Hyphaene thebaica***
Hot infusions
Tea (black)
Coffee
Fenugreek (whole)
Ginger (ground)
Hibiscus (***karkadeh***)
Cinnamon (ground)
Mint leaves
Cumin seeds
Fennel seeds
Caraway seeds
Aniseed
Barley
Juice (freshly pressed)
Sugar cane, pomegranate and other fruits in season
Composite recipes
Moghat (traditionally given to parturient mothers, with ground wild pomegranate root as the basic ingredient)
Sahlab (a milk drink made with ground orchis root as the main ingredient) ***Orchis latifolia***
Sherbets and syrups (now mostly commercialized)
Rose petal syrup
Violet petal syrup
Fruit based syrups, made from juice of mulberries, pomegranate, strawberries, etc.
Syrups made from concentrated extracts of tamarind and carob
Reconstituted sun-dried sheets of fruit pulp
Apricot (***qamareddin***)
Mango
Other (salted)
Pickling water of turnips
Seasoned water of boiled chickpeas

day of rest for Muslims) and is eaten during feasts or for meals celebrating special occasions. Well-to-do households that can afford it tend to consume high amounts of animal protein. Meat tends to be regarded as a status symbol or a prestige item for households with limited incomes. Nevertheless, the ancient habit of serving several meat dishes when giving a banquet [*6*] continues to be the practice. Today, families with modest incomes still make a point of serving 2 or more meat dishes when entertaining guests.

Meals and meal patterns

The first meal of the day is small. It is made up of a drink taken alone or accompanied by a piece of bread, a dry biscuit, a bowl of stewed whole wheat, or just some broken dry bread soaked in milk or other hot infusion. Children usually have a glass of milk or tea with milk and a sandwich. What the average Egyptian refers to as "breakfast" is what is eaten between the waking up drink and the main cooked meal. It is a between-meal snack of varying importance, from a few dry biscuits to a cheese sandwich or more often a *ful* or *ta'ameyya* (fried bean patty) sandwich or a pastry.

The Friday breakfast, eaten at leisure and *en famille*, is a more generous meal. Stewed beans, eggs, green leafy vegetables, onions, tahina (sesame paste) salad, *ta'ameyya*, pickled vegetables, cheese, stewed whole wheat (*belila*) or home made noodles, butter or cream, honey, molasses and all kinds of jams are some of the food items that can appear on a Friday breakfast table.

The main cooked meal is usually made up of bread eaten with cooked vegetables or legumes, with pickles and green leafy vegetables or a finely chopped mixed salad on the side. Meat, for those who can afford it, is cooked with the vegetables and less often cooked and served apart. Fruit may or may not be eaten at the main meal. It is more usual to end the meal with a glass of tea or other hot infusion (Table 2).

For the majority of the *fellaheen*, manual labourers and artisans, the midday meal consumed at the workplace is a smaller and usually uncooked meal made up essentially of bread eaten with cheese and/or fava beans, onions and green leafy vegetables, often accompanied by tomatoes, pickled aubergines, or other pickled vegetables.

Till about 2 decades ago, the main cooked meal for millions of public sector employees, who worked 6 days a week from 08.00 to 14.00, was at around 15.00. With the new 5-day working week and longer working hours adopted by the growing private sector as well as some of the government institutions and services, there has been a shift of several hours in the timing of the main cooked meal. The presence, in this group, of relatively high salaried private sector and banking employees who already lead a modern lifestyle makes this group a prime consumer of the modern type of fast foods (Table 3). The main meal is consumed upon return home, i.e. around 18.00 hours. This late timing brings it nearer to the traditional timing of the main cooked meal eaten by peasants and labourers at the end of their long working day. However, it appears that the 2 eating patterns, the old and the new, sometimes co-exist. Those who have eaten at 18.00 can again eat a full cooked meal if invited out. A rapidly growing demand has been observed among urban populations with long working hours for the modern take-away type of meals commonly consumed at the workplace. For them, this is a between-meal snack and not counted as a meal. Many of them tide over this period with only beverages and a pastry.

With the growing industrialization of the country, meal times for industrial workers have also been changing, with no unified pattern. Some work 8-hour shifts with no lunch break while others can work for a long day with a 1-hour midday break. For

Table 3 **Changes in availability of fast food from 1950 to 2000 in different outlets in traditional and western style neighbourhoods**

Type of food	Neighbourhood			
	Traditional		Western	
	1950	2000	1950	2000
Fast food outlet				
Hamburger meal	–	–	–	+
Pizza	–	–	–	+
Fried chicken	–	–	–	+
Grilled chicken	–	–	–	+
Cafeteria style shops	–	–	±	±
Grilled pigeons	±	+	+	+
Grilled kebab and kofta	+	+	+	+
Ful (fava beans) and ***ta'ameyya*** (fried bean patty) meal	+	+	+	±
Koshari (rice and lentil dish)	+	+	–	±
Veal head, offal and rice sausage	+	+	–	–
Fixed stand/counter				
Feteera, pastry with a variety of fillings	+	+	–	–
Fried fish	+	+	+	+
Grilled fish	+	+	+	+
Grilled beef or chicken ***shawerma*** sandwiches	–	–	±	+
Western style panini sandwiches with composite filling	–	–	–	+
Simple sandwiches	+	+	+	±
Regheef el-hawawshi, minced meat in flat local bread	+	±	–	–
Mobile cart or stand				
Koshari, rice and lentil dish	+	+	–	–
Ful and ***ful*** sandwiches	+	+	+	+
Shamsi[a] bread and old white cheese	+	±	–	–
Ambulant vendor				
Borek, pastry with white cheese filling	+	+	+	–
Semeet, bread rings with ***rumi*** (hard) cheese or ***dokka***[b]	+	+	+	+
Veal head, offal and rice sausage	+	±	–	–

+ available, ± occasionally available, – not available.
[a]Traditional Upper Egyptian bread.
[b]Mixture of salt with ground cumin and sesame seeds and other aromatic ingredients.

Egyptians this is not a main meal. This pattern is similar to the traditional pattern of a midday meal consumed at the workplace and the main cooked meal eaten upon return home in the evening. The group that works a straight 8-hour shift without a break will return home for the main meal in a pattern similar to that of public sector employees, except that they have no access to the pre-main meal snack.

There is a rapidly growing number of working women at all social levels. Children who return from school at an earlier time than their working parents do not always have a meal upon their arrival home. They may have to wait for the return of their parents to eat with them. Parents do not seem to mind that their children tide this long period between breakfast and the main meal with a sandwich, a soft drink, candy, or with any of the rapidly growing array of junk foods [*17*]. This means that the peak hunger period for the growing child is appeased with foods of doubtful nutritional quality, which are often eaten under little control or supervision. As a consequence, the children are poor eaters when they sit at the main meal [*18,19*]. The ill-effects on the health of children of a cycle of irregular mealtimes and nutritionally imbalanced food intake may be further complicated by long hours of television watching accompanied by more consumption of junk foods, soft drinks, candy and sweets [*20*]. While the rise in the incidence of iron deficiency anaemia and obesity among children has already been reported [*21*], no investigation has yet been undertaken of the set of symptoms and complaints that are commonly reported these days by the mothers themselves. These symptoms include constipation, irritability and recurrent headaches that are not related to any sickness.

For those whose main meal is consumed at lunch time, the evening meal is lighter and usually made up of what is referred to locally as dry foods (i.e. without a sauce). Leftovers from lunch are often served again in the evening. Some of the common evening meal components apart from bread include fava beans and lentil based dishes, cheese, dark green leafy vegetables, pickled vegetables, tomatoes and cucumbers. Melon or watermelon eaten with white cheese and bread make up a popular summer menu. For children, a favourite nutritious evening meal is bread dipped in a molasses-tahina mix. Tinned foods such as mackerel, sardines, tuna, beef, processed beef or poultry can be eaten with bread or made into sandwiches with a salad or pickled vegetables on the side. Few households serve a second cooked meal at night. This is usually reserved for the instances when guests are invited.

A food habit that has survived till today is that of nibbling different snacks. Nibbling is favoured following the evening meal, and snacks are more often consumed outdoors during the long summer evenings. With television watching, nibbling (and food consumption in general) can continue late into the night. Traditional snack foods (Table 4) comprise a variety of different food items and continue to be enjoyed by the rich and the poor of all ages. Some of them are highly nutritious and can represent a non-negligible supplement to the daily nutrient intake of a child. Their replacement by sweets, candy and junk foods is much less advantageous to the food system.

The onset of change

In the mid 20th century, the basic elements of the traditional Egyptian diet were for the

larger part still preserved, more so among the rural communities and the Copts whose diet and ritual foods are little affected by change. The legacy of the succession of external influences leading to changes in food habits was more evident in the larger urban communities and the coastal towns. The higher social classes were much more readily influenced by the food habits of the foreign ruling elite. Most of the influence was eastern Mediterranean and, to a lesser extent, European, North African and Arab (Arabian peninsula). The simply prepared foods of the traditional diet gave place to elaborate dishes requiring complex, lengthy preparation and generous amounts of clarified butter, with less attention to the consumption of fresh vegetables. Deep-frying, the use of rich, composite sauces and the growing popularity of rich sweetmeats and desserts containing nuts and soaked in heavy syrup considerably raised the overall intake of sugars and saturated fats. White bread, in many instances, replaced the traditional high extraction local bread. Many of the nutritionally valuable traditional food associations were ignored. For people living in poverty or those with limited incomes, changes were more related to the need to cope with rising food costs and to making nutritionally correct choices. By necessity, they depended on the cheaper traditional foods and the subsidized local bread. For this group, the continued consumption of fresh dark green leafy and other vegetables was a nutritionally valuable traditional habit.

Table 4 **Some traditional snack food consumed by Egyptians**

Traditional snack food
Legumes
Green chick peas (***malana***)
Boiled chick peas
Roasted chick peas
Green fava beans (***ful herati***)
Roasted germinated fava beans (***ful meqeli***)
Germinated fava beans
Lupine (soaked and boiled)
Sprouted fenugreek seeds
Roasted peanuts
Vegetables
Egyptian red carrots
Romaine lettuce
Tubers (***habb el aziz***)
Tiger nuts
Grains and seeds
Popped corn (maize)
Grilled fresh corn on the cob
Roasted wheat grains
Roasted pumpkin seeds
Roasted cucurbit seeds
Roasted melon seeds
Fruits
Christ thorn (***nabq***)
Jojoba (***ennab***)
Golden berry (***harankash***)
Dom palm fruit
Sycamore fig
Prickly pear
Other
Sugar cane

A series of changes in the food habits and lifestyles of the rural populations followed the acceleration of rural development programmes (and modernization) which gradually ended the traditional isolation of the *fellaheen*. Rural populations became exposed to a host of unfamiliar external influences and lifestyles with little prior preparation or guidance on how to deal with new situations and new food products.

Two major developments directly influenced changes in food habits. The first was the creation of a nationwide network of cooperative societies, *game'eyya ta'awoneyya*, (a successor to the food rationing

system introduced during the Second World War) to serve as distribution outlets for subsidized or price-controlled foods. These cooperatives were instrumental in introducing rice, a hitherto unfamiliar food for the southerners who traditionally consumed *fereek* (rubbed green wheat) instead. Equipped with cold storage facilities for the distribution of frozen foods, the cooperative societies were the end point in a cold chain for the distribution of imported frozen foods. Subsidized imported meat and chicken were important supplements to the food system during the economically difficult decades after the end of the war. The Egyptians, who always preferred to eat freshly slaughtered meat or poultry, were very slow in accepting frozen meats. The same cold chain served to distribute cheap frozen fish from Lake Nasser, which reached the tables of a growing number of Egyptians, adding a precious source of high quality protein. Cooperatives also served as outlets for the sale of price-controlled chicken and eggs produced by the growing numbers of state-backed commercial chicken farms. All these developments led to an increase in the consumption of animal protein in groups of the urban population with modest incomes.

The second development was the establishment of a network of mechanized bakeries producing mainly the high extraction local bread, and to a lesser extent, a thin flat white bread known as *shami* bread. These bakeries, using subsidized flour and selling a price-controlled loaf, produced bread that was considerably cheaper for the *fellaheen* than home production. Home baking became reserved for special occasions, feasts and celebrations. The younger generations, both rural and urban, are turning more to white bread, preferring the European-style loaf. They find it more suited to their sandwiches [*22*].

The last decades of the twentieth century witnessed a further acceleration of change in the form and substance of the Egyptian diet. Change was accelerated by the liberalization of the market and the "open door" economic policy, which gave rise to indiscriminate and uncontrolled consumer desire for imported commodities and western lifestyles [*20*]. The spread of this trend was facilitated by the rapid social mobility [*23*] that followed in the wake of the 1952 revolution and the access by middle income and low income groups of the population to the much higher earnings of family members working in the Gulf countries. This increase in the purchasing power of Egyptians was also a result of the gradual increase in the per capita gross domestic product over the same period [*24,25*].

Government efforts to extend the public broadcasting (radio and television) service to all the inhabited areas in the country brought inside homes images of unfamiliar modern lifestyles. Aggressive marketing campaigns for the modern foods that accompanied the new lifestyles found their mark in the targeted population of youth and children. The phenomenal popularity of junk foods among children does not seem to be confined by any socioeconomic or geographic barriers, making this group a prime consumer of junk foods. Families in all walks of life were overtaken by the demands of the unfamiliar lifestyles and patterns, in particular, the longer working hours and the inevitable change in the eating pattern. Deprived from the support traditionally enjoyed as members of an extended family, parents in the modern nuclear families found themselves ill equipped and unable to cope. Problems were felt more where both parents worked or in families with a woman as head of household. The ability to cope was further cur-

tailed by the low purchasing power of low-income families.

Discussion

The variety and abundance of food in Egypt over the ages preserved it from change [*3*]. The food balance of the country started to break down in the middle of the 20th century, which marked the start of food importation and the beginning of a gradual decline in the tradition of food self-sufficiency [*4*]. The demands of an increasing population that were not paralleled by an increase in the total inhabited and cultivated surface area widely surpassed local food production. In 1947, there were 19 million inhabitants living on 4% of the total surface area of Egypt. This rose to almost 66 million living on about 5.3% of the surface area in the year 2000. It took several centuries for the Egyptian diet to develop and take root. The Egyptians who were well settled in their habits were not all able to adjust to or cope with the rapid changes that occurred during the past half century, and in particular the past 2 decades. Those changes were in the greater part related to the modernization and industrialization of the country. The increase in the number of women working outside the home, women heads of household and nuclear families did not make matters easier. Little help or guidance was offered on how to adapt to a changed pattern of life or on how to make the right choices to ensure a balanced daily food intake.

The traditional diet of Egyptians is made up of basic elements regarded as the essential components of the system. Any changes in food habits strong enough to disrupt the balance of the system without being compensated for will, unless corrected, lead to malnutrition and ill health. It would be a cause for concern if the imbalance affected those food elements, such as high extraction bread, legumes, fresh dark green leafy vegetables, and other vegetables and fruits, which are the pillars of the system and which have high nutritional value.

It became evident towards the end of the last century that the healthy diet of Egyptians, developed over thousands of years and which had till then retained its essential features, was progressively losing some of its essential elements and rapidly disintegrating. The rapidity of change in food habits accompanied equally rapid social and economic transformations. The changes were accelerated in the 1970s with the liberalization of the economy. It is apparent that people at all levels of society were overwhelmed by the rapidity of the change.

The change was quicker to take hold in the urban populations, which represent nearly half the total population of the country. Not having access to nutrition guidance, they adopted ready solutions that were not backed by nutritional awareness or discrimination. These new choices were made easy by a higher purchasing power and a strong desire for modernization. The choices were also influenced by aggressive advertising campaigns and the easy accessibility of junk food, candy and soft drinks.

It is disturbing to observe the way present day Egyptians are trading their dietary heritage for unbalanced, unhealthy foods. Much time and effort could be spent on a fine analysis of the causal web of factors that makes the Egyptian lose grip on the traditional diet. It would be more cost-effective to investigate why the new trends are taking hold, to find ways to protect good food habits and to identify the interventions or the means which would preserve the integrity of a balanced food system.

One of the important approaches in a multi-pronged strategy to improve the nutritional quality of the Egyptian diet would be the creation of nutritional awareness and developing the capacity for nutritional discrimination among the Egyptian public. This could be achieved through the mobilization of well-informed and coordinated support from those involved in monitoring the nutrition situation and in formulating policy and interventions that could preserve the nutritional quality of the traditional food system. Their task would be to promote an evolution of the food system and enable it to cope with and accommodate the changes that have occurred. The information generated could become instrumental in the creation of an enlightened consumer and a consumer society that would have the power to influence and shape the food market.

A second approach, complementary to the above, would be to support and guide families in adjusting meal patterns and composition to cope with new lifestyles and changes in daily routine. No carefully planned adjustment has been made to accommodate the long working hours which have been in operation now for nearly 2 decades. Egyptian families were not adequately prepared to cope with the problems that the longer working day created. Shifting the main cooked meal to late afternoon has been the solution adopted by most families. The problem of no provision for a meal on children's return from school, commonly the case in nuclear families where both parents are working, and in the absence of the support of the traditional extended family, has not been properly investigated.

A third approach would be to help families regain confidence in traditional foods and in the possibility of eating modern meals without losing the essential features of the Egyptian food system. This practical approach would need to highlight those foods that are better adapted to the demands of modern life and provide information on meal composition and on ways of reducing food preparation time. It should draw attention to foods that combine low cost with high nutritional value. Guidance in managing child feeding will need to be based on the results of a comprehensive evaluation of the situation and the problems that children face.

All approaches in a strategy to protect the traditional system will need to be adapted to the demands and requirements of all socioeconomic strata of the population in all situations and settings, whether wealthy or deprived, rural or urban.

The shortcuts and easy solutions that offer themselves, such as the consumption of the new fast foods, may solve immediate problems and satisfy immediate needs in the short term. In the long term, however, ignoring the needs of children or complacency about the types of food that they consume will certainly give rise to malnutrition. Iron deficiency anaemia, obesity and undernourishment are becoming more and more common among Egyptian children [*21*]. Correcting the dietary deficiencies alone will not solve the problem. Help and guidance needs to be provided to reorganize family meals in a way that satisfies the nutritional needs of children.

The growing trends for increased consumption of fast food, junk food, sweets and candy instead of the more wholesome traditional snacks, and for consuming soft drinks with a high calorie content instead of the traditional natural beverages are viewed as a social and a market phenomenon. These products have become popular with all ages and all social groups. Aggressive marketing campaigns are finding fertile, ground especially among the younger gen-

erations. The cost on health of the spread of these habits is high because of the higher calorie and fat intake, lower intake of vitamins and minerals, unaccustomed increase in the daily intake of animal proteins, and most importantly exposure to toxic substances and mutagens identified in some fast food meals and in junk foods that often contain artificial colours, flavours, and unidentified food additives [*26*]

What the Egyptians do not know is that the traditional diet that they are abandoning is what the western world is now seeking to eat [*2,27*]. Also, from a nutritional point of view, the uncontrolled consumption of these modern foods does not represent progress, but a regression. The intellectual impulse to blame market forces is misplaced. The market is only a reflection of the desires of the people at a given point in time and space. Industry makes extensive studies into the behavioural patterns of the people in order to be able to satisfy them and, in turn, to guarantee their own gains. It is the duty of nutritionists to work on a medium/long-term basis to shape those desires. This would be instrumental in encouraging the government to develop a policy to shape the market according to the new desires that we have helped to form. The case of a soft drink company responding to the desire to consume less sugar by producing a diet version of their cola, and removing the stimulating substance in the drink and marketing a decaffeinated version are examples of response to the desires of the discriminating client.

Interdictions do not give rise to results. When nutritionists succeed in shaping habits by the creation of a discriminating consumer, a strong consumer society will in turn be able to influence the market. If a national campaign for promotion of change is decisive enough, the market will follow because this is where the profit lies. Once the market responds and reflects the desires of enlightened, discriminating consumers, they will then become its strongest ally when it promotes modified, healthier products.

Conclusion

Egypt has a valuable heritage of a well-established and balanced diet which persisted practically unchanged for the best part of 5000 years. This valuable indigenous food system must be protected and compensated for losses suffered through the adoption of new food habits. A number of appropriate interventions need to be identified suited to the current circumstances for each sector of the population. These interventions should be able to protect the essential features of the traditional system and offer options to compensate for deficiencies. An enlightened and discriminating consumer can shape the market and reverse the ill effects of the trend towards excessive consumption of fast foods and other unhealthy foods. Reorganization and adjustment of mealtimes and meal composition to meet the demands of altered lifestyles would be a valuable backup to the discriminating consumer. Nutritionists need to formulate a multi-pronged national policy for teaching nutritional discrimination, not only nutritional education, so as to enable people to differentiate the good from the bad, in relation to “me” and “my needs”. This is an exercise that needs to start with the younger generation in particular in schools.

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