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My Dear Nieces and Nephews:

I am deeply interested not only in your health individually but in the efficiency and welfare of your families. It is particularly important in these times of industrial and financial stress, that children shall not suffer defects which may mark and handicap them for their entire life. Fortunately, an adequately defensive nutritional program can be provided without much expense and indeed often more cheaply than the currently selected foods. There will be no necessity for any child of yours to develop dental caries or tooth decay if the simple procedures that I am outlining, shall be adequately carried out. Your cousin, Alice, desired to send some suggestions to Olive and Julia and I suggested to her that I would outline something that would be helpful to all of you. I think Alice will be glad to assist in making copies to supplement those that I am sending her.

There are two ways in which I could make suggestions relative to the mineral and vitamin problem in the selection of food, the one on the basis of detailing a special menu for each day, which is very unsatisfactory, and the other would be in the form of general principles which should control and guide you in selecting the foods which will meet the body's daily needs. I would suggest the latter and the following is an outline of the principles involved.

If you will think of an automobile into which you would have the choice of putting two kinds of gasoline, one that would furnish only power, corresponding with ordinary gasoline, and the other capable of making new tires grow as fast as the old ones are worn out, continually putting on a new coat of paint and even making an Austin grow into a Pierce-Arrow, there is no doubt as to which gasoline you would use, even though there would be a great deal of difference in the price. This very closely represents the condition that obtains in our bodies.

We have a sense of hunger which expresses itself as appetite and we eat until this is satisfied, but this only applies to that part of our food which produces power and heat. We have almost no sense of hunger for the minerals and other chemicals and vitamins that are needed for building new and repairing old tissues. Modern civilization is making a tragic mistake in getting away from the natural foods that are low in energy and high in minerals, and increasing the intake of the heat and energy producing foods. This energy can be quantitatively expressed by the amount of oxygen that may be utilized when modern foods are burning either by the wet process within our bodies or by the dry process in special apparatus. We speak of this in terms of calories.

Most people need from 2000 to 3000 calories a day, according to the nature of their physical activities. Similarly, we need two grams of phosphorus and one and one-half grams of calcium a day in our food in order

to keep up the body's daily requirements. Our problem then is to get enough of the minerals and vitamins without exceeding our limit in calories. Our bodies call a halt usually when they have taken in enough calories to satisfy the appetite but at the same time they probably have not obtained enough of the minerals and vitamins sufficient for the daily requirement. Cereals, milk and sea foods are the foods that Nature has provided us with in natural form, which will satisfy our hunger and will at the same time take care of our body's requirements. Modern civilization has modified this by providing us with menus that tend to be too high in calories and too low in mineral content.

Our next great problem is to keep the battery of our car charged sufficiently so that we will utilize the fuel efficiently. The vitamins provide the battery charge for animals including humans. One of our greatest struggles is to get sufficient of the vitamins, particularly the fat-soluble vitamins. There is a great tendency toward trying to supply these with synthetic products which are not a substitute. The amount of minerals that are in the food that we eat, that will be utilized by the body, will be largely determined by these activating substances. We may apply these principles to the daily diet.

It is not wise to fill the limited space with foods that are not doing our bodies any particular good. You would be interested to know that while you would have to eat 7 1/2 pounds of potatoes or 11 pounds of beets or 9 1/2 pounds of carrots to get the daily phosphorus requirement, all of which would provide too high a number of calories, you would obtain as much phosphorus from 1 pound of lentils. This would also provide the calcium. You would also supply the entire day's requirement of minerals from 0.8 pounds of fish or 0.6 pounds of cheese. Milk is one of the best, if not the best single food, since you obtain the minerals rapidly in proportion to the calories. The main thing is to get the daily phosphorus and calcium requirement and sufficient of the vitamins, particularly the fat-soluble vitamins.

There is a misapprehension regarding the value of fruits as food. Of course fruits are desireable as an adjunct, but most of them are very low in minerals. You would for example, have to eat 37 pounds of apples a day or 26 pounds of oranges to get your two grams of phosphorus and when these fruits are sweetened into jams or jellies, you would have to eat 32 pounds of orange marmalade a day, which would provide 33,000 calories; few of us could take care of more than 3000 calories. You would also have to take over 30,000 calories of honey to get your two grams of phosphorus, for which you would need to eat 28 pounds per day. Similarly, you would have to eat 34 pounds a day of maple syrup which would provide 85,000 calories. Among the poorest foods we could feed children would be white bread and jam or pancakes with maple syrup or similar combinations, and these are no better for adults than they are for children, for we all have the same problems except that the stress is greater during periods of rapid growth.

The basic foods should be the entire grains such as whole wheat, rye or oats, whole wheat and rye breads, wheat and oat cereals, oat-cake, dairy products, including milk and cheese, which should be used liberally, and marine foods. All marine or sea foods, both fresh and salt water, are high

in minerals and constitute one of the very best foods you could eat. Canned fish such as sardines, tuna, or salmon are all excellent; also the fresh fish such as oysters, halibut, haddock, etc. The protein requirement can be provided each day in one egg or a piece of meat equivalent to the bulk of one egg a day. The meals can be amply modified and varied with vegetables, raw and cooked, the best of the cooked vegetables being lentils used as a soup. The cooked vegetables are better since raw vegetables are usually too bulky to allow very much mineral to be obtained from them. Some of the best of the cooked vegetables are cauliflower, brussels sprouts, asparagus tips and celery. Lettuce is the best of the raw vegetables.

Cut down on starches and sugars. Sweet things satisfy the hunger and provide calories and thus not only displace foods higher in minerals, but reduce the total amount of food eaten by satisfying the appetite. Reduce all white flour products and pastries to a minimum. One of the best sources of minerals is provided in cheese. Use freshly cracked wheat for cereal, muffins or bread. Much of the value of the wheat germ is lost by oxidation if the product is not fresh.

There are only a few foods that would give you your fat-soluble vitamins. These are the fish products, including practically all fresh water and salt water foods, milk, cheese and butter made from cows that have been on a rapidly growing green young wheat, either fresh or stored grass, particularly butter made in June. This is much richer than butter made during other seasons of the year. Eat butter chiefly for its vitamin content.

One of your greatest difficulties will be to provide the children and yourselves with sufficient of the fat-soluble activators and vitamins. We being mammals, have bodies prepared to get these from milk and its butterfat, which is not in skimmed milk. There is not much left for the children when the cream has been taken from the milk for the parents' coffee. Where possible, have June butter stored for winter use. Cod-liver oil can be given in moderate doses without injury and to great advantage. Seldom however, should the child be given more than a teaspoonful a day for extended periods, because of toxic effects that often develop. It is better to take the cod-liver oil with the meal rather than before of after, as it aids in the utilization of the minerals in the food.

We are now able to determine from a chemical analysis of an individuals's saliva whether or not tooth decay would be likely to be present in that particular mouth. Remember, it is the defensive chemicals that must be present in the saliva to prevent tooth decay and these are provided to the saliva by having the food amply high in minerals and fat-soluble vitamins. The saliva furnishes the greatly needed minerals which aid in the digestive process; hence the great advantage in having the food in a physical form to require chewing, which makes the saliva flow. Do not let the children wash their food down with their drink. They should drink about a quart of milk a day, preferably after each meal or part of it between meals.

An excellent program then will be to use a cooked cereal made from

freshly cracked wheat or oats, this to be eaten with cream or milk and a limited amount of sugar sufficient to flavor the cereal. Have them follow this with one or two glasses of milk. Recently baked whole wheat muffins made from freshly cracked wheat and spread liberally with a high vitamin butter are excellent in both their mineral and vitamin content. These can be eaten to advantage with cooked applesauce or other cooked fruits not too highly sweetened. The highly sweetened marmalades and jams check the appetite and make a disproportion of the calories to the minerals and vitamins. There is no objection to having the children fill up on bulky foods such as potatoes and vegetables, if the daily mineral and vitamin requirements have been satisfied first. If June butter cannot be obtained, which is usually the case for most of the year, and unless arrangements can be made for having some put in storage for winter use, it will be well to reinforce the diet with a little cod-liver oil during the winter months.

In my studies of growing children in other countries as well as in this country, in every instance where they were eating foods that were found to be high in minerals and vitamins, there was no tooth decay and in every instance where modern foods high in calories and low in minerals were used, rampant tooth decay was prevalent. Remember that it would take three large loaves of white bread a day to provide our requirements for phosphorus, but this would give us 10,000 calories, an amount which it would be physically impossible to utilize. Eating this with skimmed milk would be one of the surest ways to produce dental caries and in some cases might even produce convulsions. The safety of the primitive people has been the impossibility of their getting hold of any foods that were high in calories and low in minerals, but my studies have indicated that they break down and develop dental caries as readily as any other people when they go on modern diets.

Practical demonstrations of the way this program works out will shortly be available in a series of articles which I have provided for one of our journals, The Dental Digest. These articles will emphasize that tooth decay is a symptom and not a disease. It is evidence of a faulty nutrition and not as so many have thought, entirely the result of the lack of mouth care. Mouth care is, of course, desireable. Preventive diets usually cost less, besides preventing the expense of repair of the teeth.

These are times when these practical problems should be and must be considered carefully.

I hope I have not seemed to be lecturing to you. I love you all dearly and am deeply concerned for your best welfare.

Lovingly,

Uncle Weston