Nutrition for the Long Run, *by Brenda Stoddard, R.D.*

It comes as no surprise that providing your body with the proper nutrition while training for a marathon will help optimize your running performance. We know that good nutrition will help your body to "run" more efficient, enhance your overall health and immune system, aid in preventing/healing injuries, improve your body's adaptation to training as well as promote speedy recovery. The food you eat and the way you eat it will indeed dictate how well you run! But with so much information out there it can be hard to know what to do and when to do it! Below are some basic recommendations to help you fuel your body for peak running performance. Use this information to guide you, but don't be ultra concerned about all the details so much that you don't enjoy eating!!!!! After all we run to eat! Or do we eat to run? Remember what might work for one person, may not work for you. Try to remember that just like running should be fun, eating should be fun too! Practice, practice, practice during your long runs to see what does and doesn't work for you and than follow that on race day!

BASIC GUIDELINES: Endurance runners should aim for a diet high in carbohydrates (60-70%), moderate in protein (12-20%) and low in fat (20-25%). Food choices should include foods from all the 5 food groups: Grains, Vegetables, Fruits, Milk/dairy and Meat/Beans. Calories should be spread evenly throughout the day (no skipping meals, especially breakfast which is the MOST important meal of the day) eating 3-6 times per day. Women should aim for 2,000 to 3,500 calories/day, men should aim for 2,500-4,000 calories per day. On rest days and shorter run days, aim for the lower end of the calories; on long run days shoot for the upper range.

CARBOHYDRATE: is truly a runner's best friend because it serves as the primary energy source for working muscles and helps the body to use fat more efficiently. Carbs also help to maintain optimal blood sugars levels. Carbs are stored in the muscles as glycogen, which is the primary fuel you need to keep MOVING. When glycogen stores start to diminish, so do you. This is when exercise intensity reduces and you start to feel pain, cramping and sluggishness known as "The "WALL" take place. This will usually happen after about 90 minutes to 2 hours of running. Going out too fast too soon will also contribute to the deletion of glycogen stores. Therefore, training you body with running as well as carb intake will help avoid hitting the wall. Carbohydrate is also the source of many photochemicals and antioxidants which help us repair, recover, maintain a healthy immune system and prevent/heal an injury. Therefore a diet high in carbs is essential for long distance running performance. Examples of Good sources to fuel your body are: pasta, rice, potatoes, cereal fruit, vegetables, some low fat/fat free dairy products and whole grain product. Remember that 60-70% of your diet should be coming from these carbohydrate sources. One of the rewards of running is being able to sneak in a few sweets/treats now and then. But make sure you avoid "living" off from junk food as your main carb source because these carbs are virtually nutrient free and could end up harming your training efforts. To help figure out the amount that's right for you, multiply your weight in pounds by 3.2 to give you the number of grams of carbohydrates you should consume per day. Examples include:

*15 grams of carb=1/2 cup cooked rice or pasta & 1 serving of fruit, ½ cup of starchy vegetables or ½ cup dried beans.
*12 grams of carb= 1 cup of low fat milk or yogurt or 1.5 oz of cheese
*5 grams of carb= 1 cup leafy raw vegetables or ½ cup chopped vegetables

PROTIEN: is used to build and repair body tissues including muscles, tendons and ligaments. Protein is NOT a primary source of energy for long distance runners. Your body can only use so much at one time, any excess may be converted to fat. 12-20% of your diet should come from protein. To figure out the amount for you, multiply your weight in pounds by .6 to calculate the number of grams of protein you should consume per day. Examples include:

*21 grams of protein: 3 oz lean meat, poultry or fish provides
*8 grams of protein: One cup of low fat milk or yogurt provides *7 grams of protein: ½ cup cooked beans, 1 ounce of cheese, 1 egg, 4 oz of tofu or 2 T peanut butter *3 grams of protein: A serving of whole grain product (i.e. ½ cup cereal, 1 slice of bread)

FAT: helps a runner sustain prolonged exercise. It is also an energy source that insulates the body against cold as well as helps protect and cushion vital organs. Limit fat for pre run/pre race meals as it exits the stomach slowly and my cause cramping. Fat burns better when combined with carbohydrates. There are three kinds of fat. Saturated fats include butter, hydrogenated oils, coconut oil and palm oil. Polyunsaturated fats include corn oil, soybean oil and margarine. Monounsaturated fats include olive oil, canola oil and peanut oil and are the preferred fat. Peanuts butter (natural) is a good source of monounsaturated fat. Approximately 20-25% of your diet should come from fat, 10% coming from saturated fat.

FLUIDS: Marathon runners are at risk for dehydration, and hyponatrimia (Low blood sodium levels, a dangerous but easily preventable condition). Dehydration can bring on fatigue, cramps and impair performance. If you drink too much and aren't properly replacing your electrolytes you lose in sweat you are at risk for hyponatremia (low sodium levels) which can produce symptoms such a nausea, vomiting, muscle weakness, headache, disorientation and bloating in face and hands. In general water is sufficient for any runs under one hour. Any runs 60-90 minutes or longer generally require more than water.(i.e. Gatorade, Ultima, Endurox R4) To figure out your basic fluid needs take ½ your body weight (lbs) in fluid ounces. (140 # person would require 70 oz/day)

BASIC GUIDELINES BEFORE, DURING AND AFTER RUNNING:

Before: A meal or snack should provide sufficient fluid to maintain hydration, be fairly low in fat and fiber to aid in bowel elimination and minimize any GI distress, be relatively high in carbohydrate to help maintain blood glucose, be moderate in protein. Choose foods that are familiar and well tolerated, avoid unfamiliar foods. Drink 14-22 oz of fluid 2-3 hours before a long run and another 7-10 oz 10-20 minutes before the run.

Pre Race Snacks:*1 small bagel +2 tbsp peanut butter + 1 small banana. * 4 oz juice, 8 oz yogurt, 2 slices toast. *1 ½ cup ready to eat cereal or 1 cup oatmeal + ½ cup skim milk + 1 fruit. * 1 fruit cereal bar + 4 oz juice

During: The primary goals for nutrient consumption are to replace fluid losses and provide carbohydrate (approximately 30-60 grams per hour) for the maintenance of blood glucose levels and to keep muscles primed. 6-12 oz of fluid should be consumed every 15-20 minutes depending on tolerance. Race snacks: gels, cliff shots, bananas, oranges, Fig Newton's, graham crackers, pretzels, Jelly beans or fruit chews, granola bar, rice crispy squares, raisins.

After: The dietary goal is to provide adequate energy and carbohydrates to replace muscle glycogen and to ensure rapid recovery. Carbohydrate intake of 1.5 grams/kg body weight during the first 30 minutes (approximately) 60-100 grams carb) will be adequate to replace glycogen stores. Protein consumed after exercise will provide amino acids for the building and repair of muscle tissue. Runners should consume a mixed meal providing carbs, protein and fat soon after a long run/marathon. Drink enough fluids to

replace sweat losses during exercise. Drink at least 16-24 ounces of fluid for every pound of body weight lost during exercise.

Recovery Snacks: *Fruit smooth: 1 cup skim milk, 1 small banana, 1 cup frozen berries. *1 cup cottage cheese w/fruit and 1 cup grapes and 1 cup orange juice. * 1cup low fat chocolate milk, gram crackers and peanut butter. *Baked potato with low fat cheese. *Pasta with low fat meat/cheese.

Good eating habits are a lot like good training habits. Remember the big picture: don't get caught up in the day to day things. A treat in your diet from time to time won't harm your performance just like taking a break from your training schedule once in a while. In the long "run", relax, have fun, be consistent, learn what works for you and above all, have fun running and ENJOY YOUR FOOD!

Sources: Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and athletic performance, Gatorade Sports Science Institute, National Athletic Trainers Association, USDA My pyramid, Cool Running, Runners world, and American College of Sports Medicine.

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