Understanding fitness, by Bruce Bishop

There are literally hundreds of new diets on the magazine racks, and book shelves these days, but what is the best way to be fit, healthy and happy anyway. Some would tell you it is only eating grapefruit. Others would say it's burning your butt on step aerobics. Well it's certainly not grapefruit, and there's more to it than beating your self to death on a raised platform. The key is education, understanding how the body works and how it uses the fuel we give it.

Next time you go shopping, and you are standing in checkout line, look around at the magazines. You will probably find several articles telling you how you can lose 50 pounds in three weeks. Many of them even have university professors professing to how good their new diet is. Of course, knowing that university Professors must publish or chance loosing their position, it's not surprising that they will send most anything to be printed. But do they work? Sadly enough, for many people they don't.

Some of the most popular diets on the shelves these days are the one food or limited selection diets. They proclaim that you can "eat all that you want of your favorite foods, and still lose weight." As long as your favorite foods are grapefruit. The danger of these diets is their lack of essential protein, vitamins, and certain enzymes. One could always gain those lacking essentials by going to the drug store and buying them in the bottle, but why? These diet programs are successful because they offer one thing. They promise that you can loose weight painlessly, with out exercise. It is actually true, you will lose weight. However, not all of the weight you loose will be fat. Some of it will be muscle, and what burns fat more than muscle? So what is being created is a situation where the body is loosing its ability to burn fat. Other bad things happen too. The muscle is made of protein, and when we lose it we also loose enzymes, which are also made of protein.

Some of these enzymes burn fat in the muscle cell, and others protect us from diseases. A loss of these makes us vulnerable. Quite often people who are on a starvation or imbalanced diet get sick. This sort of dieting also stimulates the body's lypogenic activity (fat conservation) and suppresses the lypolytic activity (fat burning), and The body's metabolism slows down. The body may be loseing weight, but with less fat burning muscle, and an increased fat storing ability, it's going to gain weight back faster than ever before.[1] These diets then can lead to feelings of failure, and low self esteem. There is good news though. Diets don't need to be hard. Most of the people who try starvation diets show more willpower than most anyone who is fit. That's what makes a good diet so easy to a diet veteran.

So what is a good diet? A good diet is a balanced diet. We get a variety of nutrients from a variety of foods. We however, must understand what is meant by balanced. It does not mean an equal amount of everything. One would not want to consume 4 ounces of fiber, 4 ounces of protein and 4 ounces of fat every day. That is what I call the Twinki diet. No, a balanced diet means taking in just what the body needs, though one might be surprised at the latitude and range that the body will allow. The important part is knowing what to choose when going to the supper market.

Almost all of the next section of this paper was derived from a book called The fit or fat target diet ,by Covert Baily. He uses the four basic food groups and arranges each food according to it's nutritional value. In the center of his target are the most nutritional foods, and he recommends that we use these "good foods" when we shop. In center of the meat group are the beans and legumes. They are high in fiber and have no fat. They are also high in protein, and that is why he has placed them in the meat group. Next to them are the white fish, cod and flounder. Also tuna packed in water. Next out is the turkey and chicken white meat, no skin, venison, and all of the rest of the sea food. In the center of the milk group is, of course, skim milk and plain nonfat yogurt. Next out is all of the other kinds of

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1 Covert Bailey,The fit or fat target diet(Boston:Houghton Mifflin Co.,1984) 72

yogurt, 1% low fat milk and uncreamed cottage cheese. In the center of the fruit and vegetable group is about all of the fresh fruits and vegetables except for the olives and avocados. Fruit juices run pretty far out basically because when a fruit or vegetable is juiced, the sugar and water are removed leaving behind the fibrous pulp and most of the nutrient. The fourth group is the bread and cereals group. At the center of this group is every body's favorite shredded wheat. Next out is Raisin bran, but he warns us about the sugar content of this cereal. In the third ring are most all of the other nutritious cereals like Grape nuts, Wheaties, Total, and of course oatmeal. The target has 7 rings and a few foods that don't even rate the 7th ring and just hover just outside the edge of the target. Some of these include butter, margarine, olives, nuts, sugar, and honey, which are all 100% fat or sugar anyway.[2] I did not mention the foods in the outer rings because the inner foods are the best to look for when shopping, and are very easy to find, not to mention cheap. The fit or fat target is set up according to nutritional value. Other ways of organizing food is in a pyramid based on amount of consumption in a certain time period. An article I found entitled "The Mediterranean diet" uses this method. It's about the only thing the publishers of this wisdom, Dr.Walter Willett, got right. It is like most of the off the shelf diets which are written only to publish a discovery about nutrition in the form of a diet that takes these discoveries to an extreme. In this case the wonderful news was about olives. "Olives are high in vitamin E", they say. They say how, because vitamin E is an antioxidant "today's nutritional miracle", olives are thought to prevent cancer, and they, of course, tell us that olive oil is "a godsend to any one who cares about food that tastes good". Their pyramid starts out looking nutritious. The daily foods it recommends are breads and grain, though they don't specify whole grains, fruits, vegetables, and beans, but that's where it starts to get strange. The next 2 items for our daily diet are olives, olive oil, and cheese.[3] Now, anyone that has studied nutrition in most any way, or even anybody who reads labels,

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2 Covert Bailey,The Fit or Fat Target Diet(Boston:Houghton Mifflin Co.,1984) 56-57

3 Corby Kummer,"The Mediterrenaen Diet" Self July 1993: 74

knows olives and cheese are 100% fat, and fat is the number one problem in the American diet. The average American diet contains 35% fat. The new Mediterranean diet consists of 40% fat. Dr. Willett thinks that " Americans should face the fact that we resist lowering the fat in our diets because we like fat. A more realistic goal would be to replace the harmful fats we eat with less harmful ones."[4] Many people believe in the absolute separation of animal and vegetable fats. That is, that one is very bad for you, and one is good for you. This is completely untrue. The latest word is that animal fat contributes to heart decease. This is because this kind of fat, once it gets into the blood, starts sticking to the walls of the blood vessels and closing them up. This can be very bad if a clot forms in the heart, brain, or any other vital organ. Vegetable fat does not tend to stick so heart doctors are not as much concerned with it. However, this does not mean that it is good for you. All oil, whether it has cholesterol or not, is still all fat, and eating fat creates fat in the body. In its self, fat creates many problems. It gets into the unexercised muscle and makes it less efficient, slowing the rate at which the muscle can burn it. It also stores fewer defensive cells which protect us from diseases. It makes it harder for us to exercise, which reduces our ability to reduce fat. This is part of the vicious cycle of unfitness which will be discussed later in this paper. Fat is just not good for us and it hurt us. To say we should replace one kind of fat with another, especially to increase the amount, is like saying that it is better to jump out in front of a buss instead of a steam roller because it will crush us less when it runs over us.

When a person eats something, the first thing that starts the digestion process is the teeth. Once the food is broken down enough it is sent to the stomach. There the acids produced by the liver break the food down even farther. The fats, proteins, and carbohydrates are separated and absorbed into the blood stream. The fat floats around until it is used for energy by a muscle or it runs into a fat cell where it is absorbed. Proteins are either used by the muscle or organ for a repair job, or just float around in the blood stream.

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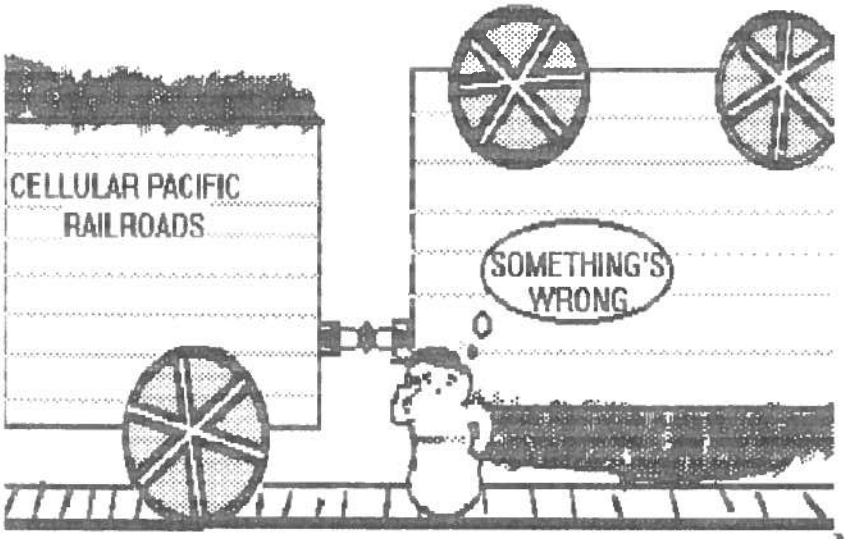
4 Corby Kummer"The Mediteranian Diet" Self July 1993: 74

Carbohydrates are broken down into sugars, and are used by the organs, and the muscles, but the largest user of sugar is the brain. The impact of this also will be discussed later in this paper. The liver, among several other jobs, is the house keeper of the blood stream. When ever it detects a rise or decrease in the amount of sugar or protein it begins to convert them into what is needed. If it detects a reduction in sugar, it will start converting protein into sugar, and vise versa. However, if it detects an increase in both, like after a large meal, it will convert both into fat. The liver can not convert fat into any thing else. So once a person has fat there is only one way to get rid of it, exercise. So one must keep an eye on fat intake, no mater what kind of fat it is.

Another kind of diet that is plentiful is the milk shake diet. These are the ones that tell you that by drinking one of there shakes for breakfast, and one for lunch followed by a "sensible" dinner will make you lose incredible weight. These types of diets will, if you read the instructions on the box, give you a balances diet with the sensible diner. However, this diet falls short in three important ways. First, and most importantly, exercise. Exercise is an essential part of fitness. The second is taste. No, not that you have bad taste if you drink these shakes, but rather one does not change the taste of what he or she is hungry for. If a body is given sweets all of the time, then when that body is hungry sweets is what it will crave. Also, if a person doesn't decide to stay on the diet plan for the rest of their life then when they eventually stop they won't have a taste for nutritious foods. The body is great at adapting, and will began to get used to the food it is taking in, weather that food is sweets and fats of nutritious food. I mean, if it was impossible to get used to the taste of whole wheat, bran, and beans ,then how did humanity ever get through the dark ages?

The other thing the body needs that a shake does not provide is roughage. We all have heard of the benefits of roughage, but what is it. roughage is basically food that we eat that does not get digested. Not only does it keep the body regular(like that last verb) by controlling the undigested water, but it also has calories. So what if it has calories? These are calories that are counted before they are eaten, but are not digested. In other words they

fill you up for free. A very important type of roughage is called cellulose. Cellulose is present in the cell walls of plants, and is indigestible by humans. Cellulose, like all other carbohydrates, is a long chain of sugars. Normally the carbohydrates are broken apart by enzymes in the stomach, like a bunch of railroad workers taking apart the cars of a train. The enzymes are specially maid to unhook the links between the cars. Cellulose, unfortunately for them, has an upside down connection between the sugars causing every other sugar, or train car to be inverted. Something that the enzymes can't break apart.[5]



Many times I have heard people ask why they even have fat. Experts are always telling us to avoid it, and that it's bad for us. So why fat? Our body uses two types of fuel, fat and sugar, or simple carbohydrates. Plants also use carbohydrates for fuel, but not fat. So why don't people? If we never had to wonder where our next meal was coming from, if we always had food available and never had to store food, then we might have evolved using carbs. However as animals we move around allot and carbs are just too heavy to tote around. Fat holds twice as many calories as carbs per pound, but more importantly fat takes up less space. The body's fat cells can hold 3500 calories per pound where as the liver, which is where carbs are stored, holds only 250 calories per pound. That would mean that if a person was

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5 Dr. Hugh Pote, lecture on cell structure, VUB science course, metropoliten state colege of Denver, Denver , 5 july 1993

to need to go for 3 weeks with out eating, he would need to either need to have 9 pounds of fat cells of a 126 pound liver. Get the point?[6]

All this time I have been saying that the other key to fitness, other than diet, is exercise. Most people don't like to exercise. "It takes time, it hurts, I feel horrible after I work out." I tell people who say this that they are probably exercising incorrectly. Believe me, fit people, muscular people, people in good health are not super people, even though some of them would have you believe it. However, most people who work out will say that it is the best thing they have ever done. A friend of mine, who lifts weights told me, "exersize, even though it can cause pain and fatigue, feels good. It is a good kind of pain, you know that you are getting stronger. After you get used to doing it you know just how much discomfort to expect" This expectation can also lead to the feeling of absence or of longing for the sensation of improvement.[7] People wouldn't exercise for very long if they felt worse and worse after each work out. People must take care to exercise at the rite level. I have known several people who have exercised wrong and paid the price. Lets take my good friend Billy Bob Beerbelly. Now, Billy was a bit over weight, but was determined to become fit. So he got a job in a tall office building as a mail clerk. He figured that if he ran up and down the stairs every day he would loose weight. After about three weeks I visited him at his work. He had gained weight and looked terrible. I asked him how it was going and he said. "I have been running my head off, up and down these stairs day in and day out and I haven't lost a pound. After delivering all of the mail and make it back down here I am exhausted, and I feel terrible. The only thing that makes me feel any better is when lunch time comes."

Why does this happen? To understand this we must see what is going on inside Billy's body. When Billy first comes to work he is feeling just fine. His glucose(same as sugar), protein, and fat levels are all stable. Hi glucose level might be a little high because of the simple sugars he ate with those three bowls of fruit loops he had for breakfast, but

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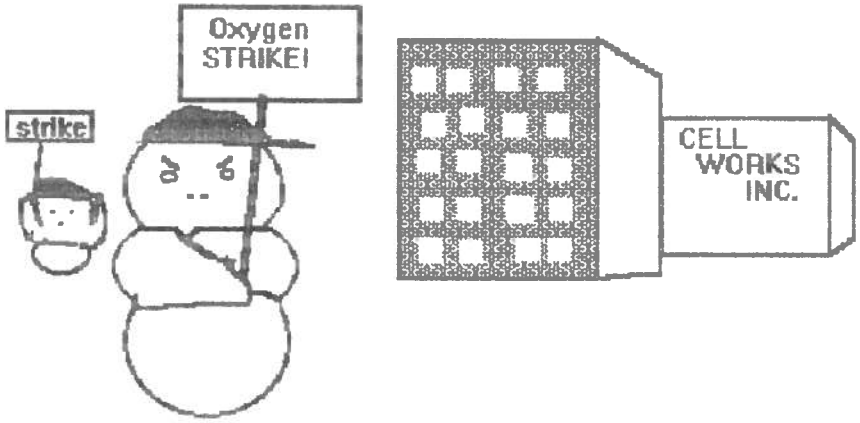
6 Covert Bailey,Fit or Fat(Boston:Houghton Mifflin Co.,1978)78

7 Dominic Blum, Interview, Denver, 26 July 1993

otherwise he is normal. Then the mail comes, and he begins running up and down the stairs. Now, each muscle cell, as I said earlier, can run off of fat and glucose at the same time. This is because there are two different types of enzymes in the cell. However the fat burning enzyme needs oxygen to operate. No oxygen, no work. Kind of like a union on strike. Fortunately for us, the glucose burning (or sugar burning) enzymes will work all of the time. They have no union, you see. So now a lot of glucose is being used to move Billy Bobs beerbelly up and down the stairs.



The levels start to drop, and the liver starts to convert protein into glucose to make up for the lowered levels. And now a surprise. How does the body make up for the lower protein? Well, it gets it from what ever source it can, and the most convenient source is the muscle. That's right, he looses muscle to compensate for the protein loss. Also, when his muscle cells burn glucose they produce a by product of lactic acid, and when this stuff builds up in the muscle it creates a burning sensation. The build up is caused by the fact that his heart is not strong or efficient enough to pump the blood fast enough to get it out of the cells. So it hurts. Earlier I said that the brain also runs off of glucose. When those levels drop the brain is affected, usually with feelings of sickness, dizziness, and low energy. So now Billy feels bad. That is until lunch time when the order out pizza arrives. He eats it, his glucose and protein levels increase allot, over the norm in fact, and he feels better. Which teaches his body that exercise is bad and food is good. On top of all that he now has less muscle than he had before, so he is less able to burn fat. Plus, his fat burning enzymes didn't get a work

out so they are weaker and getting pushed out by the now stronger glucose burning enzymes. No wonder Billy has put on weight and is feeling worse. By the way, the condition of low glucose or blood sugar is called hypoglycemia.

To put it simply, the best way to exercise for the porpoise of loosing weight is aerobically (which means with air). When the body is worked at a low enough rate it can provide oxygen to all of the muscles. With enough oxygen the fat burning enzymes can get their work out, and become stronger. With stronger fat burning enzymes the body burns more fat even when it's not exercising. This is why some people can seem to eat all they want and still never gain weight. As time goes by, fat will drop off faster and faster, because the more a body becomes fit , the easier it is to get fitter. This is a life style that a person can live with. The more one exercises the better that person feels after the work out. It becomes almost addictive.

As for the best way to exercise, it would not normally be a part of a paper such as this one, but I feel it would not seem right if I did not put it in. Mr. Bailey recommends an aerobic work out at a specific heart rate to guide the intensity. The formula for finding a specific heart rate is this. 220 minus the persons age. this is the hearts maximum rate, and should **never be reached.** Doing so could risk a heart attack. Find 80% of the maximum rate and this is the exercising rate. The body should be exercised at this rate for at least 12 min. not including warm up.

The formula: (220-age)= max. heart rate x 80% or .8 =Exercising rate
(DO NOT REACH)

Maintain exercising rate for at least 12 min.(the more the better)

And always check with a doctor before starting any exercise program.[8]

Where as it is hard seeing ones self eating just grape fruit, or sticking to an expensive diet plan, or drinking shakes for the rest of ones life, it is easy seeing ones self

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8 Covert Bailey,Fit or Fat(Boston:Houghton Mifflin Co.,1978)24

staying fit. Simply understanding how ones body works, and working it how it was naturally meant to work is vastly superior to trying to trick it into getting thin. A truly healthy body feels good because it doesn't experience the backlash of an unbalanced diet. If we educate our selves and understand how our body works, and treat it accordingly we will lead healthier and happier lives.

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