

Yes!! There Really is a Magic Bullet!!

by Dr. Alan D. Cohen, Ph.D.

It is the mental and emotional edge we all SEEK in our competitions. We all possess this "magic bullet," but few of us ever use it. We don't use it in our daily lives and we certainly don't use it in all of our competitions, even if it makes the difference in winning or not.

We've all tried various pills, drinks, vitamins, cassettes, visualization techniques etc. You name it and I'm certain a triathlete, duathlete, master and even school age athlete has tried it.

Personally, I feel that the E-CAPS program, which I follow, is greatly responsible for the thousands of medals/trophies I have won. It is an important reason why I am able to compete as often as I do, in an average of 600 individual track and field events each year. In essence, it has allowed me to fully use my "magic bullet."

These attempts to find external aids that can help us to be the very best we can be are to be encouraged. I readily agree that some of these concepts and products have value, however, they are not the "magic bullet" to which I am referring. The real "magic bullet" lies inside all of us. It is there just waiting to be called upon. Yes, like life it is very simple, but like life we complicate it and have an uncanny tendency to simply mess it up!

(continued on page 5)

Antioxidants

This article is intended to explain, in relatively simple terms, the cause and effects of free radical damage and the role that antioxidants play in defending your body from the harmful effects of these toxins.

In the past year or two there has been a lot of talk about antioxidants and the important role that they play in the elimination of "free radicals" and other harmful cellular waste by-products. There has also been a corresponding increase in nutritional supplements that tout special antioxidant formulas. They range from the mundane to the extreme, but you usually pay a premium because of these designer products' "special antioxidant formula".

The truth however is that many products you are probably already taking contain very potent and effective antioxidants. Vitamins A, C, E and Coenzyme Q10 are among the most effective antioxidants available. They are also an integral part of the RACE CAPS (75mg Coenzyme Q10, 200 I.U. vitamin E), TRAINING CAPS (200 I.U. vitamin E) and INSURANCE CAPS (1,500mg vitamin C, 400 I.U. Vitamin E, 25,000 I.U. vitamin A, 100mg vitamin B6) formulas.

WHAT ARE FREE RADICALS

Free radicals are very unstable and potentially dangerous chemical molecular fragments that damage pro-

teins and other cell tissues in body upon contact. Endurance exercise stimulates the production of the two main types of free radicals, oxygen radicals and peroxide radicals. Oxygen radicals result from incompletely burned stages of oxygen, like sparks from a fireplace. Peroxide radicals are organic particles which are formed from the damage that occurs to fat cells, usually caused by oxygen radicals. Several other related factors can also lead to the formation of peroxide radicals.

Two other harmful by-products of heavy endurance training which also accelerate free radical activity are lactate accumulation and hypoxia. Both of these occur as a result of chronic oxygen deficiency. Lactic acid is produced during the anaerobic breakdown of glycogen in muscle fibers. It is removed by a filtering process in the liver which requires large amounts of oxygen. When this process is disrupted, which it usually is during intensive daily training, lactate accumulates and causes your muscles to feel sore and contributes to a general sense of fatigue. The presence of excessive lactate damages protein stores (muscle tissue) by making the surrounding tissue too acidic. This encourages your muscle cells to deplete glycogen stores which in turn causes the increased burning of protein for fuel which causes added stress

(continued on page 2)



From E-CAPS and ENDURANCE NEWS!

Listen To



Your Heart

When it comes to an infallible indicator as to the condition of your body, your heart will never let you down. Whether it is due to over training, stress, cold, flu, virus or any other stimuli that adversely affects your body, your heart will tell you long before you discern any other visible symptoms. Listening to your heart and taking appropriate action will help you to preempt bouts of overtraining or illness as well as saving you a lot of aggravation and down time.

Best of all, it does not take any special equipment other than a watch or clock with a second hand. The point is this; When your body is strong and healthy, your true resting pulse rate will stay consistent within 1 or 2 beats per minute every day. On the other hand, when it is less than 100%, your true resting pulse rate will be elevated by as much as 5-10 beats per minute depending on the severity of the cause.

However, your true resting pulse rate can only be measured once a day, when you first awaken in the morning. It must be taken before you get out of bed because even getting up to go to the bathroom and brush your teeth will elevate your pulse rate. So, as soon as you wake up, find your pulse and count it for 15 seconds and multiply that number by 4. Once you have done

this for a week or two, preferably during a period of moderate training, and recording it in your training log you will see that your pulse rate is consistently at 42 beats per minute, for example.

Now, you will have a basis for comparison so that if you get up one morning and your pulse is 48, even though you might feel fine, you will know that something is wrong. It could be elevated because of heavy training on the previous day, or it may be telling you that you are about to get sick. Whatever the case, you need to make some adjustments to your training plans. If you had another heavy training day planned, scrap it and go

easy. If you also notice a tickle in your throat, a little congestion or any other cold symptoms, ease off the training and start loading on vitamin C (5 grams a day or more) and drinking lots of water.

After a few months, you will be able to look at

your training log and see how consistently your true resting pulse rate predicted a cold or some other disruption in your training. Monitoring your true resting pulse rate and listening to what it tells you will reduce the severity of your illnesses and prevent the dreaded over training monster from putting the bite on you. So, this season be smart and listen to your heart. ■

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(Antioxidants cont'd from page 1)

to your kidneys.

Hypoxia, literally oxygen deficiency, which affects your muscles, liver and most other organs and tissue in your body goes hand in hand with lactate accumulation. Since oxygen is consumed at up to 20 times the normal rate during strenuous training, you can see how your body can become oxygen deficient. Exercise induced iron deficiencies which result from the breakdown of red blood cells, sometimes called "sports anemia", and amenorrhea in female athletes (cessation of the menstrual cycle) are directly linked to hypoxia of the pituitary gland. Hypoxia can also cause your muscles and other cells to excrete calcium which can hinder your endurance and cause some cramping.

Continuing to exercise in this state of oxygen debt, not only causes excessive lactic acid to build up in the muscle tissue but it also produces more free radicals which cause your tissues to literally digest themselves from the inside. This damage to your protein stores combined with a return to normal oxygen levels causes the formation of another kind of free radical called a superoxide. The superoxide free radical attacks the cell membrane which generates peroxide free radicals and starts the chain reaction of cell deterioration all over again.

YOUR BEST DEFENSE

Now that we have discussed all of the terrible things that free radicals do, you should know that with a little help, you can defend your body against exercise induced free radical damage. This may seem hard to believe, but regular exercise is one of your best defenses because of the tremendous

(continued on page 3)



HEALTHY RECIPES

HEARTY TOMATO SOUP

Another great low fat, low sodium winter soup with three variations.

INGREDIENTS:

- 1 1/2 tablespoon canola oil
- 1 cup chopped onions
- 1/2 cup finely chopped celery
- 1/2 cup finely chopped carrots
- 1 teaspoon dried basil
- 1 teaspoon dried dill
- 1 clove minced garlic
- 2 28 oz. can tomatoes (crushed if possible), pureed in food processor or blender
- 4 cups chicken stock or broth from bouillon
- 1 tablespoon sherry (optional)
- pinch of pepper

PREPARATION:

In a large soup pot, sautee onions in oil. When transparent add celery and carrots, sautee for 5 minutes. Add herbs and garlic, cook for a couple of minutes. Add remaining ingredients. Bring to a boil, then cook on low simmer for 35 minutes, stirring frequently. Add salt and pepper to taste.

Makes 11 cups; about 8 servings

Nutritional facts per serving (bouillon broth)

Calories	86 grams
Protein	2.6 grams
Carbohydrate	12.5 grams
Fat	3.1 grams



VARIATIONS

#1) Curried Rice Tomato Soup

Use above recipe, adding 1/4 cup white rice, 1/2 cup more water or stock and 1 teaspoon (or to taste) curry powder.

Nutritional facts per serving (bouillon broth)

Calories	89.4 grams
Protein	3 grams
Carbohydrate	17 grams
Fat	3.2 grams

#2) Tomato Pasta Soup

Prepare tomato soup, and add 1 1/2 cups cooked pasta and 1/2 cup fresh chopped parsley to soup. You can use macaroni elbows, fusili (corkscrew), orzo, small shells, or your favorite pasta.

Nutritional facts per serving (bouillon broth)

Calories	123 grams
Protein	3.8 grams
Carbohydrate	20 grams
Fat	3.3 grams

#3) Creamy Tomato Soup

(not low fat, but delicious)

In a small sauce pan, make a roux by adding 2 tablespoons of flour to 2 tablespoons of melted butter. Over a low flame, whisk constantly for 2-3 minutes. Blend prepared tomato soup, then add roux and one cup of heavy cream and stir well.

Nutritional facts per serving (bouillon broth)

Calories	221.5 grams
Protein	3.4 grams
Carbohydrate	14 grams
Fat	17.2 grams

(Antioxidants cont'd from page 2)

adaptability of the human body. This is why newcomers to endurance exercise seem to suffer more ill effects than highly conditioned athletes do.

Since most or all of you are well beyond the free radical activity that results from a beginners adaptation stages, the role of antioxidants in your diet is crucial. Since endurance exercise produces high levels of free radicals in the mitochondria but doesn't usually damage other parts of the cells and other tissues, Vitamin E and C are the two most critical antioxidants for you. However, sprint and strength types of exercise create the most widespread damage. For this type of activity, additional antioxidants like Vitamin A, uric acid, glutathione peroxidase and superoxide dismutase (SOD) can be added to combat the more wide spread damage.

PRACTICAL SUGGESTIONS

• Daily dosages of 400-800 I.U. of vitamin E, 1-5 grams of vitamin C and 75-150mg of Coenzyme Q10 should be taken during training. The lower dosages will suffice for moderate training levels, while the higher dosages are best for the heaviest phases of your training. Vitamin A and vitamin B6 would also be helpful.

• When you find yourself experiencing any of the symptoms previously discussed which you would identify with "over training", increase your antioxidant intake in addition to moderating your training until your body returns to a relatively normal state of operation.

If you have any questions about antioxidants that arose from or were not covered in this article, you can call or write to EN. ■

Resistance Training for the Endurance Athlete: Part 2 of 3

by Dan Miller

Now that you have established a solid base by working through the adaptation/transition and hypertrophy phases of this training program, you should be ready to begin the strength phase. This third phase of my program emphasizes building the strength characteristics of your muscles. In order to accomplish this, you will be doing mostly compound exercises. That is to say exercises that work multiple muscles simultaneously, i.e. bench press - pectorals and triceps.

The workouts in this phase require quite a bit more effort and will tend to cause more fatigue and soreness because the weights are so much heavier. Because of the nature of the strength phase, you will be doing fewer repetitions and sets than in the previous phases. You may also need to allow longer rest periods between sets. After the warm up sets, try to keep the rest intervals at 90 seconds, but no more than 120 seconds between the main sets. 10 Rep Max.

A number of readers mentioned that it was difficult to figure out their true 1 Repetition Maximum (1RM) in

the beginning phases of this program. Determining your true 1RM is also difficult for anyone who does not have much experience with weight training in general. So I have devised an alternative which is almost as good and offers a lower risk of injury to the muscles, tendons and connective tissue.

What you are going to do is determine your 10 Repetition Maximum and figure that as approximately 70% of your 1RM. Let's use the bench press as an example; Do 1 or 2 warm up sets using weights that allow you to do 10-12 reps without too much difficulty. Then choose a heavier weight that you estimate you will be able to do 10 repetitions with. Then, with a spotter, attempt to do 10 repetitions. If you can do more than 10 reps before failure, the weight is not heavy enough. If you do less than 10 reps, the weight is too heavy. If you don't get the right weight the first time, wait at least 15 minutes before attempting another 10 rep max effort. This will allow the muscle group long enough to recover completely from the previous effort. I should also point out that your 10RM

or 1RM will increase as you progress through each phase. So, you should recalibrate your Maximum Repetition every few weeks or in between each phase at the least.

So, let's say that you find that with 140 lbs. you are at failure on the 10th rep, thus 140 lbs is your 10 RM. So, if 140 lbs is 70% of your 1RM, then your 1RM is about 200 lbs. You should be able to do this with most of the exercises listed in the Phase III chart, except exercises like dips, pull ups and back extensions. With those exercises, after your warm up sets, add enough weights to put you at failure in the desired rep range.

Note: If you missed the first part of this series from Endurance News #3, you may request a free copy by sending us a SASE. ■

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PHASE 3

Strength 3-5 weeks
Warm Up 5-10 minutes of stationary bike, XC ski machine, jumping rope, etc.

EXERCISE

SET#/OF REPS

ADD'L SETS/REPS

Step Ups	1x25 @ bodyweight (BW)	1x15 @ 50% 1RM, 4x11 @ 75% 1RM
Dead Lifts	1x11 @ 50% 1RM	1x7 @ 75% 1RM, 3x3-5 @ 90-95% 1RM
Single Leg Squats	1x11 @ 50% 1RM	1x7 @ 75% 1RM, 3x3-5 @ 90-95% 1RM
Seated Single Leg Curl	1x11 @ 50% 1RM	1x7 @ 75% 1RM, 3x3-5 @ 90-95% 1RM
Incline Dumbbell/Barbell	1x11 @ 50% 1RM	1x7 @ 75% 1RM, 3x3-5 @ 90-95% 1RM
Pull Ups	1x11 @ BW	4x7 (Add 5-10 lbs. per set)
Push Press*	1x11 @ 50% 1RM	1x7 @ 75% 1RM, 3x3-5 @ 90-95% 1RM
Bent Over Row	1x11 @ 50% 1RM	1x7 @ 75% 1RM, 3x3-5 @ 90-95% 1RM
Dips	1x11 @ BW	4x7 (Add 5-10 lbs. per set)
Back Extensions	1x15 @ BW	1x15 @ BW + 5 lbs., 3x11-15 @ BW+10 lb
Ab Crunches	1x25-35	2-3x25-35
Obliques	1x20-25 each side	2-3x20-25 each side
Stretches	10-15 minutes (try to stretch all muscle groups that were just worked)	

*How to do a Push Press; From a standing position with a barbell on your upper chest, bend at the knees to a quarter squat position. Now extend your legs then push the barbell over your head so that your arms are fully extended. If you have questions on proper form for any other exercise, call Dan Miller or Endurance News.

(Magic Bullet cont'd from page 1)

We basically compete by ourselves! We are out on the course, bike, track, etc. by ourselves. We are alone!! It is us who tire, sweat and hurt out there. I always love those fight managers when interviewed after the big bout who never fail to say "we knocked him out" or "we got up off the canvas to claim the victory!" Yet, they never had a glove touch them.

We, as athletes, know better when it comes down to it. It is you! It is me who is in agony! No coach, trainer or advisor can give you that "magic bullet" or that so called mental and emotional edge that must be a part of you in order for you to succeed and win. It is ultimately you who is responsible for you! Surely, they can awaken, motivate and even encourage you to want to excel and win, but in the final analysis it is you who must honestly make that decision.

Yes, our tendency is to complicate things-to complicate our lives and we carry this over into our competitions. Personally, we know if we trained our best. We also know if we prepared as best we could. It is so simple, if we did the best we could, there is little else or even nothing else we could do. There should be no fear or embarrassment in losing, so just use your "magic bullet" and go out and do the very best you can. Can you do more than that? No!! But honestly do that and keep on trying to do better. It is that simple! That is your "magic bullet." It is extremely effective and productive if you discipline yourself to keep on pushing and really do the very best that you can, through the agony and pain. If you lose today, you still have your life, the sun will still come up tomorrow, so you'll have another chance to best your competi-

tion tomorrow. It is this attitude that is your "magic bullet," just keep on going and pushing. Believe me, you'll have your day(s).

In 1985 in Ridgewood, New Jersey, after winning my 5K age group, I took off in the 10K. At the 3 mile mark I suffered a massive stroke, a cerebral hemorrhage! The medical diagnosis was "you'll never walk or talk again."

"For whatever purpose, I reasoned that if I could run 100 miles, I was as good as ever and I had overcome my stroke. I called on my 'Magic Bullet' to keep me going, to endure, to put pain aside."

"No therapy, he'll be somewhat of a vegetable," was the comment.

After 3 days, some cerebral swelling subsided, I was able to think and immediately my "magic bullet" took over, "no way," I said. It took many months, hard work, tears, prayers and anger, but in a little more than a year I was back on the roads. My family told me I was a sight to behold. Dragging a leg, off balance, looking as if I were in total agony.

In 1987, two years later, my test came. Running fairly well, and even though essentially a middle distance runner, I was enthralled with ultras. I decided to gain entry to the National Championship 100 miler to be held in New York at Shea Stadium, home of the New York Mets.

For whatever purpose, I reasoned that if I could run 100 miles, I was as good as ever and I had overcome my stroke. I called on my "magic bullet"

to keep me going, to endure, to put pain aside, to live with the agony. After all, in reality, it is only a learning experience, you can get used to anything. This is your "magic bullet," we simply must learn to use it.

I trained as best I could. Even though I was the oldest starter of 64 runners, I finished 12th overall, won my age group of 9, finished under 20 hours, and cried tears of joy the last three miles. Those last miles were sheer joy, even though spectators asked me "how bad was the pain?" At the last mile, the late Kurt Steiner, of the NYRRRC, announced "here comes Dr. Alan Cohen" and in his own way let the crowd know of my purpose in doing this race, the tears began to really flow, Kurt also had suffered a stroke.

We all possess this "magic bullet," the desire to succeed, this drive, just keep on going. There is no other magic formula, that's all there is to it. We all have that power, don't give up. Try it a few times when you are certain you cannot take another step, you'll find you can, you will!! It's habit forming.

You may not always win, but you'll never be a loser. Eventually it will become a part of you. In times of distress, call upon it, you will find it. We all have it, so cultivate it! All those coaches trainers, gurus, etc. cannot do it for you.

Some say it learning to win, others say it's reaching a "zone" or a super level. It is none of these, it is using what you already possess, it is inside of you, it is the only real life "magic bullet."

Competition, like life, is not easy, hey, whoever said life is not easy and not fair, deserves some credit, but we all possess the equalizer. ■

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Endurance News Mission Statement

The objective of Endurance News is to provide you, the serious endurance athlete, with a valuable resource that you will find to be informative, educational, thought provoking and helpful in your ongoing pursuit of optimum performance and health.

Endurance News features insightful articles on diet, nutrition, training and other topics of interest to endurance athletes - Written by myself as well as professional and elite amateur athletes, and other experts in the area of nutrition and exercise. In addition, EN will include articles highlighting new and existing E-CAPS products and how to get the maximum benefits from them.

In reading this and future issues, please remember that the views expressed in this publication will always be biased in favor of eating a healthy diet, hard training that emphasizes quality over quantity, and prudent supplementation to improve health and performance. But above all, we at Endurance News believe there are no short cuts, and success can only come from hard work.

*Brian Frank
Editor*

Legal disclaimer: The contents of Endurance News are not intended to provide medical advice to individuals. For medical advice, please consult a licensed physician. ■

6

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IN THIS ISSUE:

- *Alan Cohen's Magic Bullet*
- *Antioxidants*
- *Resistance Training for the Endurance Athlete: Part 2 of 3*
- *Listen to Your Heart*
- *Healthy Recipes: Hearty Tomato Soup with 3 Variations*
- *EN Mission Statement*