TheElite Training Group track club

Expanding the area of what is possible

In Track & Field Distance Running & Competent Self-Care in medicine and psychology

www.theetgtrackclub.com

TheETG training program

TheETG Training Packets

Mission: Expand the area of what is possible for human performance in distance running. TheETG's primary method of achieving that is to proliferate applied science based information by way of $free packets containing plain language info for anyone seeking to move themselves or others forward in these areas.

As you continue to acquire and apply more information you continue to expand the area of what is possible.
The functioning of brain cells, muscle cells, blood cells, -all cells- are governed by the laws of nature, -not- your chosen belief system.
Data-less conclusions founded upon faulty assumptions are the mother of all screw-ups. They lead to human belief systems that quickly get set in stone.

Put data ahead of dogma. Follow the data -not- the crowd.

".....cellular development must be governed by a variety of factors outside the scope of genetic inheritance. "
B.L.Stauffer -- Epigenetics: An Emerging Player In Health And Disease
Journal Of Applied Physiology.....Volume 109 #1....July 2010....page 230 -231

"....elite athletes are still made and not born, though perhaps some may be made elite in one discipline more easily than others."
A. Jones, et al -- Human Performance: A Role For The ACE Genotype?
Exercise & Sport Sciences Reviews -- Volume 30 #4 -- October 2002 -- page 184

“Scientifically speaking, altitude training has no effect.”
Dr. Nikolai Nordsborg -- University of Copenhagen

"...called EPO...a new systemic review of existing research reveals that there is no scientific evidence
that it does enhance performance, but there is evidence that using it in sport could place a user's health and life at risk."
EPO [erythropoietin] doping in elite cycling: No evidence of benefit, but risk of harm -- Science Daily -- December 5, 2012

“Many of these compounds in a highly-trained individual do absolutely nothing from the point of view of enhancing performance…..”
“…Athletes think if it’s on a list, it works.”
S.Devi -- Overhaul of global anti-doping system needed -- Lancet — Volume 387 #10034 — May 28, 2016 — page 2188

"....investigate the effects of supposedly enhancing drugs in sport. If, as is expected, many substances in current use are found to be ineffective
it will help keep our athletes safe and improve confidence in sporting results."
Adam Cohen -- Centre for Human Drug Research in Leiden -- The Netherlands

disruptive
innovation

Velocity Oriented Training….All interval training All the time
recruitment, recruitment rate, recruitment duration at goal pace

Brain & nervous system gene transcription & translation

- **----- mitochondria**
- **----- ion pumps & ion channels**
- **----- glucose transporters & glycogen storage capacity**
- **----- blood vessels**

TheETG Training Program

By Marshall Burt……
Part of TheETG mission is to break all world and American records at 800m, 1500m, 5000m, 10,000m.
Thus, I set out to design a non-traditional, science based training program with very few moving parts, that creates controlability in producing a large forward movement in fitness level in a short period of time — from a small amount of training, and doing so without the all too typical plateau or limitation in fitness progression over the long term.
Something representing "disruptive innovation". That was sometime around 1991.

I thought it would take about 1 - 2 years to design a program that achieved all of the above.
Took me a few minutes less than about 30 years just to enter the ball park of completing the design of this training program. Started with several years of several hours a day in the Human Performance and exercise physiology labs at Univ of Texas with several of the top researchers in the world, lotta years in the libraries at Univ of Texas reading published sport sciences research, lotta years of trial and error with more error than trial. Lots of frustration with every few steps forward came a step back.

TheETG velocity oriented "all interval training all the time" Training Program represents "disruptive innovation" in training in our sport. It disposes of the major strongholds in traditional thinking in our sport, issues surrounding the obsession with weekly mileage, training volume versus intensity, periodization versus standardization, altitude versus sea level, red blood cells versus plasma volume, genetics versus training, drugs versus placebo effect, and the issues around age and aging and the supposedly mandatory loss of power and endurance capabilities that people claim --has-to-- come with that. Traditional training programs call certain days "easy days" or "recovery days". **Those have all been stripped away, replaced simply by rest**. In the area of periodization, traditional training programs progress over a period of months from slow mileage and hills, to some higher velocity training, then some "speed work" and so-called "peaking", then several weeks off and loss of fitness. TheETG training program condenses everything including the "base building" and all other workouts into a 2 - 3 week period of time repeated all year round. Workouts -don't- come and go from the training program [periodization] across a season as is the norm with traditional training programs. All the workouts, rest days, and break periods are standardized rather than making-up stuff as we go.

TheETG training program in a nutshell.....
Traditional training programs focus on training up muscle, red blood cells, heart and lung capacity.
TheETG focuses almost solely on the brain, nervous system, and immune system.
This makes the design of TheETG training program pretty simple.
There are 5 standardized running workouts are done all year around. There are several designated weights and stretching workouts. Looking back at the end of each month, including warmups, etc. the runner averages closer to 3 to 5 miles per week than the 70 to 150 miles per week of a traditional, mileage oriented training program.

TheETG velocity oriented "all interval training all the time".....
The objective in the design and structure of the running workouts is to develop the level of brain cell and nerve recruitment, recruitment rate, and recruitment duration necessary to run at goal pace from starting line to finish line. Achieve that by designing workouts that stimulate gene level inducement of the required training adaptations in and around brain cells and nerve fibers.
The big ticket item brain & nervous system training adaptations.....

- ----- mitochondria
- ----- ion pumps & ion channels
- ----- glucose transporters & glycogen storage capacity
- ----- blood vessels

1 ----- Base Building Hills Day [1] = mile, 4 reps with full recovery between each.
TheETG velocity oriented version of what is called a "tempo run", or a "long run", and/or "altitude training" in a traditional training program. A moderate to fast pace run, done in interval form on a course with mega-sized hills. In terms of physiological training adaptations "altitude training" is more about hills that come with mountains than the air at altitude. This workout is done all year round, 16 to 18 times each year.

2 ----- Base Building Track Day [1] = mile, 1 rep.
TheETG velocity oriented version of what is called a "tempo run" in a traditional training program. A comfortably fast paced run on a track. This workout is done all year round, about 16 to 18 times each year.

3 ----- Base Building Hills day [2] = 800m, 4 reps with full recovery between each.
TheETG velocity oriented version of what is called a "tempo run", or a "long run", and/or "altitude training" in a traditional training program. A moderate to fast pace run, done in interval form on a course with mega-sized hills. In terms of physiological training adaptations "altitude training" is more about hills that come with mountains than the air at altitude. This workout is done all year round, 16 to 18 times each year.

4 ----- Base Building track day [2] = 800m, 1 rep.
TheETG velocity oriented version of what is called a "tempo run" in a traditional training program. A comfortably fast paced run on a track. This workout is done all year round, about 16 to 18 times each year.

5 ----- TheETG Goal Pace workout = 4 reps at goal pace, progressing over the year[s] toward 1 rep at goal pace for the full race distance. Cumulative volume of the workout adds up to the race distance. This workout is done all year round, about 16 to 18 times each year.

TheETG Megacycle

Develop the level of brain cell and nerve recruitment, recruitment rate, and recruitment duration necessary to run at goal pace from starting line to finish line. Achieve that by designing workouts that stimulate gene level inducement of the required training adaptations in and around brain cells and nerve fibers.

The big ticket item brain & nervous system training adaptations.....

----- mitochondria
----- ion pumps & ion channels
----- glucose transporters & glycogen storage capacity
----- blood vessels

Week 1

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Break Period ROM's [5min holds] do any stretch in any group	**Break Period** TheETG Strength ROM's [5min holds] do any stretch in any group	**Break Period**	**Break Period** ROM's [5min holds] do any stretch in any group	**Break Period** ROM's [5min holds] do any stretch in any group	**Break Period**	**Base Building hills day 1** mile, 4 reps full recovery between each -- hot bath w/epsom salts -- inversion table -- autogenics

Week 2

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 mile walk TheETG ROM's [group 1] -- lite massage -- inversion table -- autogenics	1 mile walk TheETG ROM's [group 2] TheETG Strength -- downtime		**Base Building track day 1** mile, 1 rep -- hot bath w/epsom salts -- inversion table -- autogenics	1 mile walk TheETG ROM's [group 1] -- lite massage -- inversion table -- autogenics	1 mile walk TheETG ROM's [group 2] -- downtime	**Base Building hills day 2** 800m, 4 reps full recovery between each -- hot bath w/epsom salts -- inversion table -- autogenics

Week 3

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 mile walk TheETG ROM's [group 1] -- lite massage -- inversion table -- autogenics	1 mile walk TheETG ROM's [group 2] TheETG Strength -- downtime		**Base Building track day 2** 800m, 1 rep -- hot bath w/epsom salts -- inversion table -- autogenics	1 mile walk TheETG ROM's [group 1] -- lite massage -- inversion table -- autogenics	1 mile walk TheETG ROM's [group 2] -- downtime	**TheETG Goal Pace** 1 to 4 reps full recovery between each -- hot bath w/epsom salts -- inversion table -- autogenics

see protocols in TheETG free pdf packets = TheETG Training Program, TheETG range of motion
----- range of motion exercises [TheETG ROM's]
----- strength training, supplemental exercises [TheETG strength]
see protocols in TheETG free pdf packet = TheETG recovery, restoration, adaptation
----- autogenics ----- hot bath w/epsom salts ----- inversion table ----- lite massage

-- hot bath w/epsom salt = 10 minutes, temp 98 - 105F	-- lite massage = no deep stuff, no pain, no digging, -- inversion table = inverted position for several minutes
-- autogenics = relaxation exercise for 10 minutes	-- downtime = lay-down within 10 hours after you wakeup

Workout Details

track events....800m, 1500m, 5000m, 10,000m

Base Building hills day [1]

Standardized moderate to fast pace run in interval form on a course with mega-sized hills, **reps = 4 x mile**
TheETG velocity oriented version of what is called a "tempo run", or a "long run", and/or "altitude training" in a traditional training program.
In terms of physiological training adaptations "altitude training" is more about hills that come with mountains than the air at altitude.

----- run at a set pace, over the course of the year as fitness level moves forward, make progressions, re-set the pace to faster target times
----- take a --full-- recovery between reps to be reasonably fresh for the next rep.....[don't play games with the rest period]
----- no running or jogging during the rest periods.....either walk, stand, sit, or lay down
----- if necessary do a dramatically abbreviated warmup prior to the next rep
----- **insure the standardization** of this workout by always using **the same, set-in-stone course** with mega-sized hills
----- intensity is built into the design of the workout. To avoid adding more, avoid pushing. Let the workout design do the work
----- on days when things aren't going well, avoid shutting down the workout. Do –all-- 4 reps, if necessary by walking or combo walk-jog

Base Building track day [1]

Standardized fast pace run on the track, **reps = 1 x 800m**
TheETG velocity oriented version of what is called a "tempo run".

----- run at a set pace. As fitness level moves forward, make progressions.....re-setting the pace to a faster target time.
----- intensity is built into the design of the workout. To avoid adding more, avoid pushing. Let the workout design do the work

Base Building hills day [2]

Standardized moderate to fast pace run in interval form on a course with mega-sized hills, **reps = 4 x 800m**
TheETG velocity oriented version of what is called a "tempo run", or a "long run", and/or "altitude training" in a traditional training program.
In terms of physiological training adaptations "altitude training" is more about hills that come with mountains than the air at altitude.

----- run at a set pace, over the course of the year as fitness level moves forward, make progressions, re-set the pace to faster target times
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----- on days when things aren't going well, avoid shutting down the workout. Do –all-- 4 reps, if necessary by walking or combo walk-jog

Base Building track day [2]

Standardized fast pace run on the track, **reps = 1 x 800m**
TheETG velocity oriented version of what is called a "tempo run".

----- run at a set pace. As fitness level moves forward, make progressions.....re-setting the pace to a faster target time.
----- intensity is built into the design of the workout. To avoid adding more, avoid pushing. Let the workout design do the work

TheETG Goal Pace workout

Standardized reps covering the race distance in interval form

----- entire workout = 4 reps maximum.
----- first rep of each goal pace workout should be at least 50% of the race distance. Reps should add-up to no more than the race distance
----- across weeks/months/years, as fitness level moves forward, progress to running 1 rep at goal pace for the full race distance
----- run at best pace until fitness level progresses to allow completion at goal pace, then increase the distance of the rep[s]
----- take a --full-- recovery between reps to be reasonably fresh for the next rep.....[don't play games with the rest period]
----- no running or jogging during the rest periods.....either walk, stand, sit, or lay down.
----- if necessary do a dramatically abbreviated warmup prior to the next rep
----- cold or very windy weather = run the first half of each rep at goal pace then run at a comfortably fast pace for the remaining distance

TheETG taper protocol

--- track meet week = run training workouts should be no more than 1 rep.
--- autogenics everyday.
--- 1 day before a track meet.....TheETG Goal Pace workout = **one rep run at 30%** of your normal rep 1 distance

Strength Training

-- for weights….work with a weight you <u>can't</u> lift in a <u>controlled</u> manner more than 6 to 7 reps consecutively

1

Wall Hand Stands **[**push-ups in a hand stand position] -- Use a wall as a back-stop. If you lack the strength to do this, begin with a modified version….. -- put your back to the wall, put hands on floor, walk your feet up the wall as far as you can handle. As you get stronger, walk feet further up the wall -- when you can go close to vertical, turn around and do them normally	2 **reps**

2

Pull-ups [hand position = palms facing each other]	2 **reps [do slowly]**

3

Bar Dips	2 **reps [do slowly]**

4

Side Shuffle -- side to side leg movement [no step over] facing one direction	2 **reps** 10 meters [out and back = 1 rep]

5

Soleus Raises do one leg at a time…..seated, knees bent plantar flexion	4 **reps [do slowly]**

6

Shoulder Retraction [use seated row machine, do both arms together] [arms stay straight, elbows stay locked through entire motion]	4 **reps [do slowly]**

7

Forearm Curl [standing, use dumbbells, one arm at a time] [hand position = palm stays in mid-position.....-not- palm up, -not- palm down]	4 **reps [do slowly]**

8

Balance close eyes, on one leg…..do a 1/4 squat & return to start	4 **reps [do slowly]**

9

Jacks **[j**ack-knife sit-ups, simultaneously done sits-ups and leg raises] -- lay on floor, supine on your back -- raise your straight legs and at the same time do a sit-up with arms extended -- touch your toes keeping legs straight, then return to starting position	**10** reps **[do slowly]**

10

Back extensions **[**lay on floor, prone on your stomach] -- raise upper-torso slightly off the ground [arms folded, hands under chin]	**10** reps **[do slowly]**

11

vertical Jumps **--** one leg at a time…. box jump to a height, take off and land on the same leg	4 **reps**

12

depth jumps [land on both feet at same time] -- at landing, immediately jump to a box height lower than take-off box height	4 **reps**

13

power bounding [do one leg at a time] easy to moderate effort for height & distance	4 **reps**

14

bench press [laying supine on bench, use barbell to do both arms together]	4 **reps**

15

¼ squat **[**one leg at a time, barbell on shoulders, only go ¼ of the way down]	4 **reps**

16

calf raises do one leg at a time…..barbell on shoulders	4 **reps**

17

hamstring curl [do one leg at a time]	4 **reps**

2024 Training Records

megacycle 1

Base Building hills day [1]	Base Building track day [2]	Base Building hills day 2	Base Building track day 2	TheETG Goal Pace
date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____	date _____ temp ____ wind _____ rep 1 = _____m = _____ rep 2 = _____ m = _____ rep 3 = _____ m = _____ rep 4 = _____ m = _____

megacycle 2

Base Building hills day [1]	Base Building track day [2]	Base Building hills day 2	Base Building track day 2	TheETG Goal Pace
date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____	date _____ temp ____ wind _____ rep 1 = _____m = _____ rep 2 = _____ m = _____ rep 3 = _____ m = _____ rep 4 = _____ m = _____

megacycle 3

Base Building hills day [1]	Base Building track day [2]	Base Building hills day 2	Base Building track day 2	TheETG Goal Pace
date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____	date _____ temp ____ wind _____ rep 1 = _____m = _____ rep 2 = _____ m = _____ rep 3 = _____ m = _____ rep 4 = _____ m = _____

megacycle 4

Base Building hills day [1]	Base Building track day [2]	Base Building hills day 2	Base Building track day 2	TheETG Goal Pace
date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ mile target pace_____ rep 1 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____ rep 2 = _____ rep 3 = _____ rep 4 = _____	date _____ temp ____ wind _____ 800m target pace_____ rep 1 = _____	date _____ temp ____ wind _____ rep 1 = _____m = _____ rep 2 = _____ m = _____ rep 3 = _____ m = _____ rep 4 = _____ m = _____

TheETG Training Principles

Do these things and you remove the major limitations that are <u>embedded in the design</u> of traditional training programs in track & field distance running.

1 --- Standardization

Think standardization.....Choose a group of workouts and stick with those workouts all year around.
In human physiology and the subject of training stimuli, variety is -not- always your friend.
Thus road workouts should be repeated on the --same-- course. Tracks or type of track surface should be the -same- from one workout to the next. Workouts, rest days, and break periods should be standardized.....rather than "making it up as you go".
And the presence of potent training stimuli should be <u>permanent</u> in the training program.
Never "periodize" those workouts out of the training program across the course of a season or year.

2 --- Progressions

Base building workouts should be designed in a standardized manner such that over time, as the body responds via training adaptations, the target times can be reset for progression to faster target times.
Provides greater control to the coach to create a stepwise progression of the training stimulus.
This should be a permanent characteristic in workout design.

3-- Stay ahead of tissue tightening and tissue strength needs

Look to successfully address this. All is lost if you don't get this done.
Tissues tighten over time due to training!!! They lose range of motion. This major issue in our sport shows up everywhere you look in the form of muscle spasms, cramps, micro-tears, strains, pulls, all typically occurring at the worst possible time because these issues happen **<u>when</u>** your fitness level is moving forward. They happen **<u>because</u>** your fitness level is moving forward. They happen at times when things are going well. The rate of tissue tightening as your fitness level progresses may exceed the rate, frequency and/or effectiveness of your stretching protocols [range of motion exercises = ROM's]. Hamstrings, calfs, quads [and in throwers = pecs, biceps].
Use long hold [5 - 10 minutes] Range Of Motion exercises to stay ahead of tissue tightening.
All is lost if you don't get this done. Also, if the level of tissue <u>strength</u> necessary to endure your training loads exceeds what your tissues have, the tissues that are the weakest link in the chain may require you to improve the effectiveness of your strengthening protocols or reconsider the design of your training program.

4 --- Most training in interval form

Faster training increases the potential for achieving higher levels of fitness, and thus running faster times in races. At the cellular level both endurance and speed emanate from relatively high velocity aerobic training. You'll have "speed" whether you do sprints or not, you'll have endurance whether you do "long runs" or not. The multitude of workouts in a traditional training program from the 8 to 12 mile fast runs, to mile repeats, to 15 mile long runs, to the 6 to 9 mile fartleks.....should -all- collectively be viewed as a multitude of different ways a personal trainer at a gym has a client do sit-ups. You don't need a multitude of different ways to do sit-ups.
You can and should <u>choose one or two effective ways, stick with those</u>.....and ditch everything else.

5 --- Most long training in the 1 to 4 mile corridor on mega-sized hills

Targeting the 1 – 4 mile corridor forces design of workouts containing relatively high intensity sustained effort training on courses with mega-sized hills that create an elevated demand for relatively high power output from the brain & nervous system.
These types of workouts are a velocity oriented version of what is called a "tempo run", or a "long run", and/or "altitude training" in traditional training programs.
In terms of physiological training adaptations, "altitude training" is more about the **<u>hills that come with being near mountains</u>** than the air at altitude.

6 --- Goal Pace workouts -every- month, all year around

You get the most fit at the paces you train on the most. Do goal pace workouts all year around.

7 --- Rest Days, Stay anabolic

Nutritionally, the focus is protein and micronutrient intake….not carbo loading.
Keep the body in an anabolic state. If you get that done everything moves forward. If you don't get that done nothing else matters.
You should <u>permanently place days off</u> in your training program in a standardized, non-"make it up as you go along" manner.
That's days, as in the plural form of that word.
In a velocity oriented training program there should be multiple days rest between run training workouts.
In designing a training program, faulty assumptions are the mother of all screwups.
Training less requires less rest = faulty assumption.
Higher intensity training requires less training <u>but more rest between</u> workouts.

TheETG Strength Training

During the running stride, the foot is on the ground for only a short period of time.
You need to be able to produce a high level of force during the short period of time that the foot is on the ground.
The rate and amount of force production is kind of important in our sport. The rate and amount of force production increases with the rate and intensity of electrical signals from the brain, down the transmission lines [nerves], to the muscles. The more force you can produce while your foot is on the ground during the running stride, the faster you can run.

Real strength is about the brain and nervous system, -not- muscle mass.

That's the mechanism by which a guy at the 1996 Olympic Games set a world record in the clean and jerk…..nicknamed "pocket Hercules" due to weighing only 140 pounds he lifted 412 pounds off the floor and brought it to his chest, then pressed it over his head. Real strength is about the brain and nervous system, -not- muscle mass.

Several sprinters on the planet, weighing the 140 - 150 pounds, about the same as middle distance runners but running 9.7 - 9.9 for 100 meters. Power output is about the brain and nervous system, not muscle mass.

One could turn on "Good Morning America" or the "Today Show" a few years ago when Shaolin monks from China were touring the U.S.. One of them weighing 160 - 180 pounds did a hand stand using only his index fingers, not only supporting his body weight but maintaining his balance with no help as well.

Strength and power are about the brain and nervous system, not muscle mass.

Mechanisms Of Developing Strength & Power

Muscles don't move without being told to do so.
To be told to do so, they have to be sent an electrical signal.
This signal tells them how much force to produce and how quickly to produce it.
The brain sends these signals down its transmission lines [ie. nerves] out to the muscles.

The mechanisms of performance in our sport are conceptually contained in the following questions;
1. **How much** force can you produce [Strength]
2. **How quickly** can you produce a high level of force [Power]
3. **How long** can you keep that going [Endurance]

Strength via the brain and nervous system. If you train it you will have it. If you don't, you won't.
Focus on brain and nerve -not- muscle mass. Biggest is not always strongest.

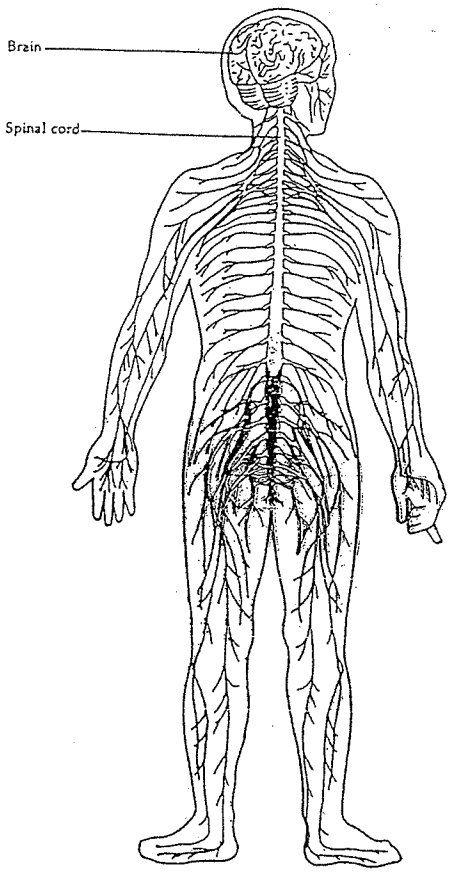
Training & Performance issues
-- how much force can you produce, and how quickly can you produce it
-- increase amount of force production
-- increase rate of force production

Objective
-- induce adaptations in brain and nervous system rather than a focus solely on muscle

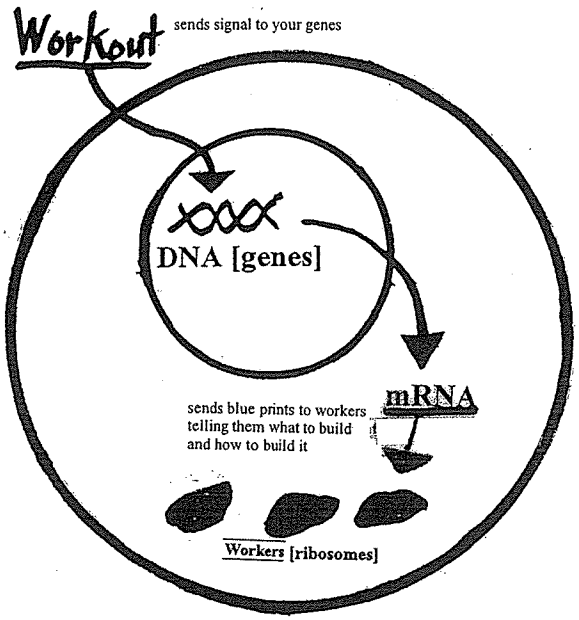
The major proteins that your training program needs to cause production of [to a very high level for high level performance].....
1 --- Proteins involved in synaptogenesis [production of connections between brain cells to aide in synchronization of signals to muscle for muscle fiber force output and rate of force production]
2 --- sodium/potassium pumps along brain cell, nerve fiber, and muscle fiber membranes.
3 --- calcium pumps in muscle for returning calcium to storage areas [sarcoplasmic recticulum] in muscle in between muscle contractions.
4 --- faster rather than slower forms of sodium/potassium/chloride/calcium pumps and channels along brain cell, nerve fiber, and muscle fiber membranes.

The Human Body Is A Construction Site
--- blue prints & instructions of what to build
--- building materials
--- maintenance & repair

ETG



Train The Brain



Facts
1 – workout
2 – build new parts of cells and/or new cells

Questions
1 – what needs to be built
2 – what workout design causes this

"Nature.....to be commanded, must be obeyed."
Francis Bacon

TheETG
Boosting Training Adaptations

--- lite massage
Stimuli for brain cell, immune and nervous system regeneration, and to keep body in an anabolic state.
Lite massage only, no deep massage, no thumbs or elbows, no digging.

--- Jacuzzi
5 - 10 minutes [98 - 105 degrees F] Provides stimuli for production of nerve growth factor, brain derived neurotrophic factor, isoforms of growth hormone, isoforms of insulin-like growth factor-1, and blood flow for regenerative functions in brain, nerve, immune system, and muscle.

--- Epsom salt bath
5 - 10 minutes warm or hot bath in epsom salts [magnesium absorbed through skin]

--- Down-time eyes closed bed-rest
Eyes closed lay-down time preferably within 7 – 9 hours after you get up in the morning. Splits-up the amount of "up-time" and/or awake-time on a given day by inserting some down-time. Reduce the cumulative total amount of daily activity and stress loads on brain, nervous system, and immune system.

--- Inversion table
A few minutes in an inverted position

--- Autogenic Relaxation [10 minutes]
I first started getting into mind-body medicine shortly after I first started hearing about it in earnest in the late 1970's and early 1980's.
I started teaching autogenic relaxation to my high school runners in the mid-1980's.

Reduces brain and peripheral nervous system activity, reduce stress hormone [cortisol] levels and/or effects, increase blood flow and oxygenation, increase or normalize levels of substances and growth factors [nerve growth factors, neuro-trophic factors, anabolic hormones, etc] that promote regeneration and recovery functions in brain, nerve, immune system, and muscle.

Autogenic Relaxation: Stage 1
-- Oxygenation [diaphragmatic breathing].....lay on floor or sit, place one hand on stomach.
During inhale, make your stomach rise prior to your chest rising.

Autogenic Relaxation: Stage 2
-- Brain and nervous system activity reduction.....close your eyes, let go of thoughts related to daily activities.
Repeat affirmations several times...."This is my down-time, I am calming and quieting all cells of my body. I am resting."

Autogenic Relaxation: Stage 3
-- Blood flow.....create relaxation, warmth and heaviness in limbs and torso. Repeat the affirmations....."my hands and arms are becoming warmer and heavier. My feet and legs are becoming warmer and heavier. My chest and torso is becoming warmer and heavier. I am feeling more and more quiet, calm, and relaxed."

protein
protein
protein
protein

hot jacuzzi, hot bath
autogenic Relaxation
down-time

Keep the body in an anabolic state.

If you get that done everything moves forward.

If you don't get that done, nothing else matters.

Stay ahead of tissue strength needs

If the level of tissue strength necessary to endure your training loads exceeds what your tissues have, the **tissues that are the weakest link in the chain may** require you to improve the **effectiveness of your strengthening protocols** or reconsider the design of your training program**.**

Stay ahead of tissue tightening

In sprinters, distance runners, etc….hamstring, calf, quad, cramping & muscle strains. Issues tend to occur at times when your fitness level is moving forward, and because your fitness level is moving forward.

Use Range Of Motion exercises to stay ahead of tissue tightening.

The rate of tissue tightening as your fitness level progresses in any given week/month may exceed the rate and frequency of stretching sessions and/or the effectiveness/potency of your stretching protocols [range of motion exercises = ROM's].

Look to successfully address that.

Training Program Design

"Exercise bouts that maximize anabolic hormonal response and/or minimize the catabolic hormonal response promote greater long-term adaptations....."

"Similarly, exercise bouts that limit the anabolic hormonal response and/or exacerbate the catabolic hormonal response suppress adaptations....."

D.A.Judelson, et al
Effect of hydration state on resistance exercise-induced endocrine markers of anabolism, catabolism, and metabolism
Journal Of Applied Physiology.....Volume 105 #3....September 2008....page 815 - 824

"Although there is obviously a training stimulus beyond which any additional load or stimulus does not induce further desired adaptation, the control mechanisms for the adaptive process require regular periods of overload....."

"However, an imbalance between training frequency and subsequent recovery may give rise to an accumulation of training stress that results in a suboptimal adaptation response in skeletal muscle, termed overtraining. Therefore, the frequency of overload is important in defining the training stimulus, with adequate recovery required to ensure optimal muscle adaptation."

V.Coffey, et al
Effect of High-Frequency Resistance Exercise on Adaptive Responses in Skeletal Muscle
Medicine & Science in Sports & Exercise.....Volume 39 #12.....December 2007.....page 2135-2144

"The production of reactive oxygen and nitrogen species....."

"Low to moderate doses of reactive oxygen and nitrogen species play a role in muscle adaptation to endurance training, but an overwhelming increase in reactive oxygen and nitrogen species may lead to increased cell apoptosis and immunosuppression, fatigued states and underperformance."

N.A. Lewis, et al
Redox Homeostasis in the Elite Endurance Athlete
Sports Medicine.....Volume 45 #3.....March 2015....page 379

Training Program Design

There are --2-- separate consequences of "Over-training"
1. The one where you incur a running injury

2. The one where your body enters into the physiological state where your anabolic system [a.k.a tissue building] is suppressed to some significant degree and thus your ability to acquire training adaptations and move forward in fitness level is suppressed. This can be referred to generally as **"Physiological Over-training",** or being in an "over-trained state".

Physiological over-training, or being in an "over-trained state" is something one can measure. It often comes in the form of cortisol [stress hormone} production, which suppresses anabolic [tissue building] hormones and other hormone production [ie. testosterone, estrogen, growth hormone, thyroid hormone, and overall adrenal gland function], and competes with anabolic hormones for binding sites on tissues such as muscle. It reduces protein production, such as muscle protein, blood proteins [ie. Red Blood Cells, Immune system cells, etc]. This is a state where even though you are -not- injured, and even though you are training fully, your fitness level does -not- move forward, and may even reverse.

Again, this is a measurable state. You can measure cortisol levels. You can measure red blood cell and EPO production ability. You can measure muscle protein synthesis. You can measure immune system activity. You can measure adrenal gland function. You can measure certain aspects of brain activity.

Regardless of what type of training program you believe in and follow [mileage oriented, or velocity oriented], its helpful if one's body can stay in an anabolic state such that it can adapt to one's training, thus moving forward in fitness, leading to increases in performance level.

That's major challenge and the major objective when designing any training program.

If your body can't adapt, you can't move forward in fitness level. If your body

can't move forward in fitness level, it can't move forward in performance level. Much of sport is about moving forward in performance.

[one of several reasons why "weekly long runs" are --not-- superior to high intensity short stuff for building blood vessels in distance runners. And this is among the reasons why there are no "weekly long runs" in TheETG training program]

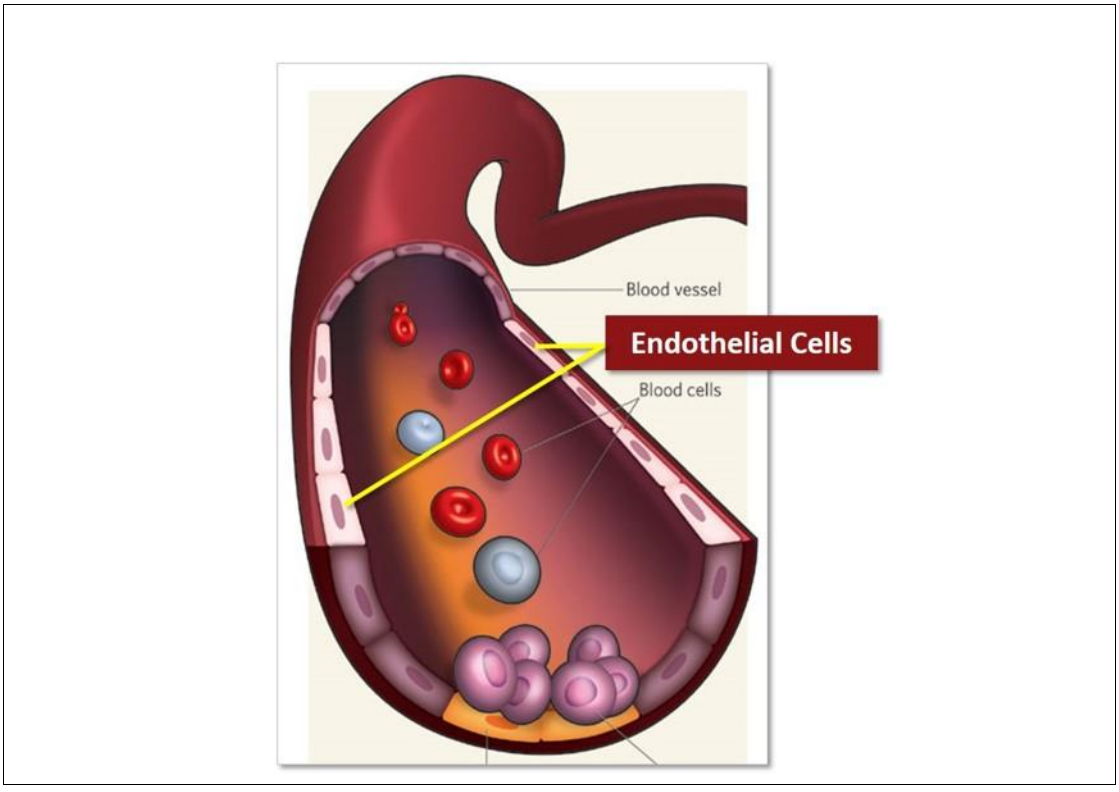
".....endothelial progenitor cells contribute to vascular repair process by differentiating into endothelial cells. This study investigates how high-intensity interval and moderate-intensity continuous exercise training affect circulating endothelial progenitor cell levels and endothelial progenitor cells functionality....."

"60 healthy sedentary males were randomized to engage in either HIT (3-minute intervals at 40 and 80 % VO2max for five repetitions) or MCT (sustained 60% VO2max) for 30 min/day, 5 days/week for 6 weeks, or to a control group that did not received exercise intervention."

"High intensity interval training is superior...."

"Moreover, high intensity interval training effectively enhances endothelial progenitor cell functionality and suppresses endothelial injury....."

Hsing-Hua Tsai, et al
High-intensity Interval training enhances mobilization/functionality of endothelial progenitor cells and depressed shedding of vascular endothelial cells undergoing hypoxia
European Journal of Applied Physiology -- Volume 116 #11 --December 2016 -- page 2375



What To Do If You Get Sick Or Injured

For injury.....
--- Begin an automatic 4 day run training shut down period
--- [see ETG Packet titled "Running Injury Repair" for details]

For illness.....
--- Continue with workouts but run the target paces for only half of each rep, do fartlek from there [including goal pace workouts] to cover the normal distance of all reps.

--- Begin elevated daily intakes of Colostrum, Vitamin D3, Aloe Juice, Probiotics, Ribose
[see ETG Packet titled "ETG Nutrients" for brand and dosage details]

Background info on the common cold.....
In order to “catch a cold”, a virus must enter the body, usually through the eyes, nose, or mouth. This occurs most often when someone who has a cold, sneezes or wipes/blows their nose. The cold virus gets out of their body in this way, often onto their hands. Assuming they don’t wash their hands or wipe them off onto their clothing, towel, etc,. they then touch door knobs, hand rails on stairs, and other objects that may be common for other people to touch within a few minutes to a few hours later. If –you-- then come along and touch one of those objects, the cold virus then gets onto you, often onto your hands. All that is necessary at this point is for you to use your hands to rub your eyes—nose--mouth without….first….having wiped them off on your clothes, towel, etc, and/or without having washed your hands.

Once the virus makes its way into your body, it often finds its way into the mucus area of your nose, and/or upper portion of your throat. In these places, though it will come under attack by your immune system, it will make a major effort to replicate and proliferate. If it does so successfully, you will…..“catch a cold”.
At your work place, at school, at the mall, at the airport, somebody with the cold or flu sneezes into their hand, wipes their nose, coughs into their hand, etc, etc. At your home, your work place, school, shopping mall, airport, those people place their hands on door handles, stair railings, water fountain buttons, escalator hand rails, etc, etc.

The cold and flu viruses await you on.....door handles, stair railings, water fountain buttons, escalator hand rails, etc, etc. Keep in mind that cold and flu viruses usually don't get into your body unless --you-- put them there.....3 steps to prevent yourself from putting the cold and flu into your body.....
step 1 = program into your brain a deeply ingrained habit to wipe your hands off on your clothes before you use them to rub or touch your eyes—nose--mouth.
step 2 = program into your brain a deeply ingrained habit to wipe your hands off on your clothes before you use them to rub or touch your eyes—nose--mouth.
step 3 = program into your brain a deeply ingrained habit to wipe your hands off on your clothes before you use them to rub or touch your eyes—nose--mouth.
There are some things you can do to assist your immune system during the early stages, at the point in time that you “feel a cold coming on”.
.....
----- Make an effort to kill the cold virus in your nose and/or upper portion of your throat, as to reduce the “viral load” that your immune system will have to combat. You can accomplish this task simply by exposing the virus to the deadly combination of…..baking soda—salt—and water. This can be done by placing a teaspoon of baking soda and a pinch of salt into a small Dixie cup or small glass of water. You then pour the mixture into your nose either strait out the cup, or use an eye dropper or other device, allowing the mixture to go through your nose, down into your throat, then expell it [do --not-- swallow it]. You should repeat with another cup, this time pouring the mixture in your mouth, and gargle for a few seconds.
Grocery stores now sell [probably on the cold remedy shelves] a ready-made product of fluid, a saline spray or baking soda and water product, etc, that may facilitate all this if you’re not into the do-it-yourself method. Product suggestion.....Xclear [xylitol nasal spray product...xlear.com]

----- It may be beneficial to use gravity to assist in the drainage of mucus when you go to bed by using pillows, etc, to elevate your upper-body above the rest of the body.
----- It may take at least 4 - 7 days for your body to fully work through resolving the situation. During the early stages, at the point in time that you “feel a cold coming on” you should begin an automatic 4 day period of consumption of nutrition medicine oriented nutrients that assist immune system, brain cells, and nervous system cells in their task of resolving the situation.

New Balance XC Seven spikeless

The story

Racing flats are the first and perhaps the best "minimalist" running shoes ever created.

In the early 1990's TheETG club owner Marshall Burt abandoned the training shoe vs racing flats designations, and began using racing flats as the only running shoes. In TheETG we do --all-- run training in racing flats. A bridge that isn't strong enough to hold the cars that cross it, will eventually cause somebody to get wet. Increase the strength of the bridge to where it can endure the loads placed on it. Inadequate tissue strength in the feet and legs will result in issues independent of what shoes you wear or how much they cost, or how biomechanically great or awful your running form happens to be.

Applied running biomechanics 101
The relatively high coefficient of friction created by certain shoe outsole tread patterns vs track spikes....and the resulting potential impact on the energy cost of running, we prefer to go spikeless.

Late 1970's, 8th grade, a year prior to his freshman year in high school, the first training shoes owned by Marshall Burt was the New Balance 320. At the end of the Fall cross-country season of his freshman year he used them to run the 1977 Marine Corps Marathon.

In 2021, 4 decades after running in New Balance 320's and after running in other brands since.....there is the full circle return to New Balance.

Casio 3257 running watch

The story

Casio motto....."Creativity and Contribution".
In high school during the late 1970's, early 1980's, on recommendation from several teammates, future ETG club owner Marshall Burt bought a Casio 863 running watch, the first running watch he ever owned and perhaps -the- most functional running watch ever made.

As a runner and a coach he stuck with the 863 deep into the 1990's.
Today he runs with the modern day replacement of the Casio 863.....the Casio 3257.

In TheETG's highly standardized "all interval training all the time" training program, one's running watch matters.
The watch during TheETG workouts, its never worn on the wrist.
Always in the hand, always operated via thumb on the hand that holds the watch.
No occupying two hands to take and see the split while running....no elbows raised up and out to see the split. That's not a part of the normal armswing in good running form. Just a simple lifting of the hand during a normal upswing of the arm allows one to see the split.

So called "performance enhancing drugs" <u>are prescription drugs</u>.

Some examples of the effectiveness of prescription drugs in sport.....

"The drug erythropoietin, often called EPO.....a new systemic review of existing research reveals that **<u>there is no scientific evidence that it does enhance performance</u>**, but there is evidence that using it in sport could place a user's health and life at risk."
EPO [erythropoietin] doping in elite cycling: No evidence of benefit, but risk of harm
Science Daily.....December 5, 2012.

"....**<u>there is no scientific basis from which to conclude that rHuEPO has performance-enhancing properties</u>** in elite cyclists.""The use of rHuEPO in cycling is rife but scientifically unsupported by evidence, and its use in sports is medical malpractice."
J.A.Heuberger, et al
Erythropoietin doping in cycling: lack of evidence for efficacy and a negative risk-benefit.
British Journal Of Clinical Pharmacology.....Volume 75 #6....June 2013...page 1406

"The **<u>over-exaggeration of the effects of growth hormone</u>** in muscle building is effectively promoting its abuse...."
"....there is the question of disinformation on rhGH....Part of this problem may, paradoxically, derive from the anti-doping authorities themselves. By ignoring the evidence the **<u>rhGH does not work</u>** in normal healthy subjects, the athletic establishment could be accused of effectively promoting its use."
"**<u>We must tell athletes the truth: growth hormone does not 'work'</u>** or at least not as they think it does and that its is associatedwith all kinds of immediate and long term hazards-----everything from decreased performance to cancer."
"....none of us scientists, doctors, coaches, or sports bodies should continue to suggest that this dangerous doping practice works."
M.J. Rennie
British Journal Of Sports Medicine.....Volume 37 #2....April 2003....pages 100-103

"**<u>Testosterone prohormones</u>** such as androstenedione, androstenediol, and dehydroepiandrosterone (DHEA) have been heavily marketed as testosterone-enhancing and muscle-building nutritional supplements for the past decade."
"Contrary to marketing claims, research to date indicates that the use of prohormone nutritional supplements (DHEA, androstenedione, androstenediol, and other steroid hormone supplements) **<u>does not produce either anabolic or ergogenic</u>** effects in men. Moreover, the use of prohormone nutritional supplements may raise the risk for negative health consequences."
G.A.Brown, et al
Testosterone Prohormone Supplements.
Medicine & Science in Sports & Exercise.....Volume 38 #8....August 2006.....pg 1367-1537

So called "performance enhancing drugs" <u>are prescription drugs</u>.

Some examples of the effectiveness of prescription drugs in American medicine & health care.....

"Most drugs are only effective **<u>for a small percentage</u>** of people who take them."
Michael Leavitt [U.S. Secretary of Health & Human Services 2005 - 2009]

".....the benefits that US health care currently deliver **<u>may not outweigh the aggregate health harm</u>** it imparts."
Journal Of The American Medical Association...Volume 302 #1..July 1, 2009...page 89 - 91

"It is estimated that more than 700,000 individuals are seen in hospital emergency departments for adverse drug events each year in the United States."
[Centers For Disease Control....2015]

"106,000 deaths/year **<u>from non-error</u>**, adverse effects of medications"
B. Starfield
Is US Health Really the Best in the World
Journal of The American Medical Association.....Volume 284 #4....July 26, 2000....page 483 - 485

".....1.5 million U.S. residents are harmed or killed each year because of medication errors, according to an Institute of Medicine report."
Nature Medicine....Volume 12 #9....September 2006.....pg 984 - 985....News In Brief

Pursue becoming a

Master Of Sport