

Measurement Goals	Put your wrist size here	inches	Your Starting measurements are!	A few Weeks Later
Measure your wrist just below the bones at the wrist.				
<b>Your goals are to reach these measurements!</b>				
Chest should be 6.5 times wrist measurement.		inches		
Waist should be 70% of chest.		inches		
Forearm should be 29% of chest measurement.		inches		
Upper arm should be 36% of chest measurement.		inches		
Thighs should be 53% of chest measurement.		inches		
Calves should be 34% of chest measurement.		inches		
Neck should be 37% of chest measurement.		inches		
<b>Your Weight</b>	<b>Body Mass</b>			

**Your health is  
your responsibility.**

**Don't take it lightly!**

This exercise program is for everyone who can move their arms and legs.

Sitting

Standing

Some may require an assistant to help

This booklet explains

Why You Should Do  
This Type of Exercise!

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Old Geezers Club

# Well it finally happened!

I've put an exercise program together.

Everyone's been saying, "Dr. Jerry, you've got to lose that belly!" My response has always been, "If I can figure out why it is there, I will work to get rid of it."

This exercise program is about what I have developed while doing my research for the answers.

Any program I use, has to do these things:

- ♦ Teach my body how to use sugars properly.
- ♦ Increase hormone levels to the brain.
- ♦ Get the body-mind communications working again.
- ♦ Increase testosterone levels to build muscles.
- ♦ Trigger repairs in the body to heal from old injuries.
- ♦ Relieve inflammation and stress!

**And most importantly, make me feel good!**

OH! Did I mention, it has to be *easy* to do?

**Well this is it!**

My Notes:

Compare your body mass index number with this chart to see where you are in weight.

Category	BMI range – kg/m <sup>2</sup>
Severely underweight	less than 16.0
Underweight	from 16.0 to 18.5
Normal	from 18.5 to 25
Overweight	from 25 to 30
Obese Class I	from 30 to 35
Obese Class II	from 35 to 40
Obese Class III	over 40



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**Gen Ki Do Association**  
**Of Natural Health Educators**

Pronounced Gang Key Doe  
Which means  
**“Way of Whole Health”**

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A few years ago my twin brother and I talked about opening a place for us older guys to exercise. Women had “Curves”™ so we wanted to have a place for us. We just wanted to get back into shape without the noise and hassle of the younger generation.

The **Old Geezers Club** is the name we wanted to call it.



Dr. Gary R. WineBrenner D.C.

So... in memory of my twin brother, I am calling this:

**Old Geezers Club**

## Are you tired of being tired?

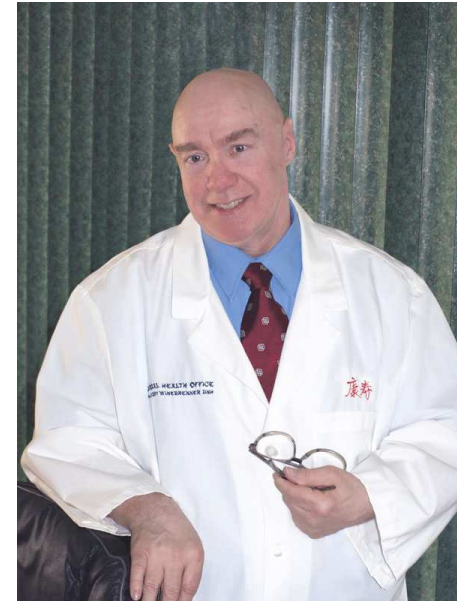
- When you woke up this morning, did you feel like you could use a few more hours sleep?
- Are you sore today, after a busy day yesterday?
- Are you still feeling that “Old \_\_\_\_\_ injury” from years ago?



**Life got you down?**



**Do you want a change?**



**You can do this!**

I was 52 when I got my degree and now I am 61 years old. I've done a lot of research before developing this program. I'm overweight, diabetic and have serious balance problems after an injury 3 years ago.

I'm doing this as much for me as I am for everyone else who is older and not in the best of shape.

vide healthy sugars that do not trigger fat storage.

All sugary junk foods, grains, breads, pasta, rice and other starchy foods like potatoes do trigger fat storage. Grain foods and starchy foods increase unhealthy levels of insulin and leptin hormones that trigger inflammation and fat storage in the body.

So eating healthy fruit and vegetables will get your body back to **Set Point** without added fat storage. Restrict fruits if you are diabetic or have a big belly.

It is all about getting your body to burn and store sugars properly, so there is no need to have lots of fat as part of your energy storage.

*Remember your brain is only interested in the amount of energy you have stored, not what kind of energy you have stored.*

### **Now a note about the oils in your diet!**

Poly-unsaturated oils are made from soy, corn, canola, and other vegetable sources. These are considered healthy oils for the body because they do not add cholesterol to the body. That isn't true, by the way! They are a low energy source for the body and stored as fat on the body. There are other issues with these oils but that is for another discussion.

**Well there you have it!**

Be persistent, don't give up, you'll do good.

Did you know that every time you move, your muscles cause a vibration in your bones and joints? Moving your body vibrates you, and that stimulates growth and healing. Vibration helps bones stay strong. Vibration in certain type muscle fibers stimulates your pituitary gland to make more growth hormone and trigger healing in the body.

Regular exercise has long been touted as providing many health benefits to the body. In this group of "**Old Geezers**" we recognize that many of us have limitations in the type of exercise we would be able to do. We recognize that most of us have no desire to start lifting weights or go jogging or even do aerobic exercises.

Well you don't have to do any of those types of exercises to get some of the same benefits and more.

### **What the "Old Geezers Club" is all about.**

By the way, this program is *not designed to take the place* of any doctor recommended rehabilitation that you may have been asked to do.

We do not claim to provide that sort of service. We are simply an exercise program designed with the older person in mind.

Your participation means you have asked your doctor if you are healthy enough to exercise, and you have his blessing to do so. It also means that you are ready to assume responsibility for any inju-

ries that may occur by doing these exercises.

Let's learn a little something about muscles and how they may hold the answers to many of your health problems when you use them correctly.

First off, we want to exercise

## “Smarter not Harder”

Many of us have been told that our bones are getting weak or thin or we are losing our bone density. We've noticed that we don't have the strength we used to have and our muscles get tired and sore too quickly.

As it turns out, our astronauts experienced these same symptoms after being in space. They could only stay in space for a hundred days or so before losing too much muscle mass and bone strength to be healthy. Their balance was severely compromised.

We know that depression and memory loss where common place for astronauts returning home from their journeys. Mental and physical fatigue was



storage, during exercise or dieting, the brain gets nervous about the losses. This loss of sugar and fat energy triggers a response in the brain. So the brain says, “Hey lets eat, I’m hungry.” So you eat. Your brain doesn’t care what kind of energy it gets or even if it is an unhealthy source.

### Your brain loves sugar!

Think of it this way, you first use up the glycogen sugar storage during dieting or activity. If the exercise goes on long enough or is the right type of exercise, you burn up some fat also. Then you crave grains and sugary drinks to return energy losses to the body. These are quick sources of sugar. You used up sugar so you want to replace sugar right! **No!**

The problem is that these foods do not get stored as glycogen/sugar, they get stored as fat. Fat isn't high energy storage so it takes a lot more of it to get the energy storage levels back to what your brain thinks you should have. (Set point) This is why it is so difficult to lose weight. You've eaten sugar to replace the sugar you used during exercise but the sugary foods you have eaten do not get stored as sugar, they get converted to fat and stored that way.

The question is:

What can you eat to store glycogen sugar and not fat?

Some fruit and most non-starchy vegetables pro-

Measuring leptin levels tells about your ability to gain weight, get rid of weight and how well your body responds to the levels of leptin in the blood.

Numbers from this test should be below 9 and above 3 to be in the optimal range for weight control. High fasting levels of this hormone means that it is not functioning well, losing weight and keeping it off will be impossible.

Proper fasting level of leptin means that your brain will hear the message it sends. The brain tells you to eat until it gets the leptin message that you are content. Then the brain tells you to stop eating.

In overweight people the brain never gets the message that you are content and therefore it never tells you to stop eating.

When you exercise you use up stored sugar and fat. Your brain wants to keep its levels of stored energy at a constant. That is called:

### Set Point

Set point is the calculation of the total energy, available to the body, at any given moment in time.

That energy is from carbohydrates (glycogen storage) and all adipose (fat) storage in your body.

The brain figures out how much energy is stored, adds it up and that total amount is called **Set Point**.

After losing around 10% to 15% of your energy

all too common for them. Their lives on the space station were very busy and active with all of the job assignments they could carry out. They even exercised during their time in space.

You would have thought that such a busy schedule would have kept them healthy, but still they lost muscle and bone strength, and fought depression.

We lose bone and muscle strength also. But our losses are from *inactivity*. The astronauts' loss is from being in a *zero gravity* environment.

OK! Let's see if we can sort this out.

Sir Isaac Newton developed laws about gravity after the falling apple incident.



Newton was a physicist who liked to write laws about the things he observed.

His 2nd law was:  
(Gravity) (Weight) (Speed of activity)

**Force = Mass x Acceleration**

Here on earth we have the force of one Gravity or 1 G-Force.

The Mass is our weight. The Acceleration is how many times we perform an exercise or activity.

In space there is no gravity force on the astronauts. With no 'G-force', they have no weight. It means that when they are standing up there is no force to create weight (mass) on their bones so their bones will become weaker.

You see, if we don't need bone strength the body will not maintain bone strength. Also, in space, movements are generated with less muscle since there is no real weight to lift, no resistance. Everything is weightless! Muscle strength that is not being utilized is going to be lost.

Most of us do not require strong bones for our level of activity. We spend time doing desk work or minimal work in the yard or around the house.

There's not much need for strong bones and muscles for that level of activity so the body dumps strong bones and muscles. In fact, the body even begins to remove any strength you have left because of age.

The gravitational pull on our body provides resistance to the muscle movements we perform in

belly you are not using sugar efficiently.

### **Leptin:**

Leptin is the hormone that tells the brain how much energy you have stored. That's total energy to include sugar and fat stores.

*"If your weight problem comes back as soon as you slow down or stop the exercise, the leptin hormone isn't working yet."* Don't give up you need to restore this hormone function. Have patience as it takes time to fix the problems of aging.

### **For you or against you!**

Your fat hormones can work for you or against you. Leptin, a hormone, is produced by your fat cells and is used to tell the brain that you have enough energy storage. (fat & glycogen are stored energy)

Leptin tells your brain when to eat, how much to eat and most importantly when to stop eating.

Your brain hearing the leptin message is critical for many of the body's most important functions including the regulation of blood circulation, the prevention of blood clots, making new bone, it controls body temperature, and reproduction.

Leptin levels can be measured with the RIA, (radio-immuno-assay) blood test. Your doctor can order this test.



you boost your HGH production, which increases your metabolism and helps you burn sugar and fat.

Vibration Training engages up to **98 percent of your muscle fibers**. So, you get greater rewards and shorter workouts because you're working more muscle fibers during your exercise routine.

Vibration exercise has been shown to offer even more significant health benefits:

- **Immediate improvement in blood circulation**
- **Increased muscle strength and flexibility**
- **Improved range of motion**
- **Improved proprioception and balance**
- **Increased bone density**
- **Reduced pain and soreness**
- **Faster recovery from injury**

Now something about eating!

You can't resist eating if your brain doesn't get the right signals from this hormone. The old geezers diet program is very specific for those who have large belly's.

A large belly means you are having problems using sugar properly. It does not matter what your blood sugar reads. A low blood sugar does not mean you are using blood sugar properly. It can mean that you have lots of insulin in your body but remember insulin triggers fat storage also. So if you have a big

our daily lives.

Well, let's back up a little and look at what has been discovered.

Russian cosmonauts experienced the same loss of muscle and bone strength that our guys did while in space.

After doing some research the Russian scientists discovered that by adding vibration, at the right frequencies, they could gain more benefits from the exercise they did.

Before cosmonauts went into space, they trained in ways that increased their bone and muscle strength to several times that of a normal person.

With greater bone strength and muscle mass they could stay in space longer than our guys, before experiencing weakness. They had more to lose!

Their scientist discovered, during the 1960's and later, that vibration included in an activity, increased the level of G-force applied to the body during the activity. **Force = Mass x Acceleration**

When you increase the gravitational force on the body it weighs more. You increase the force (gravity) by changing either the mass (weight) of your body, or the number of times you do the activity. (acceleration)

**Vibration increases the number of movements your body is making during the exercise.** You don't feel the change, in speed or gravity, but it is there.

Let's look at this a little more. Muscles come in three different fiber types.

### **Type I muscles:**

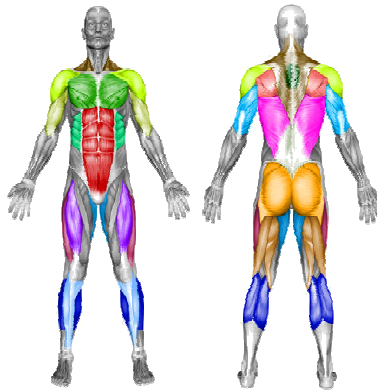
These are the muscles we use all the time. If a weak muscle contraction is needed, like lifting a book, these muscle fibers are activated. Most of the work we do only requires these Type I muscle fibers.

These muscles are Red and slow to oxidize (burn energy). They are considered slow-twitch muscles as they don't react very fast to stimulation.

They take a long time to fatigue as they make a lot of low level energy over a long period of time.



They do not get tired easily, as they have lots of blood circulation that is needed to exchange nutrient and waste products in their tissues. People who run marathons and do aerobic exercises rely on these muscle fibers for their endurance. Of course, they have trained their bodies to do that level of activity but it is the same type muscle they use.



and back movements. The proper equipment will provide all of those. Vibration with exercise stimulates 98% of the muscles which is needed to trigger all of the benefits to the body.

If your exercise routine does not stimulate the white muscle tissues it is not going to trigger all of the benefits you need to get and stay healthy.

Vibration stimulates white muscle fibers more than any exercise done without vibration (from Mercola.com).

Vibration exercise training turns your body into a Fat-Burning Machine.

When you work your type IIa and type IIb muscle fibers, your body releases exercise-induced growth hormones at levels that actually mimic taking HGH injections. In fact, certain types of anaerobic exercise stimulate as much as a 530% increase in growth hormone! The higher your HGH serum (blood) levels, the healthier, leaner and stronger you will be.

HGH declines rapidly after age 21. The amount of HGH you secrete depends on how much lean body mass and belly fat you have. The more belly fat you have, the less HGH your body produces.

Therefore, one major goal of any fitness program should be getting your body to ramp up its HGH production. **Vibration Exercises do that.**

By stimulating your super-fast muscle fibers,

ing response and triggers myofascial release in deep muscles.

### Note about the Stress hormone Cortisol:

Muscles are wasted because it reduces protein synthesis and enhances conversion of muscle protein into glucose. Cortisol halts muscle growth, reduces testosterone levels, interferes with glucose metabolism, slows growth hormone release, triggers osteoporosis, memory problems and impairs immunity.

**Do not exercise on an empty stomach as this increases cortisol release.**

## Vibration Exercises

### 5 Great Benefits at Once:

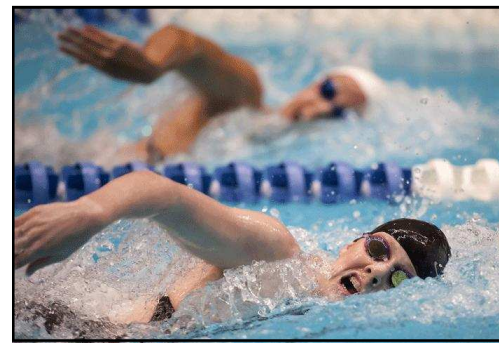
- Warm up the muscles.
- Provide stretch effects on the muscles. (More flexibility)
- Improve balance and coordination.
- Build core strength.
- Provide regeneration and massage to muscles, joints and connective tissues.

The muscles do not know the difference between you lifting weights or using vibration techniques during a workout. The benefits are the same.

Vibration stimulation should include up down movements, side to side movements and forward

## Type IIa muscles:

These muscle also release a constant supply of low level energy all day long but are somewhat stronger than the type I muscles. These muscle fibers are also red as they too contain a great amount of blood circulation. They are called fast-twitch muscles since they respond faster than the type I muscles. These muscles are used for the somewhat heavier activities around the house and yard.



Swimmers and middle distant runners use these types of muscle fibers the most. These muscle fibers can get tired but not too quickly. Those who have high

blood sugar problems need to burn sugar quickly before it gets stored as fat and raises cholesterol levels.

Type IIa muscles do not provide the amount of sugar burning to meet the needs of diabetics and those with hypoglycemia. (sugar levels go up and down as the body over reacts to the presence of sugar in the blood.)

## Type IIb muscles:

These are the “Big Guns” in our muscles. They don’t produce a constant supply of energy.

They only work when we need them like if we start lifting heavy weights or do heavy construction.

These muscles store lots of sugar (muscles burn sugar for energy). They stockpile most of the sugar we have in our body.

These muscles are called “White muscles” because they have so much sugar stored in them with very little blood circulation. Interestingly enough, these muscles are considered super fast-twitch muscles as they react very quickly to stimulation. It is the sugar that allows this to happen. They are Quick to react and Quick to get tired.

These muscles are the ones you feel most when you get tired and sore from a hard days work. There



is not as much blood circulation in these muscle fibers unless you use them regularly. These muscle fibers are perfect for short jobs requiring heavy lifting.

Sprinters run short distances, like

the 100 yard dash, by calling these muscles into play. You can over work these muscles easily if you are not used to a heavy level of activity. Vibration exercise triggers activity in these muscles the most,

before an injury. Balance is compromised and walking is difficult, especially in darkened rooms or outside at night, as they rely on visual perception the most to navigate.

It is not uncommon for these people to be in a room they are familiar with, turn around and walk right into a table or chair because their brain does not remember that it is there. They may trip going down an unexpected step they have walked on for years.

The good news is that *vibration exercise* has helped many with improvements in their proprioception. Vibration exercises help restore many of the communication lines from the body to the brain.

#### Improvements that happen with vibration exercises:

- Improved bone density and strength.
- Improved blood circulation in all body parts.
- Improved flexibility in skeletal muscles.
- An increase of serotonin. (the feel good hormone)
- An increase in HGH release. (Human growth hormone)
- Suppression of the stress hormones.
- Triggers lymphatic flush to remove toxins.
- Reduces cellulite.

Helps those with Cerebral Palsy, MS, spinal cord injuries, trauma and stroke as it stimulates the heal-

is wrong.

## Proprioception

Proprioception is your bodies' ability to know where it is in your environment. Without this perception we would be bouncing off of the furniture and walls as we navigate our way around the room.

People who have suffered a brain injury from trauma or stroke experience a change in their proprioception and frequently hit the door frames and furniture in a room as they walk around. Others with neurological disorders may also experience a deficit in proprioception.

Our brain receives information about our environment from our eyes, nose, ears, and touch. There are pressure receptors in our feet and joints that give us the information about the surface we are standing or walking on.

The brain builds a picture of the environment from these senses and makes it possible for us to navigate the terrain.

With a deficit in proprioception we don't have all of the information needed to build a clear picture to navigate with.

Falling is common, as a sudden change in the surface from tile to carpet may be enough to cause a fall, if it is an unexpected change.

Our awareness is not the same as it used to be

as you provide resistance during exercise. The constant contraction and relaxation stimulated by the vibration and your body movements burn glycogen (sugar) more than the other muscle fiber types.

These muscles waste away when not used.

When stimulated these muscle fibers will kick-start your pituitary gland to make more human growth hormone. This then triggers the building of lean body mass and fat burning. Tissue healing is also triggered with the increases in many different hormone levels.

## BENEFITS:

- ◆ Frequent stimulation of white muscle tissues increases human growth hormone levels.
- ◆ Improves your neurological function
- ◆ Increases blood circulation
- ◆ Improves balance, flexibility and strength.

**Vibration exercises, with some resistance, will activate/energize more of these muscles than weight lifting alone up to 98%.**

**The "Old Geezers" club recommends using a stretch band with exercise, in the advanced levels. These are available from your local store.**



As your body responds to the higher levels of work these muscles do grow, and show an increase in endurance levels as blood circulation improves.

They will continue to burn sugar for several hours after vibration exercises are done. Vibration with exercise is relaxing because it stimulates muscle fibers to use more calcium during contractions and that stimulates the use of more magnesium during the relaxation phase in the muscle.

A Note: ***Calcium causes muscles to remain in a constant state of tension.***

Many of us have too much calcium in our bodies and we are in a constant state of stress. High blood pressure is one sign of this happening. Blood pressure may be elevated, stress hormone levels are elevated and we don't sleep well.

Most "Power Drinks" provide potassium, sodium and even some calcium but little if any magnesium. ***If you supplement calcium then be sure to get the magnesium to go with it or you could cause serious health problems*** like high blood pressure or even heart attack.

Sedentary lifestyles in men, women and now children have around 45% of the type IIb muscles with 55% of the type I and Type IIa muscles. The older and more sedentary we are, the more we lose our type IIb muscles. This can also be true for children who do not get out and play. They do have the advantage of higher levels of hormones that help protect their body from too much degradation.

Both forms of exercise provide benefits for the body. The only difference is the ability to isolate the different muscle groups by using vibration techniques versus just jumping up and down on the mini-tramp.

## Healing

Activating the white muscle tissues stimulates the pituitary gland to release more hormones.

**Testosterone** is important because it increases muscle building.

Other important hormones are growth hormone and insulin.

**Growth hormone** is produced in the hypothalamus and is responsible for keeping the body in a youthful state by revitalizing the immune system, enhancing sexual function and most importantly stimulating muscle tissue repair.

**Insulin** assists amino acid (protein) and glucose transport into muscle cells. It helps transport nutrients through cell walls, build muscle tissues and enhance protein synthesis. The muscle loss you experience from inactivity also means you are not getting sugar into the cells.

Hormones are messengers that tell the brain what is going on in your body. These signals trigger the release of repair mechanisms to fix up whatever

***A Note:***

Simply jumping up and down on the floor is much harder on the joints.

The mini-tramp provides a softer transition between the up and down movements. It also provides the spring action that makes the exercise easier.

This form of exercise triggers the “White Muscle tissues” to respond as the weight of your drop is several hundred pounds and it takes those muscles to lift that much weight or in this case stop that much weight from falling. If you jump up and down several times a minute and exercise for 2 or 3 minutes you have done a tremendous amount of exercise and you haven’t lifted any weights in the gym.

When you move muscles you are also moving the lymph (water) in the body. This helps wash out the toxins created from all of the activity. That’s good because you don’t get as sore.

**A Bit of REVIEW:**

Mini-tramp elicits an increase in mass, by increasing gravity force on your body, with each up and down jump.

Vibration accelerates the movement or speed of the exercise which also increases the G-force on the body.

Athletes and endurance type sports enthusiasts have more Type I and Type IIa muscle fibers and fewer Type IIb muscle fibers. That is why long distance runners and swimmers are so trim and thin. They have mostly Type I and Type IIa muscle fibers in their skeletal muscles.

Those doing aerobics also fit into the trim and thin category. Sprint runners go all out for short distances. They need more of the Type IIb muscle fibers for endurance in this sport. Weight lifters also have a larger proportion of these muscle fibers. Typically guys who do heavy construction use the Type IIb muscle fibers the most.

Most of us do not lift weights or do construction. We seldom use our Type IIb muscle fibers.

As they say “if you don’t use them, you lose them”. Our body is not inclined to keep muscles around if we aren’t going to be using them. Eventually we will have lost so muscle mass that we no longer are able to burn sugar sufficiently to keep ahead of our intake. So we store it, right in front for everyone to see. Our muscles become flabby and we develop sugar problems.

As we age our hormone levels drop including our testosterone level that is needed to trigger muscle building. Low testosterone levels give symptoms of low libido, we fatigue easily, have depression and lots of belly fat on the abdomen and more.

Well, we can have the benefits of better hormone levels. Even the ladies can gain the benefits of heavy activity without actually having to do the lifting.

### Some History: Vibration—Exercise

In the 1880's a Dr. John Harvey Kellogg utilized vibration techniques at his sanitarium in Battle Creek, Michigan. (Yes this is the Kellogg's cereal guy.)

Dr. Kellogg devised chairs and platforms that vibrated and would have his patients sit or lay on these devices as part of their treatments. Their healing was greatly enhanced using these techniques. Even further back in time, the ancient Greek physicians used vibration techniques to stimulate injured parts of the body with significant increases in healing.

In our own time during the 1960's Rhythmic Neuromuscular Stimulation was developed by an East German physician. Dr. Biermann experimented with cyclic oscillations and their effects on the bones and connective tissues.

In the 1960's a Russian doctor Nazarov used what the German doctor learned and began to utilize the vibration techniques with cosmonauts and soon after with athletes.

The experiments lead to an understanding of

Remember:

(Gravity) (Weight) (Speed of activity)

$$\text{Force} = \text{Mass} \times \text{Acceleration}$$

We learned that up and down movement increases the G-force on your body. This causes the "White Muscle" tissues to burn the most sugar in the body.

The mini-tramp provides the same muscle response in the body, as the vibration does, but at a much slower speed. The affect is the same, and of course, it takes longer to get the same results as you get from the vibration exercise, but for some this is a great alternative. It is about the "Mass" part of the equation.

Jumping up and down on the mini-tramp increases the G-force on the body. The higher you jump the more G-force you generate at the end of the downward drop.

Since you have increased the G-force you have also increased the Mass (weight) of your body during the drop. Because you weigh more in this downward motion it takes more muscle response with this exercise.

If you weigh 150 pounds, with 1 G-force, jumping up and down causes a greater G-force on your body which can make your body respond as if it were several hundred pounds heavier. All of that from simply jumping up and down on a mini-tramp.



It vibrates at the right speed to stimulate those “White Muscle” fibers that are so important to your health. Amazon.com is a very good source for this unit.

### **Now on to Trampolines:**

More specifically those mini-tramps



These are the small trampolines sold years ago for exercise. They are said to help the body relax.

They make the water system or lymphatic system in your body more efficient at flushing out toxins.

You can still buy these mini-tramps for a reasonable price in the big stores. They do help flush toxins but there is much more to the story!

We just talked about how vibration increases the amount of work your body does by increasing acceleration. The vibration between 20 & 40 times per second triggers the *Tonic Muscle Reflexes* in the muscles. This will tense and relax the muscles just as fast as the vibration rate causing a tremendous increase in the amount of work being accomplished.

what frequencies were beneficial to bone and muscle strength as they applied vibration directly to muscle and joints during different exercise routines. They also discovered how different types of vibration affected the body. Some vibration helped trigger healing while other types provided better communications between body and mind. Still other vibration movements increased a persons Proprioception (balance). Up and down vibration, at the proper speed, would increase muscle mass and bone strength.

Now, these techniques are used by the Russian Space Institute, the European Space Agency and our own NASA, to increase bone density and strengthen muscles.

Right to Left and Back & Forth vibration movements trigger other body reactions that improve levels of the many different hormones needed for better communications between the body and brain. Testosterone levels increased to trigger muscle growth and also improve Proprioception (balance).

All of these movements improve flexibility, muscle tone and coordination. Serotonin levels increase with vibration exercises. Serotonin is the “Feel Good” hormone.

We see improvements in muscle strength and toning, cellulite reduction, improved bone strength and density, increased secretion of hormones associ-

ated with health and a decrease in hormones triggered by stress.

It wasn't until President Reagan and the Russians ended the cold war that we discovered the advances that Russia and Germany had made in developing these exercise technologies.

There are various types of platforms and devices developed to generate vibration in the body. There are platforms that you stand or sit on or put some part of the body on when exercising. The movements of the platform can be up and down, front to back and side to side or a combination of those movements. It is the up down movement that is said to increase the gravity force on the body. The amount of movement ranges from 2mm to 5mm. The greater the movement the greater the gravitational force on your body.

The 5mm up down movement is said to have the effect of up to 5 G-forces on the body. This makes your movement feel as if you are several times heavier than you really are. It is a great way to increase your muscle mass and bone density without putting weights on your shoulders.

The speed of the vibration affects the amount of work being done. Slower vibration with speeds around 20 cycles per second produce less work than a vibration rate of 40 cycles per second. It may seem that this speed of stimulation is super fast but I as-

sure you that the white muscles, that burn sugar the most, do respond at these speeds. This causes the burning of more calories during exercise. This speed also stimulates more muscle fiber than doing the exercise without vibration by 98%. With this much stimulation you are also increasing nerve response. This is a great benefit for those with neurological disorders and nerve damage from trauma.

Stimulating your muscles and nerves this way results in more work being done by your body in a shorter period of time.

Think about it...

If you apply 30 Hertz (30 cycles per second) for 30 seconds, you are triggering/stimulating your neuromuscular system a total of 900 times in just half a minute. That's a lot of work!

It has been discovered that vibrations over 50 cycles per second are not well tolerated, as they tend to shake things up too much. That is why you need to buy the right massager. You need to know the speed of the machine you use!



I like this unit made by Oster.

**Oster Stim-U-Lax  
Professional**