The science and art of holistic kinesiology utilizes strategies and philosophies from millennia of physicians, coaches, and teachers in domains as varied as economics, philosophy, psychology, and strength & conditioning giving us the secrets to a long, energetic, functional life. This book provides the most effective strategy and philosophies for:

- Empowering the individual to take control over their own health and physicality
- Alleviating and averting chronic health conditions like metabolic disease, heart disease, depression, auto-immune disease and chronic pain
- Develop functional strength and a capable physiology!

Unbound Health

Unlocking the Secrets to Independent Health & Strength through the Power of Human Movement

Jason Root, MS, CSCS, C-EP

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Introduction

My Own Experience

My name is Jason Root. I study and instruct in the science of human movement and the associated effects on health and performance. In 20+ professional years, I've coached or participated in coaching thousands of individuals either personally or in groups in a wide variety of conditions to a vast spectrum of physical goals. Those goals ranged from developing the ability to walk after a spinal cord injury to performing a first triathlon to training for the NFL combine.

I was born and raised in Phoenix, AZ. As a kid, I loved sports, basketball, football, baseball, track and field. My father was an elementary school teacher and coached sports during the school year. His favorite sport to coach was football as became mine to play. My mother was a fitness instructor and program director at the YMCA. Because of these two careers, our household was FILLED with learning, sport, health, and performance.

From the age of 10 through high school, I was a 3 season athlete, playing a sport all year round (except the summer which was well enough as anything outside was ill-advised living in the Phoenix area ….lest you keel over from heat stroke). I started lifting weights when I was 14 years old. I was 6'1 ½ " tall already but only weighed 155 lbs on the first day I walked into the weight room at Peoria High School at the beginning of summer before my freshman year of high school. I was uncoordinated, either owing to the growth spurt that put me at my height so early or my lack of flexibility that had always been a problem for me in sport.

Going forward, though, I had great success with weight lifting, putting on 55lbs of muscle by junior year and developed a competitive (at least at the high school level) strength profile with a 300lb bench press, a 500lb squat, and a 245lb power clean by senior year. In my positions in sports, I thrived (or was at least good enough to compete at a

varsity level) in football, basketball, and track and field, where I high jumped, long jumped and sprinted until I made the move to shot and disc. I also found that I was enthralled by the constant qualitative and quantitative evaluation to gauge progress and make adjustments in progressing the athlete.

When I was a kid, I loved 3 things in entertainment: Star Wars, Kung Fu, and The Hulk. I loved Star Wars for Luke's training in The Empire Strikes Back and how the discipline brought forth his full physical and mental potential. I loved Kung Fu for the same reason in a more Earthly setting. I loved The Hulk for the unbridled transformation of a human into another, more powerful being. This was the big start of my interest in human development.

At around 15 years old, I started developing **back pain** that was debilitating to my activities. I couldn't sit still in a chair in class. I had a spasm at a football speed and agility camp that left me bed ridden and missing 3 days of the camp. My spasms started getting worse and more frequent around age 18. This was no good for me becoming Luke Skywalker, Kwai Chang Caine, Bruce Banner, or Howie Long for that matter (my hero on the football field).

Luckily, I had an uncle who was the athletic trainer for an NBA team and physical therapist. Over a short conversation when I was about 20 yrs old, I was telling him about my start in the exercise science program at ASU. I mentioned my back problems and he showed me some stretching exercises and told me to work my mid-section (core) more. This began my study of **chronic pain** and how to address it.

Over the years, with spasm after spasm and technique after technique to fix it, I figured out how to feel out my own body in order to target imbalances, treat them with corrective exercise, and avoid triggering activities. The spasms got less and less intense and further and further away until today where I am hardly ever stiff, have more

energy, and much less worry about my back issues…. though imbalances still show up as knots and trigger points once in a while.

I have been told I am an analytic. As such, my curiosity was piqued as to whether I could increase my success even further. I happened to be taking strength and conditioning and AP biology at the same time in high school.

Unbeknownst to me, the questions that I would ask to connect these two subjects were my introduction to the world of Exercise Science (or Kinesiology) and how to evaluate the biological underpinnings of health and performance.

In my sophomore year in college, I declared this my major with the intent of strength training for college athletes. I had a few internships with ASU and some companies that specialized in strength and conditioning for athletes from high school, college, professional and Olympics. This was heaven. This is what I wanted to do. I was helping people become super heroes!

This was all fantastic. But I knew few high-level athletes outside of my internships. On the other hand, I knew many people with chronic health conditions. Both my parents had chronic conditions, either by birth or lifestyle. This greatly affected their lives. As I looked at them, I longed for a way to alleviate their health issues.

My mother was already on top of it. She trained relentlessly (too much a lot of the time). This was how she mitigated the effects of her condition. However, overtraining led to its own set of issues. My father eventually cleaned up his nutrition and exercised as well. But, without the direction of a professional. With a little guidance, we could have saved both of them years of health issues and improved their quality of life by mitigating these issues at earlier stages.

I decided to investigate other environments as an independent Strength and Conditioning Coach and Exercise Physiologist. I worked,

over the next 10 years, in physical therapy and chiropractic clinics, corporate wellness, training studios, and performance centers. I used every different environment to gain more range of experience and knowledge about a different outlook toward developing the human body and different populations with different needs.

All in all, I worked with (or 'on' in the case of manual modes of training): athletes (youth, high school, college, professional, Olympic, recreational), sports (too many to list, honestly), all ages (8 to 94 years), ***spinal cord injury/the paralyzed, stroke, Parkinson's, back/knee/neck/hip/shoulder and other joint pain, cardiovascular disease, metabolic disease, depression/anxiety or other psychological issues, and chronic pain through autoimmune disorders.***

All along, I also worked with my own body to perform in triathlon, weight lifting, power lifting, obstacle course races, and any variety of other events.

The information presented is a culmination of these experiences in different environments, associated industries, and the forerunners of each. A short list of these include but are not limited to:

- In strength and conditioning: My mentors, JR Rosania (from Phoenix Suns), Tim McClellan (Arizona State University), Rich Wenner (Arizona State), Joe Marsit (Arizona State).
    - Writers and coaches: Dan John, Pavel Tsatsouline, Gray Cook, Marty Gallagher, Stewart McGill
    - Organizations: The National Strength and Conditioning Association, The American College of Sports Medicine
- In philosophy and success: Tony Robbins, Jim Rohn, Dan Millman, Eckart Tolle, and Alan Watts.

Why this Book?

One experience during my journey in the field of health and movement science was at a spinal cord recovery center as a ***Spinal Cord Injury (SCI) Recovery Specialists***. We worked with paraplegics and quadriplegics on developing physiological function for life again. One question we asked them was why they didn't just do physical therapy. Time and again the answer was that physical therapy by way of the health insurance structure was not set up for chronic long-term conditions. The more I thought about it, this isn't just true for those with SCI. All long-term health is being ignored by the ***medical*** industry while the ***fitness*** industry simply isn't equipped to deal with it properly.

More and more I discovered that in ***fitness***, the current paradigm was COMPLETELY backward. EVERYTHING was focused on 'how you look', 'body fat', and 'weight loss' as goals. We work out exclusively IN the gym and the 'calories in vs. calories out' principles guide all our processes. These are, of course, not all bad concepts. They are, however, INCOMPLETE. Fitness is also too focused on 'hard' work. Much of what the average Joe/Jane wants to accomplish can take much less in terms of resources than what the fitness industry implies. The type of training in a gym usually doesn't address the foundational demands on person's physiology that are truly present outside of the gym or the body's natural developmental patterns.

Why don't most physical therapists (or other Allied Health businesses) handle '**chronic** conditions'? Why are trainers in gyms so underqualified and over-priced? Why do athletes retire and develop health problems and worsen injuries acquired during competition? Shouldn't '**injury resilience'** be the main concern for these folks? Shouldn't they be taught how to develop for long term health rather than just to perform in athletics?

Another problem is the separation of the industries of ***medical*** care, ***fitness***, ***performance***, and ***wellness***. These industries utilize the same concepts on different points of a continuum of ***health care***. Yet, the services are completely separated within industries. Why? The benefit is exponentially greater when they are combined to *operate* as a **spectrum** of health care rather than independent of each other. The whole is MUCH greater than the sum of the parts!!!!

I had noticed a huge contradiction in media, science/research, and different industry toward purported goals of health and what they actually delivered. Was this somehow purposeful or just an example of paradoxical results inherent in systems?

So, I made a decision to make a shift in my professional focus from developing athletes to those who truly needed change for health and quality of life. I attained a master's degree **in biomedical diagnostic**s to try and utilize testing as a tool to both crete precision individualized results and to bring these industries closer together. Maybe I could create something that could be elemental in helping provide for these health concerns for you and the rest of the population. Maybe my experience could help a reader reconnect with their own physicality, the essence of life!

This guide is a 30,000 ft view of our strategy with underlying concepts and principles under which that methodology works. It is meant primarily for the non-fitness/health professional. I hope that I am able to accomplish this for you.

I sincerely wish you the best of luck on your journey. I hope this guide helps you get a deeper involvement in your own physical development and you gain the independence to achieve whatever physical goals you desire!

Who are you?

You are the majority of the population. You are busy with family, work, church, entertainment, sports and other aspects of life. You are looking to reach all around health and performance goals. You may not have the time or desire to be elite in any given physical activity or event but would like to be healthy, strong, and enjoy all different sorts of activities at recreational, occupational, or semi-competitive levels. You may be sedentary now. You may have nagging injuries or health concerns.

I began writing this book as sort of a fun collection of blogs for those who did not have the benefit of badass strength coaches in their formative years like I did. There are many resources to learn how to strength train and perform at very high levels. We may have some insight for those folks as well. However, this book is meant as an introduction into a general system for ***post rehabilitation after certain medical events; pre-habilitation to avoid acute medical events; and general conditioning for life and athletic performance*** by identifying and addressing imbalances along with nutrition and exercise.

A great many guides for the elite athlete or the super-fit exist. The problem is that a majority of the people that need help and guidance are not these folks. Although the concepts presented in books, videos and other guides on advanced conditioning are great[1], those with only a few hours a week to train need a much more succinct program compared with the person who spends 6-12 hours a week training. They also need more concentration on the development of activities of daily living and training outside the gym or performance enhancement environment. This makes the programs in the books for the elite or specific athlete difficult to follow for the average Jane/Joe.

[1] "Study the outliers and you will know how to work with those in between."….great concept for a professional athlete but must be broken down for the average person to follow

We want to give a prescription to avoid specific health conditions and gain a solid base of physical function (we'll call this 'physicality'). I want you to have a **dynamic system of consistent action and evaluation to independently address your health and physical being for a lifetime**! This is your permanent comprehensive solution to lifelong health and vigor!

I'm like you. Well, probably. I LOVE being fit. I LOVE performing in various events and contests. But I also enjoy drinking beer. I LOVE hanging out with family and friends. I also enjoy cookies. I want to be healthy and able to help someone move or work when called upon. But, I, like you, want to learn and create in subjects that involve more than my physicality. This takes time. I, like you, have other things to do in life than train.

So, from that standpoint, my training for my physical being needs to have a maximal effect. It has to have defined highly probable outputs with little to no risk for injury. It has to take as little time as possible and be easy to implement. This approach will work for you too.

Answer these questions. Write the answers down on another piece of paper. These answers will be important to what you get from the rest of the book.

What made you pick up this book?
What is your lifestyle like?
What are your interests in life? o How do they relate to health? How can being healthier, stronger, and more physically resilient help in your life?

What health conditions have you or family/friends dealt with that need to be addressed? ○ Do these conditions cause anxiety? ○ Do these conditions interfere with your/their productivity or cause significant inconvenience?
How are the current principles in the aforementioned industries working for or against me?
How can I, as an individual, utilize the concepts in this guide and new ideas to fit my own needs?

How to Use This Guide

A Project Management Point of View

This book's purpose is to create an understanding of a problem, the approach to correct that problem, and the philosophies behind the approach. By understanding these underlying paradigms and strategies, tactics employed will seem much easier and more effective.

All-in-all, this is a book about 'project management'. The project is YOU. This guide will create an understanding of training and conditioning the human body to further oneself from the point of having possible health issues through having an energetic functionally performing body in a concise, easy to digest manner.

In this book, you will be introduced to the principles, philosophies, paradigms, systems, .and strategies of training that will build the foundation for you to start developing yourself in the most effective manner possible. One of the first philosophies we have is to use a 'project management' way of thinking when devising our methodologies. This helps us to remain objective and treat this project as a fun creative way to develop into what we want rather than concentration on what we don't want.

The steps of project planning are: **Initiation, planning, execution, control, and close**. We will combine execution and control. This project is lifelong. So 'closing' will not be an issue for us.

The first part of this guide will dig into the problem we face and the major hurdles that created the environment for us to need this guide in the first place.

The next section will focus on developing a mindset for addressing issues of health and performance along with a broad understanding of our system of physically developing the human body.

We will then learn how to look at physical activity from a macro-perspective to understand how different 'sorts' of physical activity affects us.

After all of that, we'll travel through the steps of project management in the domain of health and physical performance.

Through this guide, we will break down misconceptions developed within the fitness industry that cause gaps in one's ability to attain health and performance goals. We will teach you how to set appropriate goals. We will talk about how testing and tracking can be a roadmap of utmost importance for guiding development.

We will talk about training our bodies with a mindset to be 'useful' to ourselves, family, and friends rather than to simply attempt to look like the person on the magazine in the grocery store….and how this outlook will yield the looks as well in a lifelong pursuit of physicality.

We'll cover the 'economics of health and fitness'. How does one reach their optimal fitness level with regard to their resources (time, money, focus, discipline, etc)?

I lay out many definitions. Don't memorize them. Just understand them as you are reading.

All of this leads us back to having the most effective approach to the project of YOU.

I like analogies and feel they are a good device toward conveying a concept. But I also jump around with them a bit when the situation relates. In the book, I will relate the project of developing health and performance to the projects of: *taking a road trip; rebuilding an old car; baking a cake/mixing a drink; and building a house*. I apologize for times when utilizing different analogies to make a point breaks continuity.

Our purpose in this endeavor is developing the health of the community one reader at a time. We will improve your individual performance measures along the way!

This is a guide to a system embedded with concepts. Other books and videos (including my own) are available for exercise techniques and other 'tactics'. So, just read and try to get a good grasp of the concepts.

To bring it all together, we'll relate through stories and quotes and have a bit of fun.

My Guarantee

I guarantee success. I guarantee this system is dynamic, fun, and effective...IF FOLLOWED. The DEGREE to which you succeed is up to you.

'Holistic Kinesiology'

In academia, the word '*kinesiology'* is defined as: "*the study of human movement"*.

In practice, this really means: "*the study of the body's movements and the adaptations due to external stimuli or forces applied to human physiology"*.

In an objective practical description: *Kinesiology seeks to take a comprehensive analysis of an individual's current physiological condition (condition A) with respect to the condition they wish to achieve (condition B) and to implement the precise actions needed to get from condition A to condition B in a manner that no action wastes resources of time or effort.*

Typically, this subject is heavily focused on sports and athletes through the use of exercise. But, in reality, the domains of this study are much more vast both in population and subject matter. There are sub-disciplines that focus on the mitigation of the effects of chronic disease. There are sub-disciplines exploring the effects of nutrition, environment, or other demands past just 'exercise' on physiological adaptation.

We also need to acknowledge the limitations of 'science' and value of anecdotal and empirical knowledge in how we make strategic decisions toward a goal. The scientific method is, by design, reductionistic, focusing in and isolating individual variables while keeping all others constant. This is limiting in the real world as all variables in the real world are, well…..VARIABLE (not constant)!

In my personal experience training and developing my own physiology, there is another aspect to development. This is that aspect that connects the mind, body, and spirit in creation of a new physiology. This is the part that is appreciating the 'journey and not just the destination' (cheezy, I know!). This is the part that is experienced by musicians writing and performing a symphony. This is the part that is

experienced by Michelangelo painting the Sistine Chapel. This is the psychological, emotional, creative, and spiritual connection that may seem counter and oppositional to our 'objective and practical' explanation above.

We highlight the 'wholeness' of the nature of the information provided. The content of this text is derived from evidence (scientific) based as well as experiential information from a vast variety of different studies, coaches, and disciplines in the field.

As well, we integrate information that fills in gaps between disciplines to offer options in the menu of techniques utilized to achieve adaptation in the manner that is most advantageous to a person or population.

Additionally, we look at the 'wholeness' of movement for a person outside of the context of the traditional domains of '*competition*' or *'training'*. We gain insights from information that is '*off the field'* and '*out of the gym',* so to speak.

And we gain wisdom from other branches of study like philosophy and psychology to keep us focused, on track, connected, and enjoying the work we are doing for ourselves.

This is a paradigm that uses devices from so many different domains but are then centered around human movement. And so, we term it'***holistic kinesiology'***. We find that use of such a holistic system offers us the best opportunity for connecting the worlds of medicine, performance, education, and wellness.

This text is therefore meant to deliver a strategy for an individual or population to use in order to affect their own physiology on several levels….to develop yourself with a system that is practical and easy to employ.

Part I
The Problem

- **The Landscape**
- **Chronic Conditions**
- **Fitness?**
- **An Answer: Medically Oriented Fitness**

The Landscape

Where Are We Now and How Did We Get Here? A Brief Look at the History and Current State of Movement Science and Physical Culture

From the ancients on forward, strength and conditioning has been used to increase performance, develop humans as military weapons, acquire injury resistance, and grow health and vigor. Take the piece of equipment, the medicine ball. One of the oldest pieces of equipment is such named because that was its purpose…to improve health! Spartans in Greece, Shao Lin Buddhist monks in China, and medieval knights all trained their bodies to be hard for combat. The average citizen had to be developed to fight against threats, build, create, and search to acquire food and other resources.

Moving into the industrial and then into the information revolutions, such training was lost to some extent. We can postulate that this is because of the lack of need or opportunity during the industrial revolution as we were already working in *physically demanding* jobs for *very long hours*. Then, into the information revolution, we are working *long hours* with very *limited physical demand*. Also, for a time, physical exertion was mistakenly considered 'bad for one's health' and sent the populace in the wrong direction.

In the middle of the 20th century, with polio and soldiers returning at the end of WWII, our medical system started to utilize prescribed physical activity for health purposes with increased use of physical

therapists and exercise physiologists and therefore, a broadening of educational institutions training them.

Fitness started to catch on as an industry in the mid-century with Jack Lalanne and Charles Atlas, and gained momentum in the 70's and 80's with a bodybuilding aesthetic appeal from entertainers like Arnold Schwarzenegger and Sylvester Stallone. We can notice that health and fitness is now, seemingly, more a form of entertainment than physical culture in our daily lives. As are sports when the public spends more time watching NBA, NFL, and MLB on a screen than actually playing the sports.

Past physical education programs were a necessity for our American physical culture of health and sport. These programs start to degrade in quality and eventually lead to a loss of many PE programs completely in the schools. We wonder why psychological health issues such as ADD, depression, and bipolar disorder along with immunological disorders such as fibromyalgia, asthma, and allergies plague our population.

Our changes in environment have also affected the demands on human physiology greatly. Man prior to this last century did not have air conditioning or the circulating heat we enjoy indoors. Other methods had to be used to allow us not to succumb to the elements. Now, the pendulum has swung far in the other direction. We are too comfortable. Our bodies no longer have to adapt to large changes in temperature or have to endure wind or rain. Our immune, circulatory, muscular, metabolic, and nervous systems all had natural adaptations that occurred due to the environment. Chronic diseases that have never been seen, or at least identified, are now common. The research shows that this is an unintended consequence of our alleviating the demands of our bodies to move in different environments. We are losing our physical connection with our natural world.

Because we are not consistently challenged by our environment, we are kept both mentally and physiologically under the illusion that we will not be. This cripples our systems when the time comes that autonomic responses must be in place to adapt to environmental demands.

As well, we have become a much more cerebral society. As any anatomy and physiology student can tell you, a very high percentage of our physical brains are designed for ***movement***. But, in the present day, most of our work is done on computers. We sit in desks and cars. Elevators and cars eliminated the need to climb stairs or mountains. Our bodies shrivel into balls where our posture and other body mechanics are in dysfunction. I have people coming into me with chronic pain that haven't picked up a weight or ran a mile in 3 decades and wonder why they hurt.

What was once required to develop our bodies used to be, until just recently, ubiquitous and simply a part of life. Now, we must make extra effort. Self-care can cognitively overload us. On top of your *productive* life out in the world you must….

- Brush your teeth
- Wash your hands
- Floss
- Lift weights
- Do cardio
- Meditate
- Shower
- Do your makeup and hair
- Stretch
- Cook the proper meals
- Look at labels

Oh, and know all the right techniques for all this in the first place!

As it exists today, physical therapy or other types of ***rehab*** are generally utilized for **acute** injury/health ***events***. Have you ever had the experience of going to physical therapy and feeling like the same techniques are applied to everyone? Did a different person work with you every time? Did you feel like you were just on an assembly line of

minimally effective treatments just to be dismissed in a certain number of sessions with a Xerox copy of some exercises?

The ***fitness*** industry is not equipped to not deal at all with those with injury/disease either. This is illustrated by the fact that there is such a low barrier to entry educationally for professionals in the field as compared to the needs of those with neuromuscular imbalances or other chronic conditions.[2] When meeting your gym trainer, have you ever wondered, "How is this 20 year old kid who's just out of high school or college athletics going to help MY problem?" Have you ever hired a trainer to have them count off reps and MOTIVATE you to work harder when you weren't comfortable with that intensity? Have you ever heard, "No pain, no gain" from your coach? Or, "Soreness means we just worked hard."?

In the new millennium, our lifestyles have left us with a population loaded with chronic illnesses including metabolic disease, chronic pain, immune disorders, psychological imbalance, and cardiovascular disease. So, how does one who has a ***chronic*** condition find qualified guidance to ***avoid*** an ***event***? In other words, if the healthcare services are for those who've had an event and fitness services are not suited for someone with any real health condition, where does one with a chronic condition look for care and guidance? How do we make this care as readily available as it needs to be?

Prior to 2010 with the passage of the Affordable Care Act (ACA/ObamaCare), health insurance companies, in order to offset the financial risks from the aforementioned populations charged higher premiums or denied coverage to those with chronic conditions.[3]

[2] There are particular trainers and other professionals who do have this expertise. But, it is difficult for the consumer to identify them.

[3] http://www.ca.gov/Agencies/Insurance-Department-of

Coinciding with the implementation of the ACA, the healthcare system has slowly started moving toward more precision individualized care[4].

We ask within the PREVENTATIVE health field: "How will the individual be able to INDEPENDENTLY personalize their health ***pro-actively***

[4] Utilizing diagnostics and biomedical technology for specific reactive therapies.

Chronic Conditions

What are chronic conditions anyway? *"A **chronic condition** is a human health **condition** or **disease** that is persistent or otherwise long-lasting in its effects or a **disease** that comes with time. The term **chronic** is often applied when the course of the **disease** lasts for more than three months. In medicine, rather than chronic, more often the condition is acute.*

"A chronic course is further distinguished from a recurrent course; recurrent diseases relapse repeatedly, with periods of remission in between."[5] For instance, a broken arm is an acute condition that will heal. Paralysis is a lifelong chronic condition. Chronic conditions can be categorized by their cause or the anatomical systems they affect. In the above example, both conditions could have been caused by an accident…say hitting a tree when skiing (cause). But the neurological damage (paralysis) is harder to heal than skeletal (broken arm) (anatomical system).

Causes: The causes of chronic conditions are *developmental birth defects, genetic predisposition, genetic defect, lifestyle*, or *an event*.

- **Birth Defects**: Defects of the fetus during development are many. One example is spina bifida. This is a developmental defect where the spine does not entirely close properly.
- **Genetic diseases** can be something like type I diabetes. You are born with it and it runs in the family. But it is not caused or triggered by lifestyle. Genetic defects can happen when a mutation occurs in the genes during development either in the egg, sperm, or fetus. Downs syndrome is an example.

[5] https://en.wikipedia.org/wiki/Chronic_condition.

- **Diseases of lifestyle** include cardiovascular disease, obesity, type II diabetes, and chronic musculoskeletal pain.
- **A traumatic event** such as a car accident may injure the body permanently as in the case of a spinal cord injury (as mentioned above).
- Many diseases have no apparent cause such as ALS or Parkinson's disease.

System Classification: System classification associates the disease with the main anatomical human body system that is affected. The metabolic system is impacted in the case of obesity, and diabetes I and II. The neurological system is affected in stroke, Parkinson's, ALS, and Down's. The muscular system (though through the nervous system) is affected in multiple sclerosis, muscular dystrophy, and fibromyalgia. Cardiovascular disease is a group of conditions associated with risk of cardiovascular failure.

Many times, the cause of the disease and the system affected are different. Strokes (though affecting the brain) generally happen through a cardiovascular event. Asthma, though effecting the lungs is caused by immune dysfunction. Fibromyalgia is thought to be caused by the immune system as well. This is the reason we must view the human body both from a ***human systems*** *(segmented) and* ***integrated*** perspective.

Degree: Further classification can be for the degree of impact on a person's life. Myopia, a chronic condition of nearsightedness may, with glasses, only minimally affect the person with that condition. However, disability is when a chronic condition significantly impacts a person's functional abilities. In this example, if the person were to develop blindness, that would be a disability.

Chronic conditions and their effects:

- Chronic conditions are biggest tax on our healthcare system and our quality of life as a population (measured in QUALY's…a group of metrics used to measure quality of life). What does that mean? We live longer lives because of treatments for disease but live with more conditions due to the effects of lifestyle, food sources, contaminants, etc. Living with avoidable conditions lowers the 'quality' of life and naturally, the production in any domain of life (occupation, recreation, spiritual, financial, etc).
  Chronic conditions' financial burden on insurance companies, the healthcare system, and society as a whole:
  - **6 in 10 adults in the USA** has a chronic condition (CDC, 2018)
  - **Leading cause** of death and disability[6]
  - **75 percent** of aggregate **healthcare spending**, or an **estimated $5300 per person annually** (NCBI, 2018)
  - In terms of **public insurance**, treatment of chronic diseases comprises an even larger proportion of spending**: 96 cents per dollar for Medicare and 83 cents per dollar for Medicaid**
  - More than **two thirds of all deaths** are caused by one or more of these five chronic diseases: **heart disease, cancer, stroke, chronic obstructive pulmonary disease, and diabetes**.[7]
  - Chronic diseases are responsible for **seven out of 10 deaths in the U.S.**, **killing more than 1.7 million Americans** each year; and more than **75% of the $2 trillion** spent on public and private **healthcare** in 2005 went toward chronic diseases[8]
  - 5% of population accounts for 49% of spending
  - 20% of population accounts for 80% of spending

[6] https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm
[7] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5876976/
[8] Tinker A. How to Improve Patient Outcomes for Chronic Diseases and Comorbidities. [(accessed on 30 December 2017)]; Available online: http://www.healthcatalyst.com/wp-content/uploads/2014/04/How-to-Improve-Patient-Outcomes.pdf.

- Chronic Disease Prevelence: 45% of the total population/**133 million people** (BCBS 2008)
- **Heart Disease**: $309 Billion (AHA, 2010); **Metabolic Disease**: $13 Billion on obesity; $245 billion on diabetes ($176 direct/$69 production loss 2012)**; **Injuries** (Condition of aging and inactivity); **Falls**: $34 billion (2013); **Osteoporosis**: $17-20 billion (2010); **Chronic Pain**: bw $261 and $300 Billion + productivity costs $297 Billion on the low end= >$635 Billion total (2010 study) (30% higher than cancer + diabetes); **Mental Illness** (depression/anxiety only): Unknown in relation to production…but suicide (death caused by these disorders) on the chart below can be indicative of prevalence

**Production loss accounts for degree of uselessness in the market

In the table from the Center of Disease Control (opposite page), one can see that of the leading causes of death each year, a high percentage are 'lifestyle' types of 'chronic' diseases that are very preventable. The last column on the right shows the totals in the US.

Source, Cause, and Events

When addressing the conditions listed on the CDC table, the following point of view is important. Science and traditional medicine are set up with foundations in the scientific method to isolate variables. That is how the scientific method works. In this, medical science tends to look at things 'linearly' with a single cause and effect relationship to disease.

10 Leading Causes of Death by Age Group, United States – 2018

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total
1	Congenital Anomalies 4,473	Unintentional Injury 1,226	Unintentional Injury 734	Unintentional Injury 692	Unintentional Injury 12,044	Unintentional Injury 24,614	Unintentional Injury 22,667	Malignant Neoplasms 37,301	Malignant Neoplasms 113,947	Heart Disease 526,509	Heart Disease 655,381
2	Short Gestation 3,679	Congenital Anomalies 384	Malignant Neoplasms 393	Suicide 596	Suicide 6,211	Suicide 8,020	Malignant Neoplasms 10,640	Heart Disease 32,220	Heart Disease 81,042	Malignant Neoplasms 431,102	Malignant Neoplasms 599,274
3	Maternal Pregnancy Comp. 1,358	Homicide 353	Congenital Anomalies 201	Malignant Neoplasms 450	Homicide 4,607	Homicide 5,234	Heart Disease 10,532	Unintentional Injury 23,056	Unintentional Injury 23,693	Chronic Low. Respiratory Disease 135,560	Unintentional Injury 167,127
4	SIDS 1,334	Malignant Neoplasms 326	Homicide 121	Congenital Anomalies 172	Malignant Neoplasms 1,371	Malignant Neoplasms 3,684	Suicide 7,521	Suicide 8,345	Chronic Low. Respiratory Disease 18,804	Cerebro-vascular 127,244	Chronic Low. Respiratory Disease 159,486
5	Unintentional Injury 1,168	Influenza & Pneumonia 122	Influenza & Pneumonia 71	Homicide 168	Heart Disease 905	Heart Disease 3,561	Homicide 3,304	Liver Disease 8,157	Diabetes Mellitus 14,941	Alzheimer's Disease 120,658	Cerebro-vascular 147,810
6	Placenta Cord. Membranes 724	Heart Disease 115	Chronic Low. Respiratory Disease 68	Heart Disease 101	Congenital Anomalies 354	Liver Disease 1,008	Liver Disease 3,108	Diabetes Mellitus 6,414	Liver Disease 13,945	Diabetes Mellitus 60,182	Alzheimer's Disease 122,019
7	Bacterial Sepsis 579	Perinatal Period 62	Heart Disease 68	Chronic Low Respiratory Disease 64	Diabetes Mellitus 246	Diabetes Mellitus 837	Diabetes Mellitus 2,282	Cerebro-vascular 5,128	Cerebro-vascular 12,789	Unintentional Injury 57,213	Diabetes Mellitus 84,946
8	Circulatory System Disease 428	Septicemia 54	Cerebro-vascular 34	Cerebro-vascular 54	Influenza & Pneumonia 200	Cerebro-vascular 567	Cerebro-vascular 1,704	Chronic Low. Respiratory Disease 3,807	Suicide 8,540	Influenza & Pneumonia 48,888	Influenza & Pneumonia 59,120
9	Respiratory Distress 390	Chronic Low. Respiratory Disease 50	Septicemia 34	Influenza & Pneumonia 51	Chronic Low. Respiratory Disease 165	HIV 482	Influenza & Pneumonia 956	Septicemia 2,380	Septicemia 5,956	Nephritis 42,232	Nephritis 51,386
10	Neonatal Hemorrhage 375	Cerebro-vascular 43	Benign Neoplasms 19	Benign Neoplasms 30	Complicated Pregnancy 151	Influenza & Pneumonia 457	Septicemia 829	Influenza & Pneumonia 2,339	Influenza & Pneumonia 5,858	Parkinson's Disease 32,988	Suicide 48,344

Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.

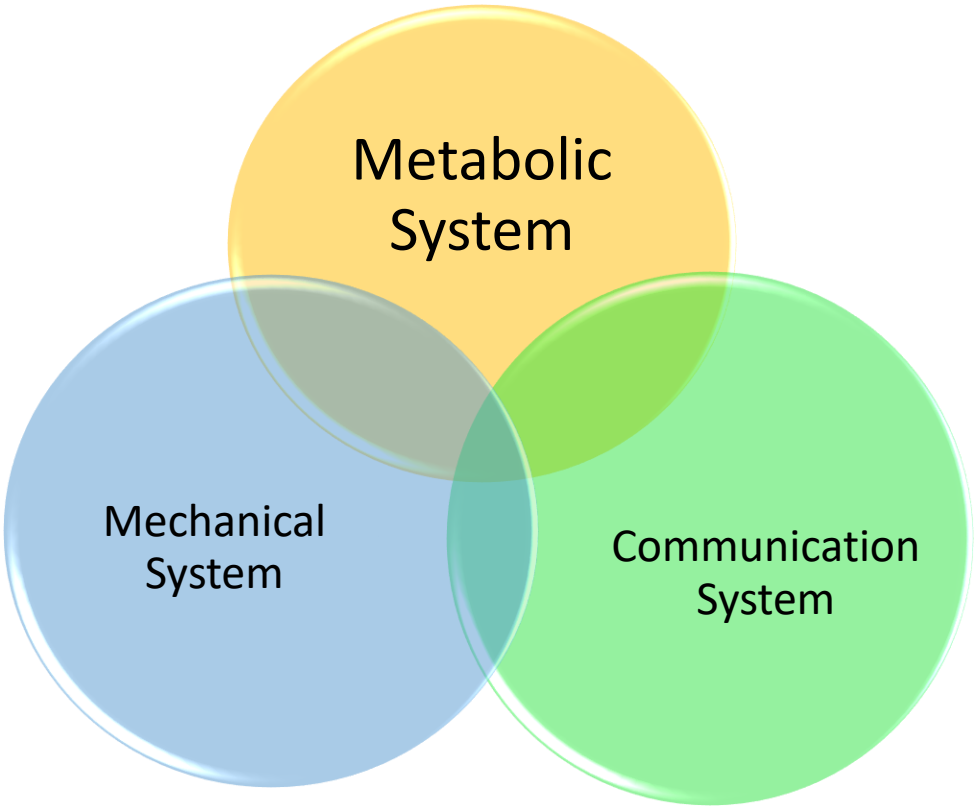
Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

Alternately, '**holistic**' health, as the term implies, looks systematically at 'cascades' of events and multiple factors in the formation of disease. It also sees the body as a singular functional unit rather than a group of systems.

The body systems are a little different from this point of view than from a medical or 'anatomist' point of view. Here are the general systems with their approaches from the **'holistic kinesiology'** world for each domain. They are categorized with regard to '**gross function',** their **traditional anatomical systems,** and the underlying activities **that**

affect the development of that system the most. We will be referring back to this a few times throughout this guide:

- Communication System: **Nervous system, endocrine system.** This system(s) is responsible for controlling all the other body processes.
- Mechanical System: **Muscular, fascial, skeletal systems**. Responsible for moving the body in space.
- Metabolic (Chemical) System: **Digestive, respiratory, integumentary, circulatory systems.** As you can see, this is the taking in of chemicals/nutrients into the body in the form of food, oxygen or other nutrients and then transporting them to body tissues.
- Energetic System: From eastern medicine. Important to mention but outside the scope of this guide or our expertise.



Following this paradigm, we do not get singular 'causes' of death such as presented in the graph. Instead we have: an acute '**event**'; the '**cause**' that was the *primary contributor to the event* (we may also refer to this as 'proximal' cause); and the '**source**' or the *circumstances that led to the cause* (also refered to as 'distal' cause). Let me explain in the following examples using the information from the CDC table:

Example One

*#1 from the CDC Table: '**Cause**' is heart disease. Heart disease is a '**cause**' from our point of view. The **event** they refer to is a **heart attack**. The cause is heart disease. The '**source**' is multifactorial in lifestyle, diet, stress, and environmental pollutions.*

*This relates to #5, a cerebrovascular **event (stroke)**. It is an **'event'**. The '**cause**' is heart/vascular disease. The **'source'** is multifactorial in lifestyle, diet, stress, and environmental pollutions.*

Example Two:

*From #8, infectious diseases are not considered lifestyle diseases. However, many of those that die from the flu or other infectious diseases do also have lifestyle/chronic diseases as comorbidities. Associated with this is the fact that the immune system health tends to be directly correlated with cardiovascular health, metabolic health, and inflammation. So, we can surmise with that by keeping a body in a condition that is resilient to injury and lifestyle disease, we are also resilient to infectious disease. The '**source**' of the disease, again, has a basis in movement, diet, pollutants, etc.*

Example Three:

*John Hopkins states: more than 250,000 deaths per year are due to medical error in the U.S. This makes it the **3rd leading cause of death***

behind heart disease and cancer *(chronic conditions).*[9] *It would, therefore, seem that we could lower our risk of these events if we stayed out of the reactive medical system as much as possible by utilizing pro-active healthcare.*[10]

How we are looking above at our 'sources' of disease in this context is a concept termed **'Terrain Theory'**. Terrain Theory concentrates on the terrain (the state of the body) in which disease thrives. Its focus is, therefore, internal. **'Germ Theory'** alternately concentrates on the invading external factors of disease. It is our perspective that these two viewpoints must always be considered together in balance.

As you can see from these examples above, the '**causes**' from the CDC table and '**sources**'** from our terrain viewpoint are one and the same in all the '**events**'! Here is a table on the next page viewing the same information from the CDC table to the new paradigm….

[9] https://www.hopkinsmedicine.org/news/media/releases/study_suggests_medical_errors_now_third_leading_cause_of_death_in_the_us

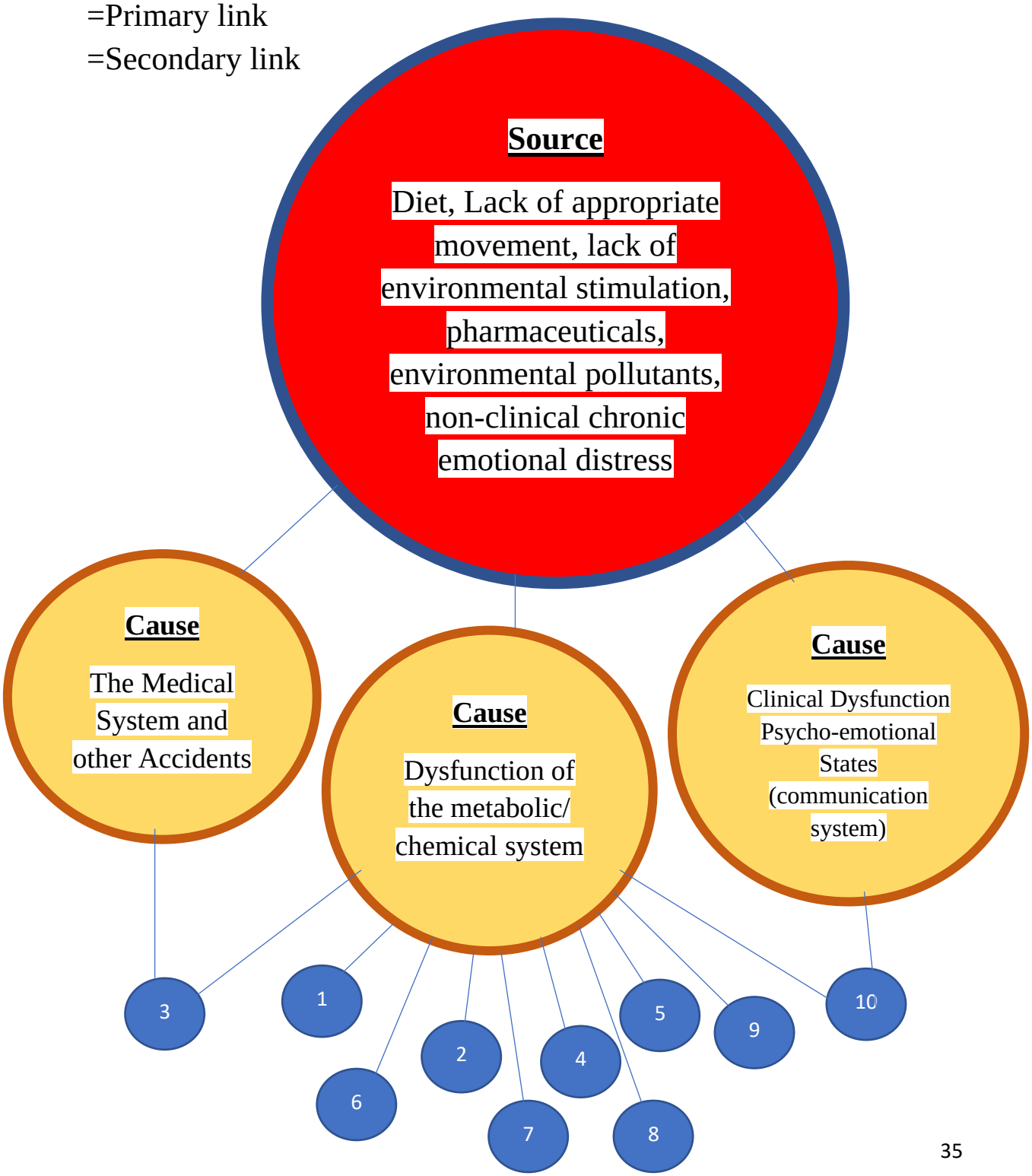
[10] Not an indictment of medicine, but a statement that, if the body is in a state of emergency in a complex system of care, mistakes get made.

#	Event	Cause	Source
1	Heart attack	Cardiovascular/Metabolic Disease/Chronic Inflammation	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress
2	Cancer	Dysfunction in physiological (esp. metabolic and immunological) balance/Chronic Inflammation	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress
3	Unintentional Injury	Medical System and Car accidents are main	Sleep, emotional distress, chronic disease leads to being in the doctor's office.
4	Respiratory Failure due to chronic scarring	Chronic Respiratory Disease….auto-immune/respiratory disorders/Chronic Inflammation	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress. Genetic dispositions
5	Stroke (CerebroVascular Event)	Cardiovascular/Metabolic Disease/Chronic Inflammation	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress
6	Alzheimers/Dementia	CV/Met Disease/Chronic Inflammation/Auto-immune dysfunction/Chronic Inflammation	Multi-Factorial: Entropy due to aging and ….. Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress
7	Diabetis	Metabolic Disease/Chronic Inflammation	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress
8	Flu/Pneumonia	Lowered Immune Function	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress
9	Nephritis (Kidney Disease)	Metabolic Disease/Chronic Inflammation	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants, emotional distress
10	Suicide	Mental Disorders-Anxiety, Depression	Multi-Factorial: Diet, Lack of movement, lack of environmental stimulation, environmental pollutants all shown to be factors. Though, obviously emotional distress and other life events are main.

**There are a great number of factors that are 'sources' of disease. However, this text is focused on the proven sources that have a highly significant impact from within the domain of movement science.

Another way to look at it…..

=Source (distal cause)
=Cause (proximal cause)
=Event (cause from CDC list)
=Primary link
=Secondary link



The 'Source of the Source'

Corporate Structure

- *"More doctors smoke Camels"*-1946 ad campaign
  Information about cigarettes' health hazards had been around since the late 1800's. But it took until the 1994 for the industry to be called out in congress. We all know how that turned out.
- "*Oxycontin…only 1% Addictive*"-Mis-labeling in pharmaceuticals starting in 1990's.
  The pharmaceutical industry pushed pain medications knowing the addictive nature/health side effects for profit. Many deaths through overdose and addiction occur.
- The demonization of fat. The sugar industry fudged studies (scientific research) to demonize fat and substitute sugar as an ingredient into foods calling them 'low fat' or 'light' starting in the 1970's. The result was the subsequent obesity epidemic along with inflammatory disease we see today and is the subject of this chapter.

There is a plethora of other examples of companies having an incentive toward profit rather than consumer health. It is not my intention to demonize the companies. But I seek rather to encourage and empower the consumer to think critically about the cascades of health effects produced by our common everyday environment and products…food, medication, cleaning products, plastic containers, etc.

Laws require that shareholders be placed as top priority in operational decision making for a company. Again, this is not a castigation of companies or corporate structure. But, in order to facilitate decision making, we must understand incentives of different parties and why operations (sales/service/etc) may not produce the consumer benefits we may expect in a given area/industry.

Healthcare and Insurance

Clients ask me all the time: “Why don’t you take insurance?” Well, insurance is a **reactive** service. Operationally, it is not meant to be **pro-active**. The service I provide for clients is COMPLETELY pro-active!

Think. Car insurance doesn’t cover your car’s oil changes or alignment or basic repairs. Home owners’ insurance doesn’t pay to fix the roof or paint the house.

Insurance in healthcare was originally meant for ‘catastrophic’ events like it is used for house fires or car accidents. The problem is that physical human health is a bit different than those other situations.

This is why, presently, physical therapy commonly works with an algebraic prescription model (standard interventions with a focus on local anatomy) rather than the ‘tinkering’ (holistic, functional, integrated) method that it used to. PT sort of straddles the zone in between ‘reactive’ and ‘pro-active’ care. Then an insurance company has to apply a specific equation to the problem of how to compensate for covered treatments.

This is one reason why our healthcare system has failures in treating chronic disease. There is a discontinuity with the care or service provided and the system put in place to pay for it. The systems of care to optimally address chronic conditions are ‘**pro-active’** while the operation systems underneath the system of care is **‘reactive’**.

Chronic Deconditioned Syndrome[11] and QALY's

Chronic Deconditioned Syndrome is a singular term for the group of chronic conditions that are ***sourced*** from the lack of physical demand owed to a sedentary lifestyle, dietary implications, stress, and environmental toxins. ***General inflammation, chronic pain, metabolic disease, cardiovascular disease, pulmonary disease, immune system disorders, and psychological disorders*** are all part of this larger integrated condition whose 'source' was gone over in the last section.

Movement science is generally more concerned with 'quality' of life than the length of life. If we refer back to the CDC table of causes of death and look at the columns on the left, we can see that 'causes of death' by chronic conditions start occurring in lower ages. Since these chronic conditions take time to become serious enough to cause death, the conditions themselves are present for years, even decades. The decades in which they are present before death see a significant decline in the **quality of life** due to these conditions. In healthcare this is measured by a metric called a QALY (quality adjusted life year). We won't go over the specific equation to calculate this here. But it is a concept that we should be familiar with.

Kinesiology and movement science along with healthcare studies have long proven that intervention with appropriate ***physical activity, environmental demands, and nutrition can reverse these diseases***. And, there is a precision approach associated with the improvement of each condition. These are the major topics of our system.

[11] Dr. Carmine Gangemi, DOC coined the term in a conversation with me several years ago.

It takes a long time to acquire a negative physical condition. We may not be aware after a while that our condition is not normal. So, here is our questionnaire to get a good idea of where you fall in relation to this concept.

#	Question	Answer
1	I am absent of continuous or recurring back, knee, shoulder, neck pain lasting years.	○ Yes ○ No
2	My fasting blood sugar is below 100 mg/dl.	○ Yes ○ No
3	My BMI is below 25 (or healthy composition for athletes).	○ Yes ○ No
4	I have not been diagnosed with heart disease.	○ Yes ○ No
5	I can tie my shoes easily	○ Yes ○ No
6	I can reach above my head easily	○ Yes ○ No
7	I can get up and down off the ground easily	○ Yes ○ No
8	I would be confident walking up 5 flights of stairs without trouble.	○ Yes ○ No
9	I could walk 4 miles without trouble.	○ Yes ○ No
10	I am free of anxiety/depression without cause from a life event.	○ Yes ○ No

A 'No' answer to any of these is an indicator that an area of health needs to be examined.

Fitness?

As we really start to talk about conditioning programs, I want examine the word 'fitness'. The word 'fitness' has a rather ambiguous definition and is even more ambiguous in practice.

Fitness defined:[12]

> *"The condition of being physically fit and healthy";*
> *"The quality of being suitable to fulfill a particular role or task";*
> And, from biology, my favorite and most accurate…. "*An organism's ability to survive and reproduce in a particular environment".*

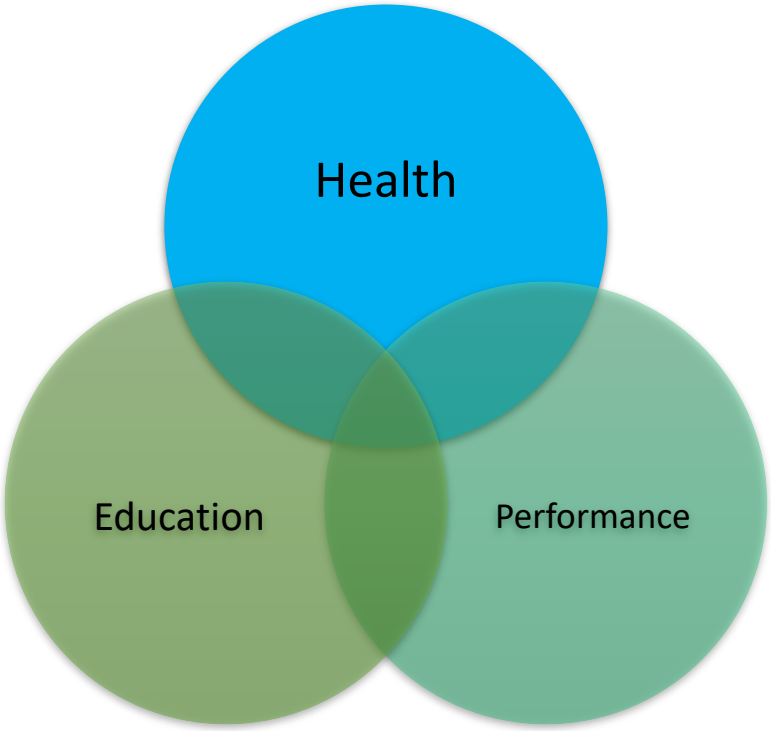
You may notice that there is nothing mentioned in the above about body fat or 6 pack abs. The ***concept or premise*** presented above IS the blend of health and performance as related to individual need. However, the ***practice*** of 'fitness' as an industry in the United States has a focus shifted toward an *external* outcome of material and aesthetic form rather than physical health, performance or *internal* development.

The focus for companies within the fitness industry is on **supplement retail, beauty boutique type services, machines that become coat-racks, memberships that aren't used, and training session sales** rather than MEASURABLE HEALTH OUTCOMES, *education*, and *functional performance* for the consumer. This is how the commercial fitness industry makes money.

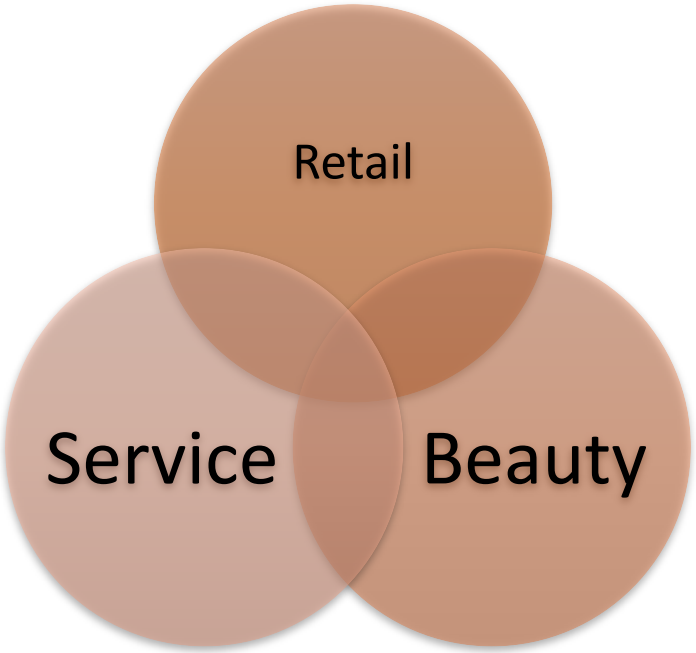
We visually conceptualize this disparity in the diagrams on the following page:

[12] https://www.google.com/search?sourceid=chrome-psyapi2&ion=1&espv=2&ie=UTF-8&q=fitness%20definition&oq=fitness%20de&aqs=chrome.0.69i59j69i57j0l4.2780j0j7

Premise



Practice



Fitness magazines in grocery stores, commercials, articles in the news, the ads within the gyms all utilize the 'weight loss' concept above all other measures of health to motivate sales through our insecurities. This is rather than giving us a complete look at the physical health and function of an individual by *forwarding education, independence, and measurable internal and external outcomes*. In other words, they (whether purposefully or not) have us all marching in circles.

For optimal health, a look at the individual from a holistic perspective utilizing measures including those **for mechanics, tissue chemistry, bone health, psychological health, and cardiovascular health** are necessary. As well, the utilization of the healthcare process of: **diagnostics, prognostics, treatment, and monitoring** need to be followed to produce the desired returns.

Ask yourself:

- *When did a personal trainer assess me or contact my physician **after** the onset of a program rather than just during the sales process?*
- *Is my fitness center selling me results or products and processes?*
- *Am I being tested and evaluated in reasonable time increments (by medical or fitness professionals) to show a detailed account of my body's progress **in actionable time**?*

Since the commercial area of fitness that we just described is the area most available to most persons in our current society, these paradigms and business systems lead to a population that is woefully undereducated, uninformed, and frustrated over why they are unable to make changes in their own health.

This is partially why the incidence of chronic disease has a direct rather than inverse relationship with the growth of the fitness industry. As the fitness industry grows, the money spent on chronic disease should be going down, not up (It's going up!).

Again, it is not my intent to demonize an industry. It is my intent to give insight to the underlying thought processes and incentives that create operational issues that lead to a dysfunctional service, product, or entire industry. It is time for new principles, paradigms, and approaches to be used in programming and business systems alike.

Answers?

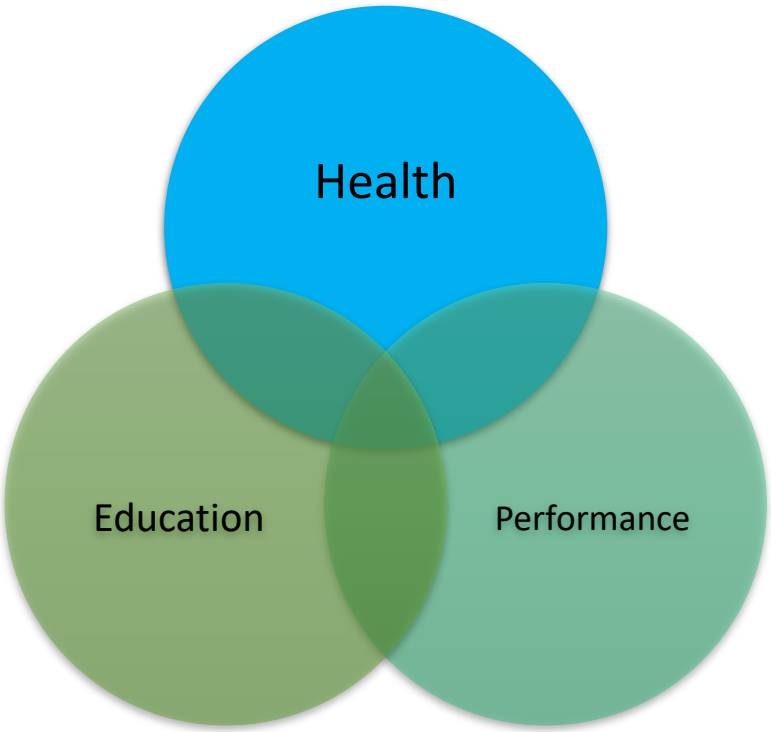
Medically Oriented Training Systems

"The doctor of the future will give no medication, but will interest his patients in the care of the human frame, diet and in the cause and prevention of disease."

— Thomas Edison

First, what is '*Medically Oriented Fitness*'? *Medically Oriented Fitness* is a philosophy and way of delivering care that thinks of 'fitness' and 'health' as two continuous concepts on a singular spectrum of care for the human condition. In the medical system of the ancients (think Hippocrates), this was the common paradigm.

RootHealth Medically Oriented Training utilizes:



1. The **healthcare** process (diagnosis>prognosis>therapy>monitoring/repeat diagnostics) as the

overall continuum of care. This is especially related to testing and diagnostics related to health conditions.

2. **Performance** (movement science) methodologies to develop the body
3. Health **education** to develop client/student independence

Versus Current Paradigms in Health and Fitness

A person should have a basic understanding of the current state of the different industries involved in our health in order to make their own decisions for their own needs. We need to know: how they work, the goals of the companies involved in that industry, and what kind of principles they follow.

Currently the business or industries of fitness and healthcare are very separate instead of the integrated system that you are about to be involved in. Somewhere along the line, hyper-specificity in the healthcare system separated the approaches of ***exercise*** and ***nutrition*** (fitness and wellness) and our ***pharmaceutical/surgical interventions*** (medical) into two disparate industries. A reintegration is emerging.

Medically Oriented Training/Fitness Systems are the new evolution of health and fitness concepts working together to solve this problem. Medically oriented training systems get back to the '***premise***' of fitness AS a '***practice***'. Medically oriented training first attains the metrics through testing that directly pertains to the health of an individual in relation to pain, metabolic disease, cardiovascular disease, injury prevention or other risk factors and then performs them again to attain multiple data points showing progress.

Many of these tests are provided by the healthcare provider with the patient's permission. Others can be performed by the exercise physiologist/kinesiologist. These programs work with the healthcare practitioner for complete care of the patient/client for reduction of risk of admission/readmission, pre-hab, and post rehab from medical events.

*Medically oriented **training systems** are individual physical conditioning programs focusing on correcting imbalances within the body that lead to pain, sickness, and a dysfunctional system through the movement sciences (specific exercise prescription, manual body work, nutrition, and nutriceuticals[13]).* We use medical testing, a performance environment, and an educational system for the **comprehensive** care of a person's well-being.

After health risks and imbalances are cleared, then performance can be worked on. We utilize techniques from all different aspects of healthcare and performance programs to bridge the gap in between an individual being in the injury (or sickness) cycle to beginning to develop their fitness and performance.

About EIM

"Exercise is Medicine® is an initiative started by the American College of Sports Medicine and the Center for Disease Control focused on encouraging primary care physicians and other health care providers to include exercise when designing treatment plans for patients or to refer the patient to a qualified health and fitness or other allied health care professional for exercise counseling. Exercise is Medicine is committed to the belief that exercise and physical activity are integral in the prevention and treatment of diseases and should be regularly assessed as part of all medical care."[14][15]

The Health Care System

In order to optimize our health and performance, we must utilize the health care (medical) system. The health care system has tools and

[13] personalized prescriptive nutritional supplements

[14] Medically oriented training systems or fitness centers are not an Allied Health or healthcare service. Therefore, a physician's guidance is always recommended before entering an exercise based conditioning program.

[15] Acsm.org

services for us to use to take out the guess work during our journey. When looking to alleviate conditions, optimize your health, or develop your performance, follow the following guidelines:

1. Testing and monitoring: The first and most important step in medical care is diagnostics. Without knowing our current condition, we cannot know what action or direction to take in improving it. Utilize diagnostics through: ***tissue and fluid analysis (in vitro) for hormones and nutrient deficiencies, biomechanical analysis from a physical therapist, bone density or other imaging tests if over a certain age and/or recommended by your physician, and any other testing that may pertain to your personal traits***. The current healthcare system recommends a yearly physical. My clients get evaluated every quarter for at least tissue and fluid analysis.
2. Referral: At this time, the healthcare system works with practitioners primarily functioning as separate units. As we will speak of below with **Integrated Medical Groups** and spoke of above with **Medically Oriented Training Systems**, this is evolving to a unified service. With the current state of healthcare, though, it is important not only to get a trusted professional as a primary care physician, but to get one that follows current paradigms of preventative care and can refer to other trusted practitioners on both the healthcare and wellness/fitness side of things.
3. New business and care delivery systems: The business of health care is changing. The Affordable Care Act changed how the health insurance and health care system approaches their services. Some new and exciting business models are coming along that can offer us the ability to take a more comprehensive pro-active look at our health.

a. **Concierge**: Single yearly or monthly pay for all health services
b. **Integrated Medical Group**: Many practitioners working together in an 'under one roof' rather than a referral network.
c. **Functional Medicine**: Functional medicine is an integrated approach that focuses on identifying and addressing the root cause (source) of disease.

These systems are fantastic for getting a higher level of service through frequent testing and optimal care that seeks the 'source'.

4. <u>Pick the right professional</u>: Doctors suggest treatments, coach and guide us. In our last section of this guide, we will speak in detail about the specific job titles that will guide you to choose the right Dr.'s, coaches and professionals within the movement sciences for your needs.

   A main factors to look for when looking for a professional will be the specific education/experience for your need and making sure there is no bias inherent in their services. As pertaining to bias, I pose the following: *Would you hire your IRS auditor as your accountant? Or your butcher as your nutritionist?* Think of this in relation to anyone coaching or advising you in any industry or area of life. Do they have a vested interest in your decision making?

How is the healthcare system working for you? Write the answers to these questions on another sheet of paper and keep them in mind while reading the rest of the book and when you utilize services in the medical or fitness industries?

- Do you think the healthcare system kept you and your family in optimal health?
- Do your providers know you personally?

- Have you gotten great sustainable lifelong results from the medical or fitness industry?
- Are services in our system easily accessible to you when you need them?
- Does your physician spend time or offer you resources to teach you the specifics of how to keep healthy and avoid the need for prescriptions or surgery?

Part II: The Project is…YOU

Everything we go through now is the 'how to' section. From *assessing behavior and activity, health screening, to keeping a mindset to setting goals to planning* your training is going to be covered here. A couple of things to keep in mind.

1. Exercise technique is specific and is many times individualized. These are covered in our other books covering each domain we are covering here. As well, there are numerous YouTube videos by many experts. In this guide, we will be focusing on developing a general approach to activity, and a broad plan of action.
2. The steps we list here are not linear but cyclical. What I mean by this is: All these actions/phases are happening over and over throughout the process of development, not in a specific order necessarily.

   While I present them as I would go through them with a client or an athlete, that is because, as a coach, I have to have a process. This process is best based on its relationship to the medical process, project planning, and athletic conditioning.

Athletes have a more linear process dependent on their season or event. For most of my non-competitive athletes (this is probably you), this is not the case. While I suggest using these steps in order at least once to learn and get ahold on them, you don't have to be married to it.

Starting with 'assessment' and 'goal setting' is a good idea. But you may not have refined goals at first. So, if you want to start with just walking out the door and starting to move, that is terrific too! Just make sure you start with comfortable easy to perform work first.

3. There will be 3 'Phases' that I will go through as major steps. Though some of those 'phases' will have many sub-steps or phases. I like the process the way I've laid it out. But you may decide it is better for you to start at the phase or step that you feel most inclined to take action at.

   Maybe 'mindset' really resonates with you. So, start there. Maybe you're a data person and like analysis. Physical Assessment may be your best starting point. Maybe, more than anything, you want to feel strong. Then starting with pushups (if that is appropriate for you) every morning is great! Wherever you decide to start….. START!!

What you are about to embark on is a major lifelong project. As such, we will be utilizing basic project management techniques throughout our process. There are a few analogies that I like to make from other projects that are common for people to be involved in. One (and the one I follow most of the time) is the analogy of building a house. Since this is a project of physical development, I think that the building of a house or something physical in its nature is appropriate. A car is also an apt comparison. Another metaphor that seems to work is that of a journey to get from a certain place to another place.

If we were to build a house, first we are going to want to make some blueprints. We must analyze the questions: ***"What do we want our house to look like?", "What should the function be?", "How big does it need to be?", "How long will it take to build?", and "What materials are needed versus what can we afford?".***

If baking a cake: ***"What are our ingredients and what is their quality?"; "What kind of equipment do we have to cook and mix with?"; "What kind of cake do we want to eat?"***

Before we leave on any journey, we must first know where we are going and how. If we are taking a trip across country, we first must ask: ***"Where do I live now?" "What kind of resources (transportation, money, clothing, etc) do I need to get there?" "Is there anyone going with me?" "What's the best route to take?" and "Why do I even want to go there in the first place?"***

These are seemingly common-sense projects with common sense steps. However, when it comes to developing and building the human body, common sense is more ambiguous. Maybe it's because of the body's complexity, the fact that each body has individual differences that are not necessarily predictable, or because of our emotional attachment to our body and its image.

In the aforementioned analogies, you may hire a travel agent, an architect, or a chef. In our situation, depending on what changes you need to make, a trainer, psychologist, conditioning coach, or primary care physician may help you along the way.

Phase 1-Intitiation

- **What is RootHealth Strong?**
- **Mental Preparation: Mindset, Psychology, and Philosophy**
- **Assessment**
    - **Understanding Activity**
    - **Assessing Condition**
- **Individual Goal Setting**
    - **ROI and physical activity**

Phase 2-Project Planning

- **Planning Specifics**
    - **Putting activity into baskets**
- **Identify Hurdles**

Phase 3-Execution & Control

- **Allocating and redistributing resources**
- **How to keep moving forward…without stress or more ‘work’**

Phase 1:

Initiation

- **RootHealth Strong?**
- **Mindset**
- **Assessment**
  - **Understanding Activity**
  - **Assessing Condition**
- **Individual Goal Setting**
- **ROI and physical activity**

This might also be referred to as the ‘preparation’ phase. Now we understand something about the problem we are trying to solve. We need to get more details on the current state of things. What are our tools to work with? What should we truly work toward? What mindset should we have to move forward?

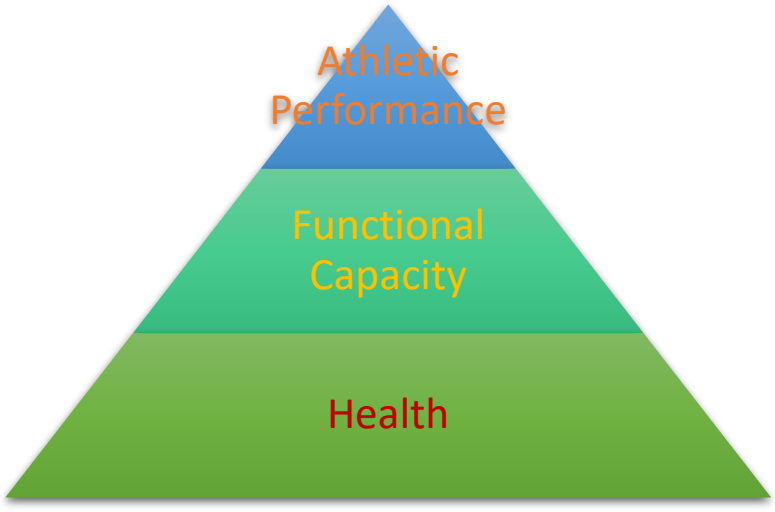
RootHealth Strong

Strength (noun): [16]

The property of being physically or mentally strong; Physical; Energy or intensity; An asset of special use or utility; Capacity for exertion or endurance; Power to resist force; Solidity, toughness; power of resisting attack; Impregnability. I am going to add the word*: 'competent'.*

We are looking for 'strength' or competency of ALL body systems. RootHealth Strong is the opposite of what was laid out in the section on chronic conditions! We are looking to create the best **'terrain'** for all out health and physical performance!

We want each system of the body to function for the following purposes and levels of competency. There are 3 levels, each one supporting the next. We will refer to our approach to this relationship of our body's abilities as '***foundational conditioning'***.



[16] https://www.definitions.net/definition/strength

We can see where the relationship between these 3 areas has obvious overlap. Most of this book's concentration is on the lower 2 levels of this pyramid diagram. Books written for specific areas of performance enhancement in the domain in which you are developing are better for the top layer.

The Layers of the Foundational Pyramid

Another way to look at the concept of RootHealth Strong is that of 'heartiness' or 'resilience' in every domain of the body's performance. One analytic technique I've found helpful in order to define which level you are at and what you are trying to achieve is to ask the question, "*What would defeat mean in relationship to my body?"* Keep that question in mind. I'll elaborate at some point in of each of the following sections.

Health

"To keep the body in good health is a duty, otherwise we shall not be able to keep our mind strong and clear."-Buddha

"Changing the paradigm of American health from 'reactive' to 'proactive' while fostering the individual ability to develop one's own physical condition is the mission of all Functional Medicine/Health." RootHealth

In training for **'Health',** we are using the science of human movement to develop the body's **competency** to **fight disease** or **resist injury** to **ALL BODILY SYSTEMS!**

When does one use healthcare (the medical industry)? When one is UNHEALTHY. I think this is a little backward in the context of creating *optimal* health. I have had many family members with a wide variety of health concerns.

Returning to the question above of, "*what does it mean to be defeated?": T*o be defeated in the context of one's health, would mean death, disease, or disability.

- *My father, for instance, had more than one hernia and heart disease that required a heart valve stent. These occurrences were very likely preventable by:*

- *Completing tests earlier with narrower margins designed for optimal health rather than disease*
- *Prescriptive exercise and nutritional interventions prior to reaching the 'disease' or 'injury' state.*

- *My mother was born with spina bifida. This is a degeneration of the spinal cord due to a malformation of the spinal column. Her degree of this condition has some neurological implications such as muscle spasticity, nerve pain, and lack of energy. However, she has mitigated the effects in severity by maintaining an exercise and nutritional regimen while undergoing frequent health testing and assessment.*
- *My grandfather tripped on the carpet at a family gathering. He broke his hip. After recovering from the injury, he became much less mobile. His ability to complete activities of daily living declined. His general activity level declined. Following this, his cognitive ability declined. Quality of life was significantly affected for the last years of his life following a singular event. Could he have been trained into better function following the event? Would motor development training have helped him to avoid the event in the first place? Could weight training have improved his bone density and avoided the break in the event of a fall?*

The people above, everyone else I know with health conditions, you, and your family need to experience a proactive system that allows you to address physiological imbalances BEFORE they become a medical condition or acute event. If an event does occur. I want you to be empowered to develop yourself.

What kind of conditions do you deal with? (I know it's a little redundant from the chronic conditions chapter…but worth answering)

- *Do you have neck, back, knee, shoulder, or other type of pain?*

- *Have you been diagnosed with heart disease?*
- *Is your immune system strong?*
- *Are you sick all the time? How about hormonally?*
- *Are you tired, depressed, anxious?*
- *Do your thyroid, adrenals, and sex organs do their job?*
- *Are you told by your doctor to lose weight by 'exercising' and 'eating better'?*
- *What does 'exercising' and 'eating better' even mean?*

Functional Capacity

"The greatest gift you can give somebody is your own personal development. I used to say, 'If you will take care of me, I will take care of you.' Now I say, 'I will take care of me for you, if you will take care of you for me.'"

— **Jim Rohn**

A philosophy of '**utility**': The development of the body beyond simply being absent of disease or chronic pain is **being useful**.

The term '***functional capacity'*** is used in the subset of movement science called **occupational health**. It is a term that describes a measurement of our body's ability to be 'useful' in our daily lives. Our bodies need to be useful to ourselves, to our family, friends, teammates, and coworkers. One is not very useful if one is unhealthy. Beyond the elimination of health conditions, one optimizes their usefulness though strength and conditioning with respect to the physical tasks and activities that are common or may be demanded of us. The goal of all our training is 'utility' or the ability to be useful to one's self and others.

To be defeated in the context of '***Functional Capacity'*** may mean not being able to carry out regular ***activities of daily living*** without pain. It may mean not having the energy to perform activities such as going up the stairs without being winded or playing games in the park with a pet or child.

I was on a family vacation a while back. I had just gotten to my sister and brother- in-law's house a few hours prior. My brother-in-law asks me if I would help him remove a tree stump from the back yard. Sure. Of course.

So, this thing was already dug out but needed to be lifted out of the hole. There was nowhere to grip onto it to lift and it was HEAVY. The roots were soaked with mud and water. Another friend had come over to

help. A strong guy in his own right, he mentioned that all of us should be able to lift 200lbs of it each so it should be fine. But, after a ½ hour of trying different techniques, we were not able to get this awkward SOB to where it needed to be.

Finally, we grabbed some tow straps. We hooked them around the stump and wrapped the end around our forearms. We pushed our hips back with a flat back and slightly bent knees, tightened, then drove our hips forward lifting it out. If this had been a barbell, the exercise would have been a Zercher style stiff legged deadlift (for those of you lifters out there).

I can't say how heavy the stump was. I have a deadlift well over 2x my body weight. But, unlike a barbell, this was awkward, had no place to grip for moving and was at a difficult angle to pull rather than straight up. The point is that, without any strength training, it is fairly unlikely that we would have moved the tree without considerable pain or the chance of injury. It felt good to be useful.

Every body should be able to perform basic tasks of daily living without risk of injury or chronic pain/discomfort/hardship and without outsourcing the activity. Gardening, helping someone move, climbing the stairs, cleaning, and repairs are all examples of these.

Athletic Performance

'***Performance***' is a word used primarily to denote competition within athletics or events one uses to test their body's limits as a recreational pursuit.

While most of the people reading this book may be looking to address health conditions or injury, athletic performance training is where the study of all these concepts typically begin and eventually lead to. To be defeated in '**Athletic Performance'** simply means that the other person in a competition scores more points.

In journeying through our method of training, one may start looking, at a certain point, to develop themselves for some sort of physical test or athletic event. Our information and systems will lead you on a path that can be continued into the realm of athletic performance. Though, this text excludes that particular domain, the principles presented here will help you to establish the long-term physical attributes that can be built on when training for competition.

Our definition of an effective program is the creation of a ***strong, injury resilient, sustainable*** physical condition that is ***PRACTICAL TO MAINTAIN.*** We are looking for balanced performance from our body in the LONG TERM. Short term gains are great for those before/after pics. But a solid foundation is what we are building here.

The benefit to athletic performance is that we will create a state where your training will only need an extra element of volume, time, or intensity to move into training for competition.

- *What have you always wanted to do? Run at triathlon? Compete in a strongman competition? Take martial arts?*
- *How do you want to test your body's capabilities? Here is where you establish your long-term foundation that can be built on for any further physical activities/goals.*

Foundational Health Questionnaire

On a scale of 1-5, answer each question within the range you feel is best. This will give us an idea of where you fall on our pyramid and which stage your program will start.

Question	Score
When I wake up in the morning, I feel a freedom of movement (no muscular pain or stiffness) (stiff/pain = 1, fluid = 5)	
Rate your ease in walking up a flight of stairs (easy = 5, difficult = 1)	
From my yearly physical, my level of confidence is….? (high=5, low=1)	
How confident would you feel in your ability to walk 4 miles without fatigue? (high=5, low=1)	
If I have to put an object of medium weight on a high shelf over my head, my level of anxiety is….? (high=1, low=5)	
There are no movements in my day that cause pain or discomfort. (Yes=5, there are lots and they are difficult = 1)	
What is your confidence in performing 10 pushups (low = 1, high = 5)	
My energy is…. (awesome! = 5, tired a lot = 1)	
My first primary goal is to (be free of disease = 1, perform tasks of daily living w/out diff = 3, perform in an athletic event = 5)	
If you had to help a friend move, would you feel confident in doing so without any physical issue? (low = 1, high = 5)	
Do you have an active interest in athletic events? (yes =5, no = 1)	

The answer to each question will give you an idea of whether an area of your physiology is in more in the range of needing work to be:

a. *free of disease and chronic pain or*
b. *ability to perform basic tasks or*
c. *go out and compete!*

When I was young (early 20's), I told you earlier that I had severe chronic back pain. The thing is…I lifted HEAVY weights in the weight room. I did some pretty good cardio. But one time I threw out my back (had a debilitating spasm) when putting a dish in the dishwasher. Getting dishes from the cupboard by my knees in the kitchen was an undertaking. Does this sound like a 'healthy' guy? How would I look from the questionnaire? I've been there folks. Be honest with yourself and you'll get a good picture of where to start and get GREAT results.

Foundational conditioning is a concept involved in evaluating the LEVEL of condition we want to be at in a certain physical domains or systems. In order to ascertain what those domains are, we turn to back to Holistic Kinesioligy.

Review of Holistic Kinesiology Functional Body Systems

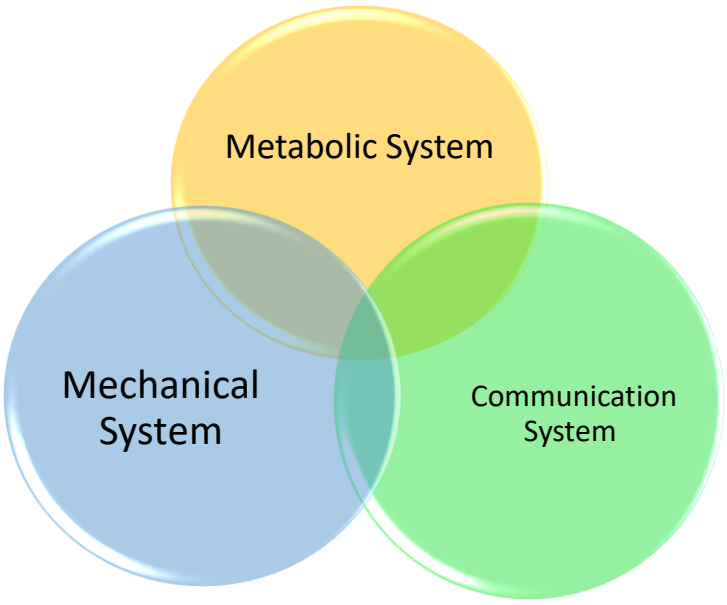
Holistic Kinesiology has several interdependent areas of focus with regard to human systems (and therefore, specific conditioning). Each area is referenced with regard to human body systems that work together, functions within that area, and the activities that it takes to develop it.. Each '**System**' is approached with a small mini project or area of focus within the larger project of YOU to get you to RootHealth Strong!

Here are the general system with their approaches from the health/fitness/athletic performance world for each theater:

- Communication System: **Nervous system, endocrine system.** Training for this area comes both from developing mental programs for success starting in the mind and physical development of the aforementioned systems from a variety of activities. The nervous system is the main system used in any category of physical activity or movement. However, its primary

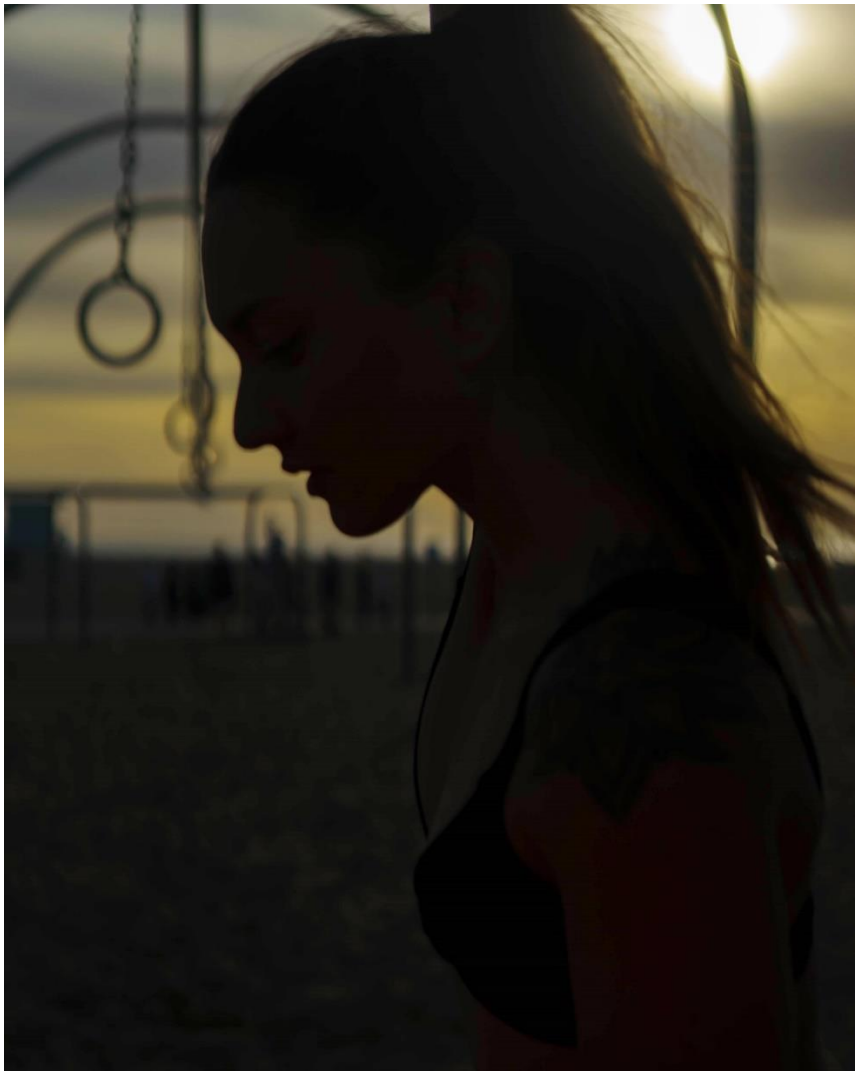
focus beyond the other systems is in the area we call **'athleticism'** that focused on **coordination, reactivity, and fine motor skills**. The endocrine system is affected in different ways by all other physical approaches which we will be going over.

- Mechanical System: **Muscular, fascial, skeletal systems**. Training for this area is in the traditional '**resistance' or 'strength' training** but also including mobility and range of motion.
- Chemical System: **Digestive, respiratory, integumentary, circulatory systems.** As you can see, this is the taking in of chemicals into the body in the form of food, oxygen or other nutrients and then transporting them to body tissues. We train this through nutritional **conditioning, environmental conditioning and cardio-respiratory conditioning**.
- Energetic System: **The Chi**. While we recognize this area of kinesiology as an important one, it is outside our expertise and so won't go further into discussion on it within this book. Body energies are important though difficult to measure and manage through western medice and thought. Approaches to this may be T'ai Chi, meditation, or work with an energy kinesiologist.



Mindset

Mental Preparation-Psychology & Philosophy for Success in Physical Goals



*So, now we know our **external environment** in terms of society and industry. We have determined what we are generally shooting for. It is now time to address the internal environment.*

'Behavioral Kinesiology (in this instance 'Sports' Psychology) is paramount to success in any goal. Your mindset will determine the outcome. Bad mindset=bad outcome. When I coach one on one clients,

they must understand at least the general principles for mindset when they start the program. A coach and student work on developing these skills throughout a program. Before they begin though, a student should attain a level of understanding of certain subjects to build mental habits on.

The Readiness to Change (Transtheoritical) Model

Our program follows what, in addiction psychology is called, the **readiness to change model**. Essentially, the concept is that when one wants to make a change or begin a project on themselves there are stages one goes through mentally along with the project stages. The stages are as such:

1	Precontemplation: The person has no inclination to make a change. *You are not here or else you would not be reading this book.*
2	Contemplation: A person intends to make a change in the next 6 mos. They are aware of the positive outcomes of the change. They may be unsure and anxious about how to procede. *You very well may be here as this is the main focus of this text.*
3	Preparation: The person plans to start their project within a month. They have a plan set out. *This is also a very likely place for someone reading this book to be.*
4	Action: The person has already started actual activities within their self project. This book might help refine that action plan.
5	Maintenance: The person is maintaining the results of the project. This takes less resources than the action stage. *If you are here, as this is a lifelong project, you may be wanting to take some of the content of this book into consideration for the next time through.*

From the domain of ‘sports psychology’and addiction medicine, the readiness to change model, and my own experience, these are some main points to keep in mind in order to move through these stages and your project effectively.

1. Accept and acknowledge your current condition, objectively and without judgement.

'Everything can be taken from a man but one thing: the last of the human freedoms—to choose one's attitude in any given set of circumstances, to choose one's own way.'-Victor Frankl

There's a reason you're reading this guide. There's a reason you bought a gym membership. There's a reason you spent money on home gym equipment. You want your condition to be different than it is now. A great many of you may have had a doctor tell you to make some changes but have been left with no direction toward making those changes. Some of you may not feel good about your looks. Many of you have chronic pain, don't have enough energy, or are depressed.

Unfortunately, much of the time, the very reasons that we need to make a change are exactly what stops us from taking action. It's a 'Catch 22. "*I am depressed and it would help tremendously if I worked out and moved. But I cannot move because I am depressed."*

We lament about the condition that we want to change. We spend more time and energy lamenting than we do actually doing anything about it. This is very common in the 'What's my first step?' stage.

How do we get past this? I like to get some tests to get an objective qualitative and quantitative view of my total health. This puts things into perspective: *"I'm fat."* is not a health diagnosis. *"I have a high BMI and body fat percentage that puts me at risk for diabetes."* is much more objective and actionable a statement. It relays a mindset in your subconscious that acknowledges your current state and that you have the ability to move to a different one.

Statements, like our first one relay to our brains a permanent state. Our second statement is a temporary one. Our mind treats our temporary state as changeable and our permanent state as static. We

must have our mindset open to change. This lets us look at the world as it is and not worse than it is. Our first statement is a judgement about ourselves. The second statement is an objective look at our current state of being.

2. Make the decision.

"*How do you eat an elephant? One bite at a time."*

Whatever change you would like to make, DECIDE to make it. Take the first step, then the second, then the third. Take it slow…or fast. Either one is fine. But, DO it. Invest what you can at the beginning, then build. But you must make the decision first.[17]

3. Visualize and tune in your inner monologue.

We all have a way in which we see ourselves. We all have a little inner voice telling us who we are and to act in a manner that is consistent with the information that voice is relaying to us. How we see ourselves and that inner voice are using information from past experience to sell us on ideas about our own personal details.

This partially explains why:

- Many poor people remain poor and the rich still make money;
- People who do not succeed academically keep getting lower grades and people who succeed when younger keep getting great marks;
- People who are unhealthy stay unhealthy while people who have always been fit remain that way.
- Alcoholics see themselves as the fun drunk and remember the fun times and wonder why they can't get sober.

This is despite any particular individual characteristics of intelligence or genetics. It is simply how we see ourselves sub-consciously. You can identify this if you pay close attention.

As well, you can take control and make adjustments to this through visualization, meditation, paradigm shifts, and alternate experiences. The more you seek the new reality, the more it will become realized. Of

[17] **Weinberg: Foundations of Sport and Exercise Psychology - 6th edition**

course, in the next chapter on ‘goal setting’ we’ll teach you how to define what you want to visualize.

My niece was climbing up a jungle gym with my wife and I watching. We laughed impressively as she climbed. This two-year-old, as she was trying to make it up the wall was repeating, “You got this.” “You can make it.” “You got this.”

She was a master of inner monologue and visualization.

4. Eliminate assumptions, myths, biases, and excuses.

Just because you’ve heard something many times does not make it true. As a coach… and as any coach, teacher, or instructor can attest, this is my biggest pet peeve. The very biggest problem to be overcome for any of us in these roles is this. I cannot stand to hear fatalist remarks in the form of:

- **Assumptions**: Ungrounded opinions based on under-examined past experiences or repeated misinformation.
- **Biases**: Prejudice and disproportionate weight given to one idea, person, group or situation creating systemic errors. Usually based on subjective points of view.
- **Excuses**: Real or imagined problems with no (or little) examination of a solution…usually based on other myths, biases, or assumptions.
- **Myth**: Myths are stories told (true or not) that help us to understand certain facts or concepts. Many myths in this industry are concepts based on a nugget of truth but prove less truthful in practice. These can be perpetuated by an industry as marketing or someone outside the industry for their own gain…such as some celebrity that has no education and has never coached a soul *(I’m talking to you Gwyneth and Cameron).*

Even the medical industry is responsible for these mistruths as their expertise is in ***reactive medicine*** and not ***pro-active health***. [18] In the next part of this section, we clear up common myths about principles and paradigm.

Myths and Fallacies in Health and Human Performance

In the pursuit of any outcome from any project, it is valuable to grasp the differentiation of concepts that work and are effective and those that are not in that particular milieu. Most of the concepts I will address as myths and fallacies are not necessarily completely false. Rather they are just not *very* true or as true as they are sold to be. The misconceptions are less of an absolute than they are a matter of nuance, degree, and clarity.

Here are some of those concepts as I have found them throughout my career. First, why do misconceptions occur in the first place?

- *It is difficult to prove prevention.* How can you say what would have worked better or what did NOT occur because of your intervention after the fact?
- Everyone has some similar characteristics and experiences. But there is also WIDE variability as well. So, the *scientific method can be difficult to apply directly* as compared to other areas of study.

Myth 1: "*Lifting makes you bulky"*

Not unless you really fulfill certain criteria within a program with focused intent and quite a bit of work on building size.

Myth 2: "*You can spot reduce."*

[18] Most of your primary care physicians have taken one class in nutrition and nothing in how the body adapts through conditioning. Their milieu, rather, is how drugs and surgery work.

Only with liposuction.

Myth 3: "*You can't build muscle and lose fat at the same time.*"

This is only difficult for body-builders or athletes in the 'peak performance' part of our foundational pyramid.

Myth 4: *"I'm just getting old."*

"Well that's just something you do now." –Louis CK in a comedy special gives a pretty funny story of a doctor explaining exercises that he has to do but has no explanation why due to his pains from 'getting old'.

My clients know not to use self-defeating talk like this. Not unless they want to hear me go on a diatribe like the one you are about to read. The real problem I have with this one is that doctors say it all the time.

The attitude that one cannot accomplish being pain free and healthy because one is of a certain age is false. As with most myths, this one is built on a truth but the scope is magnified. The truth is that after age 25 or so, the body does break down…SOME. Your ability to recover, burn body fat, reduce inflammation, or perform does reduce to a degree with age. But, the degree in which it effects our health is very low as compared to other factors.

Most of the studies on the subject do not take into account the full activity level of the participants because it is:

a) Very difficult to find a large population of older adults (25 and up) that;
b) Keeps the same 'activities of daily living' and training levels of their college aged selves (a limitation of scientific research is the pragmatism of a study).

So, the **magnitude** of truth in this concept is low in relation to our actual ability to accomplish a sustained healthy condition. I see 70 and 80-year-old people kicking ass and taking names. Have you ever been

to other countries? I was in Europe for my honeymoon and everyone in Munich who was older was healthy and walking around like anyone of any age. When in a foreign country, have you ever played the game, "***Pick out the American***." Nature or nurture?

PCI

The concept really at work here is one that I call '**Physical Compound Interest"** (**PCI** for short). PCI works just the same as interest does financially. As related to physical debts or chronic conditions it works like this:

I am young and active. I walk across the college campus every day, play some recreational sports and have a healthy sex life. After college, I get a sedentary job. I work in a cubical 50 hours a week. I drive there although, it is only a few miles away. I slowly start to get nagging back and shoulder pain. I ignore this as I concentrate more about my career and finances. My sex life declines.

I go for a hike with some friends and sprain my ankle. I compensate with bad body mechanics and get very bad back and hip pain. Now I take opiate medications to deal with the pain. The medications effect many other mental and physical areas of my life. I develop chronic heart disease and am extremely overweight.

All this happened over time. I must just be getting old. Sound familiar?

You see, each physical debt unchecked becomes like ripples in a pond. The effect is exponential, just like compound interest is financially. Now let's look at the opposite when someone uses PCI as a concept for physical assets rather than liabilities:

I am young and active. I played sports as a youth. I was taught how to develop my body from a family and education system that valued

physical health. It's after college. I work in an office but participate in many physical recreational activities. I walk or ride a bike to work. I make time to spend with my wife.

I train my body in the main aspects of health and vitality daily though not for extensive periods of time. I eat a healthy diet and have great energy to go on hikes. Every year, I compete in an event of a different kind. Last year, it was a triathlon. This year I am learning MMA and am going to have an amateur fight.

I frequently get physicals and health evaluations. If I ever get hurt, I know healing techniques as well have a body that heals quickly because all my body systems are highly alive and healthy. Because I work basic movement patterns, I am pain free most of the time. I have not had a surgery and rarely have had to take pharmaceuticals. I am the same age as the person in the example above.

The reality is that, while age does have some effect (is not JUST a number), the real issue is PCI. But PCI takes time and is mistaken for the effects of aging itself.

As related to PCI, it is possible to attain an extremely high yield from a program for just about anyone. Just like results from any investment, our yield will depend how much resources (time, focus, money, discipline) that we are able to put into the program consistently over time. But, just like investing, the earlier you start, the greater the yield. Through individual resource analysis, we will set a goal dependent on our individual resources with respect to what is common vs. what is possible to attain and sustain.

Autonomy as opposed to 'Just getting old'.

Autonomy is the mix of natural unimposed individual **freedom** and natural unimposed individual **responsibility**. You have the freedom to affect your own health. You also have the responsibility to do so. "*I am*

just old." or "*It's my genetics.*" are ways of using 'fault' of circumstance to alleviate the responsibility of the individual. '***Fault***' is something in the past that affected present circumstances. While '***responsibility***' what a person is required to do for an outcome in the present.

It is interesting. We all seem to want more freedom but less responsibility. Yet, I have seen that the greater the responsibility one takes the greater freedom one will have. One of the highest privileges I've ever had was to train those with spinal cord injury (SCI). One of the factors that these folks had beyond ANY other group of people I've coached is this: **All took responsibility**.

The fact is that any of those in the program could have put 'fault' elsewhere. All were 'victims'. The victimhood was not of a personal attack (for the most part) but of circumstance…something gone wrong in an instant. Those that let go of the 'fault' see results. I saw these people training harder than most athletes I've ever met. No complaints. Just work.

P-Man was 17 ½ when I became a part of his training team. At one year of life, an automobile accident left him a quadriplegic. He had been training at the center for 16 years. Every day he worked. Every day he had a sense of humor. NO day was he a victim or laid down 'fault' to excuse him from his responsibility to himself. His goal was to walk across the stage at high school graduation. P-Man did just that.

With the lights on the stage and his classmates cheering, he took the steps to move across the stage while grabbing his diploma from his principal.

"It's my genetics." is another myth along these lines. Yes, you should know your body type. Expectations for specific outcomes do shift a bit in relation to this. But I can't count the number of times I hear the equivalent of "*I'm just big boned*." from unhealthy sugar addicts.

I could name enumerable myths and excuses like these. But the lesson here is simple. Be like P-Man.

Myth 5: *"Training must take a lot of time and hard work."*

Nike ads have us thinking that we must go out and kick ass in order to train. This is true for athletes that want to put their bodies to the test.

But, effective, precise, and optimized programs can be designed to get you to fairly high levels of fitness with fewer resources than you think. The trick (that is not a trick) is to use low risk techniques with **frequency, consistency, and focus**.

'***Effective***'? What does 'effective' mean!? Don't all these fitness things have an 'effect'? 'Effective' for us means that we accomplish a result very specific to an individual's needs with the least amount of required effort. 'Effective' is both 'accurate' (hitting the target goal) and 'precise' (repeating results). To be 'effective' our program should utilize low risk, high reward techniques with frequency.

Following a specifically designed training program rather than randomly putting out effort, hoping that results produce themselves means we can save our time, money and attention for other life needs like family, work, or watching reruns of 'Married with Children'.

I watch reality shows on TV where people are put through grueling training to lose a lot of weight but have not built a foundation of fitness. Here are these people in horrible physical condition. They work hard and get results. But what is the danger of that work? What happens after that show ends? Do the results last? Plus, emotionally they look beat to shit. Is that sustainable? Look at this study to find out.[19]

One of the main ways we make things effective is with mitigating the ambiguity of treatment and performance methods. We do this with

[19] https://www.scientificamerican.com/article/6-years-after-the-biggest-loser-metabolism-is-slower-and-weight-is-back-up/

frequent testing and evaluation for individualization and progress. We work closely with other specialized professionals, and utilize a strategy focused on tried and true methods. This significantly improves the level of certainty towards one's desired outcome.

The example for me is Adam. Adam was in his mid-fifties when he came into our gym. He wanted to lose weight and gain muscle….basic fitness stuff. But he had a long standing shoulder issue. He also had a pain pill issue stemming from the shoulder issue. I worked with Adam for three years. One day before he moved back home, continents away, he told me, "I never thought I could get such great results by not working that hard."

Adam had been pain free for a couple years now, had long gotten rid of the pills, had great posture and a healthy BMI and body composition, and was extremely strong now for a guy pushing sixty. And, it seemed to happen just organically through ***consistent, focused action****!*

The route we took was one of developing a foundation and using ***focus, frequency, and consistency*** as our main variables. Sometimes we worked hard too. But that was not the main focus. 'Intensity' will only get you so far. But, stay on the road and keep moving like the tortoise in the story of the tortoise and the hair. You will get to where you need to be and looking back, it will seem like it was easy.

Myth 6: *No Pain/No Gain….*

Hardiness vs The Princess and the Pea

Does anyone remember that story when you were a kid about the princess and the pea? I don't remember the whole thing. But the concept was something like: you could tell a princess by placing a hard

pea underneath many mattresses and, if she couldn't sleep because of it, she was a true princess.[20]

Through conditioning, one should be able to get to know one's own body and condition intimately (like the princess) in order to identify imbalances. As associated with one's health, we can think of this as 'precaution' through awareness. As well, awareness helps in guiding our strategies. This is very important to injury prevention.

The opposite concept, borrowed from the field of psychology, that balances our princess concept is that of '***hardiness***' or the ability to handle and recover from difficult situations…both mentally and physically. Basically, we put up with a certain amount of discomfort during training for the good of the overall goal. In performance, this is '***strength***' or '***hardening***'. In health care, we can call this ***'resilience'***.

One of the main difficulties we have in all of these areas is how to balance '***precaution***' with '***resilience***'. After all, we want to be cautious in order to avoid injury. But we want to give ourselves a chance to grow with enough stimulus to be resilient when *life happens*.

Exercise and movement training have given us the ability to utilize these two opposing concepts for our advantage. We should look to be able to identify issues and 'nagging pains' that we once were simply uncomfortable with by becoming more body conscious. However, we should also, with training, be able to handle more workload without the fear of pain or our bodies being 'broken'…. So train hard, but be ever conscious! No pain, sometimes means success.

5. The Seven Deadly Sins of Health and Performance

(Mindsets that have a history of failure…AVOID)

[20] I always thought this was weird as I'd only had cooked peas before. Wouldn't it just squish?

Envy: Comparing yourself to others is a bad idea. Sure, competition is a great thing for drive and motivation. But you never know what someone else's resources are (physical, time, history of development, knowledge, etc). And, there is always someone in every realm that is better. Noting where other people are and what has led them to success is great. Disappointment in the fact your results fall short of theirs is not.

Greed: Greed is the expectation that what you will attain as a results/reward is disproportionately greater to what can be expected with regard to what is paid in (effort, discipline, time, etc). Many people have great expectations for outcomes but don't truly want to put in consistent effort toward the process, whether that is physical, mental, or emotional.

Lust: A focus on outward physical appearance and sexual attractiveness prioritized over long-term health can highjack results. Though, admittedly, physical appearance gives a powerful impetus to start addressing one's physical well-being. As well physical appearance IS always one element of our goals. It just shouldn't be addressed at the expense of other more important internal aspects of health.

Pride: One cannot learn what one thinks they already know. Pride becomes an issue when someone thinks they know more than they do in any domain. Everyone has a body. This makes many people think they know how to use and develop it. The fact that they have failed for a lifetime to attain this goal is an obvious point that many fail to recognize. This may lead one to ignore information that is very helpful because they would have to think more deeply about that information. Critical thinking takes work. It is easier to rely on old ideas. In this way pride and ‘sloth’, as you will see, go hand-in-hand.

Ingratitude: Entitlement is the product of thanklessness. Entitlement is shown through complaining. Complaining is an expression of

dissatisfaction in the fact that the universe has not customized its every detail to your individualized needs. Being thankful in what god, nature, the universe has granted you in terms of tools puts the mind on a path toward using those tools. Entitlement/thanklessness closes down those paths.

For instance, I used to live in Chicago. When a blizzard would happen, I would run out in a tank top and army boots and run. I was thankful for the tools nature provided me as a challenge to help me develop in a more interesting manner. Contrastingly, most people just complained of the cold.

One common personality trait of all of the clients I've worked with that have had trouble reaching their goals is this one. Constant dissatisfaction, victimhood, and entitlement keeps a person in their current state and disallows a change to be visualized. How can you change when the fault of your situation only lies in the external? Only the internal, the self, is capable of development.

The clients that I have had that succeeded knew how to show gratitude and appreciation to the world at large and keep an attitude that is conducive to success.

Gluttony: Gluttony is a lot like greed. It is when we give in to our desire to consume more than we produce…just related to food. In the 21st century, food is plentiful to most that would be reading this book. It is almost too easy to get. Calorie expenditure is used in productive pursuits in our lives. To move, think, and all human actions take calories from food as their building block. So, if one consumes more than they produce, their body becomes cursed with excess body fat, inflammation, and other chronic health issues.

Sloth: Sloth is the worst sin of them all. Some people would think that sloth would be referring to physical laziness. I actually consider it quite differently in this context. Sloth is MENTAL and emotional laziness. It is the lack of **'critical thinking'** and effort to '**focus**' on an issue objectively in order to determine the nature of one's condition and therefore produce the solution. It is the lack of drive that would enable us to enact a solution to the issue. It is the nature of the person who is not pro-active, does not address their habits, blames others for their disposition, and draws on the energy of those around them.**

**I do want to acknowledge the seemly endless cognitive overload and decision making that is a part of life in the 21st century. It is a goal of this book to simplify this in the domain of health and fitness.

Readiness to Change Assessment

Answer the following single question as what is 'most true'.

- I have already started working on my nutrition and performing physical tasks to develop my physical state.
- I am thinking about working on my physical state.
- I am pretty much where I need to be from my previous and sustained training.
- I have decided to start a conditioning program very soon and am just anxious/unsure about how to start.

Return to page 67 to see where you fit in the readiness to change model with regard to the answer that best fit you.

Mental Readiness Assessment

Read the following statements. Rate each one on a scale of 1-3, 1 being not true, 2 is sometimes, and 3 is very true. Write them down or keep a little copy of this page with you. Notice when one of these is exemplified through your daily actions or just self talk.

Question	Score
I get down on myself emotionally about my physical state.	
I hem and haw about decisions	
I find it difficult to visualize my outcome and make it happen.	
I get health advice from the TV or magazines.	
I am too old to get into the shape I want/need.	
My genes won't allow me to get the changes I want/need.	
I can't make gains without extensive time and effort.	

Work on any of these that are not scored a '1'.

Assessment and Goal Setting

Folks, you cannot know how to get to where you are going unless you know where you're at. It's that simple. That is why I combined assessment and goal setting into one phase. I find that every time I make an assessment, my goals change. This is because it's hard to form a goal if you don't know the current situation.

Also, you cannot be aware of your progress unless you see markers along the way. Think of diagnostics (Dx) as the GoogleMaps of health (journey analogy). Is there an accident or construction ahead? In our house analogy, this is where we look at the land and the materials that we have to work with.

So, in assessment, we look at:

1. Behavior (Activity)
2. Health Condition
3. Functional Performance

Behavior will be our major area of focus of this text. Though we have some questionnaires to give direction, health assessments are done by a professional or through over the counter/direct to consumer testing products. Functional performance assessments are covered both in our other guides for specific physical domains and many available from other professionals and sources.

Activity Assessment

Behavioral planning for your health and performance needs within the domain of 'Holistic Kinesiology' or 'Strength and Conditioining' all depends on one major concept.

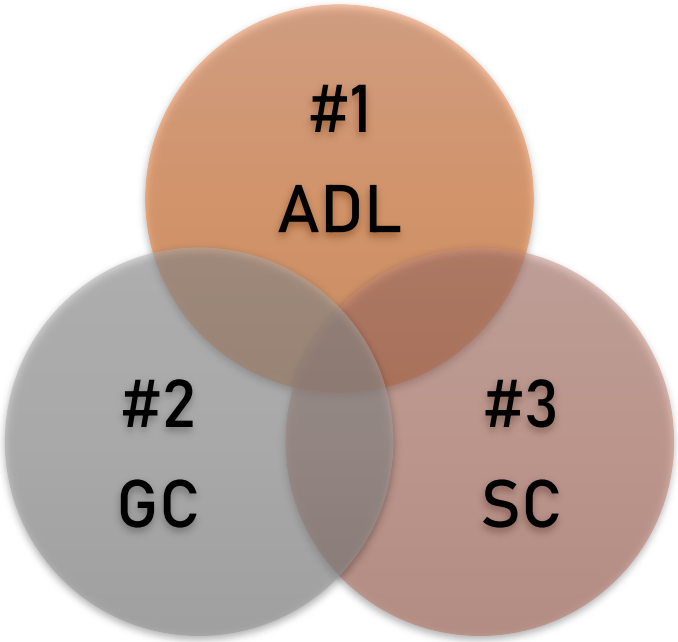
We want to look at what the full range of physical activity that we currently engage in and compare this with the general or specific activities that we need to implement as related to our goals. The word for this analysis: **Biokinetics**.

Biokinetics (physical activity baskets):
Definition*: Fancy term for understanding our total physical activity and the effect on our physiology.*

We will refer to ***Physical activity*** as a term meaning ***"all the activity we perform on a daily basis".***

I have a client that is exasperated with her husband. There is a lot of focus in America right now on the prevalence of chronic diseases (including chronic pain) as due to sedentary lifestyles. Her husband is a handyman and therefore, does not live a sedentary lifestyle. However, he does suffer from chronic pain (back and knee). His supposition is that, because he does not live a sedentary lifestyle, that his work activities are all that are needed (activity wise) for his health. This is despite his chronic pain. An additional supposition he holds is that the only way to fix his health problems is with surgery. While surgery may be indicated depending on a detailed analysis of his condition, there are more concepts that are important to understand as it relates both to this individual and how the population approaches physical activity as a whole.

As you can see, it is important to have an idea of what kinds of activity you **do** when considering what kind of activity you **need**. With regard to approaching physical culture, there are 3 of what I like to call '***activity baskets'*** through which one may examine one's own lifestyle and evaluate how to plan the activities that one engages.



Basket #1-Activities of Daily Living:
The first basket (represented in the top circle of the above diagram) is what we call '**activities of daily living' (ADL).** This basket includes anything for recreation, occupation, general purposed movements. Examples are: gardening, cleaning, transportation, walking, etc. ***The activity themselves are performed for 'life' purposes with no intent toward development of health or performance.***

These are important for general activity, fun, and mental engagement. Recreation is ***play*** and is the most important element for general development. However, we typically participate in these activities for enjoyment of competition or social interaction. There is a reason we call this 'play' and activities in the other baskets a 'work'out. **A**ctivities of **D**aily **L**iving fulfill occupational and functional needs too. Run for the train. Play with the kids or the dog. Garden. If we were to measure these for health, it may simply be with a stepometer. Otherwise, we just do them (without regard to any metric or measurement).

Another important aspect of activities of daily living is the use of them as a tool to gain feedback relating to our body's condition and developmental needs. We may be golfing and realize we need to address back tightness. Or we may experience shortness of breath walking up the stairs that may lead us to visit a cardiologist.

Most of the time, ADL's are ***open chain*** activities that have a variety of environmental factors of varied degrees of control. For instance, we don't control every movement during a basketball game. But we do have some rules. And you don't time yourself on how many reps of shoveling it takes to dig a hole either.

A rating for average activity level with regard to your common ADL's can be considered when determining estimated caloric expenditure:

Rate your activity level:

- Sedentary (light) ex. Office worker with little to no other activity
- Sedentary-Moderate ex. Office worker who walks ½ hr 3x/wk .
- Moderate ex. Restaurant worker or someone on their feet but not strenuous.
- Active ex. College student who walks across campus and works out.
- Very Active ex. Construction worker, professional athlete.

Basket #2-General Conditioning:

The second basket is '**General Conditioning/Fitness' (GC).** These are performed with an intent of body development and are, therefore, what we term a '***Developmental Activity'***. But they are carried out in a very 'general' manner without a 'specific' intent. We purposefully implement these into our life to gain better 'general' health but keep our measurements applied to the task general.

General Conditioning activities are important to keep the body moving and fill in the gaps when activities of daily living are lacking. This includes both general activities like hiking or running (when done for general fitness) or 'workout' classes that create general movement patterns.

I like to refer to this area as "Throwing the spaghetti at the wall to see what sticks". These function well for when we just don't have any particular element of our physiology with which we desire to focus. These, like ADL's, are very good for use as a tool to ascertain the body's condition to be addressed by a professional or with **specific conditioning** activities (our third basket).

These may be ***open chain*** activities like hiking or jogging where the environmental factors are pre-defined but not completely. ***Or*** they may be more ***closed chain*** like just performing a run on the treadmill. The difference between open and closed chain being that you may get attacked by a mountain lion while hiking but not on the treadmill. The mountain lion possibility is the varying factor in the activity.

Basket #3-Specific Conditioning:

The last basket is '**Specific Conditioning' (SC)**. In sport we call this '**strength and conditioning' (S&C),** or simply **'training'**. This category also includes physical therapy, post rehab, corrective activity, etc. Really this is just another way of referring to our '**Domains of Development'**.

This is when we dissect the body's physiology into different 'elements' or 'qualities' of movement. These are isolated health and performance mechanisms like *strength, stabilization, metabolism, quickness, reactivity, cardio-vascular and balance*. We utilize prescribed exercise techniques done with specific focus toward making a pre-determined change in the human body. The object here is mainly to make sure the body can function for the other 2 categories.

'Training' or '***conditioning***' is performed like a '***program***'. We call a fitness program a 'program' in the same way that we call a computer program a 'program'. We input information as a stimulus (exercise) and we get a response or 'adaptation' from the body a little every time. If we keep inputting specific information, over time we'll get specific

responses (cool, huh!). This is why we must keep focus on our input variables.

As stated before, **S**pecific **C**onditioning activities are important to improve the body's functional balance as well as work capacity so that it is able to perform activities in the other baskets as well as stay healthy. If you apply detailed measurements to the activity along with progression, it belongs here. If you've evaluated the physiology of an individual (yourself included) and prescribed activity to progress that physiology, the activity belongs here.

Specific Conditioning Activities are usually ***closed chain*** activities with pre-defined elements and variables that can be purposefully changed as the body adapts.

Characteristics:	Intension of physical change	Open/Closed Chain	Intent: General or Specific?	Physiologically Progressive
ADL	No	Open	G	No
GC	Yes	Could be either	G	No
SC	Yes	Closed	S	Yes

Every person needs to participate in activities in each basket. But the baskets will be different depending on what their goals are like, their lifestyle, and their current physical condition.

To give some nuance to the meaning of some terms in the way we are using them here:

Development means that which is to '***condition***' or '***train***' to change the body's current state. So '**developmental activity**', '**training**' and '**conditioning**' will be pretty much synonymous terms for us.

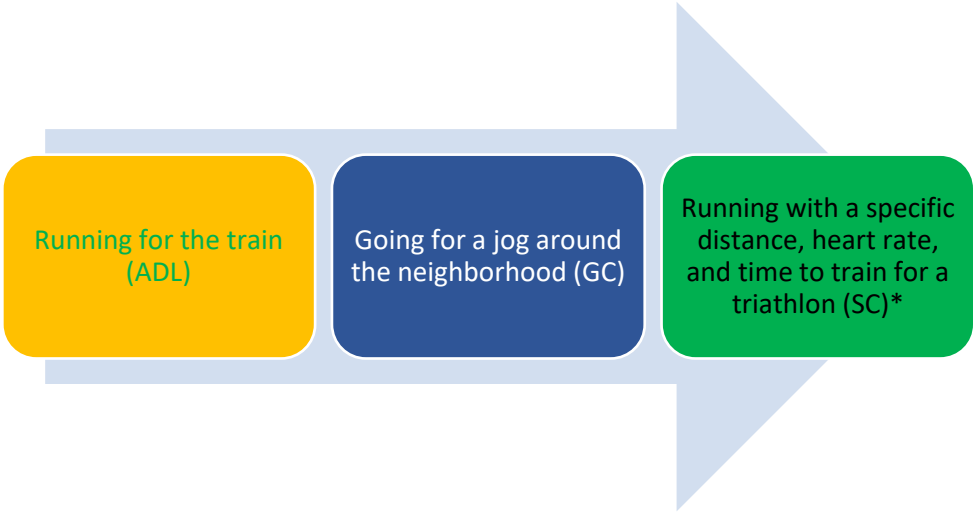
‘**Strength**’ as a term will refer to the mechanical ability of the musculoskeletal (MSK) system to resist loads. There is some ambiguity to this in concept as ‘***strength***’ is a form of development and conditioning of the MSK system and ‘***conditioning***’ is ***‘strengthening’*** systems of the body other than the mechanical system. When in doubt, just refer to the top couple sentences of this paragraph.

Overlap

As you may have surmised, you will have a bit of overlap in places. Yoga can be used for mobility. Pilates can be used for trunk stabilization. Aerobics are, by definition, good for cardio. But, is there any individual specific measurement? Some activities such as hiking, jogging, swimming, and biking can fall smack in the middle of the diagram. But their **intent** would dictate where they fall in relation to our health, fitness, or performance goals.

Are you running for fun or for time? Are you biking to work or out on the road training a specific heart rate zone? Are you a lifeguard that swims to save people? Or, do you just head to the pool for a swim? Or,

do you have a specific program that you swim to train for a triathlon? In the following diagram, we show how one singular type of activity may be placed in any number of baskets depending on the desired outcome and way in which we perform it…….



*While this example in the green is for **performance** in a sport, running with a specific heart rate for a specific time to progress the body **away from heart disease (health)** is also Specific Conditioning.

The Health/Performance Paradox

Is Michael Phelps any healthier than the average person who swims an hour a day, 3 times a week? Maybe. There is a certain threshold of intensity and volume at which the body needs to develop sport performance. This is far beyond that which is needed for health and fitness. Activity over this threshold may lead to injury through over-training.

Pertaining to Phelps, we can say that, from repetitive motions over time, he will likely be more susceptible to certain tissue imbalances that can show up as injuries later if not looked at from a ***health*** or ***therapy*** rather than ***performance*** perspective *(foundational conditioning)*.

These concepts are extremely important when it comes to evaluating specific approaches to issues such as youth fitness, fall

prevention for those over 65, or your own approach to your health and performance.

What does this mean to you?

The importance of these principles lies in the economics of fitness. The value is in:

- Avoiding working backward;
- Not wasting time in an area that has little benefit for you; or
- Making sure to put effort into an areas that are more impactful

  For instance:

  - The husband in the first scenario back in our initiation chapter could have *spent* more time on corrective exercise and specific types of strength and mobility to help avoid a lifetime of chronic pain and make work a lot easier.
  - An office worker wanting to simply get healthier may start with a walking, running, or hiking program rather than start a hard cross-training fitness program that may leave them injured.
  - A retiree who wants to get fit also may need to start a specific corrective program to get to the point where they can start that general health and fitness activity.

This really is just a mechanism to get a perspective toward your condition, where you want to go, and how you want to use your time, money, and other resources to get there. By taking this 'birds eye view' of our present total physical activity, we can plan activities accordingly.

Activity Questionnaire

Take out a piece of paper and answer the following questions:

1. How active is your home and occupational life?
    - Sedentary (light)
    - Sedentary-Moderate
    - Moderate
    - Active
    - Very Active
2. Do you play any sports?
3. Do you have any pets?
4. How do you get to work?
5. How much do you walk per day?
6. Do you have aches and pains?
7. How much do you sit?
8. Do you prefer the outdoors or to be indoors?
9. Do you prefer to workout with groups or alone?

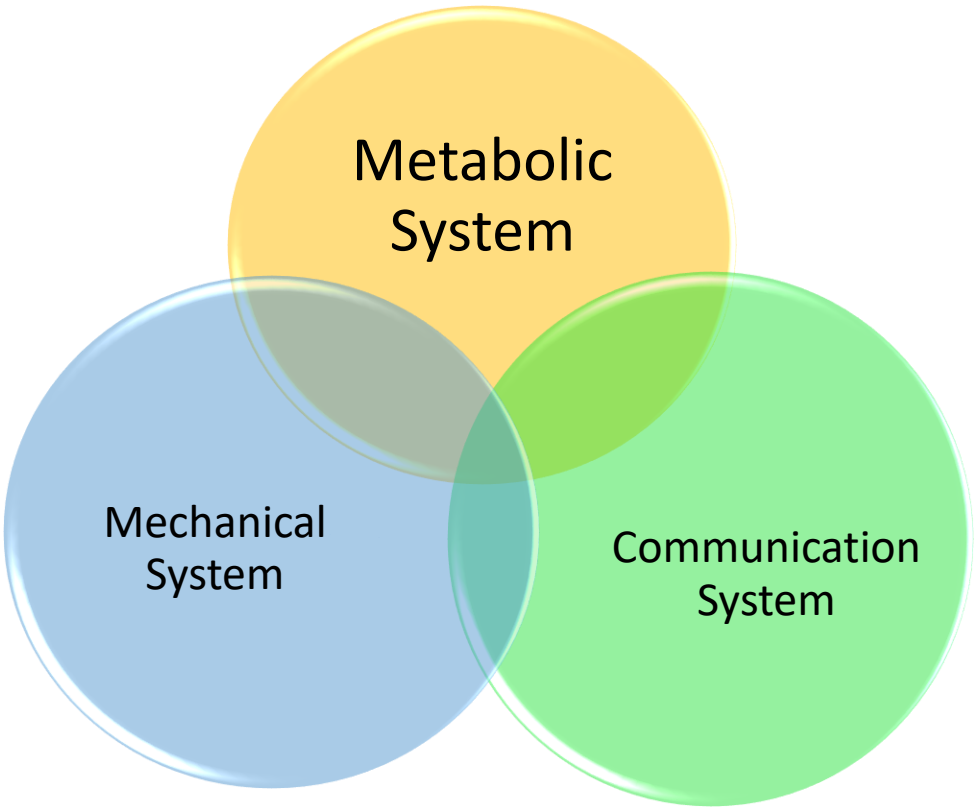
The answers to these questions will give you insight on what effect your activities are having right now and therefore, what others you may need.

Assessing Physical Condition (Health and Functional Performance)

Health Assessments

We need to test for body function, screen and scan for health risks, and assess our overall physical situation. It helps to review our holistic kinesiology body systems:

- Communication System:
  - **Nervous system, endocrine system.**
  - Controls all other systems.
  - Trained primarily with the area we call **'athleticism'** that focuses on coordination, reactivity, and fine motor skills. The endocrine system is affected in different ways by all other physical approaches which we will be going over.
- Mechanical System:
  - **Muscular, fascial, skeletal systems**.
  - Functions in structure and mechanical movments.
  - Trained with traditional '**resistance**' or '**strength**' training but also including mobility and range of motion.
- Metabolic (Chemical) System:
  - **Digestive, respiratory, integumentary, circulatory systems.**
  - Functions in the taking in of chemicals into the body in the form of food, oxygen or other nutrients and then transporting them to body tissues.
  - We train this **through nutritional conditioning, environmental conditioning and cardio-respiratory conditioning**.



Unfortunately, most physicals are only done only yearly and getting in to see the doc is not always easy in the traditional care model. Testing should be frequent enough to create an actionable process of change. Every 3 months is our recommendation. Here are the categories that we test and retest (*note-a concierge or functional medicine doc is more apt to order these and is easier for you to get in to see regularly*):

- Metabolics/Composition: Here we are looking at how your body utilizes energy. We want to see if it is storing fat, in an inflammatory state, or utilizing nutrients to the best of its ability. Some basic measures can indicate whether we need to get more intricate tests for internal processes.
    - Body Fat: Shows us how much, how and where the body is storing fat. This can indicate whether we are at risk for metabolic disease.

- BMI: Much like body fat this can indicate risk for metabolic disease. BMI is a good indicator, but is less detailed than body fat. We must remember though, that if a body is heavily muscled leading to a low BF but high BMI, that the other body systems still have to provide oxygen and nutrients to more body tissue versus what is needed for a lower BMI….even if it's muscle.
- Body Weight: This measure is a component both of the above and is easiest to test repeatedly.
- Bone Density: Bone is part of lean body mass. This is important primarily for older populations or those who might have osteoporosis.

- Cardiovascular/Respiratory Function: Our cardiovascular and respiratory systems' job is to deliver oxygen and other nutrients to the body. Our job is to see how well this job is being done and improve it for our health or performance needs. Chronic conditions such as cardiovascular disease can be mitigated by knowing and addressing cardio-respiratory function through:

  - VO2 max, sub-max, or stress test.
  - Resting heart rate
  - blood pressure among other measures are necessary.[21]
  - Heart rate variability

- Mechanical Strength/Health: For chronic pain or even little aches or just fighting our own body's tendency not to move (from sedentary lifestyle), biomechanics tests can tell us if we have the range of motion and stabilization in our musculoskeletal system to have us perform fluidly without stiffness and pain.
- Internal Chemical Balance: Internal testing through biomarkers in blood and other fluids can tell us whether a person has risk factors of chronic disease or internal performance hurdles prior to seeing symptoms arise. **Inflammation, liver activity, blood glucose,**

[21] ACSM's Guidelines for Exercise Testing and Prescription Ninth Edition

thyroid function, hormone function, adrenal function, kidney function, and pancreatic function can all be tested to tell us if or how our training is working toward our desired outcomes or not. **Nutrient profiles** can tell us if we are deficient in some nutrient or not absorbing nutrients, and need to supplement or eat differently.

Health Conditions and Activity Screening

Physical Activity Readiness (PAR-Q) FORM

	YES	NO
Has your doctor ever said that you have a heart condition and recommended only medically supervised physical activity?	____	____
Do you frequently have pains in your chest when you perform physical activity?	____	____
Have you had chest pain when you were not doing physical activity?	____	____
Do you lose your balance due to dizziness or do you ever lose consciousness?	____	____
Do you have a bone, joint or any other health problem that causes you pain or limitations that must be addressed when developing an exercise program (i.e. diabetes, osteoporosis, high blood pressure, high cholesterol, arthritis, anorexia, bulimia, anemia, epilepsy, respiratory ailments, back problems, etc.)?	____	____
Are you pregnant now or have given birth within the last 6 months?	____	____
Have you had a recent surgery?	____	____

If you answered NO honestly to all PAR-Q questions you can be reasonably sure that you can become more physically active and take part in a fitness appraisal/training.
If you are or may be pregnant--talk with your doctor before you start becoming more active.
If you health changes so that you then answer YES to any of the above questions, tell your fitness or health professional. Ask whether you should change your physical activity plan
If you answered YES to one or more questions You will need to complete the Medical authorization Form BEFORE you meet
with a trainer or become more physically active. Tell your doctor about the PAR-Q and which questions you answered YES to.
NOTE: You may be able to do any activity you want--as long as you start slowly and build up gradually.
Or, you may need to restrict your activities to those which are safe for you. Talk with your doctor about
the kinds of activities you wish to participate in and follow his/her advice.
If you have marked YES to any of the above, please elaborate below:

_____

_____

Do you take any medications, either prescription or non-prescription, on a regular basis? Yes/No
What is the medication and it's use?_____
How does this medication affect your ability to exercise or achieve your fitness goals?

_____

Please check any of the following injuries you have had and specify which bone, muscle, joint, etc., and the year the injury occurred:

Broken bones _____ Muscles strain/sprain_____

Ligament, tendon, cartilage injury_____ Joint injury or chronic pain_____

Back injury or chronic pain_____ Other_____

Are you currently being treated for any of the above injuries? Please specify type of treatment.

_____

At this present time, do you have any health conditions or injuries that would affect or limit your training?

_____

Present/Past History

Have you had or do you presently have any of the following? (Check if yes.)

_____ Rheumatic fever

_____ Recent operation

_____ Edema (swelling of ankles)

_____ High blood pressure

_____ Low blood pressure

_____ Injury to back or knees

_____ Seizures

_____ Lung disease

_____ Heart attack or known heart disease

_____ Fainting or dizziness

_____ Diabetes

_____ High Cholesterol

_____ Orthopnea (the need to sit up to breathe comfortably) or paroxysmal (sudden, unexpected attack) or nocturnal dyspnea (shortness of breath at night)

_____ Shortness of breath at rest or with mild exertion

_____ Chest pains

_____ Palpitations or tachycardia (unusually strong or rapid beat)

_____ Intermittent claudication (calf cramping)

_____ Pain, discomfort in the chest, neck, jaw, arms, or other areas

_____ Known heart murmur

_____ Unusual fatigue or shortness of breath with usual activities
_____ Temporary loss of visual acuity or speech, or short-term numbness or weakness in one side, arm, or leg of your body

_____ Cancer

_____ Other (please describe): _____

Activity History

Health

1. Date of your last physical examination performed by a physician: _____
2. Do you have injuries (bone or muscle disabilities) that may interfere with exercising? Yes _____No _____ If yes, briefly describe: _____
3. Do you smoke? Y _____ N _____ If yes, how much per day and what was your age when you started? Amount per day _____ Age _____
4. What is your body weight now? _____What was it one year ago? _____ At age 21? _____
5. How tall are you? _____
6. List the medications you are presently taking. _____
7. Can you currently walk 4 miles briskly without fatigue? Y _____ N _____
8. Do you participate in a regular exercise program at this time? Yes _____ No _____ If yes, briefly describe:_____

How long have you been consistent with program?_____

Functional Performance Assessments

Balance, mobility, strength, cardio-respiratory function are all performance qualities that must be assessed when developing a plan. Some of these have a certain amount of crossover with the health tests above. That's ok. Too much assessment is not a thing. For a person to work on developing themselves, these assessments are covered in guides for each of those domains.

Of course, these are all too highly individualized and extensive to list and describe in this text. A kinesiologist, physical therapist, or exercise physiologist will be able to perform these with you if you choose that route. Or, in our books on areas of specific conditioning, there are great tests that can give you a baseline idea of functional health independent of a coach, physical therapist, or trainer.

Goal Setting: Concepts and Principles

"The ultimate reason for setting goals is to entice you to become the person it takes to achieve them" - Jim Rohn

"*Begin with the end in mind."* –Stephen Covey (The 7 Habits of Highly Effective People)

Is the goal: Attainable, Sustainable, and/or Transferable?

When we consider our goals, we have many factors to think about. Some of these are "attainability", "sustainability", and "transferability".

- **Attainable** means that, with the resources at our disposal, that we are able to meet the goal.
- **Sustainable** is whether we will be able to sustain the state that we attain for an extended period of time. "*I always loved the term 'victory through attrition'. You know when you're just the last guy. If you're the last guy and you're standing, you don't have to be any good. You just win. You're the winner. You won because you're the only guy left."*-Laird Hamilton
- **Transferable** is whether, when we reach a goal, other aspects of our lives will be positively affected by our changes.

An example is for a bodybuilder. A bodybuilder may be able to **attain** a 4% bodyfat at show date. Is that a **sustainable** state for that person to be in and maintain health? Would getting to that state be **transferable** to

aspects of life outside of bodybuilding itself? Only the bodybuilder him/herself can answer.

When I was in college I worked out like a fiend. I HAD to have a six pack. I HAD to look big and hold the same maximal lifts I had in high school. I was lean as could be. Living in AZ with college pool parties was great with that lean strong 'bro' body.

However, I had back issues, my lifts actually decreased from overtraining, I was stiff, and had bad moods. I spent an exorbitant amount of time and effort trying to look good…time that could have been spent on grades, career development, or just getting some 'space' in my day. That was one thing…."space"… that I have since found to be an extremely valuable resource that we value all too lightly.

I got challenged to do a triathlon by a mentor of mine to mix it up a bit. With the change in my program to more running, swimming, and biking, I also put in extra stretching. My mobility increased, my mood was better (cardio does this), my body started ***feeling*** *better. I was still spending a lot of time training. But now it was more of a balanced program.*

After that, I changed my program to be able to maintain strength, cardiovascular, and mobility with half the time in the gym by eliminating all but the major movements and putting full concentration into those. The effect was better mobility, less back and neck pain, strength without soreness, and less stress because I had more time. I gave up the six pack (going from 8-10% BF...still low). My life outside the gym was much better with more time to study and work plus the ability to have a cookie once in a while without guilt.

This was my experience with making sustainable and transferable goals. There was no real transfer at this time to the rest of my life from being 8% body fat. There was no real reason for the volume of

weightlifting I was doing if I was if I was to be sore much of the time…hampering my mobility. As a matter of fact, I was interfering with my own progress through overtraining.

Performance in a physical pursuit is a very valuable undertaking for who it can make you. But pursuits that show positive returns in other aspects of life (transferable) are inherently more attainable as you are more likely to engage in what it takes to get to the goal. And they are more sustainable as you are more likely to keep up with those activities.

Write the Answer to these questions on a piece of paper to assess your initial goals.

- Are the goals you have in mind able to be reached?
- Is it physiologically feasible to maintain that new condition long term once the goal is reached (sustainable)?
- Are the behaviors associated with reaching the new goal feasible to maintain long term?
- How will attaining your new state change your life?

The answer to these will help you in continually assessing whether your goals are right for you.

Resource Analysis (The Econonomics!)

Many people come into a gym, PT office, or training facility looking for an outcome they have their heart set on. However, after we sit down, we (as professionals) realize that this person has very little time available away from work/family/etc, monetary constraints, unavailable facilities, no support system, other life goals, etc.

Or, an even bigger hurdle is the *willingness* to invest resources. Development, of any kind, takes resources! You WILL need to allocate *time*. You WILL need to spend some *money*. You WILL need to do investigation. You WILL have some *trial and error*. You WILL spend *effort* in the gym. You WILL have to be *disciplined* in your habits. There IS an opportunity cost. While you are working on your development, what you are not doing is….EVERYTHING ELSE!

Luckily, this area of life development has a somewhat predictable ***return on investment*** (ROI). It is a coach's job to mitigate the costs through their experience and efforts. In short, we increase the ROI!

Some want the outcome enough to learn to enjoy the process of work that leads to the outcome in mind. Those that don't, we find out, simply do not really want the outcomes that they say or may think they desire. This does not bode well for our goals. So, we have to address resource attainment and/or allocation first. Here are our major areas to address:

- Time: Time is often our biggest hurdle. We will never have more time. We have to ***allocate*** time. I enjoy talking about 'Game of Thrones' with my clients. I love the show. But, if they aren't developing the outcomes that they are looking for and can still tell me about last week's episode, they may need to prioritize this resource better.
- Discipline: We have a finite amount of discipline. It just runs out. For me, I have to have a very definite plan of eating or the carbs will

get me…. all of a sudden, BAM! I just ate a plate of cookies from the organic grocer up the street! Whoops. We must analyze how to keep a good healthy supply of discipline by managing the goals and projects we undertake at one time.

- Money: Money is important for coaching, tools, facilities, etc. However, a good coach can usually figure out a way to optimize your results to accommodate your budget. If, though, you haven't money for any coaching at all, start a walking program, download our nutrition literature or an app on your phone, and use your time/discipline for that until more of this resource can be made available.
- Opportunity Cost: Eliminate, then accumulate: To manage time, money, and discipline, we eliminate things we don't need to make space for better uses of those resources. Be ready, when goal setting, to make it a goal to eliminate things that have a negative value to make room for accumulating positives (acquire assets while eliminating liabilities).
- Support: Family, neighborhood, peer group, and other cultural environments will either support or highjack our results.

  I was lucky enough to: a) go to a high school with an amazing strength and conditioning program and a nationally ranked football team and b) have a father who coached athletics and c) a mother in fitness. At breakfast my mom would talk about how much protein was in each cereal. My environment and support made it easier for me than some to learn to stay healthy and perform well.

  Most are not as lucky as we can see with the levels of obesity, heart disease, and other chronic conditions in our society. To get support, make new friends, join a sports league or other activity group. A coach can help. But, without outside peer or family support, resource allocation can be a difficult decision to

make on a daily basis. Getting the social or family aspect along with your activities will be paramount to success.

Return on Investment (ROI)

'Benefits' occur over a lifetime. They are **long term**. This may make them somewhat less '*top of mind'* than the **immediate *costs*** involved. I assume the benefits are why you are reading this in the first place.

- Time: Time in QALY's (quality adjusted life years) as well as more years of life is a benefit backed by medical evidence. We have 75 years of numbers on this…. lifespan (longevity), quality of life (healthy years), and time saved not having to spend it in doctor's offices.
- Energy: Most persons will have higher productivity, mental acuity, quality time with loved ones, energy for personal hobbies and pursuits almost immediately upon developing a pro-active health protocol.
- Discipline: Engaging in a program such as this takes discipline. However, it also builds it! The discipline and focus involved WILL carry over to other areas of life if permitted and promoted.
- Monetary: In regards to chronic health conditions, the reason we call this training 'pro-active health care' is also for economic reasons. This training will develop you in ways that will lessen the risk of back-end health care costs for admissions, re-admission into the health care system (which, by the way, carries even further risks[22]) along with better workups on our yearly physicals…. meaning lower insurance premiums (life insurance).

[22] Listen to a pharmaceutical commercial. May cause: oral bleeding, zombieism, explosive diarrhea, and tinnitus.

The estimated numbers for what you save on the back end from population studies over years is your ROI. If you do decide to invest some money in a coach of some kind, this should be your monetary incentive. The coach will pay for themselves by lowering health risks and increasing productivity/time on the back end.

We will consider all this when assessing what output we want from our efforts. ***Do you want a higher quality of life in the coming years? Do you need more energy? Do you want to build your discipline and conscientiousness? Do you want to avoid the costs of illness later in life?***

Health Fitness Economics Questionnaire

On another piece of paper, number it and answer the questions below.

1. Am a I an immersive or a 'baby-steps' person (better with small steps or doing it all at once ?
2. Do you have a time frame to meet your goal?
3. Are you? …Married/Single?____ Kids? Y/N . If so, how many?____
4. What is your profession?_____Hours/wk worked?_____
5. How physical is your job? (circle or write which best pertains to you)
   - Sedentary
   - Sedentary to moderate
   - Moderate
   - Active
   - Very Active
6. Are your family/friends involved in recreational activity/fitness programs?
7. Have you tried this in the past?

   Why did or didn't that work as you intended?
8. What type of fitness equipment do you possess or can procure easily?
9. Do you have energy and keep/maintain it throughout the day?

10. Do you live in an area with lots of parks, sidewalks, public pools or recreation centers, hiking trails, etc? _____
11. On a scale of 1-5*, how confident now are you that you can make the changes you desire? _____
12. How many hours per week are you willing/able to dedicate to this project? Short term? _____ Long term? _____
13. Do you have a monthly monetary budget in mind to dedicate to the goal? Y/N If so, what is it?_____
14. On a scale of 1-10, how dedicated are you to achieving these goals? _____
15. Do you follow or have you recently followed any specific dietary intake plan and, in general, how do you feel about your nutritional habits? _____

The answers here will give you a pretty good idea of what resources you have to start with and how to build and employ more throughout your journey.

Phase 2:

Project Planning

- **Activity Baskets**
- **Planning Specifics**
    - **Putting activity into baskets**
- **Identifying Hurdles**

Now that you have a good idea of what your current condition is along with where you want to go, it's time to map how to get there. If we think algebraically, 'A' represents our current condition (assessment). 'Z' is the condition we wish to have (goal setting). We just need to fill in the rest of the alphabet.

In action planning, we will use the information from the goals we assessed and the results of our testing and screening combined with human movement science concepts to set a step-by-step process with which to reach our goal.

Forming Your Plan of Action

Now that you know a little bit more about your own activity, you can go ahead and start planning out some basic actions you can take. Start with one action in one of these steps that makes the most sense from our evaluations. Then build on that. Use our table at the end of the chapter.

> *Hint: If you are sedentary now, nutrition and a nice daily walk is a fantastic way to start. Passed that, all approaches will be individual in nature.*

I want take a moment to return to the concept that this, unlike other projects is ongoing and has no true 'close'. Of course, it could be mini-projects over time that keep you healthy like training for a 10K for 3 months a couple of times a year with breaks to work on other movement qualities in between. But, for the most part, we are suggesting an ongoing approach.

Habit/Lifestyle Change

"We must all suffer from one of two pains: the pain of discipline or the pain of regret. The difference is that discipline weighs ounces while regret weighs tons."

"Discipline is the bridge between goals and accomplishment."

"Motivation is what gets you started. Habit is what keeps you going."---Jim Rohn

In order to create changes within our body, we must first create a different environment for it. We do this by changing our habits.

Changing habits can be difficult. We have an 'out with the old/in with the new' approach to habit change. Accumulate a good habit, then eliminate the bad. Strict elimination without accumulation leaves gaps that we fill with old bad habits….or even worse ones! Take your time.

Focus on one activity at a time. This will also give you a good idea of which ones make the biggest difference to you.

Activity Basket Distribution (Biokinetic Design)

I have clients who may say, "I am a waitress. That's not sedentary. I don't need to train." I, of course, have to respond, "Then why does your back hurt?" On the other end of the spectrum, I get many 'fitness fanatics' that don't do anything for fun, recreation, or move for their occupation. But they sure do hit that gym! Many of these people could use the skill and social interaction of a recreational sport. Both of these are fundamental misunderstandings of the importance of our activity baskets.

*A good guideline of practice for **total activity** during our planning stage for need of all types of activity is the ACSM (American College of Sports Medicine) guidelines for physical activity (related to general health).*

ACSM Guidelines for Physical Activity adults 18-64:

30 min cardiovascular of moderate intensity x 5/wk or 20 min vigorous intensity 3x/wk and strength building all major muscle groups 2x/wk

Over 65: Add balance exercises

Use the guidelines above for your total activity. Then consider the following examples and the personal information you gather up to the end of this chapter to strategize.

Examples:

- **An athlete** likely puts ~ 75% in sport performance* (ADL) and 25% in specific strength and conditioning (SC) for their sport. There is likely little need for general conditioning because the ADL's and SC's with regard to their sport are very high.
  **Of course, a lot of what happens in practice for a sport may be considered SC as opposed to ADL since the person is training for skills related to the sport itself.*
- An **office worker**- 10% ADL as they are in an office most of the day. They would be likely to supplement with another 60% general conditioning in the form of workout classes, hiking, running, etc. Then adaptive activity (SC) could be another 30% to both purposely strengthen the body systems and correct for the imbalances that come from a sedentary professional life.
- A **college student** likely has a high level of ADL's. Maybe 60% here is spent riding the bike to school, walking across campus with a heavy backpack, and playing recreational sports. But, and additional 20% each in GC and SC could be spent to pro-actively keep control of their body's state.
- A **retired air force colonel** living in Phoenix may not have much in the way of ADL's. His kids are out of the house, he doesn't play recreational sports, and he lives in a city where he has to drive to get to most places. He may do 50% general fitness in the form of running, hiking, etc. And, he'll do 50% as specific conditioning to develop against health issues, pain, etc.

Further distinction with regard to sports vs. fitness programs

"That's why I play a REAL sport. Not tryin' to be the best at exercisin'"-Kenny Powers talking about non-sport exercise. (Eastbound and Down Comedy on HBO)

Let's examine a particular example of some of the cross-training programs out there today so that we avoid unintentional injury due to

mis-classification of the activity. Many of them should be classified as ‘sports’ (a sub-category of ADL’s) but are mis-perceived as ‘fitness’ or ‘strength and conditioning’. The distinction, as we stated earlier, is dependent on the outcome:

The activities of a sport are performed with the goal of **performance in the sport itself**. An inherent characteristic of sports is that, while health may increase with activities performed during participation in a certain sport, there is also a very real risk of health problems or injury created by these activities. Either one is an unintended consequence of said activities.

In **developmental activities or strength and conditioning**, the primary intended outcomes are: **health and injury resilience!** This is to keep the player available for their participation in the sport. **Sport performance** comes as a secondary intention.

For instance, if I was a strength trainer for a football team and several players were hurt as a consequence of doing an exercise, I would be fired if I didn’t eliminate that exercise from the program. Better performance of that particular exercise is not the main goal. Being healthy and performing better in football is.

***of course, injury is possible with any activity. But, injury due to the activity itself should be a rare exception when the primary goal is injury resilience and health.*

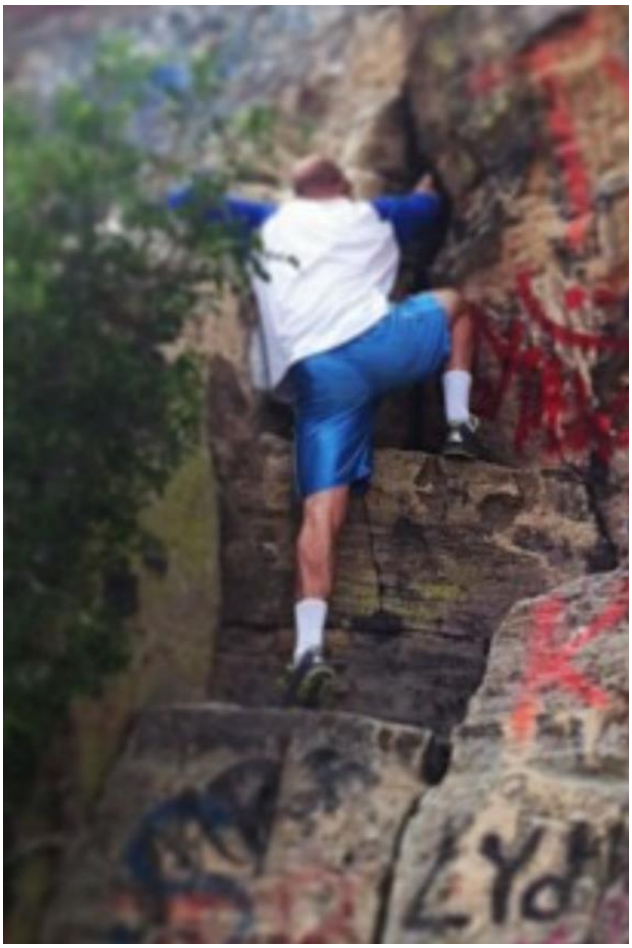
Like the activities of hiking, biking, and running, circuit or cross training can seem to fit in a variety of our baskets. Which one it fits is, again, dependent on the goal of the activity. For instance:

- If focused on competitive gains in the exercise class itself, then it would seem to be a sport as the outcome is only geared toward that activity and not on health or injury resilience.
- If focused on providing the body with ***a variety of movements*** to complete without much regard to how to improve the specific

movement qualities of the individual, then ***general conditioning*** is our category.

- Lastly, circuit training, can be good as a ***developmental activity*** (specific conditioning) if performed as a part of an overall program that gives attention and focus to specific movement qualities at other times. The circuit days are to give the body additional 'work load' training to bring it all together.

Step #1: Plan- **Activities of Daily Living**



How do we change our ADL's to be more active? How can we implement a different way of doing things in our lives to increase our total amount of physical activity to meet that which is needed for our goals?

These are simple measures like biking to work instead of driving or taking the stairs or walking to get coffee in the morning. Further, one may get a dog, start a new active hobby, or join a sport league. But these have to be practical for the individual and the phase of training you are in. The way in which one accomplishes this is highly individualized.

Fill out your purposeful changes to ADL's on the table at the end of the chapter.

Step #2: Plan-**General Conditioning**

We've planned for what we do to increase our ADL's to point that is actionable. We did this with respect to our goals, phase of development, and current activities. Next, we plan for general conditioning methods that fill in where ADL's fall short of what is needed.

There are a plethora of activities in the GC space. I personally look to the outdoors first. Walking is accessible and easy to implement. A walk or a run as a purposeful activity to employ is fantastic. Looking further, you could find places to hike in your area.

There are clubs for hiking, biking, running, etc available on the internet like meetup.com.

If you like gyms more, there are plenty of classes. Studios carry general condition classes in your neighborhood as well. Some are more geared toward one aspect of conditioning like yoga or cardio centered classes. But you can pick one and use our table to fill in where ADL's are not meeting the ACSM guidelines.

Step #3: Plan-**Specific Conditioning**

This is where we plan specific developmental activities as a program of physical development. I don't want to throw everything and the kitchen sink of 'movement science and training' at you. '***Specific Conditioning'*** is the milieu of the physical therapist, applied physiologist, strength coach, or kinesiologist and is EXTREMELY extensive in breadth and depth.

But the physical adaptations the body makes within different systems are paramount subjects to be aware of in order to get the lay of the land on our journey. And some general concepts are plenty of information for you to start action!

Concepts and Tips Within 'Specific Conditioning'

Here are some fundamental ideas to know.

General Adaptation Syndrome (GAS)[23]

Stages of Physical Change

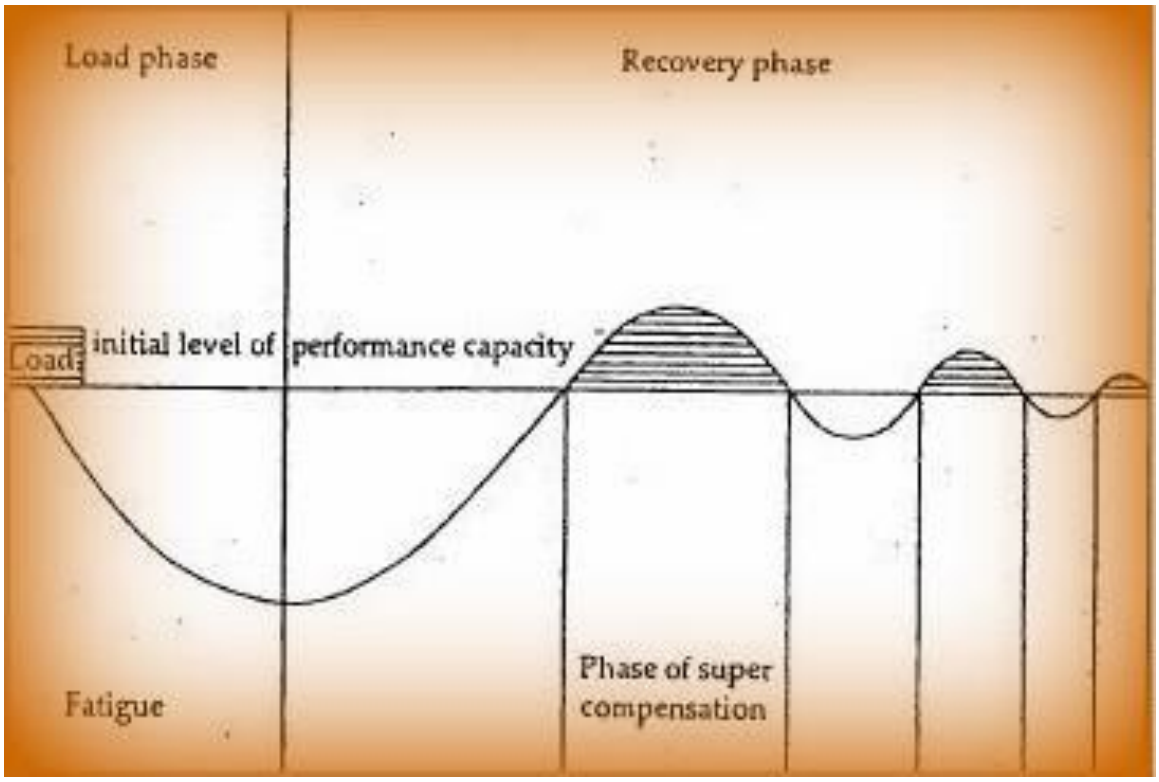
1. Exercise/Stimulus (load phase: training/workouts): In this phase of change, we add the stimulus to our body to elicit the specific desired change. If we desire a healthier or better performing cardiorespiratory system, we may run. Since this is more running than we were initially doing, we call this an 'overload' on the body. For the muscular system, we may lift a weight that is more than we may normally lift or for more repetitions.
2. Nutrition/Fuel: In this phase of training we provide the body with the materials to make a change. With bad input comes bad output. Therefore, we must fuel the body with the high quality nutrients it needs to perform 'recovery'.
3. Recovery (or super-compensation): This phase is where a person's body will recover from the stimulus plus a little extra (the '***super'*** part) to make sure it can perform the next time. This is the actual time that the body makes changes.

Understand that after the overload stage (deliberate practice or workouts), regardless of the type of adaptation (Neuromuscular, muscular, cardiovascular), the body breaks down and some pain or discomfort may be experienced. However, this should be kept within reasonable boundaries to avoid overtraining.

[23] http://study.com/academy/lesson/general-adaptation-syndrome-stages-definition-examples.html

Overtraining: The body cannot compensate/recover fully from the load phase and leads to pain/injury (both long and short term).

Each one of these components has equal importance depending, of course, on the individual. If one is missing, optimal results cannot be realized.[24]



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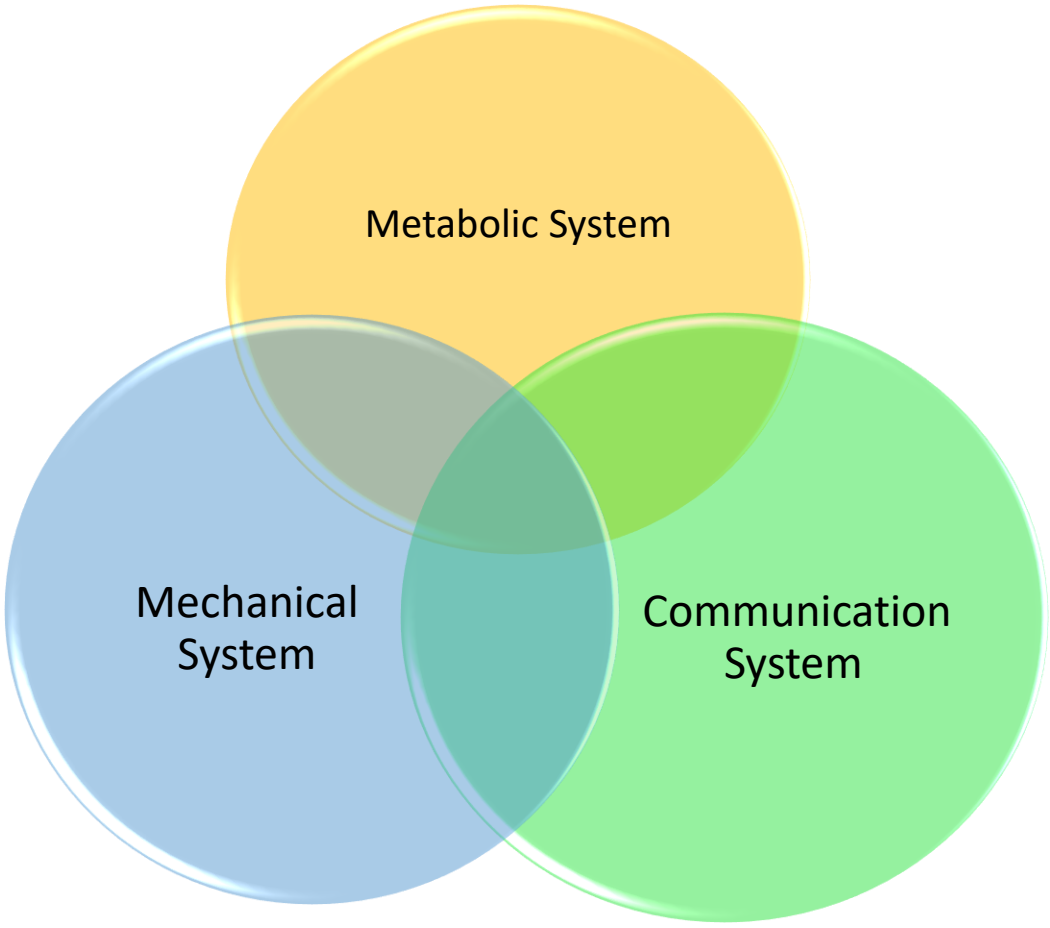
The Three Areas of Concentration

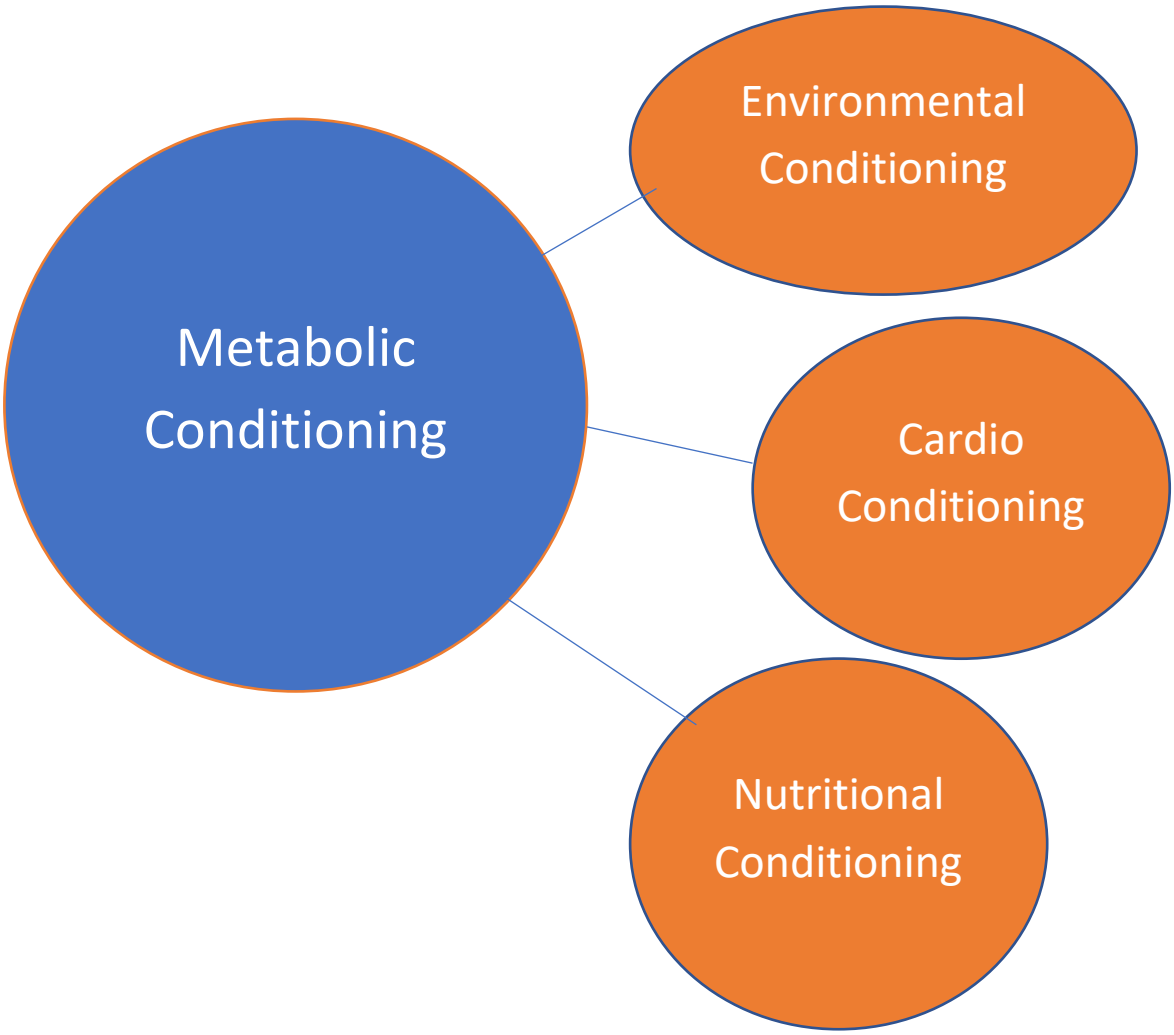
In this we refer back again to our Holistic Kinesiology systems.



From here, we expand each of these from systems to areas of action. Here is an introduction to each of these major areas of action. Details for training each area are much too extensive for this guide but are covered widely in material by other great experts and will be covered in subsequent material from us to fit within our methodology and philosophies…….

The Metabolic (Chemical) System

We label this system (and groups of systems from the traditional academic point of view) as such because the overarching major concept being: *The intake, delivery to body tissues, and elimination of chemicals as nutrients from different anatomical systems*. You can hear it in the language associated with the sytem….CHO for carbohydrates, O2 for oxygen from the lungs, the elimination of CO2 during exhalation. The major areas of ACTION that we take to affect this area: ***Environmental Stimuli, Cardiovascular-Respiratory Conditioning, and Nutritional Conditioning.***



Health Conditions

Conditioning in these areas is proven to be effective in its health effects on **cardiovascular disease, metabolic disease, auto-immune disease and hypo-immune function, and neurological disease**s of **inflammation**.

Cardio-Respiratory Conditioning

The cardiovascular system is the heart and the associated blood vessels. The respiratory system is the lungs and associated structures. The activities here are traditionally called cardiovascular. But, since one cannot perform activity for the cardiovascular system without concurrently taxing the respiratory system equally, we call it cardio-respiratory or 'cardio' for short. Fundamental movement patterns are repetitive/cyclical in nature and are best for this area of development. Running, swimming, climbing, and hiking, jumping rope are prime examples of these. *We can see Bridget (right) doing training in the park.*

*Breath training falls in this category

Environmental Conditioning

This is a 'passive' form of conditioning as the variable we are changing is environment rather than an actual mechanism of movement. Many times, this is meant to be done during rest. Saunas, ice baths, altitude training, and full body vibration are examples of exposing the body to stimuli that mimic environments that the body is hard programmed to adapt to.

Nutritional Conditioning

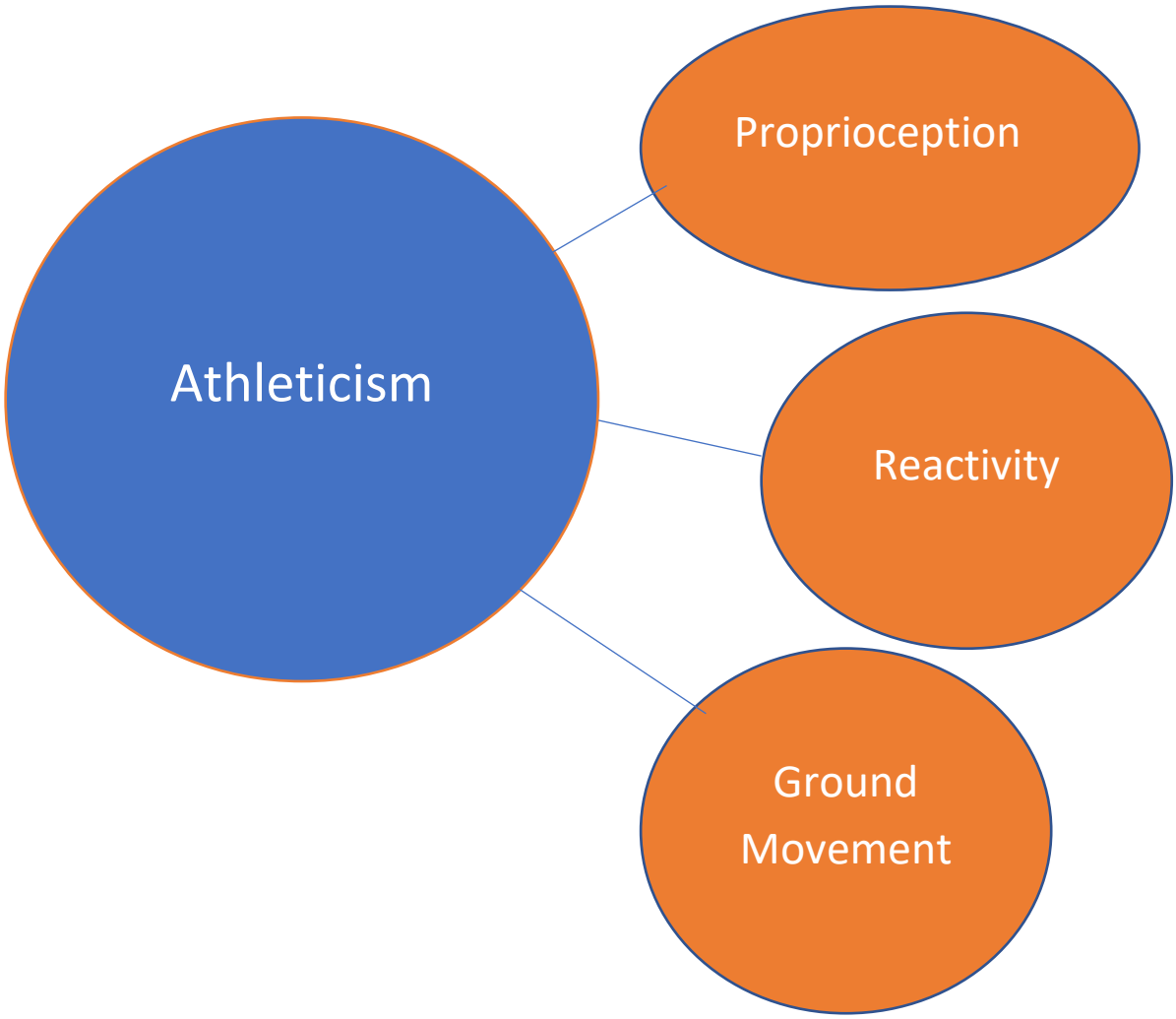
Nutrition is the number one area to address in developing health and performance. While I think that all of us are familiar with nutrition, we should mention that the purposeful adaptation to how one eats and consumes is considered a form of ‘conditioning’ the body.

Check out our guides for **nutrition, cardio-respiratory conditioning, and environmental conditioning** for details in these areas and how to develop our easy to employ strategies.

The Communication System: Athleticism

The overarching major functional concept for this area is: *The communication with all other systems.* As such, ALL other forms of training are actually based in this. However, here we focus directly on this area with the intent of primary change here. In strength and conditioning, we just call this '**Athleticism**'.

This area of emphasis refers to how well we move in space and respond to stimuli. In athleticism, we are focused more on skill acquisition through neuromuscular function rather than other outward physical changes to muscles or other body systems.



The major sub-components of this area are: ***Proprioception, reactivity, and ground movement.*** We seek to coordinate these for optimal motion.

Health Conditions

The health conditions most improved or prevented by focus in this area are those effecting **neurological function: Aging, Parkinson's, stroke, Autism, fall prevention, and multiple sclerosis** are examples.

Proprioception

Work is done with a focus on the: **vestibular** system (inner ear to tell us where we are in space); **mechanoreceptive** (muscles, nerves, and fascia)[25], and the sensory systems of the eyes, skin, and ears.

Reactivity

Reactivity refers to the ability to respond to external stimuli. This could refer to 'agility' (directional change of the whole body responding to stimuli) or hand-eye coordination (catching, blocking punches, patty-cake, etc).

Ground Movement

Crawling, foot control, form running, rolling, and scooting are all forms of ground movement. They require mobility, balance, and stabilization.

Our guide on **athleticism** gives the techniques and tactics involved in programming for this area.

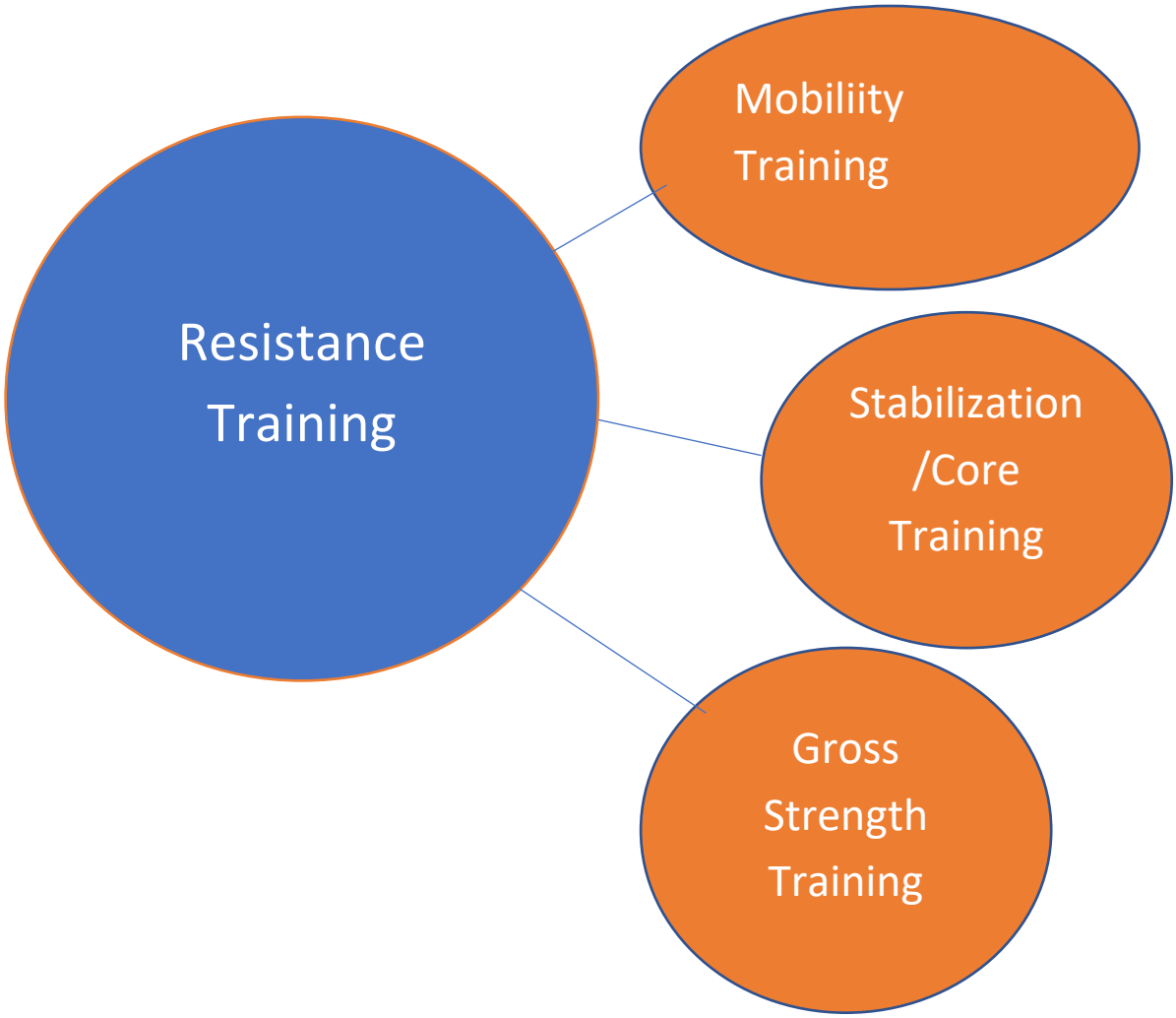
[25] This is the neuro-myo-fascial system telling our brain where our body is in space

Mechanical Strength

Mechanical strength is the ability of the mechanical system (skeletal, muscular, fascial) to control movement of the body in space against external force. Strength (or resistance) training is the name for how to develop this.

Strength training is short duration activity done with varying amounts of resistance to create more tension on the mechanical system than it would normally encounter.

There are 3 areas of strength training, each with their own variables to consider in progression. These **are mobility, stabilization, and gross strength**.



- **Range of motion**: The ability of the joints of the skeleton to move within a genetically and structurally predetermined angles without undue restriction from the mechanical system. This includes range of motion (ROM) exercises where the tension is produced through end range joint angles and muscular elongation is used to reduce tension rather than shortening against a weight to increase tension.

- **Stability**: The opposite of ROM. The ability of the body to resist motion. The nervous system wants some muscle function to move the skeletal system. But in order to do this, it must create stability. Usually this happens deep within the body. That is why, commonly, we call this ‘core’ training.

- .**Gross Strength:** A combination of the above two first elements with load added. This is the traditional type of strength where one moves under the strain of a load in one of several fundamental movement patterns (push, pull, loaded carry, squat, hinge).

It should be noted that, with strength work especially, the workloads should be appropriate for the specific condition based on safety considerations. The practice of strength training can be a bit more complicated than our other systems. This is owing to the risk of injury associated with misappropriation of techniques and the seemingly limitless variety of movements available for differing purposes.

Health Conditions

Strength training is used for treating and preventing **diseases affecting the muscles, skeletal diseases, nervous system, chronic pain, and is appropriate for immune disease as well as having a noted effect on endocrine and hormonal function.**

See our guides for functional mobility and gross strength for exercise techniques, programming, and other tactics to employ in this area.

More Specific Conditioning Concepts

Paleo Paradigm

One principle that helps us with deciding on methods to employ is that of the paleo paradigm. Basically, the human body's blueprint has not changed in its design for quite some time. So, analyze what our ancestors were required to do and mimic that.

Some of the main obstacles that a person needs to overcome in creating better health are the dysfunctional patterns our bodies have developed in relation to our current lifestyle…a lifestyle that's only been around for the last 100 years or so. Therefore, thinking paleo or "what would my ancestors do 35,000 years ago?" is a principle to keep in mind. Our genetics have our bodies programmed much more for the lifestyles of the far past than of the technology age. This thought process can help influence our goals and processes.

In our training, we try to figure out how to make people stand tall, run, jump, climb, lift, throw, and swim. The inner and outer thigh machine is not on paleo man's menu!

Evidence/Research based training

With the extremely busy lifestyles that most of the population leads, time is at a premium value. Therefore, for our training to be effective, we must limit ourselves to techniques that have been proven very effective with respect to specific outcomes over time through research and experience. Get back to the basics and follow the KISS principle.

KISS.

'Complexity' in training is another one of those paradigms that promoted by fitness marketing to sell products. You see all sorts of crazy exercises with all sorts of new funky equipment in the gym. You say,

"Hm…It looks like those folks really know their stuff." It is probable they copied it from a magazine and use the technique now to entertain thier own brain more than really having a good handle on how to create results from it. 'How' a technique or product is used and 'what it is used for' is less obvious to the observer but THIS is what is important.

Sure, creativity is great when it comes to solving problems. But with creativity comes complication. And, 'complicated' **diminishes independence** and the ability to recreate activity (frequency and consistency).

The truth is that most of the time, the best techniques are basic and repeatable and don't take a lot of fancy equipment. Do them. Then, do them well. Get better. This is how you get the best bang for your buck! Think 'mastery' over 'variety'. Study and utilize tried and true methods and **Keep It Simple, Stupid!**

Think like an athlete.

Everyone, whether we think of ourselves as such or not, is an athlete with regard to the ***types*** of movement we have to perform. Our bodies all have to move in the same general manner. All of the things that an athlete has to do, every person has to do. The difference between us is the ***degree*** of which they have to be done. An athlete may have to run. To get to the train on time, I may also have to run. The athlete simply has to be able to run faster.

So, the same principles from our training with athletes applies to any other student in any environment that we choose to utilize. It's in volume, intensity, and complexity that differences occur. Deadlift and power clean principles are applicable to teach paralyzed people to stand again. Field agility concepts are used with the elderly for fall prevention. 'Correctives' from physical therapy are important for high- and low-end practice.

So, those of you that have a tendency to perform your training mostly on the elliptical may get more benefit from a different paradigm that takes you to the field, track or mountain.

Train "Out of the Box"

Physical Boxes

Our lives are spent in boxes. Our house is a box. We climb into our car (another box) held in a garage box to go to a job that is in a large building box. We go to our office box where we go to a cubicle box. At the end of the day, to counteract the effect of sitting in our boxes rather than being active, where do we go?...To **a %^&*** gym box!

Training does not need to, and even should not commonly, happen in these pre-designed boxes….at least not most of the time. Our cities have sidewalks and there are hiking trails, pools, basketball courts, and fields. Of course, this all depends on where you live. In AZ, you may need a gym during the summer. In Chicago, one is a necessity during the winter. But training is a way to make your body more adept to what

it needs to do instinctually (which is ALWAYS 'out of the box'!). Look for ways and methods to have fun and get rid of the walls in favor of outside activity or recreational sport options. If you do NEED a gym, look for one that mimics the outdoors if you can.

I was 17 years old. Our high school football team was going to be state champs. We were nationally ranked. I was to be a starter on the defensive line. I was all ready for a summer of training…big, strong, and fast. That would be me! Then, it happened.

My parents had a motor home and wanted to go across the country on a family vacation for 3 weeks. IN THE MIDDLE OF MY TRAINING CYCLE!!! No gym for Jason.

I was a one morose SOB. My parents ended up sending me home after 2 weeks on a flight from Michigan as they got tired of my bitching.

But this was absurd. Had I had a little more emotional intelligence along with more creativity and experience in training, I could have actually solved a lot of my performance issues on the trip. I could have gained stabilization and strength with one arm pushups and pullups. I could have gained balance, mobility, and strength from pistol squats. I could have done hill sprints with my sisters as human back packs. I could have done mobility work. I could have had some great core work that would have fixed my back issues! The trip could have been a GIFT for my performance rather than how I saw it…. all because I only thought of performance as being done within the weight room walls.

<u>The Time Box</u>

Another way of thinking in the box is that all training has to do with an hour of time. Your time spent will depend on your daily workflow, environment, etc. I have many clients **'micro-dose'** their **training**. I also like to call this '***recess***' training. Remember when you were a kid and you got recess? You got 15 mins to play a game of basketball, run,

climb, and get out your wiggles (as my sister likes to say about their kids). All that and you have better learning and cognitive function when you get back in class.

Training like this is great. A person may do their mobility in the morning for 15 mins, strength at noon for 20 mins, and cardio after work for 20 mins. This is just an example, but it is effective and keeps the body healthy and moving along with increasing the frequency of activity. Many other techniques of training timing are used in the field of human movement.

Another mental programming technique one may use is **task-oriented training**. Instead of concentrating on a period of time for training, focus on the tasks associated with the goal. Then we treat the training just like your 'to-do' list. I have training bouts that take a whole day with exercises in between work or other activities. I also have some that are only 25 minutes or so. It is the task or the stimulus involved that counts.

Human Systems vs. Biomedical Model of Health and Fitness

There are two ways of looking at the physical development. One is the parts based biomedical model. This compartmentalizes the anatomy and associated physiology (function) of the human body into segments. This is how traditional western medicine tends to look at the body.

The second is the human systems model. This is the holistic paradigm. This model sees the human body working as a whole unit where the parts have less distinction from one another. We look at systems. But each is interdependent with all the others.

In choosing how to develop our bodies, it helps to use both these models (an integrated model). For instance, I may isolate the respiratory system by performing breathing exercises (human systems model). But

I am doing this to be able to integrate a better breathing pattern into my runs or swims where the whole body has to perform as a unit (integrated model).

Functional Training?

"Training to be pretty will not make you useful. But train to be useful and a fantastic aesthetic will result."

You've all heard about 'functional training'. So, what exactly is 'functional training'? Isn't all training to develop our body to function?

"Functional Training" refers more to a training 'principle' rather than methodology. It refers to the transferability of our training to physical tasks one may have to perform in one's own life. In other words, "Train to be useful!" I know I am repeating this from before, but that should tell you how important it is. Because of our cultural changes in recent history to a more sedentary lifestyle, our 'functional training' actually resembles the occupational activities from a lifestyle 100+ years ago.

In school we take anatomy and physiology. 'Anatomy' is the structure within the body. 'Physiology' is the function. In our philosophy, we think about training **function**. The anatomy (or structure being affected) is secondary. For a body builder, because of the nature of the sport, this would be opposite.

Essentially, functional training is more about point of view than technique. It falls more on a spectrum rather than a 'this is' or 'this is not' view. For instance, an arm curl is a normal movement the body may perform. A ***preacher curl*** on a machine takes out much of the stabilization and neural integration that may occur in a normal daily task. However a ***standing dumbbell curl*** may mimic a normal task more so. This means it is *more functional*. And, other exercises may be 'more functional' than that.

Integrated vs isolated exercises

All exercises range on a spectrum from integrated to isolated. The more joints moving and muscles being utilized in conjunction with one another in a common goal, the more integrated the movement is. When the concentration is on less muscles and less joints, the movement is more isolated. Most movements of activities of daily living or sport are more integrated. But that doesn't mean we don't isolate for specific needs.

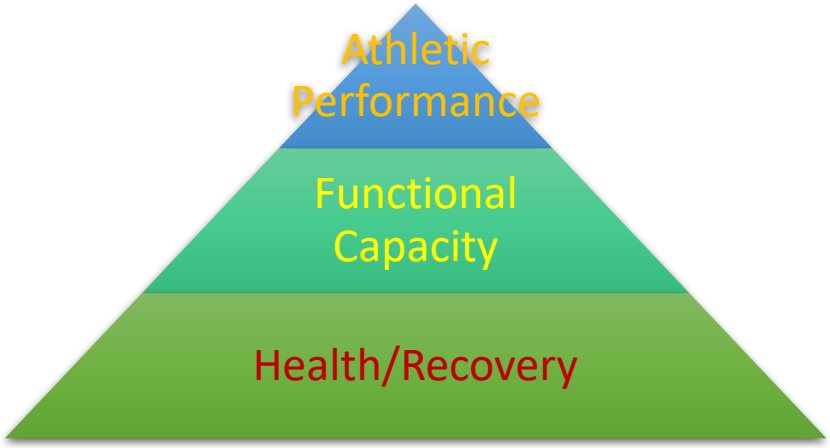
Functional training may mean utilizing programming that focuses less on high intensity and more on **planes of motion, core engagement, range of motion, and stabilization**. Or it may mean deadlifting heavy. It depends on what you are training for and what specific condition your body is in.

All in all, to call some training ‘functional’ and other training ‘not functional’ is missing the point. Exercise techniques are like tools in your garage. It’s all about knowing not to use a hammer to tighten a nut. A wrench is what is needed for that ‘function’.

Foundational Conditioning

This has been mentioned before but that is because it is important. Foundational Conditioning is a developmental training methodology based on the principle that the human body has a tiered physiology (functioning) as a whole *(as represented in the graph below) with respect to each of our 3 major areas of development***.**

This means that we must have a tiered approach to conditioning the human body. This is true in whatever goal or context we are working toward whether that is athletic performance, returning to health from a condition or injury, or conditioning for activities of daily living.



You will note that ‘foundational training’ revisits the structure in our RootStrong concept. We use ‘foundational training/conditioning’ as our building blocks for our entire methodology.

For further understanding, let’s say that you’ve left your old Mustang in the side yard. The Mustang was once an amazing

performance machine. However, after sitting in the side yard for a period of years, the electrical system is shot, the alignment is off, the engine hardly runs. **If you tried to drive this car on the road, it would blow up! It's a safety hazard!**

So, why would anyone do the same thing with their body when they've been affected by chronic health decline? You've been sitting in a chair from your school days through to your work days. Your cardiovascular system may be functional at best. Your biomechanics don't provide for a stable body with any range of motion, much less strength. Your digestive and metabolic systems don't know how to provide energy to the rest of your body. **If you try to do one of those intense bootcamp or cross training programs, it's a safety issue! You are a hazard!**

It is time to restore before we can get you out on the road. This is a principle of starting out with restoration and building to performance.

<u>The Yo-Yo</u>

The clients that come to me commonly have the yo-yo experience. The yo-yo happens when we try and jump phases too soon. What happens to a kid who tries to take algebra before arithmetic? What happens when you try to run before you crawl? Failure is usually the answer. The person is continually moving 1 step forward and 2 steps back because they did not address their level of physical condition or resources properly. This is the main reason why 'foundational conditioning' is so important.

Apply the Scientific Method to Reprogramming the Human Body (to an extent)

"What can be measured can be managed." Lord Kelvin

There is an ‘art’ to developing the body. This involves a ‘feel’ of how things are working and developing over time. However, there are specific research-based principles used in order to create specific results. With this in mind, we use the scientific method to prepare a program design that fits each individual and their specific needs.

This involves:

1. **Testing** (baseline)
2. **Questioning** (what stimulus will create the changes we need?)
3. **Hypothesis** (I think this exercise/diet/vitamin will work)
4. **Prediction** (this stimulus will elicit this result)
5. **Retesting**, and
6. **Analysis** (what did we achieve, why did this work/not work?).

All training programs must follow the scientific method, at least to a point. Elements for a training program to follow the scientific method should include:
1) Control variables: change-one variable at a time,
2) Create measurable and replicable inputs (techniques) and outputs (testing)…the plan needs to be able to be recreated.

However, we must also consider that our gym and our bodies are, quite simply, not a lab. Gyms may seem like the lab for changing our experiment (the body). But our bodies are complex and can be unpredictable depending on ever-changing circumstances. Also, unlike the lab, there is a high variation in the environment and the subjects. There must still exist a ‘feel’ or the ‘art’ to designing our bodies in structure and function alike in order to adjust to such variations while still keeping to our intent. I like to say that the testing and underlying techniques involved in a ***program*** are **science** while the ***system*** of listening to our bodies and examining its state in order to decide HOW to use those techniques is the **art**.

Perfection in training.

"Perfection is not possible. But if you seek it, you will find 'excellence'"-Vince Lombardi.
"Don't start tomorrow. When you get there, it's today again."-unknown

I hear this all the time in the form of: "I just don't know where to start." Or "I will hurt myself if my form isn't perfect."

There are words in the English language that are only expressions of 'scope'. 'Infinite', 'perfect', 'exact'. These terms are ideas that are subjective, show contextual relationships, and therefore, cannot be reached in application.

The concept that you should not be training if you aren't doing it 'perfect' or 'right' is perpetuated by the gym industry. This can be true if you are training with heavy weights and equipment. But most people don't need heavy weights and equipment to start training themselves.

EVERYONE has run before! Everyone has done pushups and bodyweight squats! Everyone can start walking! So, doing it 'wrong' is not 'wrong'. It is 'right' as compared to doing nothing.

Ok, if you are hurting and haven't done these things in a long time, help and guidance will pave the way. But, using a lack of proficiency as an excuse not to starting to move and gain proficiency is asinine.

Asymmetrical Risk

I'm going to borrow the term for this concept from the great strength coach Dan John. *Asymmetrical risk* is describing the decision process toward a choice of exercise. With asymmetrical risks, making a choice toward certain techniques with regard to the context of the situation will yield very high positive results with very minimal risk of negative consequences. ***High*** *reward,* ***low*** *risk* is ***asymmetrical***!

If one chooses to only partake in developmental techniques that are asymmetrical in nature, they do not have to be perfect at that technique to gain value. For instance, for a sedentary person, choosing to walk vs. not walking is an asymmetrical decision. Frequent walking for this person yields a huge health reward with very low risk of injury or to health. Not doing it yields high risk of long-term health issues with the reward being the time walking would have taken.

Avoid polar thinking.

Don't use 'Black and white'. Use 'grey' thinking.

Don't eat rat poison. That is a true absolute. But, little of what you hear out there in the world related to health and human development is so clear. All is a matter of nuance and context, not absolutes. 'Red meat causes cancer.' Hmmmm. Really? There's hard evidence behind that?

Rarely in dealing with the human body is the answer to a question 'always' or 'never'. Most of the time the answer is found with the thought process: 'if x is__, then y should yield ___'. If we have one situation, we act one way. In another slightly different situation, we act another...then assess. Beware of 'always' and 'never' or 'black' and 'white' advice in reference to the human body.

I like the questions posed by economist, Thomas Sowell for critical analysis of any concept:

- ***Versus what?*** *What are you comparing something to? Biking is great for cardiovascular strength. But, how well does it work vs. swimming?*
- ***At what cost?*** *Saunas are great for health. Do you have access to one? How much to get one?*
- ***What is your hard evidence?*** *What information does one have that proves a concept? How reliable is that information? How do you know?*

Routines and Habits

Remember this should be a lifelong routine with habits that are actionable day by day. This will take some trial and error. But some forward movement should come pretty quickly.

Now that you have the concepts down, start scheduling with the basic table below. After you've finished, you may choose to transfer the information to your own calendar.
There's a copy for download on our website: roothealthperformance.com

Weekly scheduling table

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
ADL							
GC							
SC							

ADL-Activities of Daily Living GC-General Conditioning SC-Specific Conditioning

Here is filled out with a plan for personalized health might look something like this. Obviously, this person's needs will differ widely from your own.

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
ADL	Play basketball	Hike with the kids		Ride the bike to work		Surf	
GC			Yoga Class		Run-30 min		
SC	Shoulder Therapy			Athleticism and Strength			Athleticism and Strength

Identifying Hurdles and Forming Solutions

Hurdles are uncontrolled variables that come up. We must address these issues in the planning stage to avoid having them get in our way unexpectedly and highjack our plan. We must recognize them ahead of time. Here are some common ones…..

Hurdle One: Family, Friends, Work

The real main issue with a population that is racked with chronic deconditioned syndrome is this 'Catch 22' situation:
The reason we want to be in shape is also our biggest obstacle. For instance, do any of the following seem to fit your life?

- I want to be in shape to spend time with the kids. But if I am working out, I am not spending time with the kids!
- I want to look good for the guys/girls at the bar. But if I am at the bar, I am drinking, eating bad food and not training.
- My job is sedentary. So I need to train to counteract the effects of sedentary desk work. But I need to work to provide for my family and that is restricting the time I have to develop my body.
- I drive to work which is the source of my muscular pain and weakness. The drive also cuts in on time that I would be able to train. The only way to mitigate this is to quit my job. But that would also eliminate the need for so much training.

There's another hard fact in this area we all must face. It's going to sound bad. But it has to be said. **Your family, friends, and bosses don't care about your health and performance goals**. At least they

don’t care enough to fully respect the process that is required to attain them.

On Friday, your best friend will try and get you out for beers instead of working out. Your wife or husband will buy sweets at the grocery store even though you’re trying to stay away from sugar. It’s not that they don’t want you to be healthy. They are just unlikely to sacrifice their time with you or make the same sacrifices you are making. They care about the short-term benefit of your company. YOU have to make the decisions that lead to long term results.

You may even have to consider that your family or friends might resent your success as it makes them less successful in comparison.

How might you mitigate these situations? *Write your own questions on a piece of paper and come up with some solutions.*

1. Can you work from home to lessen traffic time?
2. Would playing with the kids fill in for the general conditioning activities.
3. Would a short workout be a good idea before meeting friends out?
4. Could you workout at work/do short activities (micro-dose) while you work?

Hurdle Two: Your Own Body

Bodies adapt in a variety of ways. Our training elicits positive changes. But some others may be negative or side effects of training. We must be able to tell the difference. This is why we recommend techniques with asymmetrical risk associated with your body’s condition.

When you experience pain or injury, the best way to work with it is recovery training. Also, a good coach can guide you to whether recovery is best and what type will be most beneficial.

If working independent of coaching, take notes from our other books or visit a trusted professional's YouTube page dealing with the condition you are experiencing.

Phase 3:

Execution and Control

- A**llocate and redistribute resources**
- **Keep moving forward without increasing stress or workload.**

"If you always do what you've always done, you'll always get what you've always got." -Henry Ford

The paradigms, principles, and methodology here may seem to be different than you've seen before. Good! New thinking = new results.

As you've seen, most of this book is about understanding the problem we face and planning how to deal with it enjoyably and with success.

This last portion is how to 'make sense' about behaviors, physical changes, and hurdles. 'Making sense' of what is happening will help us make proper decisions. Some of this revisits the concepts in the 'mindset' section in our initiation phase.

You're going to fail. But be happy about it!

Well, at times you may feel like it. There will be times when you FEEL like you are standing still or *failing* to reach your goal or find difficulty in carrying out new behaviors. There are a few common reasons why that may be.

I assume there is something in your physical condition that you want to change by reading this book. Why aren't you there already?

It is likely that you've failed in the past. You've failed to keep that condition. All of us fail. As a matter of fact, failure MUST happen before success.

But let's talk about why most failures occur in the area of health and physicality…..

You are not reading the sign posts (analyzing progress).

Allison was a client of mine. She had just had a baby. She had an ankle injury just before. She had bad posture. But she was an ex-athlete who knew how to train.

At around the 3-5 month mark, Allison asks me, "Why haven't I hit my weight loss goal?" I said, "Let's take a look at where you were when you started…." Then we reviewed, core strength, ankle issue, posture, etc. In relationship to these, she had fantastic outcomes.

Then I told her, "As related to your initial end goal of weight loss, you are just a bit off on your nutrition." She had done well in this area but only enough to shift health without affecting weight. We started tracking this along with some physical measurements and PRESTO!

The weight magically started coming off.

Another client of mine was talking about how frustrated he was with his body's mechanics. How he still felt off center and out of alignment.

So, after reviewing his history since he started working with me and some other professional partners (he had gone from chronic pain to just having some imbalances that were lingering), I told him the story of the 'broken ankle'.

A person sprains their ankle. At first they are on crutches. They lament about using the crutches.

Then, one day, they are healing and can get off the crutches and move to a brace. For a day, they are happy about their progress and to be rid of the crutches. Then they lament about the brace.

One day after healing and therapy, they can take the brace off. For a day, they are happy about their progress and to be rid of the brace. But now they have a limp. For the limp, they lament.

One day, they get stronger and get rid of the limp. For a day they are happy for their progress and to have gotten over the limp. But now they have mechanical compensations such as knee and hip pain and imbalances. So, they lament again.

We, as humans have a tendency to focus on what we are dissatisfied in the moment rather than the positive direction we are heading. A person is liable to quit because of frustrated feelings related to a 'goal' or 'finish line' rather than related to the initial stage or the 'starting line'. This is a problem we encounter in the 'action' phase.

We live in a pill taking society. We want results fast like we want from a pill. But pills rarely solve problems. They alleviate symptoms. The source of the original problem is almost always still there.
So, we quit when things aren't moving fast. "It didn't work." "It is working, you just aren't recognizing small successes. Alleviating the 'source' of a problem takes time.

That is why I describe this as a lifelong project. It works. It works for everyone. When I first started training, I'd have clients that were

over 50 years old saying, “what if strength training doesn’t work for me?” I’d say, “It works for everyone.” However, now I know to add, “But the level to which you will find success depends on your resources…patience being a big one.” So, **be patient and keep going**. But pay attention to the sign posts along the way.

You have reached the limit of your resources.
You have lofty goals that we set in the ‘goal setting’ chapter. But after taking some action, you may find that you train less often than you had planned, spend less time than you initially intended, eating less optimally than you should according to plan, or any number of hurdles that limit the resources you once thought you had from the ROI questionnaire. Then you feel frustrated that your progress is not what you had intended.

When this occurs, you must either attain more resources in the areas of time, discipline, focus, money, etc from any number of methods in our sports psych chapter. Or you need to re-assess your goals. Or you need to recognize that getting better at the activities you are doing takes time. When you are better at the activities, they are more effective and take less resources.

Many who embark upon this journey succeed not by arriving at their initial amazing goal of progress. But instead they realize that their resources are better suited for ‘slow progression’, ‘not regressing’, or ‘maintaining’. All are great. But never quit because your initial goal is not arriving as quickly as planned. Reassess your resources and your strategy to determine how it fits with the initial plan and compare during the action stage.

You’re ‘working’ out.
‘**Work’-outs**. We see developing our body as a huge resource drain. We don’t have the time, money, attention to GUARANTEE success.

Thinking of developing the body as ‘work’ is the problem. We ‘train hard’. Why?

When I was a kid, I liked to draw and became quite good. I didn’t say I wanted to ‘work’-draw. I just drew and the fun was trying to get a little better as I went along. The more I drew and put intent into it, the better I got.

Arnold Schwarzenegger talks about hard work. Arnold ‘LOVED’ training his body. There was little ‘work’ about it.

Training will have hurdles. You will reach plateaus. Life events get in the way. But, if you are training with a mindset that developing your body as a hobby that you also consider a responsibility to yourself, these hurdles may actually become enjoyable challenges to ‘play’ with. So **PLAY** and develop. Don’t work too hard.

You’re not excited.

You absolutely will get nowhere unless you are excited for the new evolution you are creating. This is where ‘visualization’ is important in ‘mindset’. I get excited about absolutely EVERYTHING I create and do! **Find your ‘why’. Visualize it. Perform.** Really, that should be this whole book. That last line….the one in bold print. Read it again.

Your hurdles have become excuses.

I hear this all day long-
ME: ‘So how did that (nutrition, exercise, etc) go?’
CLIENT: ‘Oh, (blah, blah, blah, excuse!) came up and I didn’t perform anything that we planned.’
ME: OK. How could you have mitigated that (blah, blah, blah, excuse) and kept it from getting in your way?

You Only Train with ‘Moderation’

“Moderation does not have the power to stir men’s souls!”-Dan Millman (as Socrates in Way of the Peaceful Warrior)

Ok, so you may be thinking that we've been giving a point of view of training as it needs to be pretty 'moderate'. This is simply pointing out that each training bout is not being filmed for a Nike commercial. Focus and progression are much more important than the intensity of each training bout.

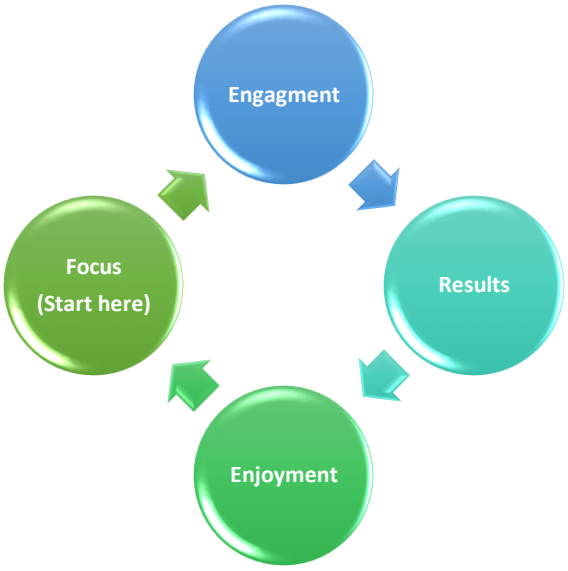
But you should train hard sometimes. Otherwise, training will feel empty. You'll find yourself asking, "What am I doing this for?" So, find something passionate to train for! This will yield results toward something. This will help you find the discipline and drive to train hard and know when to train hard when the time comes. Play a sport. Join a martial arts dojo. Find a passion to train for and you will start to train WITH PASSION!

You lack focus/attention or the mind/body connection

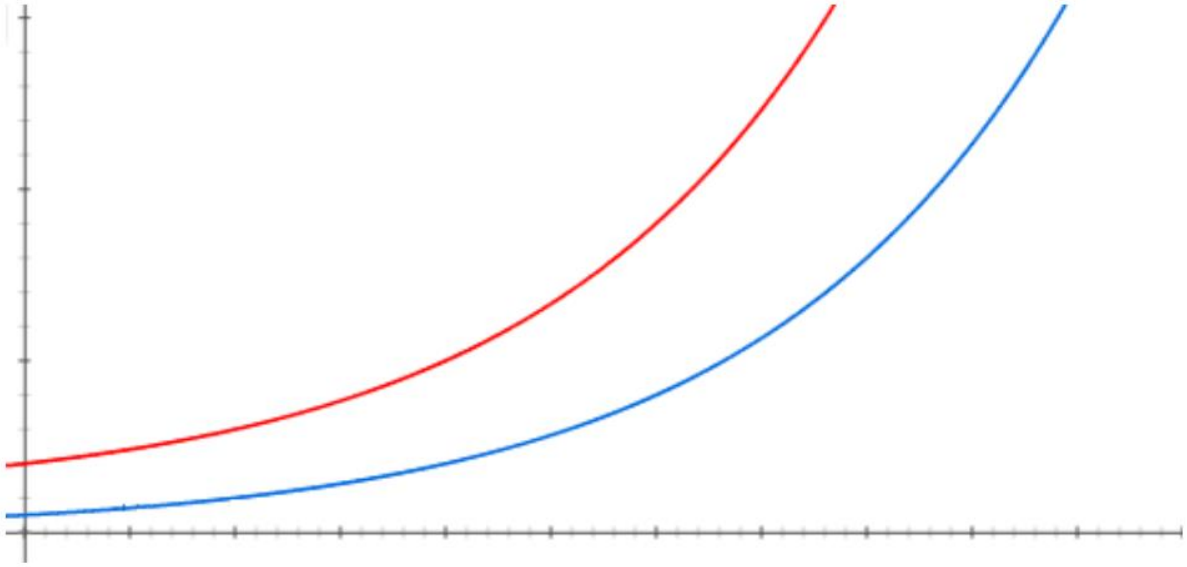
"Activity does not equal achievement." -John Wooden

- A primary need in training is to be focused on our main goal or outcome with full attention. This will help keep us on point and developing the right activities that will get the outcome we desire. This includes our nutrition, training sessions, sleep, meditation, or various other modalities we may use for the goal at hand.
- During our training bouts, we must focus on the specific exercises and the variables involved connecting the mind and body while achieving specific small outcomes from each exercise. Actions as seemingly small but important as breathing and counting help us achieve this.
- There's something I like to call the focus enjoyment loop. It is very simple. As we focus on what we're doing, we become engaged. As we become engaged, we begin to feel an outcome. As we feel results, we enjoy the activity more. Enjoyment then incentivizes us to focus and thus recreates the loop……Focus>Engagement>Results>Enjoyment>Focus.

Do you see the cycle?



As this cycle goes over and over, we see this curve with our results:



Summary of Hurdles

These situations are why we talk about predicting hurdles. They are very unlikely to be overcome reactively. You must pro-actively plan for what to do.

When and why have you stopped in the past? You MUST enjoy the process and small victories. The reason I didn't include a timeline for

individual goals in the previous chapter's tables is that I want you to pay attention to the little victories every day through focus. These will build and accumulate just like an investment portfolio. Watch the changes! Enjoy them. Never think you failed in the run just because you didn't cross a finish line yet. You only really would have failed if you never got on the track.

Of course you have the 'end in mind' as we stated before. But if you are trying to get from A – Z, you should respect B-Y on the way….And recognize that X may just be good enough for you.

Sometimes on our journey, we get unsuspected occurrences and obstacles that come along the way. The body responds in many varieties of ways, sometimes unpredictably. We want to be static in our direction but dynamic in the specifics of our goals, plans and actions to allow for adjustments to our body's response. **So, keep the end in mind!**

Keep moving forward without stress or more work

Keep a log: Goal setting and action planning are continually revisited throughout our lifelong process of development. We do this with specifics day by day and big general changes on a per-program basis (every 6 weeks to a year depending).

This is where we determine more quantitative goals of where we want to be on a week by week and month basis. If we said we wanted to increase the bench press in 3 months, by about how much? If we want to lose weight, how much and how soon? Is our plan being executed well depending on our initial assessments of resources?

Daily Check In Log

I log a bit different than other people. I like to use questions that bring a narrative of my journey through physical development into my mind. I

simply check in with each of our holistic kinesiology domains. Here are the questions I ask. You're going to want to take these and then tailor them to your own goals and condition.

1. How does my mobility feel today? Getting out of bed? Performing tasks of daily living? During the workout? Any pain or stiffness?
2. How does my energy feel? Any lulls in times of day? Performing tasks? Motivation? During training?
3. Do I feel strong? Performing tasks? During training?
4. Basic measurements such as circumference, body weight, and blood glucose are helpful as well.
5. How to the answers to these questions correlate to my behaviors and habits?

Understanding Coaching in the Development Process

As you have gone through basic goal setting and understanding the principles of conditioning and the process of change, you may decide that you need guidance.

Purpose of a Coach

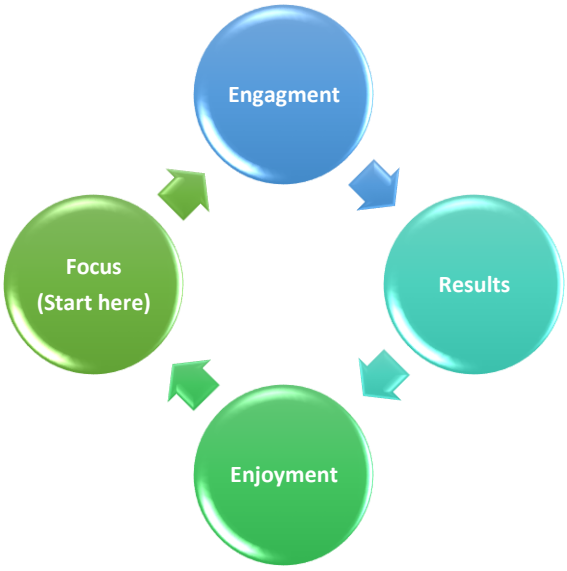
A conditioning coach's purpose is to guide a person through developing physical changes that translate into other areas of that person's life. These areas include (but are not limited to): Health, occupational activity, recreational activity, athletic performance, and physical attractiveness.

Everyone needs a coach!!!

For success with any goal, a coach is absolutely necessary for the **most** effective results. Coaches provide feedback, experience, and guidance. For optimal life success one could use a coach with physical development, psychological development, career decisions, business development and a host of other life aspects. This does not mean, however, to not begin your developmental journey in the absence of a coach. Time's a wastin'!!!

Focus/Attention-Mind/Body: Goals and Mechanisms

"Activity does not equal achievement." -John Wooden



Because coaches help create areas of focus. Coaches can help us create this loop that we went over in the last chapter.

Ownership/Accountability

"90% of success is simply being where you're supposed to be, when you're supposed to be there." -Robert Root (Football Coach)

Along with focus, a client must learn to 'own' his/her current condition and future results. Coaches and trainers can teach, give feedback and guidance and even give manual soft tissue manipulation and therapy. But it is the effort of the student/subject in working, breathing, eating, counting, and other basic activities that creates the desired result.

Frequency/Consistency/Commitment

"Do. Or do not. There is no try." -Yoda

"Productivity is never an accident. It is always the result of a commitment to excellence, intelligent planning, and focused effort." Paul J. Meyer

We have acknowledged the two sides of the coaching equation: the instructor and the student. One ingredient that affects both sides and must be present on both sides is 'commitment'. If both the instructor and trainee do not commit fully to the outcomes, there can be only perfunctory results.

Variables that can be manipulated in the design of a training program include ***intensity, volume, time, type, and frequency***. **Frequency** is the absolute most important. One must keep frequent specific action to attain the desired result. To get to frequency, one must keep consistent and make a commitment toward the goal and the program.

Communication of a Coach

A professional should clearly communicate 'why' one is using a technique and how it fits into a program. They should delineate whether

their basis of information is experiential, research (if so, from where did the research come?), taught by a mentor, heard off the street, is dogmatic (industry norm), or is a trade secret.

Feedback! Internal and External

External feedback (information about movements/results from a source outside the body) is one benefit of having a coach. Another benefit is that the external feedback can transform to internal feedback or your body's own way of guiding you by the nervous system (or how you feel).

Fostering Independence

While we believe that one always needs a coach for feedback and guidance through different phases of development, a certain level of independence is necessary. One's goal should not just be to achieve goals but to get to the point where they've learned how to get desired results with less coaching or on their own. When they reach a new level or need variety or feedback, they may return to the coach for further guidance. This is where having developed internal feedback and an education to the mechanisms of change are paramount. One must learn to utilize their new skills on their own.

Habit/Lifestyle Change

A good coach will be able to teach you how to identify which habits to change to make the biggest difference. Habit change takes a lot of our resource of 'discipline'. Picking the right habits is therefore a great role of a coach so that you aren't wasting your time and discipline getting rid of or accumulating things that only will make a small difference.

Roles of Instructor/Student (Client)

The ***role*** of the coach is a little different than the ***purpose*** of the coach. The role of a client and a coach will depend highly on the professional's scope of practice and the client's goal. The role of a physical therapist is

quite different than a PE teacher, for instance, even though there are similar educational backgrounds. The needs, goals, and conditions will change as the student develops through a program and so the roles need change as well. But here are some general guidelines regarding roles that seem to be ubiquitous within most learning situations:

Client

- Learn: Develop your mind and body with intension
- Work: Put in the needed resources (effort, time, energy) for practice. Keep with nutrition and outside activity. Practice and training bouts are for learning. LIFE is for doing!
- Have fun!!!!.....development is fun…look at kids and puppies playing THAT'S DEVELOPMENT!! Be engaged. Everything is more enjoyable when you are engaged in the activity.

Instructor

- Goal Setting: Guide the student/client on how to determine their short and long term goals.
- Program: Develop and adapt the proper program and tools for client needs
- Teach: Make sure client/student understands how techniques and program will get them from where they are to where they want to be and how that will transfer to their lives.
- Keep focus/fun balance: Have fun! Be personable. But physical results are our primary objective.

  ^An instructor should always be learning in order to pass on new knowledge within their scope of practice.

Services and Professionals Available along with Their Education and 'Scope of Practice'

It is imperative that, as someone seeking to make a change, that you know who you should use for your particular need and to make sure that you are using the professional qualified for treatment or coaching for said need. This will help to optimize your results and avoid any further injury. Many of these may also have dual roles….such as those PE teachers or Physical Therapist who are also strength coaches.

Before we start talking about the professionals/services, we should propose some questions to ask yourself first (return to questionnaires throughout the book):

1. *Do I have a health condition? If yes, is it acute or chronic? (This may indicate a need for a* ***medical or allied health*** *professional).* If you feel that you have any health condition that is in the 'disease' state, consult a physician for testing and recommendation for course of action.
2. *Is my need more health or performance?* Do I simply want to function better, have more energy, look better, or do I have pain, obesity, heart disease, etc? If I do, then I may need a professional suited toward guiding me on a path that allows me to pursue fitness as I overcome my health condition.
3. *Do I need long term or short term care?* If chronic conditions exist, then use an educated professional for a long term, lifelong solution. If training to look good in a bridesmaid dress in 3 mos, a less educated professional is sufficient.[26]
4. *Do I need hands on treatment or other treatment modalities or simple movement coaching?* If biomechanical issues or pain is present, this

[26] I've trained lots of athletes of all levels. But no one works harder on fitness than the brides and bridesmaids before summer weddings!

may be a factor. Use a professional who is qualified for the needed hands on treatment with the proper license or certification.

Kinesiology Professionals

Physical Education Teacher: A PE teacher is on the ground floor of education. They should have a degree in Exercise Science with an emphasis on education and an education certification.

Personal Trainer: I hesitate to include this one in this category as they are not required to attain a kinesiology degree or any other standard of movement science education as a foundation. But many do have degrees and do study their craft well.

A personal trainer may be required to have a high school degree and a certification (this may be taken online or over a weekend) for work at most gyms. They tend to work with general fitness or body fat goals in large fitness centers or independently. NOT qualified for hands on work or health conditions ***unless otherwise indicated***.

Strength and Conditioning Coach: Has a BS or MS in kinesiology with high level certifications including the **Strength Training and Condition Specialist (CSCS from the National Strength and Conditioning Association).** They work with high school, college, Olympic or professional athletes for conditioning the body for the sport. Will work in primarily in educational institutions or performance centers. Qualified to stretch and perform myofascial release as manual therapy.

Physical Therapist: ***Allied Health Professional***. Has a **Doctor of Physical Therapy and Physical Therapy license**. Works on ***acute*** biomechanical injuries. Qualified to perform hands on work/manipulation.

Athletic Trainer: ***Allied Health Professional***. Has BS in kinesiology or athletic training and **license and clinical work in Athletic Training.** Works similar to a physical therapist but most directly with athletes. Qualified to perform hands on work/manipulation.

Kinesiotherapist: ***Allied Health Professional***. Has a BS in Kinesiotherapy and ***license in Kinesiotherapy*** and clinical hours. Works similar to a physical therapist but with chronic rather than acute conditions. Biggest employer is the Veterans Administration. High need for this type of person/education but only 2 colleges in the country have a specific program. So, they are a rarity.

Chiropractor: ***Allied Health professional***. Holds a **Doctor of Chiropractic**. Aligns the skeletal system (especially the spine) to relieve pain and other health issues. PT and Chiro's are getting much closer in terms of treatment paradigms and methods. Qualified to perform hands on work/manipulation.

Exercise Physiologist: There are 2 sub-types of exercise physiologist.

Clinical: ***Allied Health Professional***. MS in Exercise Physiology. Clinical hours and certification for Clinical Exercise Physiologist (CEP). Works primarily in cardiac rehabilitation for acute admissions and recovery from cardiovascular related health events.

Certified: BS in Kinesiology. Certified Exercise Physiologist (EP). Works with chronic as opposed to acute health problems across the board. The 'renaissance man' of chronic health/pro-active health and performance.

Sports or Behavioral Psychologist: ***Healthcare professional***. **PhD in Psychology**. Treats mental health/behavioral issues relating/causing health conditions. I include this if some foundational work in kinesiology or exercise science is included in their undergraduate work.

Licensed Massage Therapist: ***Allied Health professional***. High school degree. **License of Massage Therapy**. Like personal trainers, this profession is highly variable in education and scope of practice. Manual work on muscle tissue related to muscular imbalances/pain. Qualified to perform hands on work/manipulation.

Occupational Therapist: ***Allied Health professional***. MS in Occupational Therapy. **License and clinical hours in occupational therapy**. Works on motor programming for those with stroke, autism, and other neurological disorders. Qualified to perform hands on work/manipulation.

Registered Dietician: ***Allied Health professional***. BS or MS in Dietetics/Nutrition. Works with acute and chronic health conditions by prescribing nutritional programming and supplementation.

Nutritionist: Certification in nutrition. Non-regulated. Anyone can call themselves a nutritionist with any nutrition education or background. However many certifications are offered that have great information and many equal master's degree level of traditional university education.[27]

[27] Bls.gov

I sincerely hope this guide helps lead you to your ultimate best self that you desire!

I put questionnaires on my site: **roothealthperformance.com** for your use**.** There are free videos and links to our other educational materials there as well.

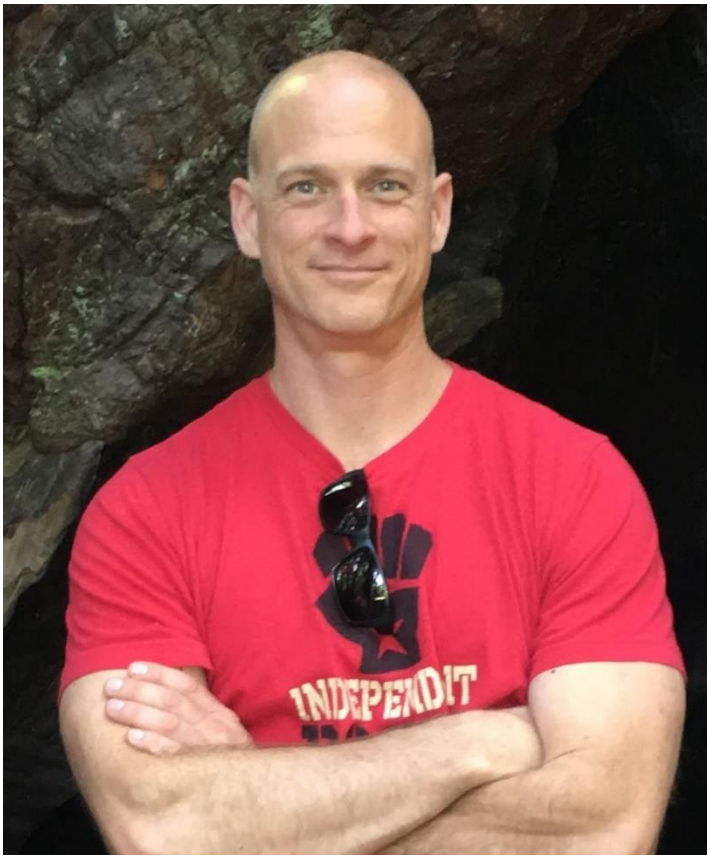
Thanks for joining me. Best of luck in your health and physicality!

Jason Root, MS, CSCS, EIM

About the Author

Jason Root has worked for over 20 years, helping to develop thousands of people, in the fields of **athletic performance** and **medically oriented fitness**. Jason has been a ***strength and conditioning coach*** with the NCAA collegiate S&C department at Arizona State University, coached with the ***powerlifting for paraplegics*** team at the Rehab Institute of Chicago, and as a ***Spinal Cord Injury Rehab Specialist*** in Carlsbad, CA.

Jason collaborates with top healthcare specialists including physiatrists, orthopedists, cardiologists, chiropractors, and psychologists. He has authored the following guides and books: *RootHealth-Medically Oriented Physical Conditioning; RootHealth-Nutrition; and RootHealth-Functional Mobility.*



For those curious, the shirt is from Rogue brewing in Oregon