1. Tweakology is creating the proper functional variability to create the most optimal fun and functional environment for analysis, rehab, training and conditioning and even dancing.

2. If we know function as variable, three dimensional, Chain Reaction, and subconscious, our transformation of this understanding must be consistent with this notion.

3. The test is the exercise and the exercise, properly tweaked, will result in an improvement in the test.

4. The ultimate name of the game is encouragement . . . encouragement is proportional to our ability to facilitate ongoing success.

5. We all need to start by analyzing . . . the greatest functional analysis involves the client, patient, athlete simply having fun, as the movement should be successful and subconscious.

6. The analysis . . . understanding that the analysis is never done and that rehabilitation is a continuation of the functional analysis.

7. We have a lot of mental responsibilities even before we initiate the first rehabilitative exercises.

8. Our functional manual reaction (FMR) uses tweakology . . . what plane, what joint, what position and what range?

9. Tweak is complex because body movement is complex.

10. Movement tweaks are the most effective way to transform anything into something better.

11. The research continues to pile up on the side of function.
OBJECTIVES FOR THE TWEAKOLOGY FUNCTIONAL GUIDE

To assimilate up-to-date information and knowledge about tweakology. To learn how to apply effective functional techniques when testing, training and rehabilitating using tweakology.

To understand and appreciate the tri-plane Chain Reaction principles as they apply to tweakology.

HOW TO USE THIS FUNCTIONAL GUIDE

This functional guide can be used as a convenient summary of the program's contents to take with you after viewing. You can also use this guide as a notebook; space has been provided so that you can make notes on relevant tracts as you watch them.
STRATEGY 1
Strategically appreciating the wisdom of the 3D Dumbbell Matrix

STRATEGY 2
Strategically discovering the empowerment of movement tweakology

STRATEGY 3
Strategically realizing the complexities of movement and tweakology

STRATEGY 4
Strategically analyzing with the applications of movement tweakology

STRATEGY 5
Strategically designing rehabilitation programs based on continued analysis through the ability to tweak.
STRATEGY 6
Strategically identifying, quantifying, and modifying through tweakology

STRATEGY 7
Strategically applying the science of tweak to create thousands of functional and fun exercises

STRATEGY 8
Strategically transforming our functional knowledge into multiple opportunities to enhance the lives of others

STRATEGY 9
Strategically validating our understanding of function through research

STRATEGY 10.
Strategically encouraging ourselves and our patients and clients through the power of tweakology
Gary Gray as a wallflower in high school and even now . . . a whopper-jawed herniated robot trying to dance.

The use of tweakology to get anyone to look good dancing

Tweakology is the science of tweaking

Tweakology is creating the proper functional variability to create the most optimal fun and functional environment for analysis, rehab, training and conditioning and even dancing

With the complex biomechanics of function, our goal is to transform our principles and concepts of function into effective analysis and treatment in training and conditioning techniques

This is the transformation of the notion into the motion. The transformation is the strategy and applications . . . these are the tweaks.

If we know function as variable, three dimensional, Chain Reaction, and subconscious, our transformation of this understanding must be consistent with this notion.

Three major buckets of tweaks: bucket #1 movement tweaks, bucket #2 dimensional tweaks (time, reps, distance and sequencing) bucket #3 influence tweaks (control, loads, tools, and feedback)

**Plane Movement Tweaks**
- What plane or planes of motion we facilitate or inhibit
- One of the most powerful tweaks
- The tweak of 3Dology
- Understanding that all motion has components of all three planes of motion
- The 3Dology of the proprioceptors
- All muscles function in three planes
- The three dimensionality of the joints

**Range Movement Tweaks**
- Analysis of the end range of all three planes of motion
- There are two end ranges for each plane of motion
- The end ranges throughout the entire Chain Reaction
- Understanding initial range, mid range, and end range tweaks
Position Movement Tweaks
• A lot of function occurs from an asymmetrical posture
• Function occurs from a variety of positions
• A lot of function occurs from unilateral stance
• Enhances the other movement tweaks
• With tweakology we first of all need to know the biomechanics of function

Joint Movement Tweaks
• Attacking the preferred joint or joints and the preferred muscle groups
• Tweaking a joint or joints to facilitate the desired Chain Reaction

Tweakology is complex . . . tweakology allows our tests to be transformed into effective exercises.

The test is the exercise and the exercise, properly tweaked, will result in an improvement in the test.

Testing function and enhancing function as evidenced by the retest of function is the name of the game

Create an environment where we allow our patients, clients and athletes to become more successful

The ultimate name of the game is encouragement . . . encouragement is proportional to our ability to facilitate ongoing success

It is our prayer that our patients, clients and athletes simply say “thanks”
Special thanks to Jody Salenbien
The jibber jabber of tweakology without the motion is a lot of talk without action . . . we need to see the motion to understand the tweaks

Jody is a professional personal trainer . . . she is a super tweaker.

We all need to start by analyzing
Our question is “So how does Jody move?” What is her body showing me?

In order to understand all of movement I need to have a strategy

The greatest functional analysis involves the client, patient, athlete simply having fun as the movement should be successful and subconscious

Discussion of movement tweaks with gait in the sagittal plane, frontal plane and transverse planes.

Arm drivers in all three planes during gait analysis

Combining gait tweaks to begin to create the desired Chain Reaction

One strategy is initially going to the source of the power . . . the hips
• Left leg balance with right leg medial toe touch with bilateral overhead posterior reach
Looking at the amount of motion, quality of motion, and where the motion is coming from
A position tweak, with a plane tweak, with an end range tweak
Going to a frontal plane tweak
• Left leg balance with right leg medial toe touch with bilateral arm overhead medial and lateral reach
• Left leg balance with right leg medial toe touch with bilateral arm overhead medial end range reach

Looking for the translation of the hip and pelvis
• Left leg balance with right leg medial toe touch with bilateral arm right and left rotational reach at shoulder height
What are we looking at and what are we looking for?
• Left leg balance with left knee flexed, right leg anterior lateral toe touch with bilateral arm left rotational reach at shoulder height
What did we do? . . . pre-position the pelvis, the left hip and the left knee with an upper extremity transverse plane driver
• Left leg balance with bilateral arm overhead posterior reach
What are we now looking at without the stability of toe touch?
• Left leg balance with bilateral arm overhead medial and lateral reach
Seeing “not a real good frontal plane hip load”
• Left leg balance with bilateral arm left and right rotational reach at waist height
Now going away from the hip
• Bilateral stance, full squat
• Bilateral stance, full squat, with bilateral arm overhead reach
Noting the right lower extremity compensation
• Left leg balance, right leg posterior medial toe touch, full squat
• Right leg balance, left leg posterior medial toe touch, full squat
What are we looking for?
The strategy of driving throughout all three planes, various positions relative to stability, at end ranges, utilizing the joint tweaks

Utilizing the same strategies in the rehab and the training and conditioning

Looking at the feet and ankles with our balance reach and excursion tests . . . also looking at the knees and hips

• Left stride stance with bilateral arm right and left rotational reach at shoulder height
Looking for calcaneal eversion and inversion
Using the opposite side leg as a driver

• Left leg balance, right leg anterior and posterior reach
• Right leg balance, left leg anterior and posterior reach
• Left leg balance, right leg medial and lateral reach
• Right leg balance, left leg medial and lateral reach

Emphasizing a position tweak to tweak into finding out more about Jody's function

How do I analyze with movement tweaks . . . utilizing a pure functional strategy?

• Left leg balance, left arm left rotational reach at shoulder height
• Right leg balance, right arm right rotational reach at shoulder height

What are we suspicious of?

Adding a step to significantly influence the balance reach test

Discussion of the lifting matrix with plane tweaks, range tweaks, joint tweaks and position tweaks

• Left and right lateral lunges
• Left and right anterior lunges
• Left and right posterior lunges
• Left and right posterior lateral rotational lunges
• Left and right lateral and left and right posterior lateral rotational lunges

How and why the body compensates

Discussion of what we see and what we are thinking
"Okay Lord, just give me some wisdom and some logic"

The answer is in the tweaks

Rehab reinforces all the same tweak concepts and strategies
The fun never ends because of the tweaks
Allowing our patients, clients and athletes to always be successful and then be even more successful
When we begin our rehab programs, hopefully we want to have a hankerin’ of what is going on . . .
that is what is causing the compensation and what is causing the pain and/or dysfunction.

How do we know where to go and what to do when we get there?

The analysis . . . understanding that the analysis is never done and that rehabilitation is a continuation
of the functional analysis.

Our ability to tweak allows us to be effective in rehabilitation.

The thought process of attacking the hip through a joint tweak through the foot . . . tweak the
range based on when and where we have the problem . . . tweak the plane of motion . . . tweak
the position of the body.

The best place to start is as close to where we want to finish?

We have a lot of mental responsibilities even before we initiate the first rehabilitative exercises.

It is all based on our functional analysis, and functionally what do we still need to see, and where
do we want to go today?

**The big rocks of the rehab process are:**

- Cheating mobilization
- FMR mobilization
- Strength and proprioceptive mostability training
- Enhanced mostability reaction exercises
- Constantly think tweak

**Starting within the TrueStretch™**

- Positioning and driving with the arms and legs
- Positioning in the various planes
- Driving in the other two planes with various body parts
- Ground reaction driving with the platform
- Utilization of joint drivers to get to other joints and other planes of the body
- Utilization of bilateral and unilateral arm drivers
- Manual reaction drivers to various body parts
- Tweaking the position of the arms to change the Chain Reaction in the various body parts
  such as the low back
- Bilateral arm drivers in the sagittal plane, transverse plane and frontal plane

Discussion of “hip flexor of the arm pit”

“Someone turned the goose loose”

Utilizing the strategy of movement tweaks to effectively mobilize the anterior hip.

Mobilizing the down leg hip with the foot platform frontal plane driver with the upper extremity
drivers in all three planes of motion.

Creating more of a functional environment outside the TrueStretch™

- Right side stance with positional tweak to simulate running
- Left toe in . . . a transverse plane positional tweak
- Right arm overhead posterior and right rotational reach . . . a plane tweak and end range tweak
What are the femur, pelvis, low back and scapula doing?

“You don’t know it until we do it and look at it and analyze it”

Our functional manual reaction (FMR) uses tweakology . . . what plane, what joint, what position and what range?

Tweakology becomes a check list for analysis and treatment and training and conditioning

What are the foot and ankle doing? We now get the motion but can we use it?

Understanding the strategy of mostability and creating appropriate mostability exercises with tweakology

- Lunging with arm drivers to illicit the desired **Chain Reaction** responses

Taking the friends away with a super tweak

Lets now talk to the hip

The exciting feeling we get when we realize the functional power of movement tweaks

Becoming a Ph.D. in tweakology

**Debrief with Bob Wiersma, Executive Director, Functional Rehabilitation Network**

- Tweaking is creative and the most complex side of practice
- Tweak is complex because body movement is complex
- The fear we had because we did not have logical and functional strategies
- The huge tweak of three planes of motion
- Ranges within the planes with various positions at specific joints
- Complex comfort
- The good news is that there are a lot of options . . . the bad news is there are a lot of options
- Understanding the integration of all the movements tweaks
- We need to know function first . . . we have to know why we are tweaking
- Tweaking is subtle . . . the common mistake of trying to super tweak
- Gradually build from the successful functional threshold
- Identifying, quantifying and modifying through tweaking
- Tweaking allows us to test our hypothesis
- Conscious and subconscious tweaks
- Going beyond the theory to all of function
- Pain as a driver
- Pain is a huge part of tweakology
- Tweaks are our life blood
- Tweaks create a smile on our faces and on our patients, clients and athletes faces
Gary’s opportunity to train and condition with Jody

The whole “enchilada” of the 3D Jumping Jack Matrix

**Plane Tweaks**

- Frontal plane feet out of sync and frontal plane arms out of sync
- Frontal plane feet in sync
- Sagittal plane feet out of sync
- Sagittal plane feet in sync
- Transverse plane feet in sync
- Transverse plane feet out of sync
- Frontal plane arms out of sync
- Frontal plane arms in sync
- Sagittal plane arms out of sync
- Sagittal plane arms in sync
- Transverse plane arms out of sync
- Transverse plane arms in sync

Mixing up the foot and arm patterns

In sync and out of sync relative to the feet and the arms

A smile is the key to the Jumping Jack Matrix

We now have 96 ways to do a jumping jack
Range Tweaks
• Utilizing initial range, end range, along with the full range of motion

We now have up to approximately 300 jumping jacks

Position Tweaks
• Sagittal plane tweak with right stride stance and left stride stance
• Frontal plane tweak with narrow stance and wide stance
• Transverse plane tweak with toed in stance and toed out stance

Now we have up to approximately 1800 jumping jacks

Now we add arm position tweaks

Can we utilize the right jumping jack exercise for the right functional reason?

With a three dimensional directional tweak, we now have approximately 10,800 jumping jacks . . . and that is not including all the other tweaks such as speed, feedback, load, influence, etc.

Special thanks to Jody with a sagittal plane high five, frontal plane high five, and a transverse plane high five
Movement tweaks are the most effective way to transform anything into something better

Great golfers practice with movement tweaks . . . training with movement tweaks allows our ability to golf to become enhanced

**Position Tweaks** - challenging the normal swing

- Right foot wide
- Left foot wide
- Right foot narrow
- Left foot narrow

Good frontal plane positioning for the golf swing allows just enough width for the stability and just enough narrowness for the mobility

- Right foot back
- Left foot back
- Right foot forward
- Left foot forward

- Right foot toed out
- Left foot toed out
- Right foot toed in
- Left foot toed in
- Both feet toed in
- Both feet toed out
Range Tweaks - 56° wedge
• Full load equals 100 yards
• 50% load equals 50 yards
• 75% load equals 75 yards
• 25% load equals 25 yards
• 50% follow through equals knock down shot

Plane Tweaks - Proprioceptively setting the system
• Uphill lie . . . more transverse plane
• Uphill lie in a forced position tweak . . . toed out with transverse plane swing
• Downhill lie . . . more frontal plane
• Downhill lie with a forced position tweak . . . toed rectus with frontal plane swing

Variability, i.e.; tweakability, is the spice of life

Movement tweaks allow us to become spunky

“Can we transform our functional knowledge in order to enhance the lives of everyone we come in contact with?”
RESEARCH ROUNDTABLE WITH DR. DAVID TIBERIO


The research continues to pile up on the side of function

There are a lot of functional exercises . . . but is it the best functional exercise at the time for our clients and patients?

Driving a lunge in the sagittal plane reveals more hip dominance

Driving a lunge in the frontal plane reveals more foot, ankle and knee dominance

An anterior lunge versus a lateral lunge obviously changes the range of motion and the plane of motion but also the joint dominance

The more a joint goes through a range of motion the more it gets eccentrically turned on and we shift the emphasis to the muscles that control that joint in that plane

Example of an anterior and lateral lunge with achilles tendinitis

Understanding functional feeding through tweaking in and tweaking out

Anterior lunge with a bilateral arm rotational reach

Lateral lunge with a bilateral arm anterior reach

The tweak of a step up with an anterior and lateral lunge
Analyzing the **Chain Reaction** during step ups and step downs and with step down and returns

Function is synergistic . . . we now know it is no longer the agonists being weak and the antagonists being tight . . . in function there is no such thing as an agonist and antagonist

Step down and returns combined with balance reach tests with the opposite leg create more of a vertical load

The hip dominance of a “chair” squat versus the ankle and knee dominance of a “regular” squat

Understanding a butt driver . . . giving various body parts various tasks and targets to create powerful movement tweaks

The influence tweak of speed . . . initially allowing speed within the exercise and activity to be as fast as possible while under control without abnormal compensation

Just with movement tweaks you can not get bored . . . and with movement tweaks, function remains tremendously challenging

The whole idea of education, research, and friendship is to pass along the torch to those who follow behind us

“Authenticism will always win”

**A special thanks to Dr. David Tiberio**