

Gimmicks vs. Reality

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Gimmicks and Reality

- ◆ Introduction
 - Tudor Bompa-
 - ◆ Periodization
 - ◆ 1956 Olympics Games = Rower
 - ◆ Coached athletes in 11 Olympic and World Championship Games
 - ◆ Help achieve 4 Golds and 22 National Championships
 - "Periodization of (Strength) Training for Sports"

Gimmicks and Reality

- ◆ Definition
- ◆ Gimmick-
- ◆ Reality-
 - Stretched reality

Gimmicks and Reality

- ◆ Anatomical Adaptations
- ◆ Physiological Adaptation

- ◆ > level of adaptation = > performance improvement.

Gimmicks and Reality

- ◆ Best Adaptation=
 - Specificity
 - Intensity
 - Feasibility
 - Simplify Training
 - ◆ Low # of exercises
 - ◆ More sets/reps

Gimmicks and Reality

- ◆ Essentials of a good Training Program
 - Sport Skills Specific
 - Strength Training and Conditioning
 - Proper Core Stabilization
 - Balance and Proprioception
 - Flexibility

Gimmicks and Reality

- ◆ Balance Training
 - Recognized since 1930's
 - Misleading concept
 - ◆ "Balance training precedes all other performance components."
 - ◆ Balance Training Improves performance
 - ◆ Balance Training Prevents Injuries



Gimmicks and Reality

- ◆ Balance Training
 - No scientific research or Definitive Proof
 - No Proof that Balance Training is a limiting factor for performance.
 - Pros:
 - ◆ Essential for rehabilitation of injured limb.
 - ◆ Fun

Gimmicks and Reality

- ◆ ACL Injury
 - ↓
 - ◆ Interruption of the 'ACL muscle reflex arc'
 - ↓
 - ◆ Triggers 'Second Pathway'

Gimmicks and Reality

- " Second Pathway"
- from the remaining muscle, capsule and peri-articular soft tissue mechanoreceptors
- slower
- abnormal muscle activation patterns of hamstring & quadriceps, reducing knee stability.

Gimmicks and Reality

- ◆ Core stabilization
 - "Overflow of Activation"
 - Prime movers and other synergistic muscles.
 - Enhances postural stability
 - Deadlift other upright multi-joint exercises=good core stabilizers.

Injuries mostly ligaments
Stabilizer muscles less likely injured.

Gimmicks and Reality

- ◆ 'Power Exercises on the stability ball'
- ◆ Dumbbell Press on Stability Ball vs. Bench Press



Gimmicks and Reality

- ◆ Stability Ball
 - Good adjunct to 'abdominal corset' muscle training.
 - 'Core awareness'
 - Stabilizers least injured muscles.
 - Avoid circus like exercises unless this is exactly like his /her sport. Avoid waste of time.

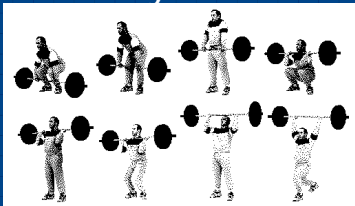
Gimmicks and Reality

- ◆ Bodybuilding
 - **Myth: Hypertrophy is essential for strength and power gain.**
 - **Reality:**
 - Hypertrophy is needed in very few sports.
 - Strength and power gains can be realized without significant hypertrophy.
 - Techniques for maximum mass gain may be counterproductive for power gain.



Gimmicks and Reality

- Olympic Lifting
 - **Myth:**
 - Olympic Style Lifting Training Program will solve all strength and power problems of all athletes.
 - **Reality:**
 - Modified Explosive lifting, periodized according to the specific sport will enhance power and in turn may improve sports performance.



Gimmicks and Reality

◆ Sled / Harness Running

- Myth= increase speed and power
- Reality = it doesn't
 - ◆ force application is too slow.
 - ◆ Changes CG



◆ Pros=Metabolic benefits.

- Alactic Acid Training: 5-10 secs
- Lactic Acid Tolerance : 15 secs - >30 secs

Gimmicks and Reality

◆ Hill Running

- Incline Slope-
 - Int. Training 25->75m
 - >5-15 degrees
- ◆ Myth: Develop Leg Power
- ◆ Reality: force application is too slow/long propulsion phase >300ms

◆ Pros =

- Alactic Acid Training
- Lactic Acid Tolerance
- HR=168-176bpm
- Anaerobic Threshold

Gimmicks and Reality

◆ Alactic Reps: <15 deg

- Reps 5-10 sec
- Max speed effort
- Rest \geq 3 min

◆ LA Tolerance <10 deg

- Steady speed 5-30 secs
- Short rest < 2minutes

Gimmicks and Reality

- ◆ Decline Slope
 - Not widely practiced
 - Scope : break personal speed barrier
 - ◆ < 3degrees= Increase in acceleration
 - ◆ >3 degrees
 - Changes running mechanics
 - Prolongs duration of contact phase
 - Needs to stabilize the body
 - Propulsion phase = lower power
 - 'braking '

Gimmicks and Reality

- ◆ Claim:
 - ◆ JumpSoles™ are the world's most popular plyometric training platforms which attach to your own shoes. Training with JumpSoles™ builds up important fast twitch muscle fibers for explosive leaping ability and quickness.



Gimmicks and Reality

- ◆ Jump Soles-
 - Myth = Increase Jump Height
 - Reality= not proven to be superior over conventional plyometric training.
 - ◆ Stretch reflex contraction is a function of the rate of stretch.
 - ◆ High incidence of achilles' tendinitis.
- ◆ Spring Shoe-
 - Myth = Increase Jump Power
 - Reality: False. (Increases contact time)

Gimmicks and Reality

- ◆ Claim:
- ◆ Allows the user to train both resistance running and overspeed running without a partner, thereby improving stride length and frequency, the two key elements in sprint speed.



Gimmicks and Reality

- ◆ Power Chute
 - Myth : Increase Maximum Velocity
 - Reality : not substantiated
 - ◆ Air resistance in the first 20-40m the chute is released to effect sudden 'burst of speed'. Contrast effect illusion.

Gimmicks and Reality

- ◆ Chute
 - Positive effect : if the chute is stable and does not move, =may increase fast twitch fiber recruitment.
 - Negative :
 - ◆ Chute is moving behind the athlete and tends to destabilize the body.
 - ◆ Need to stabilize the body also prolongs contact phase.
 - ◆ Actually may decrease speed.

Gimmicks and Reality

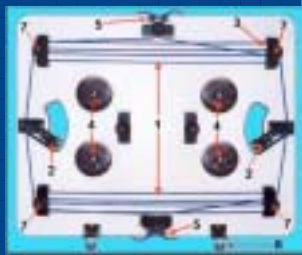
- ◆ Running Drill (Arm Swing)
 - Myth : Increase arm drive
 - Reality: Not true.
 - ◆ Force of the back arm drive=quickness/force of the opposite leg drive
 - Pulling Exercises for the are better for back arm drive.

Gimmicks and Reality

- ◆ Elastic Bands
 - Used since 1950's
 - Simple and readily available
 - Increase resistance with the degree of stretch
 - Decrease resistance over time.
 - **Best use for endurance sports** = high reps
 - Myth: Inc. lateral speed, agility, jump power, etc.

Gimmicks and Reality

- ◆ Vertimax



Gimmicks and Reality

- ◆ Vertimax
 - May have benefits due to pulley system maintaining constant resistance over the range of motion.
 - Too much resistance prolongs the contact time. 'Amortization phase.'
 - May increase rate of stretch if landing is not softened.
 - More practical in developing eccentric strength.
 - Widely used but not definitely proven more superior than Body weight plyometric training.

Gimmicks and Reality

- ◆ Over Speed Training
 - Myth: Increase Speed
 - Reality: Decrease Speed
 - ◆ Forward pulling alters the mechanics of running.
 - ◆ Trunk leans backward = position of deceleration
 - ◆ Increases duration of Contact phase.
 - ◆ Not conducive for a strong propulsion.



Gimmicks and Reality

- ◆ Over Speed Training
 - ◆ More pulling than pushing.
 - ◆ Artificial pull cause proprioceptors to detect unknown/disturbed conditions
 - ◆ Attempt to correct by stabilizing the body
 - ◆ Prolongs contact phase
 - ◆ Decrease velocity.

Gimmicks and Reality

Over Speed treadmill

- **Myth:** Increase stride frequency thus increase speed.
- **Reality:**
 - ◆ Does not increase speed.
 - ◆ It alters the firing pattern of the fast twitch muscle fiber.
 - ◆ Maybe useful for energy systems training.
 - ◆ Key to fast running is the propulsive phase.



Gimmicks and Reality

'Unweighted Running'

- ◆ Claim:
 - Basically, putting on a harness and spinning your legs along the treadmill belt represents a way to train those fast-firing nerve cells which control movements and coordinate leg-muscle activity during very quick contractions. It also 'teaches' muscle cells to function at accelerated firing rates



Gimmicks and Reality

Study

- 'Effect of Overspeed Harness Supported Treadmill Training on Running Economy and Performance,' Medicine and Science in Sports and Exercise, vol. 27(5), Supplement, 1995).

Verdict:

- Unweighted work **did not** improve running economy, compared to regular running, nor did it accelerate one-mile or 5-K race times.

Gimmicks and Reality

- ◆ Maximum Speed is a result of :
 1. Propulsion Power
 2. Stride Length
 3. Stride Frequency

Gimmicks and Reality

- ◆ Propulsion Phase
 - The higher the force , shorter the propulsive phase
 - Strong propulsive phase is possible only on immobile surface
 - Increase Propulsive phase by training **Max Strength and Power**

Gimmicks and Reality

- ◆ Stride Length
 - Due to force application
 - Over speed treadmill- surface belt to fast for force application.
 - To increase stride length must **increase propulsive force**

Gimmicks and Reality

- ◆ Stride Frequency-
 - Depends on height/leg length
 - Short sprinters may have higher frequency but may not be the fastest.
 - High frequency induced by the treadmill cannot compensate for a weak propulsive phase.
 - *Increase Stride Frequency by **Decreasing Contact Phase**

Gimmicks and Reality

- ◆ Abdominal Stimulators:
 - Claims:
 - Used successfully for years by physiotherapists.
 - No effort exercise.
 - Workout while watching TV.
 - No side effects.?
 - ◆ Reality-
 - Performance Training adaptations are effort related.
 - Mind (Perceptual) and Neuromuscular coordination.

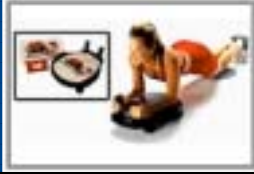
Abtronic (Fat Blaster)

- ◆ Claims:
 - 10 min/day = 600 sit ups
 - Can flatten stomach once and for all
 - Has fat and cellulite blaster that could work on fat
 - Could firm, tone and tighten the upper 'abs', 'lower abs' and 'love handles', with no sweat.



Gimmicks and Reality

- ◆ Ab Roller
- ◆ Ab Dolly
- ◆ Torso Roller



Gimmicks and Reality

- ◆ AbDolly
- ◆ Ab Chair
- ◆ Ab Roller
 - Claims:
 - Best Abdominal training.
 - To burn Fat around abdominal area.
 - Give you 'six-pack' abs
 - Reality:
 - Abdominal muscles respond the same as other skeletal muscle.
 - To strengthen the mid- torso , obliques, transversus m. and hip flexors must be synergistically trained.

Obsessed with Abs



Electromyographic Comparison of the Upper and Lower Rectus Abdominis During Abdominal Exercises

- ◆ Curl up
- ◆ Swiss Ball Curl up
- ◆ Ab Trainer Curl up
- ◆ Leg Lowering
- ◆ Swiss Ball Roll out
- ◆ Reverse Curl up

Journal of Strength and Conditioning Research, 2003, 17(3), 475-483 Clark MC, Holt LE, Sinyard J

Gimmicks and Reality

*High performance athlete's aren't born...
They use their Powerballs!*

Gimmicks and Reality

- ◆ Claim:
- ◆ Explosive, dynamic, exciting Powerball! Powerball is a dynamic and completely revolutionary new gyroscope that literally explodes with mind numbing torque and inertia once you activate its internal rotor.
- ◆ test up to 90% of the muscles in the arm in a single 7 minute session



*High performance athlete's aren't born...
They use their Powerballs!*

Gimmicks and Reality

- ◆ Power Ball Gyroscope:
 - Claim:
 - ◆ Give you powerful grip:
 - Reality:
 - ◆ The stimulus does not induce powerful contractions but rather a **slow gradual build-up**.
 - ◆ May be useful for lactic acid tolerance training.
 - ◆ May be of value for **grip endurance**.

Gimmicks and Reality

- ◆ a revolutionary biomechanical hand positioning system for walking and all athletic activities,
- ◆ **“world's first total-body orthotic”**
- ◆ any strength and endurance training
- ◆ to strengthen women's internal organs - the Kegel muscles and the muscles used for bladder control.



Gimmicks and Reality



Gimmicks and Reality

- ◆ retrains the specific contraction pattern of your fingers, thumb and wrist into a neutral position, resulting in better body control, improved balance, and better results with less effort
- ◆ one-size-fits-all **e3 fitness grip** will fit the majority of all user's hands correctly

Gimmicks and Reality

- ◆ IT'S A JUNGLE OUT THERE!
- ◆ Research any new training method or equipment.
- ◆ Base your training programs on sound scientific principles.
- ◆ Simplify rather than complicate training.
- ◆ Excessive exercise lowers adaptation.
- ◆ Do what is important.

KUNG HEI FAT CHOI!!!
