

Dryland Training

- Presented by the American Swimming Coaches Association

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- Guy Edson

- Instructor with ASCA since 1988
- Previously a Full Time Coach for 15 years
 - High School, Age Group, Senior
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1 Slide to Sum up 282

1. Do No Harm
2. Thousands of exercises are out there
3. Pick age and developmentally appropriate exercises
4. Plan routines with purpose and progressions
5. Educate everyone
6. Get excited about it.

First: A Little Dryland Training School “Attitude”

- Go ahead, ask 12 Olympic coaches what they do for dryland training.
 - You will get at least 13 different answers!
- Science versus “gut feelings”
- Plenty of “experts”
 - Some are scientists
 - Some are coaches
 - Some write articles for popular magazines
 - Some offer seminars !
 - I do not put myself in the category of “expert”
- Make informed choices
- Don’t get married to one idea

Are you here looking
for the 2% that will
make a difference

If you are , have you
taken care of the other

98%?

-- Vern Gambetta

How Does Dryland Help Swimming

- The Power of Position
- Increasing Force Potential
- Improving Muscular Force and the Physiology of Energy Delivery
- Complementing or Supplementing Swimming?
Big Decision
- The Brain!

The Power of Position

- We want to build a kayak
- We want to hold shape
- Development of the core is the key

Increasing Force Potential

- Power is force (strength) used over time
- To increase power, increase force as well as endurance
- If the distance swimmer wants to hold 59's, but their best time is 57, they will have difficulty. However, if they improve their best time to 55, then 59's will be easier to hold... increase your force

Improving Muscular Force and The Physiology of Energy Delivery

- Match muscular force goals in the weight room with swimming power requirements
 - Too much muscle mass can be counter productive to a distance swimmer
 - Too much of a power emphasis can hurt a sprinter

Complement or Supplement?

- Coaching philosophy... what's yours?
- Pool time considerations.
 - If pool time is limited then dryland becomes a supplement
- Dryland, in some programs, is simply a complement

Dryland – Where It Started

- Robert Kiphuth
 - 1941 – How to Be Fit
 - 1942 -- Swimming

Trends Come and Go...and Come Back

- Calisthenics
- Isometrics
- Heavy weights
- Nautilus and Universal Machines
- Light resistance with high reps
- Core

Better Athletes

- “I want to know that I am the fittest athlete on the blocks.”
 - Samantha Arsenault, 2000 Gold Medalist, 800 F.R.
 - Coached by Don Lemieux, Greenwood, MA

Present Day

- Proliferation of creative and knowledgeable college trainers who take time to know swimming and swimmers
- Vern Gambetta

Consider: Choices

- How much dryland work to do?
- Who does it?
- What to do?
- Who supervises it?

Consider: Age Group

- Level of formal physical education... or lack of it.
- Coordination, balance, and body awareness
- Lack of “positional strength” (core)
- Positional strength precedes limb strength
- A wide range of dryland activities are helpful
- A progressive approach
 - Starting at age 6/7 with 10 min x 3 days
 - Building to high school age with maybe 30 min x 5 days

Consider: High School

- Wide range of biological ages
- The need for different dryland for different “ages”
- Everyone can and should do core
- Not everyone should be doing “weights”

Where are We Going

- A. Overview of the Physical Qualities of Dryland
- B. Age Considerations
- C. Motivation
- D. A note on Injuries
- E. Flexibility
- F. What is Resistance Training and how to do it
- G. What is Core Strength
- H. Specific Exercises
- I. Designing a Dryland Training Program
- J. Sample Circuits

The “flow” will be to move from text knowledge to the Practical.

Daydreaming Encouraged
Ask Questions, Please!

Physical Qualities of Dryland

1. Strength and Power
2. Coordination
3. Explosiveness
4. Endurance
5. Flexibility

...Details on coming slides...

Strength

- Postural Strength
 - “connectivity,” the “kinetic chain”
- Core Strength
 - Holding the Line
- Limb Strength
 - Of limited value without the above

Power

- One pushup is strength
- 30 pushups is Power
- If the child cannot do one pushup then there is a progression...
 - Planking from knees
 - Planking from toes
 - “vibration” pushup
 - Quarter to half to full pushup
- Sometimes we make an error by trying to do power before there is strength

Coordination

- The ability to link the body
 - Timing in all strokes, especially fly and breast
 - Turns and Starts
- Limb speed is relatively low in swimming as compared to other sports, still, coordination is required
 - 1.0 to 1.6 seconds per arm stroke

Explosiveness

- Becoming “quick”
- Dependent on muscle size and type
 - Part born-with, part trained
- Not the same as Power

Endurance

- Most of our swimming events are “power events”
 - maintaining force over time
- Endurance is developed primarily in the pool
- Does dryland seek to supplement pool work?
 - Add to the endurance component
- Or, does dryland seek to compliment pool work?
 - Do what we have difficulty in the pool doing?
- Good questions... what do you think?

Dryland Training Recommendations

- 8 and Unders:

- Recommendation: 25% = 15 min per day

- 9-12 year olds

- Recommendation: 15% = 15 min per day

- 13-15's

- 15% on dryland = 25 minutes of a 2 hour 30 min wo

- 16-Senior: varies depending on distance

- 10% on core for all = 15 to 20 min, daily

- 10-20% on power = 15 to 40 min, daily

Early Ages, 6-8

- Coordination should be a cornerstone
- Girls tend to be better coordinated
- Boys tend to be more... “experimental”
- High physical activity rates but...
- Need for short rest periods
- Window of opportunity for rhythm development
- Limited anaerobic ability, forget explosiveness
- Lots of fun, variety

8 Asunders

- Develop large motor skills, coordination, general strength
- Games on dryland and in water
 - Dryland games may require areas not available
- Calisthenics
 - Hopping, jumping, skipping, squatting
 - Planking leading to pushups
 - Posture and balance using “sticks”
 - Crawling
 - Balance beam
- Throwing/catching

Middle Years, Ages 9-12

- Window of opportunity for skill development
- Ditto for rhythm and tempo
- Teach correct movements
- Girls may outperform boys in water and land
- Increase aerobic intensity, limit anaerobic
- Focus on core and postural strength

9-12 Year Olds

- Add running. Start at 5-10 minutes and build up. Try some sprints.
- Continue crawling
- Build more pushups (correctly done) and situps
- Move to light med balls (2Kilo)
- Stretch cords for technique
- Introduce shoulder stability exercises

Middle Teen Years, Ages 13-18

- Intense aerobic activity possible and encouraged
- Increasing ability to develop anaerobic system
- Explosiveness possible later in age range
- Progressions are important to avoid injuries

13-15 year olds

- Do a big build up for those able
- Longer sessions
- More running
- More complex calisthenics
- Advanced med ball
- Stretch cords for training
- 5 to 7 pound dumb-bells
- Limited machines and barbells

Ages 16 and Older

- More free weights
- Dumb-bells to 15 lbs
- 4 to 6 K medballs
- Serious strength cycles for sprint and md types
- Matching dryland with swimming
- Gut wrenching power (muscular endurance) sessions
- Extensive use of swim benches when available

Motivation

1. Communication
2. Exercise new strengths
3. Allow environment for new performances
4. Offer change and variety
5. Get Stronger!

Injuries and Rehabilitation

1. Imagine you are the parent
2. Long term injury is never worth it
3. Consult with a Physical Therapist
 1. (how to get PT help for free...)
4. Keep them going even if not in water
5. Have swimmers bring PT prescriptions to workout.

Flexibility

- Be careful... flexible enough to do what?
- Swimmers tend to be plenty flexible in the upper body
 - Shoulder issues from being too loose
- Swimmers are often in need of lower body flexibility, especially hamstrings

Flexibility

1. Improve range of motion
2. Prevent tearing injuries
3. Promote muscle relaxation
4. Prevent soreness
5. Establish a lifetime fitness pattern

Flexibility

Flexibility is a function of

- A. length and elasticity of muscle and connective tissue
- B. Micro adhesions (The Velcro factor)
- C. Differences between individuals
 - 1. length of muscles
 - 2. past injuries

Flexibility

Fact: flexibility *does* improves range of motion

A. ROM may increase propulsion forces, may lead to better alignment, may diminish energy costs.

B. Maglisco says no research proves that flexibility training (or strength training) improves performance!

1. we have anecdotal evidence
2. we have experience
3. we have feelings and opinions

Myth: Weight training decreases flexibility.

-- but it does increase bulk which may increase resistance.

Flexibility

ROM may be affected by more than tendons and connective tissue

- may also be a function within fibers

- we do NOT want loose tendons

 - primary cause of bicipital tendonitis

Flexibility

When do you do flexibility work?

A. Best when core temperature is increased

1. cold rubberband/warm rubberband

B. Before exercise?

C. During?

D. After?

Flexibility

Four Types

- A. Ballistic also called dynamic
- B. Static
- C. Partner Assisted
- D. PNF – Proprioceptive neuromuscular facilitation

Flexibility

Ballistic or dynamic

A. Some types are ok (various arm swinging)

B. Bouncing is definitely OUT

It can create micro tears, and micro adhesions

C. In swimming, slow dynamic stretching may be the best way to improve (Maglischo)

Move through range of motion with slow and deliberate motions, ie freestyle arms.

Flexibility

Static Stretching

A. Best for cold bodies

you might do dynamic stretching before static stretching

B. move slow through a range then hold for 10-20 seconds, back off, repeat 3 times

Flexibility

Partner

- A. Safety and education
- B. static stretching with help

Flexibility

PNF -- Proprioceptive neuromuscular facilitation

- A. Recommended by Physical Therapists
 - however, Maglischo says not any better than other methods.
- B. With or without partner
- C. Defined... next page

Flexibility

Two types of PNF: antagonist and agonist

- 1. antagonist
 - Contracting and relaxing opposing muscles
 - Contract 6-10 seconds, relax, then stretch opposite
 - Example: alt foot flexion with extension
 - Example: alt standing slouch with toe touch
- 2. agonist
 - Contracting and relaxing opposing muscles
 - Stretch 6-10 seconds, relax, isometric resistance against force, relax, stretch
 - Example: pull elbow across chest with opposite hand, resist, relax, stretch further
 - Example: laying on back hamstring stretch by pulling with rope, resist, relax, stretch further.

Flexibility

The Stretch Reflex

- A. Natural, involuntary protection
- B. Some try to beat it by bouncing

YIKES!

Flexibility

Do:

- Recognize that all are different
- Start young, establish a habit
- Specific stretches:
 - Use static stretch for ankles and hamstrings
 - Use dynamic stretching for shoulders, back, hips

Flexibility

- College trainers will tell you that more injuries are caused from improper stretching than from lack of flexibility on the playing field.
- Don't Do these:
 - Looking over shoulder, hurdles, sitting back on ankles, ankle pull back bends (lifts), back bend pushups, clapping behind the back, partner assisted arms behind back
 - Pulling towel over from behind over the head with two arms
- Maybe do these:
 - breaststroke ankle sit

Flexibility

For shoulders

- Only for those who need it
- No inward rotation of shoulder joint
 - Causes head of humerus to rotate past bicep tendon
- Focus on dynamic stretching
- Freestyle and backstroke stroking (dynamic)
- Reaching down your spine (static)
- Elbow push (pnf)
- Streamlining (static)

Good Shoulder Stretches



Matt Wren, MS, PT – Core and Shoulder Stabilization DVD

Not a Good Shoulder Stretch



Not a Good Shoulder Stretch

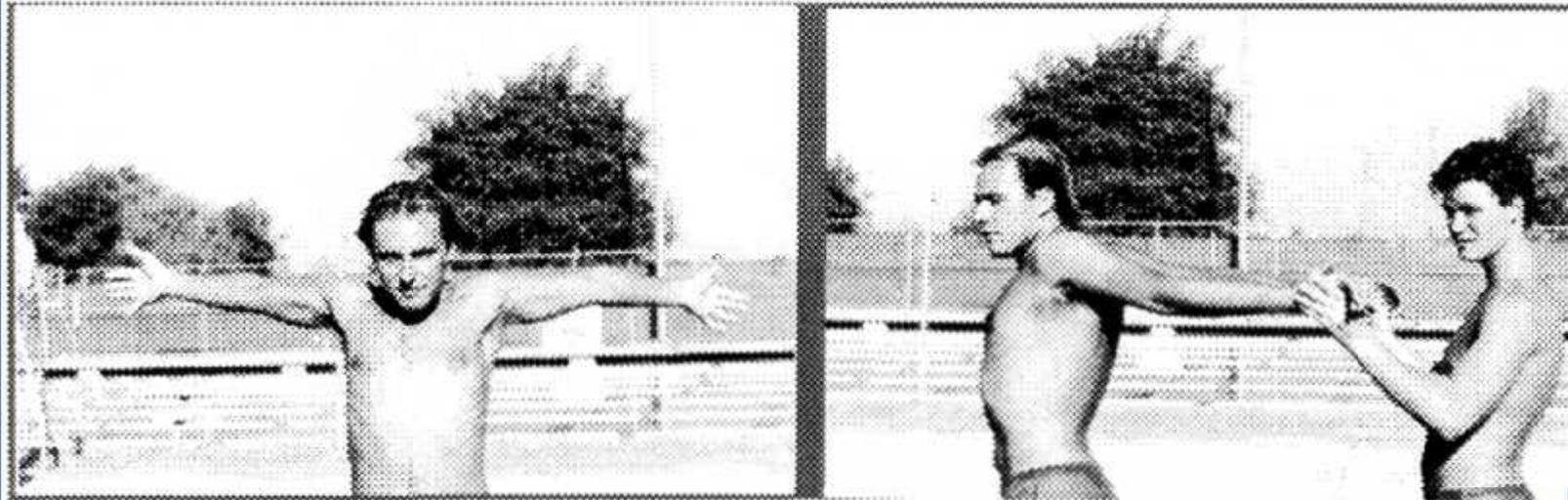
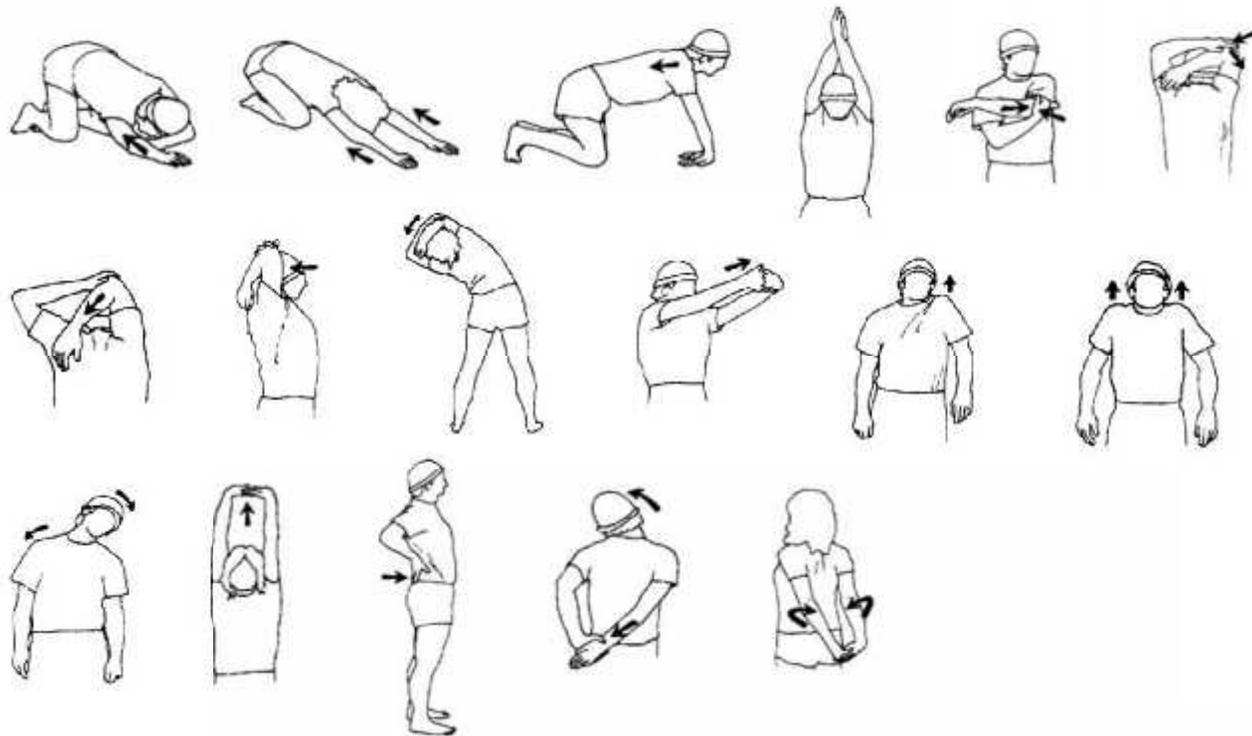


Figure 13. Two shoulder stretching exercises that should be avoided by swimmers.

Stretches for Upper Body

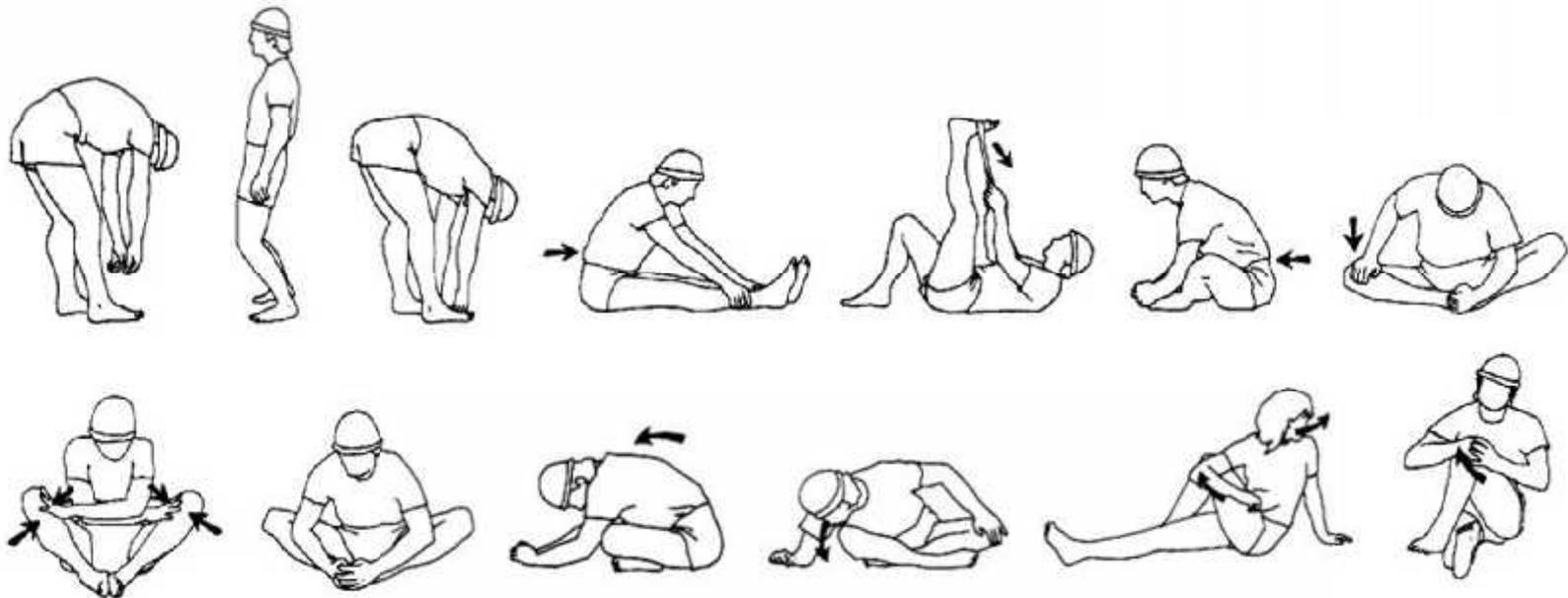
SUMMARY OF STRETCHES FOR BACK, SHOULDERS, AND ARMS



You can do these stretches, in this order, as a routine.

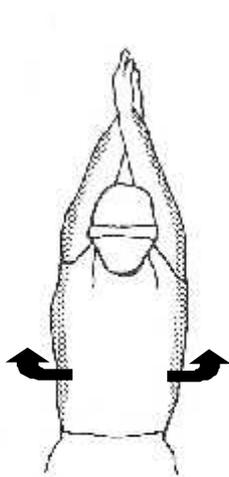
Stretches for Legs and Hamstrings

SUMMARY OF STRETCHES FOR LOWER BACK, HIPS, GROIN, AND HAMSTRINGS

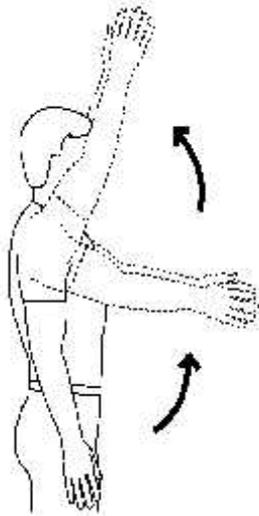


You can do these stretches, in this order, as a routine.

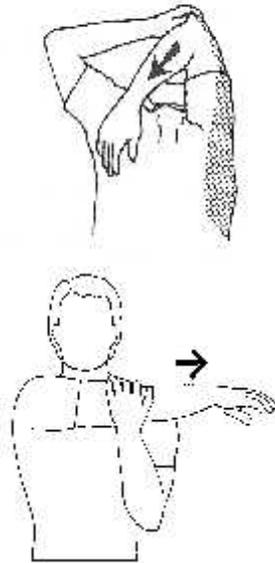
7 Simple Stretches Before You Begin Workout



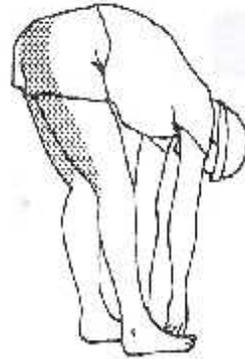
Gentle swings from hands crossed on chest to overhead steamline



Gentle arm circles, both directions, back-stroke, freestyle



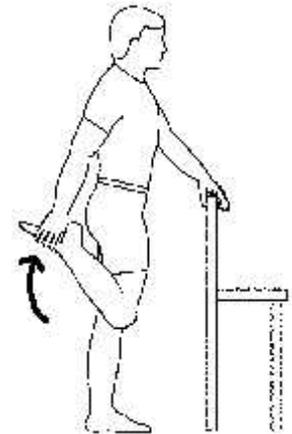
Reach down your spine, reach under your chin



Down slow, rise slow with knees bent, repeat



First with knee straight, then bend knee slightly



Hand on toes, stretch the ankle

Flexibility

Designing a Stretching Program

- See Anderson's Book
- Collect other figures, take photos, use the web
- Make enlargements on copy machine
- Post around Exercise room
- Don't forget to build a progression
 - Based on number of repeats (total time)
- Create "cycles"
 - Focus on one body part while maintaining the rest, then switch the focus.

Flexibility

Resources

- Anderson's "Stretching Book"
- Matt Wren's "Core and Shoulder Stability" videos
- Maglischo's Strength and Flexibility Manual
- 1000's of places on the internet
- Popular magazines

Next Topic, Resistance Training

Sections

- Biological age and sex considerations
- 6 Types of Resistance Training
- 3 Purposes of Resistance Training
- Strength development
- Power development
- Overload principle
- Variation Principle
- Maglisco's 3 stages of resistance training
- More specifics on types of resistance training

Resistance Training

Biological Age considerations

1. Use a conservative approach.
2. Use Patience.
3. In pre pubescent kids “additional” strength gains from nervous system rather than normal muscle growth.
4. Call it resistance training, not “weight training”
5. No lifting to failure with pre-pubescents
6. Educate swimmers, parents, administrators
 - reference Kramer and Fleck’s “Strength Training for Young Athletes,” Human Kinetics Press

"Train
Movements not
Muscles"

-- Gambetta

Neurologically, the brain
does not recognize
individual muscles; It
recognizes *patterns of
movement*

Resistance Training

7. Guidelines

- a. age 7 and under: body weight only
- b. age 8-10, introduction to weights,
 - low volume
 - dumbbells, rather than barbells
- c. age 11-13: introduce more advanced exercises
 - continue increase in resistance

Resistance Training

Sex Differences

- A. boys = girls during pre-puberty
- B. after puberty boys gain muscle due to testosterone
- C. relative gains/body weight for both the same, possibly more with girls
 - 1. girls recruit more muscle neurons
- D. girls do not develop muscle mass gains on par with boys.
- E. Bottom Line: Girls can be in same program as the guys.

Resistance Training

Six types of resistance training (some details to follow)

1. isometric (static) – angle specific
2. Isotonic – constant load through range
3. variable resistance – using machines
4. isokinetic resistance – constant speed controlled by machine
5. body weight calisthenics
6. plyometrics – jumping, rubber banding

Resistance Training

- Wait!, Go back... what was number 5 again?
- Implications
 - It's not necessary to have a ton (literally) of expensive equipment
- Beware of Marketing
 - Bigger and more expensive is not necessarily better.

Resistance Training

- 1. Isometric
 - a. Not with arms as was the case in the 70's
 - b. Good example of not getting married to one idea
 - c. Excellent for posture in the water, "Holding the line"
- 2. Isotonic
 - a. free weights, med ball, pulley systems, VASA, rocks! (and stretch cords)
 - b. fails to maintain resistance due to ballistic movement
 - c. If using dumbbells, balance and coordination become trained as well.
 - d. Safety issues with barbells

Resistance Training

- d. Movements can be eccentric and/or concentric
 - - concentric most common
 - - pushing or pulling the weight
 - - eccentric, “Negatives”
 - - holding back force
 - - works opposing muscles
 - - strong proponents, opponents

“There is no clear superiority of one method over another.” --Maglischo

Resistance Training

- 3. Variable resistance
 - a. Nautilus and some Universal Machines
 - b. Limited access.
 - c. Research that supports superiority of variable resistance machines is funded by the machine manufacturers
- 4. Isokenetic (Counsilman inspired)
 - a. speed determined by machine
 - b. resistance through full range
 - c. Bio-Kinetic Swim Bench
 - d. Mini-gyms

Resistance Training

- 5. Body Weight (Calisthenics)
 - Can make awesome strength gains
 - Not injury free
- 6. Plyometrics
 - a. repetitive jumping, throwing and catching
 - b. jumping is excellent for starts and turns
 - c. stick to basic two legged jumping, avoid advanced exercises
 - d. safety issues with throwing/catching

Resistance Training

3 Purposes of Resistance Training

- A. Strength
- B. Power
- C. Endurance

Some think that only swim specific training is effective.

Some think that only resistance training in the water is effective.

Some think that endurance training is best left to water workouts.

Lots to think about!

Resistance Training

What is “Strength” Training

- Strength is: the max amount of weight that can be lifted once
- fiber recruitment is an issue
- muscle growth is an issue
- Resistance training lowers inhibition to using strength.

Resistance Training

Alternatives to heavy weights:

- Med ball
- Plyometrics
- Tubing
- Calisthenics
- The above may provide enough resistance while keeping the speed of movement high.

Generating Force

- Learn the exercise correctly
 - Proper body position and mechanics
 - Light weight and low reps to learn
 - Add weight and reps with increase in skill and strength
- Pushups
 - Learn position through planking
 - “good vibrations”
 - Half pushups
 - Full pushups

Pull Ups for Force Generation

- How many is enough? Beyond what number does it become power rather than force?
- Perhaps add weight once the athlete is up to 10 pullups

Push-ups For Force Generation

- Again, how many is enough?
- At some point, add weight, or add a hand clap

Lat Pulls on a Machine For Force Generation

- Build to 3 sets of 5
 - First set at 70%
 - Second set at 100%
 - Third set assisted

Medicine Ball For Force Generation

- Increasing reps to maybe 10
- Increasing weight of med ball
- Increasing speed

Resistance Training

Power

- Power is strength over a period of time.
- Note that without strength, you cannot have power.
- Stroking power is essential to swimming speed.
- The question is, how to get it.
- Answer: Use less weight, do faster reps
- Heavy weights can be used to train fast twitch fibers, but...
- slow movements may not recruit fast twitch

Developing Power

- Sub Maximum force over time
- Develop power with high numbers of reps with moderate to low resistance
- Consider speed of movement, match swimming speed
- Consider number of strokes needed for goal event.
- Consider goal time of event
- Match speed, reps, and total time with swimming goals
- Increase resistance, increase sets

Resistance Training

Athletes get stronger through the Overload Principle

A. Overload Through the full range

- “train movements, not muscles”

- Vern Gambetta

- one exception would be with exercises to “hold the line” such as isometric bridging

B. Overload must be Progressive

Resistance Training

Variation Principle

- The body gets used to doing the same thing, even if put into a progression.
- Consider alternating days, ie MWF lower body, and TTh upper body.
- Focus on strength or power for cycles of 4-6 weeks then switch focus for the next cycle

Resistance Training

Maglischo's 3 stages of Resistance Training

1. increase muscle size, 4 – 8 weeks
 - use weights and calisthenics
2. Explosive training, 8 – 20 weeks (power)
 - increase rate of force production
3. In water resistance training
 - can begin while doing explosive training
 - buckets and pulleys, tubing, power racks

Resistance Training

Match strength training with goals.

If you want...

A. To increase strength → free weights, with rest

B. More power → speed circuit on moderate to low rest

C. Physical “toughness” → circuit on low rest

- just a thought and an opinion

- some prefer maximum lift type days

- when the girls beat the guys

 - who can lift “more weight”

Developing Endurance

- Primarily obtained in the pool
- Muscular endurance (power) and aerobic endurance
- Running
 - Some recommend without shoes
 - Sustained 150-180 heart rate runs
 - 30 minutes
- Cycling, as with running

Resistance Training

Speed: studies show training at high rates of speed increased strength in a wide range of speeds. Maglischo suggest doing resistance training at faster than stroke speed.

Core Strength

- The core: hips, abdomen, lower back, upper back and neck
- These muscle groups play a role in postural alignment and balance
- In swimming the core is important for starts, turns, and maintaining alignment in the water.
- Many believe that a strong core is the foundation for strong extremities.
- Develop core strength with a variety of isotonic, calisthenic, and isometric exercises

Coordination

- Coordination is tied to limb speed
- Running sprints
 - To the cones and back, and back
 - Obstacle courses, requiring jumping
- Dodge ball in small area
- Quick ball passing
- Multiple ball water polo in limited area
- Tumbling
- “Balance beams”
- Dryland swimming
- Stretch cords
- Crawling forward, backwards, sideways

Next Section

- On the following pages, a variety of exercises appropriate for a swim team dryland training program.
- This is NOT the complete list...

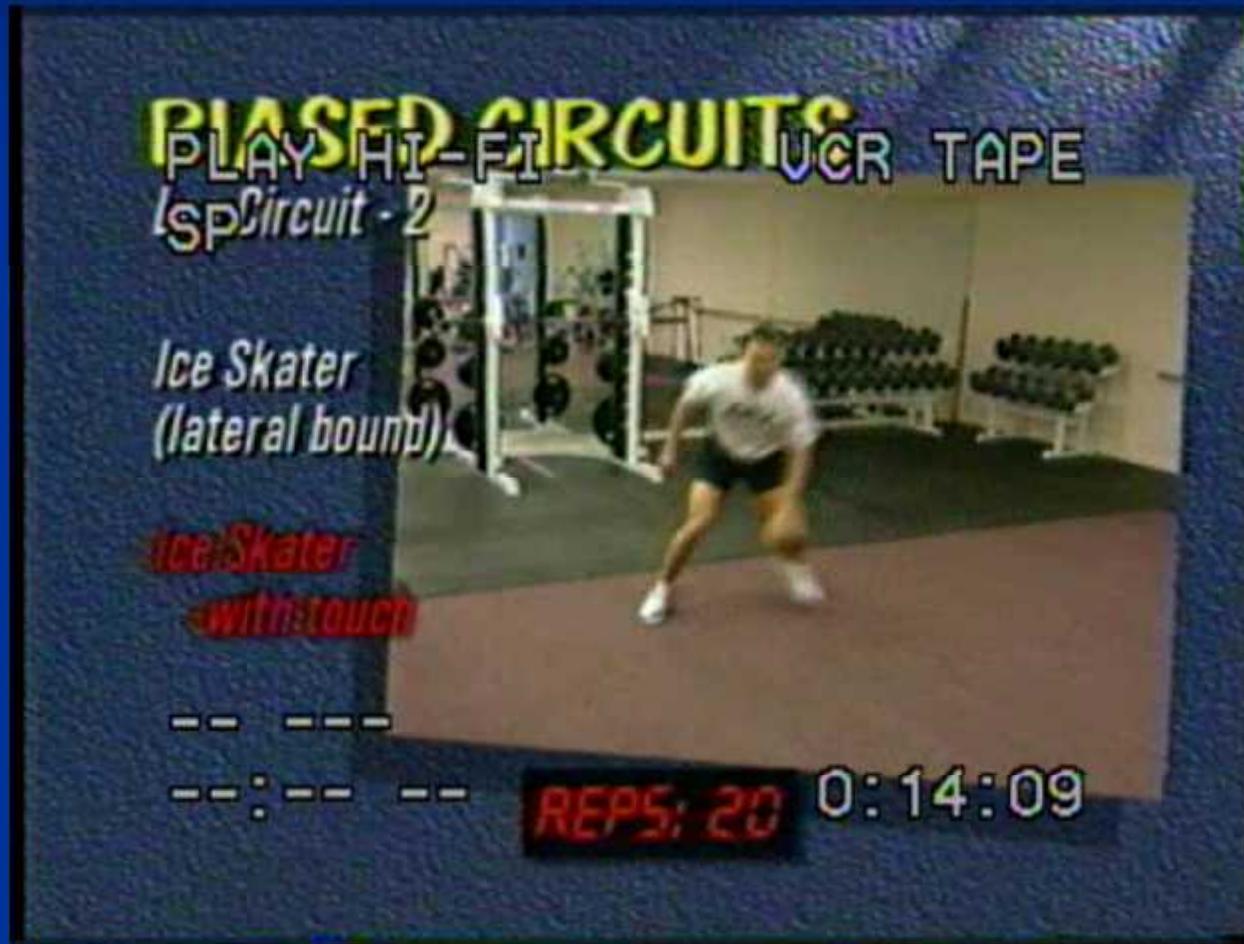
Dryland Exercises – Med Ball Warm Up



Dryland Exercises – Alt Overhead Press on Physio Ball



Dryland Exercises – Side Jumps



Dryland Exercises – Slide Board

FITNESS CIRCUITS

*Slide Board
Core Circuit*

Slide Board

-With Touches

*-Cross-Country
Skier*

*Med Ball
Russian Twist*



TIME: 30

Dryland Exercises – Slide board With Touch

FITNESS CIRCUITS

*Slide Board
Core Circuit*

Slide Board

-With Touches

*-Cross-Country
Skier*

*Med Ball
Russian Twist*



TIME:30

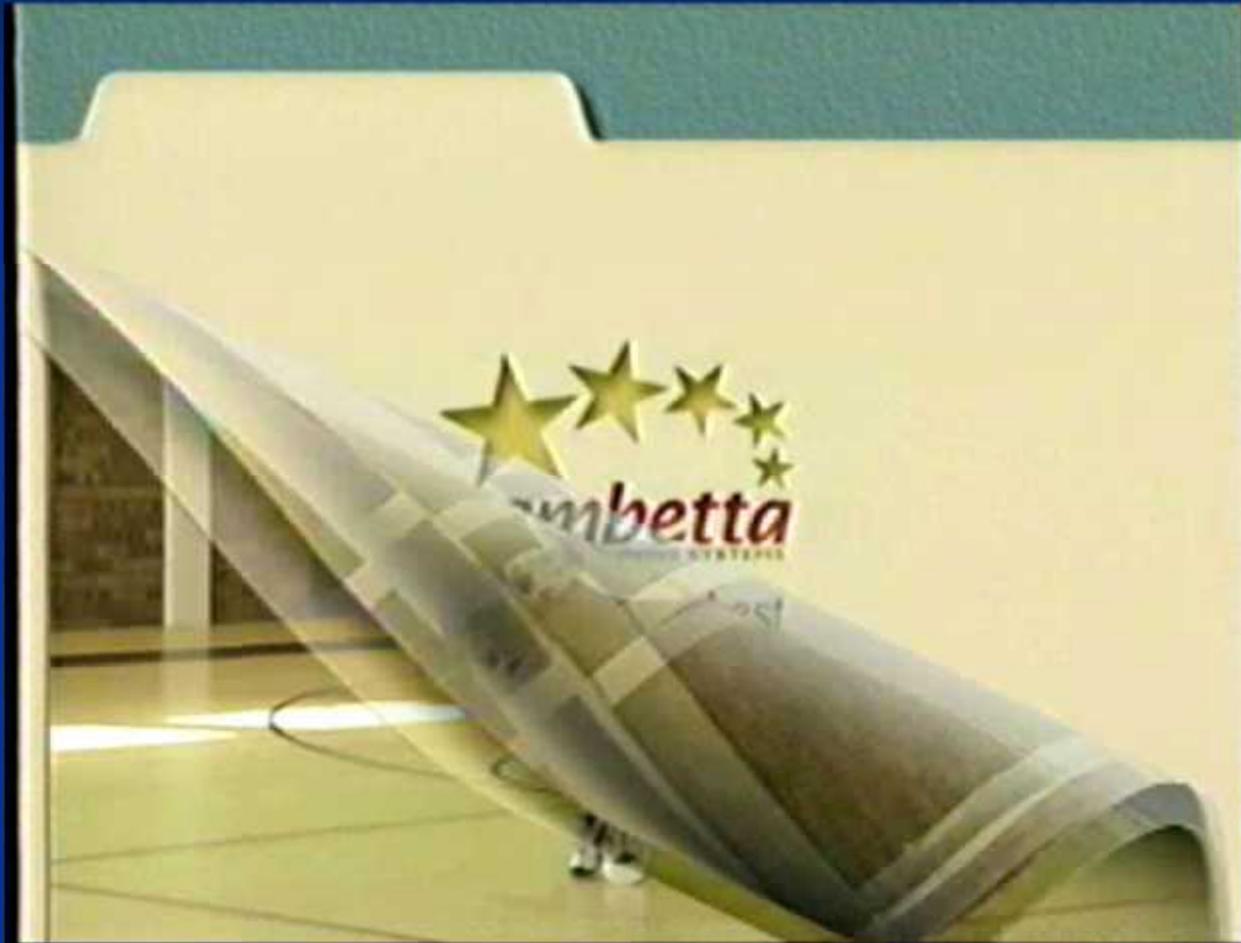
Dryland Exercises – Med Ball Throw down



Dryland Exercises – Disco



Dryland Exercises – Disco on Balance Tube



Dryland Exercises – Deep Squats



Dryland Exercises – Med Ball Throw Downs... again!



Dryland Exercises – Step-ups



Dryland Exercises – Step Ups with a Hop



Dryland Exercises – Deep Squats with a Turn



Dryland Exercises – Dumbbell Bicep Curl to Cross



Dryland Exercises – Lunge with Chop



Dryland Exercises – Lunge with Extension



Dryland Exercises – Rotation Pushups



Dryland Exercises – Sit-up With Chop



Dryland Exercises – Boxing



Dryland Exercises – Side Bends



Dryland Exercises – Side Lunge with Extension



Dryland Exercises – Alternate Backhand Raise



Dryland Exercises – Burpees



Dryland Exercises – Pushups



Dryland Exercises – Prone Bridge



Dryland Exercises – Prone Bridge with Kicks



Dryland Exercises – Back Bridge



Dryland Exercises – Back Bridge with Kicks



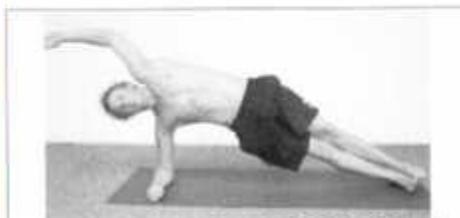
Dryland Exercises – Side Bridge



Dryland Exercises – Side Bridge with Kicks



EXERCISE 8—COLLINS' LATERAL FLY™ SERIES—EXERCISE PROGRESSION



8a. RAISE AND EXTEND ARM OVERHEAD



8b. RAISE WITH HAND ON HIP



8c. RAISE AND LOWER ARM FORWARD AND UP TO CHALLENGE THE BODY'S CENTRE OF GRAVITY



EXTEND ARM OVERHEAD AND RAISE TOP LEG AND HOLD WITHOUT LOSING BODY POSITION



8e. RAISE AND LOWER ARM FORWARD AND UP HOLDING HAND WEIGHT TO FURTHER CHALLENGE THE BODY'S CENTRE OF GRAVITY



8f. RAISE TOP LEG TO FURTHER CHALLENGE



NOTE: Roll body weight forward (5-10 degrees) onto toes and fist to change to point of challenge on the abdominal musculature.

Side Bridge with Dumbbell

Dryland Exercises – Leg Circuit, Quick Squats



Dryland Exercises – Leg Circuit, Quick Lunges



Dryland Exercises – Leg Circuit, Side Lunges



Dryland Exercises – Leg Circuit, Squats Knees Out



Dryland Exercises – Leg Circuit, Jumps



Dryland Exercises – Crawling Circuit, Forward and Back



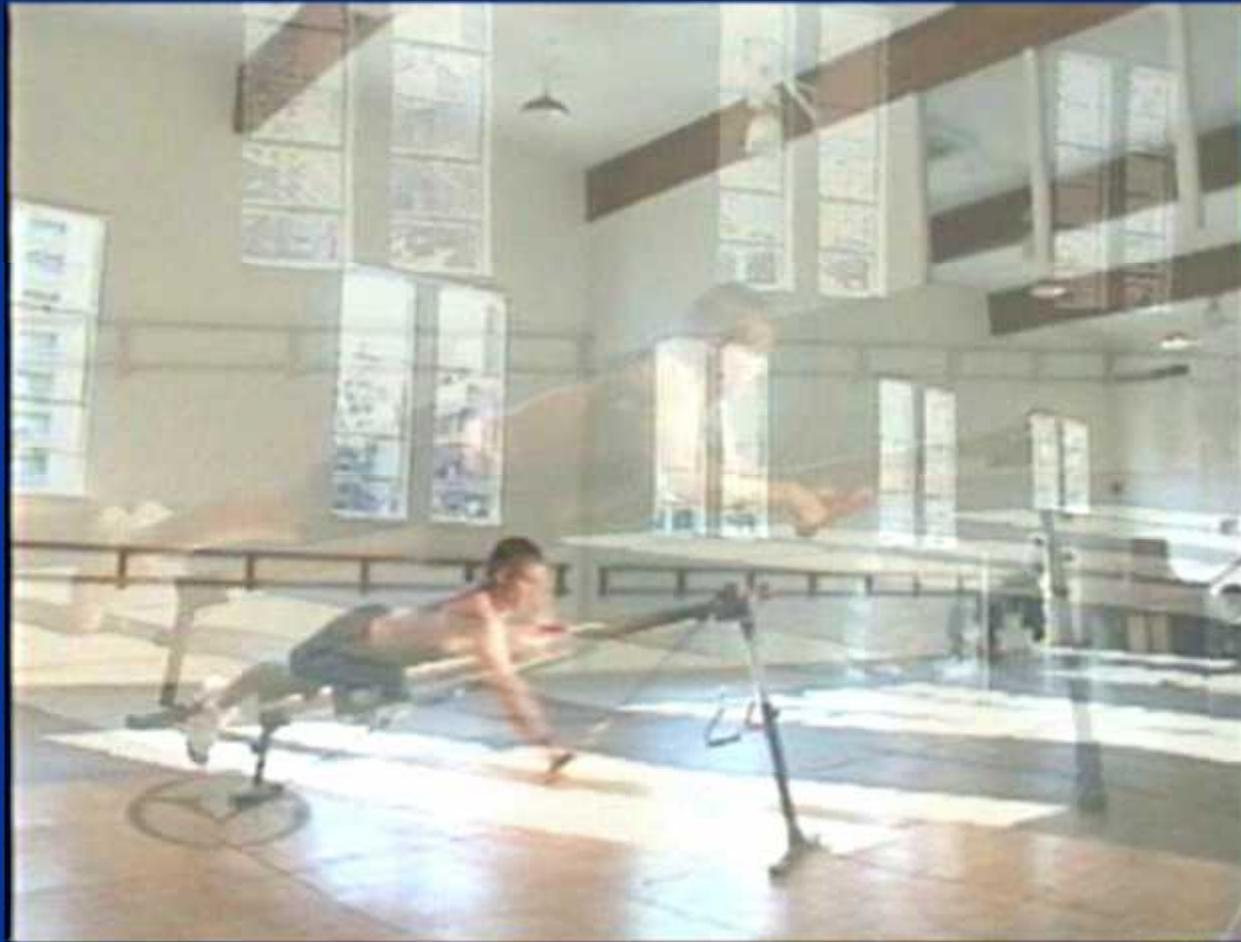
Dryland Exercises – Crawling Circuit, Sideways



Dryland Exercises – Crawling Circuit, Alligator Crawling



VASA Swim Trainer



Common and not so Common Stretch Cord Exercises

- Swimmer
 - Butterfly, alt arms free, alt arms free on balance beam, alt arms free on balance beam with one leg quarter squats
- Internal and external bent arm lateral shoulder rotation
- Vertical pushups, boxing, boxing on one leg, boxing on one leg with balance beam
- Biceps curls, alternating, on one leg, on balance beam
- Triceps curls, alternating, on one leg, on balance beam
- Squats
- Breaststroke pull in the corners

Designing a Dryland Program

1. Read, study

- a. gather ideas, keep notes
- b. form opinions and philosophy
- c. get a certification, check the internet
 - [American Council on Exercise \(ACE\)](#)
 - [National Strength and Conditioning Association \(NSCA\)](#)

Side note: If you an ASCA member, take this test and request a certificate, and then don't be shy about promoting it.

Designing a Dryland Program

■ Educational Resources at ASCA

VERN GAMBETTA
 Vern is an internationally known expert on conditioning for athletes. He is President of Gambetta Sports Training Systems. Previously, he was Director of Conditioning for the Chicago Bears, San Francisco 49ers and a conditioning consultant for the 1992 U.S. Olympic Team and the U.S. Men's National Team. He has authored several books and numerous articles on conditioning.

STEVE ODGERS
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Equal training is a key athletic trait and is not your coach's fault. Most specific areas of training in various sports, major body composition, and athletic performance, is in your hands. It will achieve a wide number of goals at all times. The more you know, the better.

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CIRCUIT TRAINING
 Vern Gambetta & Steve Odgers

VERN GAMBETTA
 Vern is the Director of Speed Development for 100 and 200 meters of the United States Olympic Team. He is also the conditioning consultant for the 1992 U.S. Olympic Team and the 1996 U.S. Men's National Team. He has authored several books and numerous articles on conditioning.

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Advanced MEDICINE BALL TRAINING
 Vern Gambetta & Steve Odgers

DRYLAND CORE TRAINING

featuring **Pedro Moros** with narration by **John Leonard**

Presented By
 The American Swimming Coaches Association

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Multi-Dimensional Strength Training
 Functional Strength Training for Conditioning & Rehabilitation
 Vern Gambetta

FOR ATHLETES OF ALL LEVELS
FOR SPORTS AND REHABILITATION

JUMPI JUMPI JUMPI!
CONTENTS
 Teaching Progression
 Basic Plyometrics
 Advanced Plyometrics
 Plyometrics for Lateral Speed & Agility

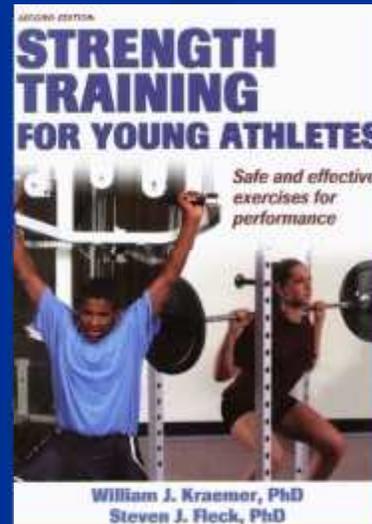
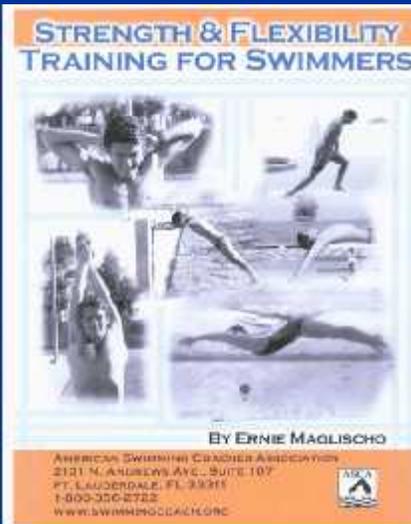
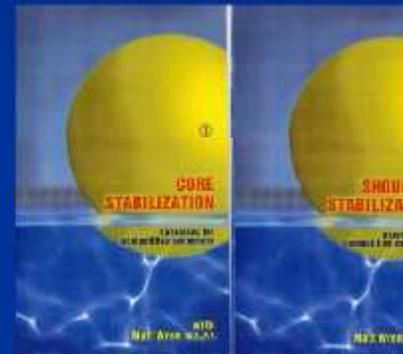
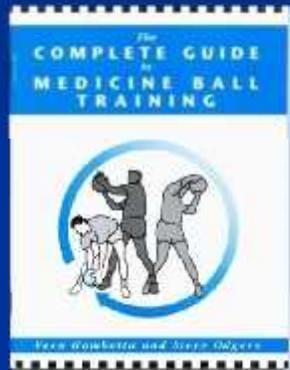
VERN GAMBETTA
 Vern Gambetta, President of Gambetta Sports Training Systems, is an internationally known expert on conditioning for athletes. Steve Odgers is the Sports and Weight Lifting Conditioning Coach and a former world class distance competitor.

STEVE ODGERS

JUMPI JUMPI JUMPI!
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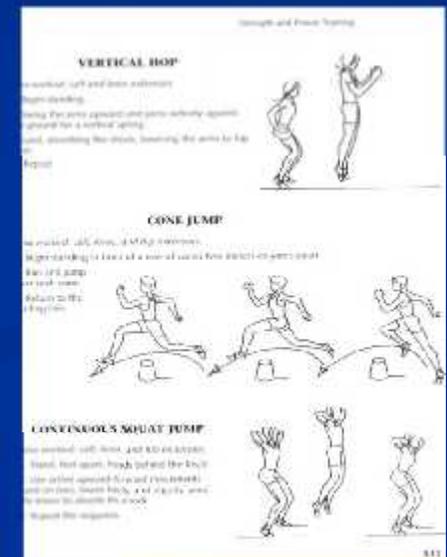
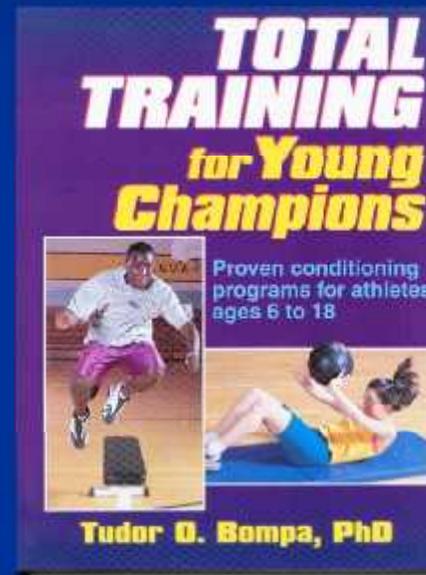
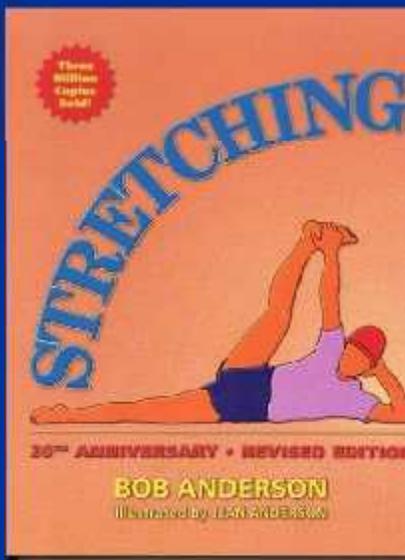
Designing a Dryland Program

■ Educational Resources at ASCA



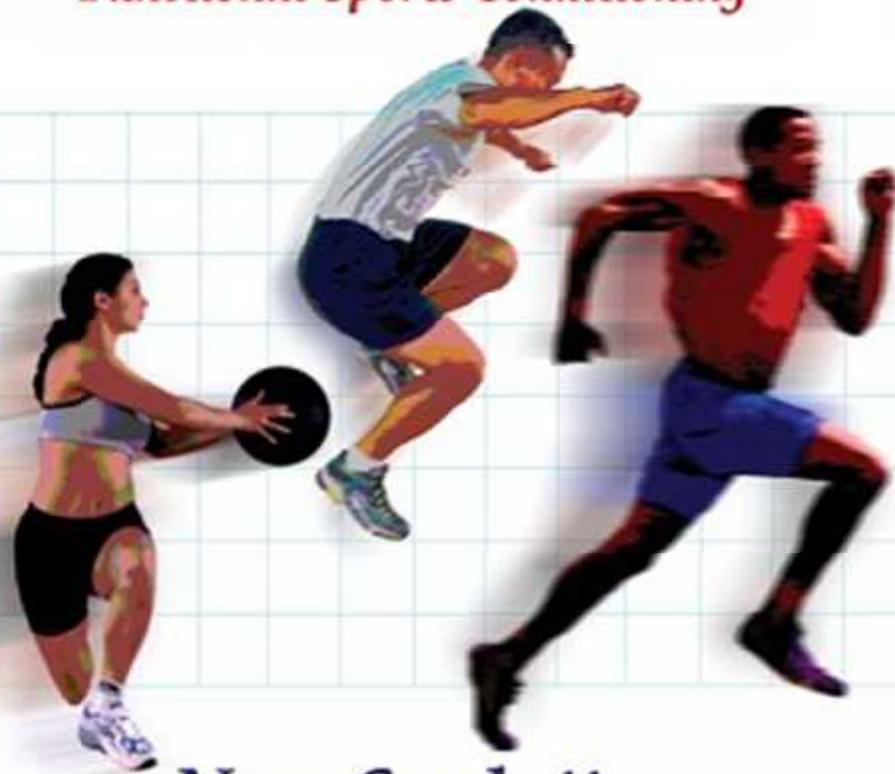
Designing a Dryland Program

■ Educational Resources at ASCA



Athletic Development

*The Art & Science of
Functional Sports Conditioning*



Vern Gambetta

Designing a Dryland Program

2. Check Resources

- a. equipment
- b. personnel
- c. time
- d. support
- e. budget
- f. location

Location

- Design dryland according to space and equipment available, not the other way around.
- If you are not happy with location and equipment, then...
 - Hallways, deck, the pool!, the pit
- Spring garage sales

Supervision

- No OYO
- No supplemental weight training with Dad's or personal trainers
- Team only
- Best supervised by you.
- Alternatives
 - A certified (ACE or NSCA) and USA Swimming Coach Member, hand picked by you

Equipment Priorities

- Mats
- Stretch cords, balance beams, sticks
- Med balls
- Dumb bells
- VASA
- Pull up bars and dip bars
- Free weights and benches
- Machines

Designing a Dryland Program

3. Set goals

- a. for facility and equipment
- b. for program, extent of program, participation
- c. for performance
 - measure dryland versus dryland, not swimming
- d. Test regularly
 - adds motivation and accountability

Designing a Dryland Program

4. Set the season Plan

a. cycles

- 4 to 8 weeks for age 14 and over
- 2 to 4 weeks for age 13 and under

b. variety, types of cycles, for example:

- core
- muscular endurance
- strength
- coordination
- swim specific
- total body

Designing a Dryland Program

c. progressions

- the most fundamental principal
- train the core first, extremities later
 1. core
 2. strength
 3. power
 4. endurance
- overload by what means?
 - time of exercise
 - resistance
 - repetitions
 - rest

d. Accommodate different abilities

- each station may have several variations and or resistances, for example:

disco: level 1, no balance beam,
no weight

level 2, no beam, light weight

level 3, balance beam, light
weight

level 4, balance beam,
heavier weight

Designing a Dryland Program

c. progressions (continued) -- what will the progressions be?

Aerobic core

Start with 15 sec on, 45 sec off for 20 stations (20 minutes)

Build to 45 on, 15 off for 30 stations (30 minutes)

Speed

Start with 30 sec on, 30 sec off for 15 stations (15 minutes)

Build to 1:00 on, 1 minute off, for 15 stations (30 minutes)

Power

Start with 10 stations, stay at 10 stations

Start with 15 seconds, stay at 15 seconds

Start with 10 reps, stay at 10 reps (1.5 seconds per rep)

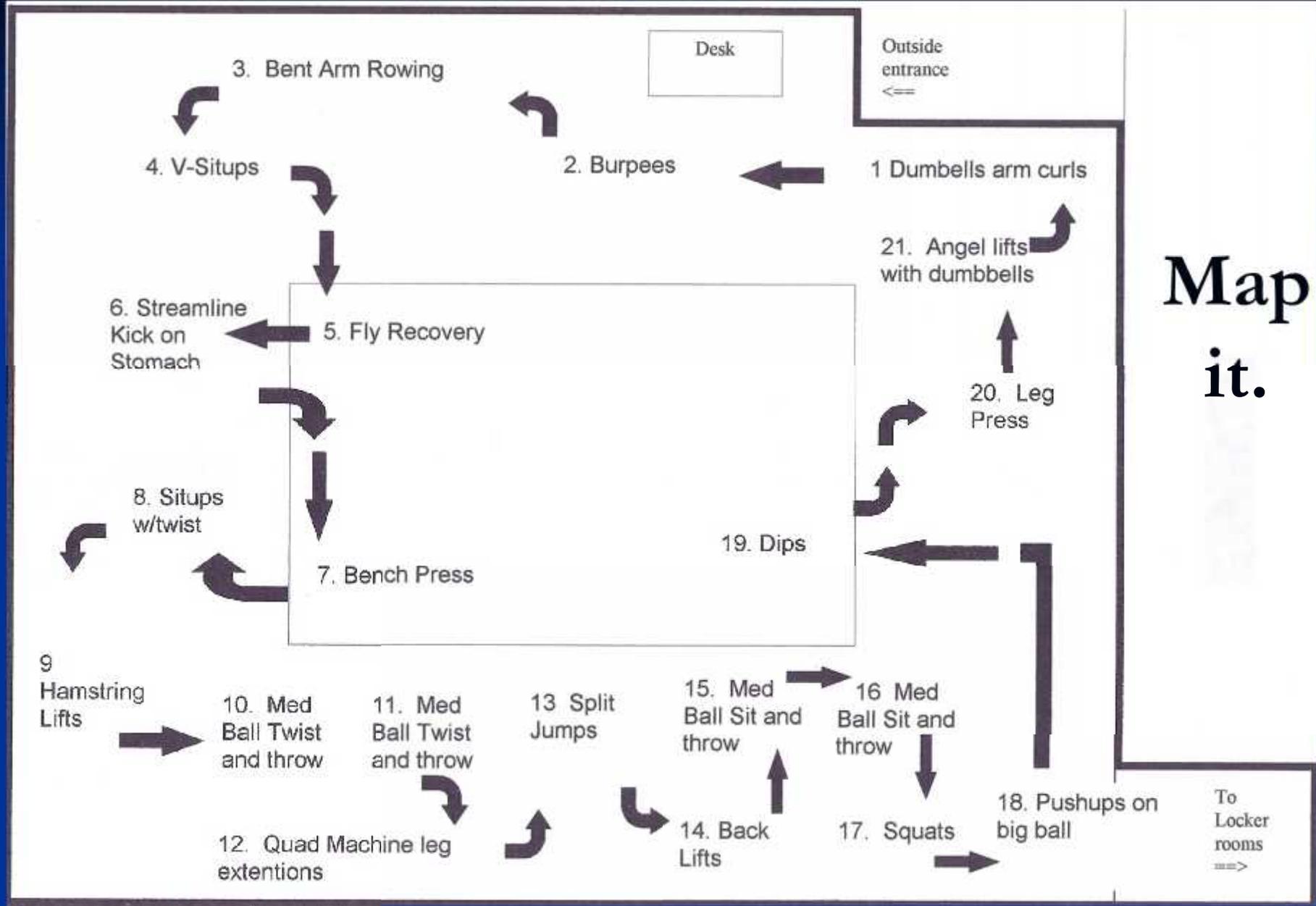
Increase weight, keeps reps same.

Operation

- Groups, or stations
 - Age, equipment, exercise dependent
- Selection of cycle objectives or “points of focus”
- Selection of exercises
- Mapping
- Progressions
- Management: FINIS Circuit Timer
- Goal setting and recording

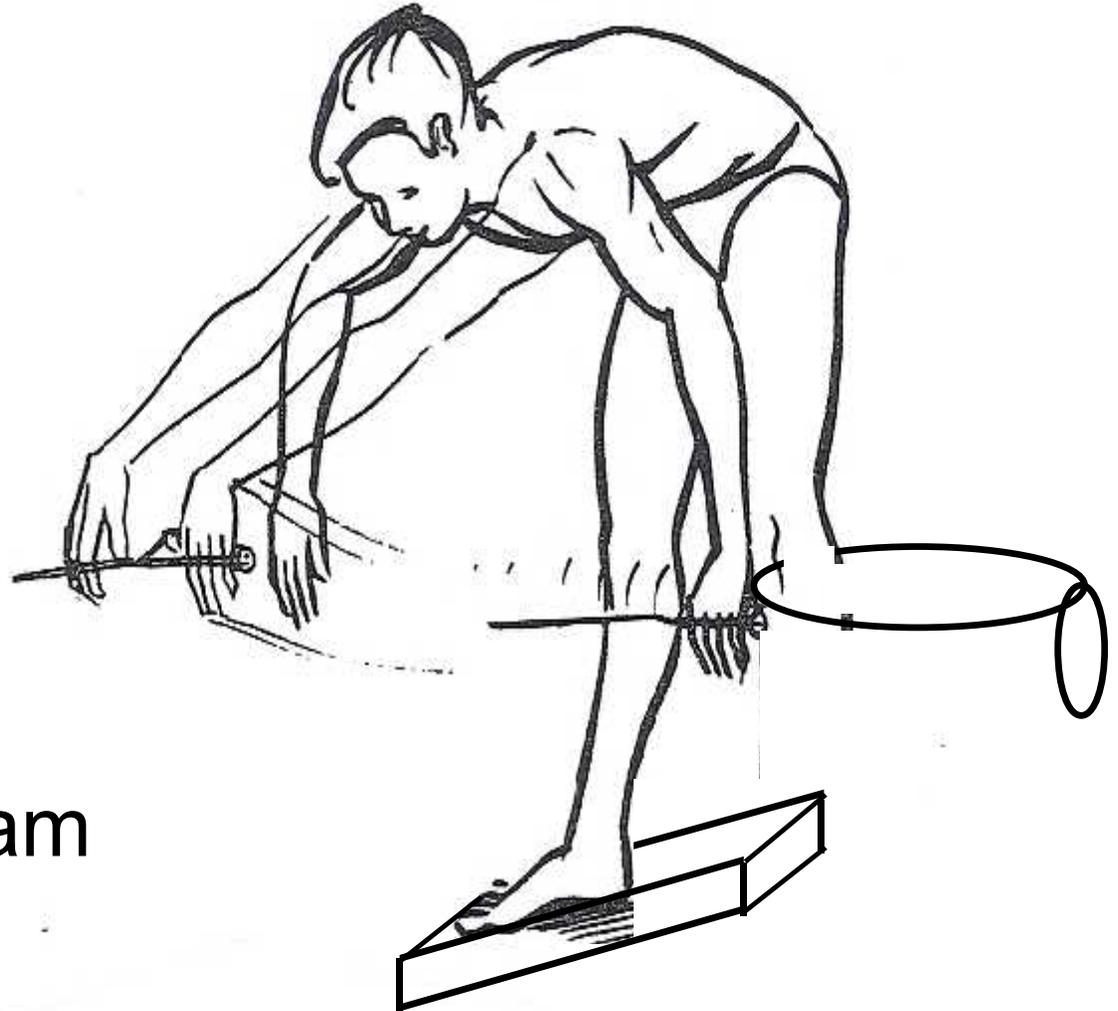
Designing a Dryland Program

5. List the components (exercises)
6. Plan your layout
 - Order and Space considerations
 - Create a “map” (see next slide)
 - Create laminated station signs (see next slide)
7. Make time for education
 - a. train swimmers to train
 - b. parent education
8. Supervise it (or assign it)
 - a. If assigning it, review it
9. Get excited about it
10. Promote it.



Map
it.

5



- Level 1, no beam
- Level 2, beam
- Level 3, beam with quarter squat

20 WEEK WEIGHT TRAINING PROGRAM

WEEK	PHASE	EMPHASIS	REPS	SETS	TIME	SESSIONS
1-2	Start-Up	Form/Tech. Testing – Joint Stability	15-20	25-30	1.5 Hrs	3-6/week
3-8	Hyper-trophy	Slow Tech. “Pumped”	10-12	25-30	1-2 Hrs	3/week
9-14	Max Strength	Med. Speed “Failure”	5-9	20-30	1-1.5 Hrs	3/week
15-17	Power	Explosive Speed	3-5	12-15	1Hr	2-3/week
18-20	Maint. Conv.	Movement Speed @ 50%	8-10	6-9	15-30 Min.	2/week

Designing a Dryland Program

Maglischo's Program

Six Factors to consider (details coming up)

1. Weekly frequency
2. Duration daily
3. Selection of exercises
4. Order of exercises
5. Number of sets and reps
6. progression

Designing a Dryland Program

Maglischo's Program

Training Frequency:

2 to 5 days

- not a lot of difference!

- a split routine is effective if going 5 days

Training Duration:

30 to 60 minutes

Designing a Dryland Program

Maglischo's Program

Exercise Selection

For Arm Strokes:

lat pull-downs, seated rowing, bent arm pullovers, straight arm pullovers, chin ups, bench press, dumbbell flys, pushups, triceps extensions, triceps pushdowns

Maglischo is cautious on pushups and dips because of the friction between the head of the humerus and tendons of shoulder.

Designing a Dryland Program

Maglischo's Program

Exercise Selection

- For kicking, starting, turning
 - Squats
 - Leg presses
 - Lunges
 - Step ups
 - Calf raises
 - Seated knee extensions

Designing a Dryland Program

Maglischo's Program

Exercise Selection

- Stabilization
 - Bent knee situps
 - Crunches
 - Torso twists
 - Diagonal curl ups

Designing a Dryland Program

Maglischo's Program

Order of Exercises

- 1. major propulsive muscles first, then core
- 2. heavy resistance first, then light

Sets and Reps

- Sets: first week or two – one set, then add sets. 6 sets is probably max
- Reps: 3 to 12 with 3-5 minutes between sets

Designing a Dryland Program

Maglischo's Program

Progression

- Start with weight that requires max effort for 3-6 reps
- Then try to increase reps until double the initial reps
- Then add weight
- Starting weight should be about 60% of maximum 1 rep lift. Then move toward 80 to 90%

Designing a Dryland Program

Maglischo's Program

Additional Ideas

- Cheating
 - Using body movement to move weight. (It's ok)
- Forced Help
 - Spotter helps (It's ok)
- Pyramids
 - Start with 8-10 reps, do 3-6 sets, reduce reps and add weight. Keep the speed

Sample Program – New Swimmers

Winter, 10 min per day

- Dec: body weight, planks, situps, push ups
- Jan: add crawling, delete situps
- Feb: crawling, pushups, hopping
- Mar: speed sit ups, ball tossing, jumping
- Apr: crawling, pushups, planks
- May, speed situps, ball throwing, hops

Sample Program – New Swimmers

Summer, 15 min per day

- Monday: crawling, ball toss – building to light med balls by end of summer
- Tues: Ultimate Frisbee with 3 frisbees in play
- Wed: pushups, pull ups, light med ball
- Thur: Running – 5 min slow, 10 min of sprints on a work rest ratio of 1:2
- Fri: crawling, light med ball, long jumps and hopping

Sample Program – New Swimmers

Fall, 10 min per day

- Sept: crawling and step ups
- Oct: med ball light tosses, intro to physio balls for better balanced athletes
- Nov: planks, sit ups, push ups. Form over speed.

Sample Program for Experienced AG Swimmers Aged 10-14

- Three cycles: Jan-Apr, May-Aug, Sep-Dec
 - Champ meet at end of every cycle, tapering from dryland 2 weeks out but for purpose of more water time to practice skills
- Jan-Apr
 - 3 per week, 30 minutes per day
 - Mon: body weight including crawling
 - Wed: med ball circuit
 - Fri: swim bench, stretch cord, crawling

Sample Program for Experienced AG Swimmers Aged 10-14, May-Aug

- Mon: med ball circuit, 30 min
- Tues: running, 15 min warmup, 15 min faster intervals with rest
- Wed: commando day, calisthenics, circuit, low rest. Tough. 30 min.
- Thu: stretch cords and swim bench. 30 min
- Fri: games. 30 min

Sample Program for Experienced AG Swimmers Aged 10-14, Sept-Dec

- Tues: swim bench, stretch cords, step ups, crawling, speed push ups and sit ups. 45 min
- Thur: Calisthenics and med ball 30 min. Crawling for 15 min.
- Sat: Gym use. Crawling for 30 min. Core and plank work for 15 min.

Sample Program for Teenagers Aged 15 – 18: Overview

- Tremendous peer pressure to bulk up.
- Use of supplements is prevalent.
- Experimenting and showing off are common.
- Wide variety in abilities, primarily developmental, not male versus female.

Sample Program for Teenagers Aged 15 – 18: Jan - March

- Dryland for one hour before afternoon workout 5 days a week
- Reduce to 45 min. of maintenance in March before final meet. Some drop wts completely.
- MWF: circuit program with free weights, body wt, med ball, universal machine.
 - Begin with 30 on, 30 rest for 25 min. Build to 60.
 - Number of reps increases dramatically
 - Maintain speed
 - Remaining time is “mental skills” time

Sample Program for Teenagers Aged 15 – 18: Jan - March

■ Tues and Thurs

- Running various distances and speeds.
- Tues include crawling and core
- Thurs include planks and sit ups, pushups, pull ups.

Sample Program for Teenagers Aged 15 – 18: April - June

- Focus on building Force
 - Free weights and Universal
- Mon, Wed, Fri: 12 stations of heavy lifting
 - 1 short set of 8 reps at 80%
 - Second set at max , 4 – 8 lifts
 - Third set, super set with assistance, 4 lifts
 - Safety: Good spotting
- Tues is running
- Thurs is core as in the first cycle

Sample Program for Teenagers Aged 15 – 18: July

- Similar to first cycle except lighter resistance with greater speed.
- Taper the dryland parallel with the water.

Sample Program for Teenagers Aged 15 – 18: Post Summer Champs

- August to Mid Sep
 - Same Tues Thurs routine
 - Mon, Ultimate Frisbee
 - Wed, crawling
 - Fri, basketball with 3 balls

Sample Program for Teenagers Aged 15 – 18: Fall

- MWF: circuit program, 30 on 30 rest, progressing
- T, Th
 - Running and circuit core
 - Circuit: step ups, jump ups, stretch cords, med ball, 20 stations at 30/30 progressing

Sample Program for Teenagers Aged 15 – 18: early winter

- If champ meet in December
 - Taper going less reps and weight
- If no champ meet continue program until January cycle.

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

Comments:

1. most exercises are multidimensional requiring balance which in turn develops core balance.
2. there are 10 basic stations, there can be 1, 2, 3 or more exercises at each station.
3. I sense it is better to do two or three exercises at each station rather than do one exercise and go through the circuit three times. (I sense this because it's a LOT harder!)

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

4. Investment in equipment is small. Stretch cords can be substituted for many of the exercises.
5. Start at 15 seconds on, 45 seconds off. Work up to 45 seconds on, 15 seconds off.
6. Moderate to light resistance, fast repetitions.
7. Begin with 10 minutes of 45 on, 15 off stretching.
8. I think it best to do this for 4-6 weeks, 3 days a week, then switch to a higher resistance, low reps, strength program for 3-4 weeks.
9. This program can be done on the deck!

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

Name	Equipment	Alternative
1. Sit ups/backlifts	Bench, medicine ball or dumbbell	Anything to lock feet on, weight plates
2. Legs	Slide Board, medicine ball or dumbbell	Plyometric Jumps, bent at waist, skaters position, knees bent, leading leg (right) crossed behind front leg (Left), jump to the right, cross and then jump to the left, weight plates
3. Upper body	Swedish Ball (Physioball), dumbbells	low stool, or bench, weight plates
4. Legs	Step up box, medicine ball or dumbbell	Any solid box or bench
5. push ups	Dumbbells	
6. balance beam	2 x 4 x 24 inches (wooden board), medicine ball or dumbbell	
7. medicine ball	Medicine ball	Dumbbells or weight plates for some exercises
8. legs	medicine ball or dumbbell	weight plates for some exercises
9. Cords	Stretch cords	
10: Dumbbells	dumbbells	Weight plates

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

Station Number	Equipment	Exercise	Notes
1	SIT UP BENCH	CHOPS WITH MED BALL	Hold ball over right shoulder, sit up and twist bringing med ball to left hip, recover down with med ball over left shoulder, repeat to other side
2	SLIDE BOARD	HIGH KNEE	Bent at waist, Lift leading leg high and throw to side as you push off with opposite leg. Swing arms in direction of movement.
3	PHYSIO-BALL	BENCH PRESS w dumbbell	Roll out and bridge so that only the shoulders are supported. Keep feet close together to take away balance. Alternate dumbbell lifts, fast.
4	BOX	SIDE HOP STEPS W MED BALL	Side jump to left and up then down in one movement. Pass the medicine ball from in front of you, around your back and to the front. Move ball in opposite direction from direction of side jump.
5	PUSHUPS	ROTATION WITH DUMBBELLS	Pushups with dumbbells. Do a pushup, then rotate to side and lift dumbbell straight up so you are forming a vertical line from right arm to right hand.

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

6	BEAM	ROWING - SWITCH LEGS	On balance beam on right leg, bent 90degrees at waist. Dumbbell in right hand. Bend/squat, touch dumbbell to floor, straighten leg as you lift dumbbell in rowing motion. Switch hands, same leg (left/right). Switch hands, switch legs (right/right) Same leg, switch hands (right/left)
7	MEDICINE BALL	SIT AND TWIST	Classic med ball exercise, legs together, touch toes with med ball. For added instability (better core work, sit on air pillow)
8	LEGS	DISCO ON BEAM w dumbbell	Left foot on beam, dumbbell in right hand, bend and touch dumbbell to floor on left side of left foot. Lift, cross, and extend dumbbell over the right shoulder, repeat as time allows then switch legs and hands.
9	CORDS	RIGHT LEG ADDUCTION	Standing position on left leg, adduct right leg from right to left in front of left leg.
10	DUMB BELLS	ALT OVERHEAD PRESS ALT LEG	On one leg (for fun try wobble board, air pillow, or balance beam), start with dumbbells at shoulder position press to a full extension overhead.

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

Station Number	Equipment	Exercise	Notes
11	SITUP BENCH	BACK LIFTS	With medball, dumbbell, or plate behind head, add a twist at full extension.
12	SLIDE BOARD	CROSS TOUCH	As the first time, but twist and touch the floor with opposite hand to direction of slide. Touch floor with left hand when sliding to right.
13	PHYSIO BALL	ALT TRICEPS CURLS	Sit on ball with legs crossed, alternate triceps curls with dumbbells
14	BOX	FRONT HOP STEPS W MED BALL	As above
15	PUSHUPS	REGULAR ON DUMBBELLS	Good old fashioned pushups

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

16	BEAM	INLINE SQUATS W MED BALL	Stand one foot in front of the other on balance beam. Extend med ball as you squat: first out front, then to side, then to other side.
17	MEDICINE BALL	TWIST THROW DOWN TWIST	From standing position, using left hand, raise ball overhead, twist and throw med ball down to 7 o'clock position off left foot, catch bounce, lift on toes, twist and throw down to 5 o'clock position off of right foot.
18	LEGS	LUNGE TO BALANCE W MED BALL	Lunge right leg forward and extend med ball out front, recover to upright but without setting right leg down. repeat as time allows then switch legs
19	CORDS	LEFT LEG ADDUCTION	As above, opposite leg
20	DUMB BELLS	ONE LEG ALT ANGELS	With dumbbells, keeping arms straight, lift from side to overhead in wide sweeping motion. Do on one leg, add balance beam for more stability work. Switch legs half way through set.

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

Station Number	Equipment	Exercise	Notes
21	SIT UP	WITH MED BALL TOSS	Push ball up one meter and catch as you perform sit up.
22	SLIDE BOARD	WITH MED BALL PUSH	Hold medicine ball, or dumbbell, and extend in direction of slide.
23	PHYSIO BALL	BICEPS TO CROSS EXTENSION	Legs crossed. Maybe add "boxing" movements on to end of exercise.
24	BOX	REAR STEP UPS W Med Ball	As Above but backwards
25	PUSHUPS	CLIMB UP DOWN ON BOX	Do a pushup on the floor, move to the side and up to a higher position (hand placed on dumbbells or books, or 2 2x4's, pushups, move to side and down, repeat.

An aerobic fitness / core fitness circuit for Senior/HS Swimmers

26	BEAM	ALT LIFT TO OVERHEAD	Dumbbells from bicep curl through to extension overhead, switch legs.
27	MEDI-CINE BALL	TWIST PICKUP EXTEND TWIST	Standing, place ball at 7 o'clock off of left leg. Twist pick up ball, lift to overhead and you go up on toes, twist and lower ball to 5 o'clock on right side.
28	LEGS	ONE LEG SQUATS W MED BALL	Hold med ball over right shoulder and extend and chop to left side as you lunge with left leg.
29	CORDS	SWIMMING	Bend at waist, stand on balance beam with both feet, alternate freestyle pulls
30	DUMB BELLS	CLEAN TO EXTENSION	Squat lift with dumbbells to overhead lift.

“Killer” Circuit For Senior/HS

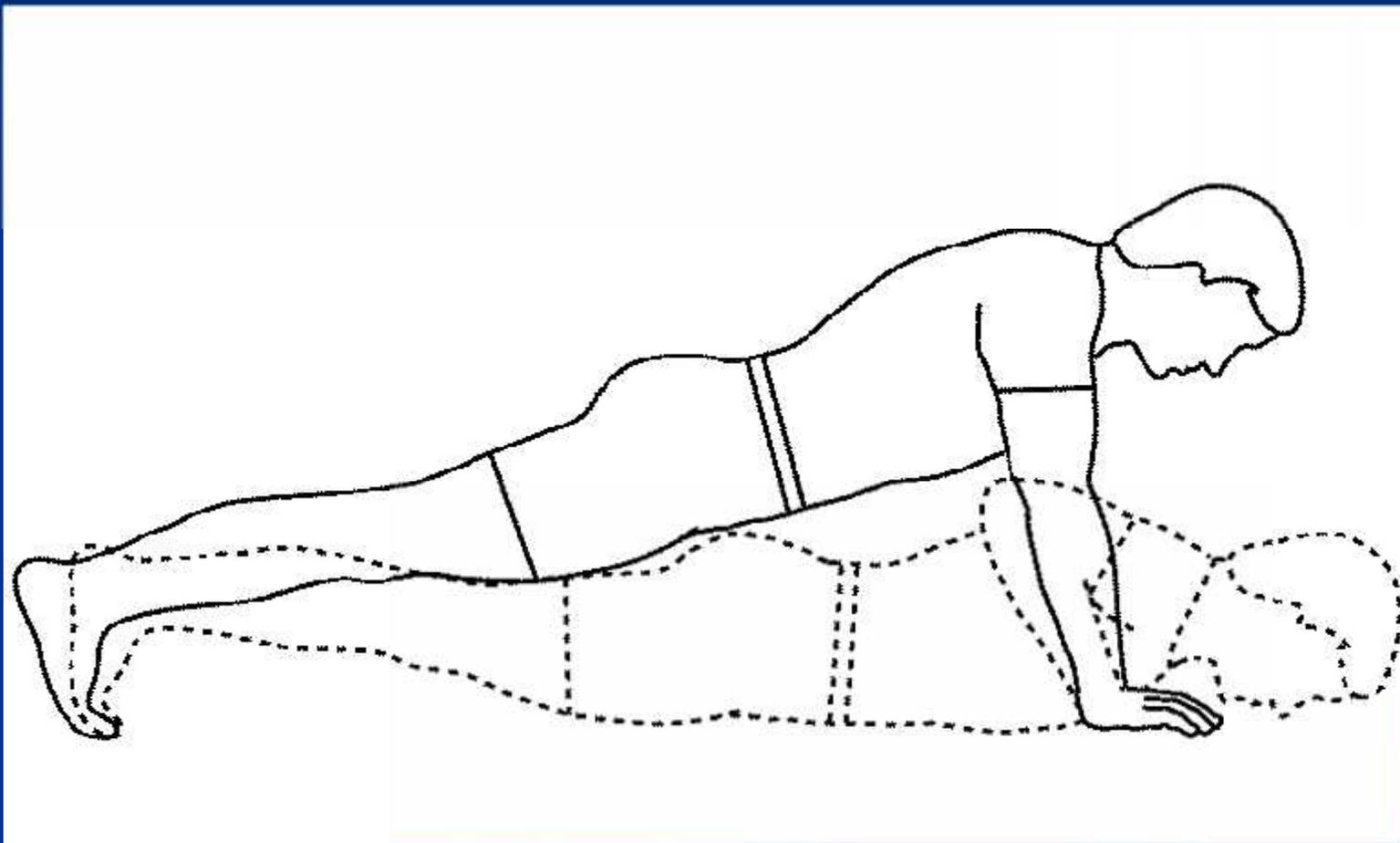
	Upper body	Legs	Core
1	Push ups	Side jumps	Sit ups
2	Push ups	Step ups	Back lifts
3	Bicep curls to cross	Side step ups w/ med ball	Sit ups
4	Push ups	Side jumps with DB twist	Back lifts
5	Boxing	Lunge w med ball chop	Sit ups
6	Push ups	Squats w med ball ext	Back lifts
7	Swimming on beam	Step ups	Sit ups
8	Push ups	Lunge w dumbbells	Back lifts
9	Lawn mower left	Lawn mower right	Sit ups
10	Push ups	Side jumps	Dead lift to over head

Example “Fitness Circuit”

(begins on next slide)

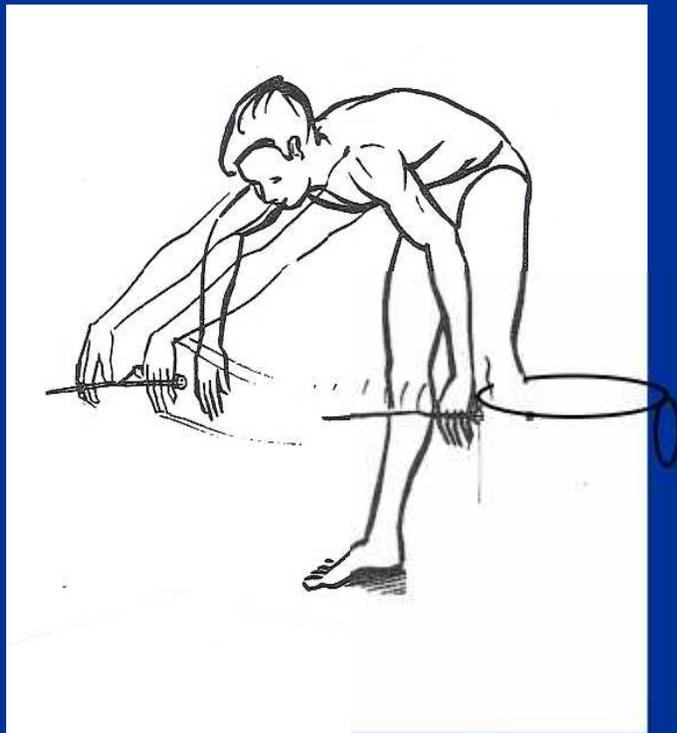
- Use light to moderate resistance
- Aim for high speed
- Start at 15 seconds on, 45 off, for 20 minutes
- Progress to 50 on, 10 off for 30 stations
- Can be used for Age Group and Senior

1. Push ups



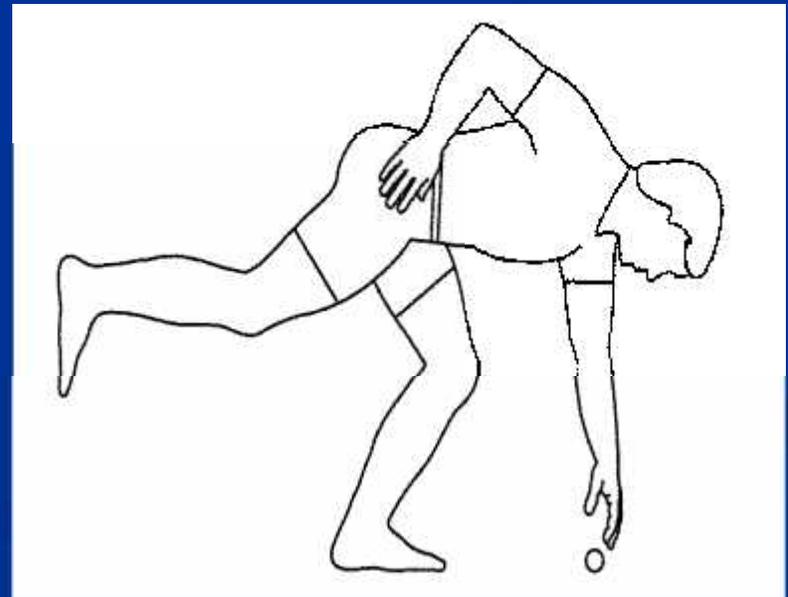
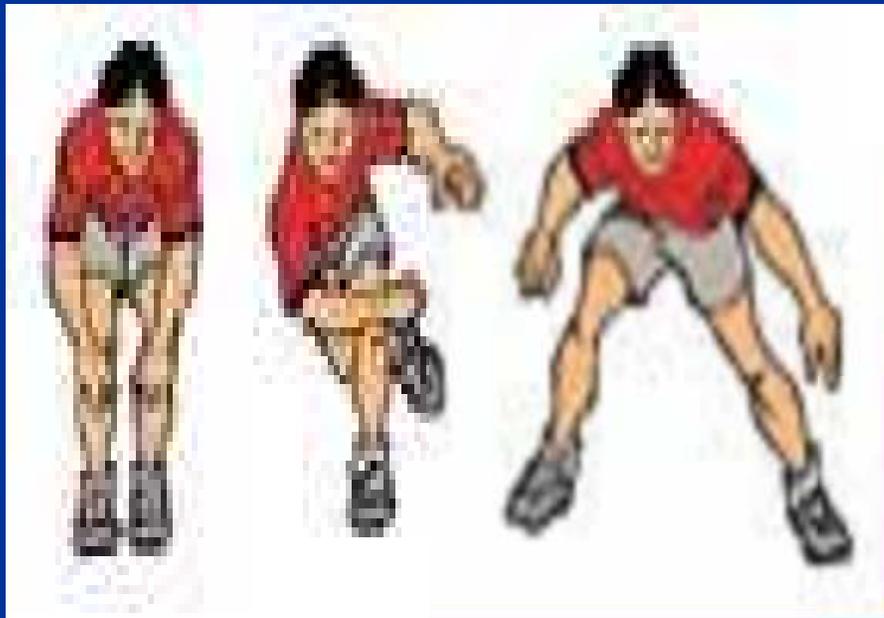
2. Freestyle Pulls

- alternating arms on one leg with one quarter squat per pull



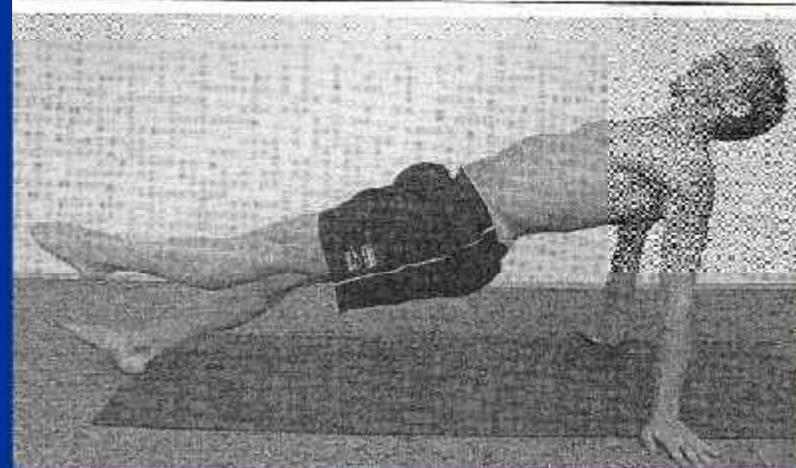
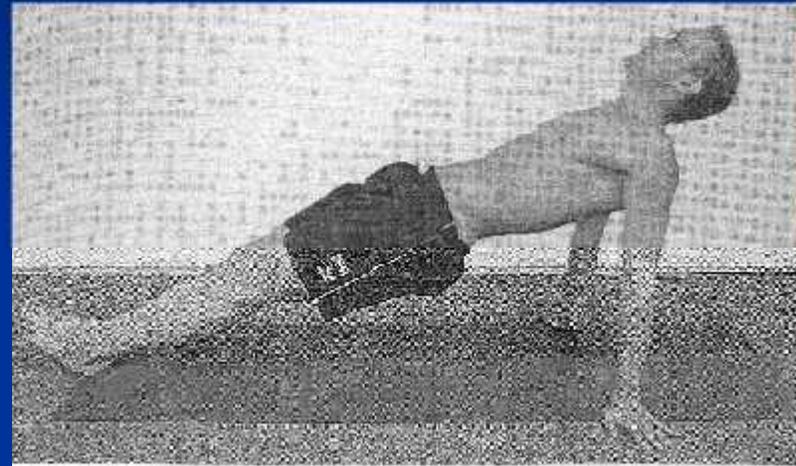
3. Lateral Jumps

- Side Jumps in ice skater position, twisting and touching opposite hand outside foot.



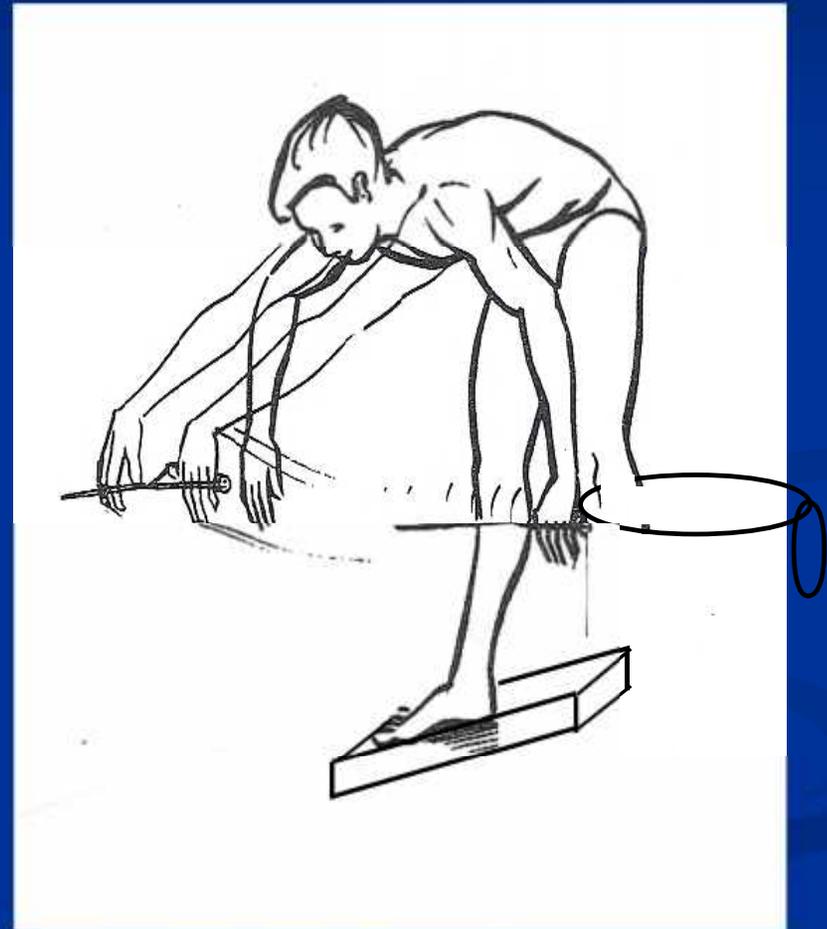
4. Back bridge

- Lift Hips, straight line, with alternate leg lifts
- Can also do on elbows



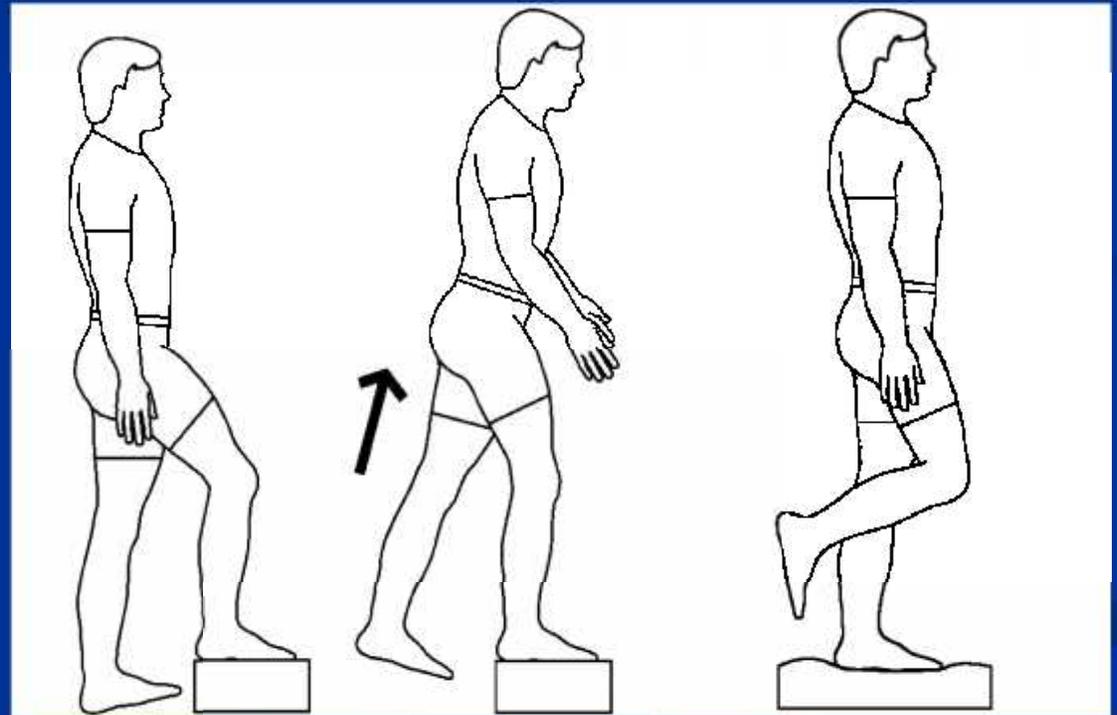
5. Freestyle Pulls

This time on a
Balance Beam

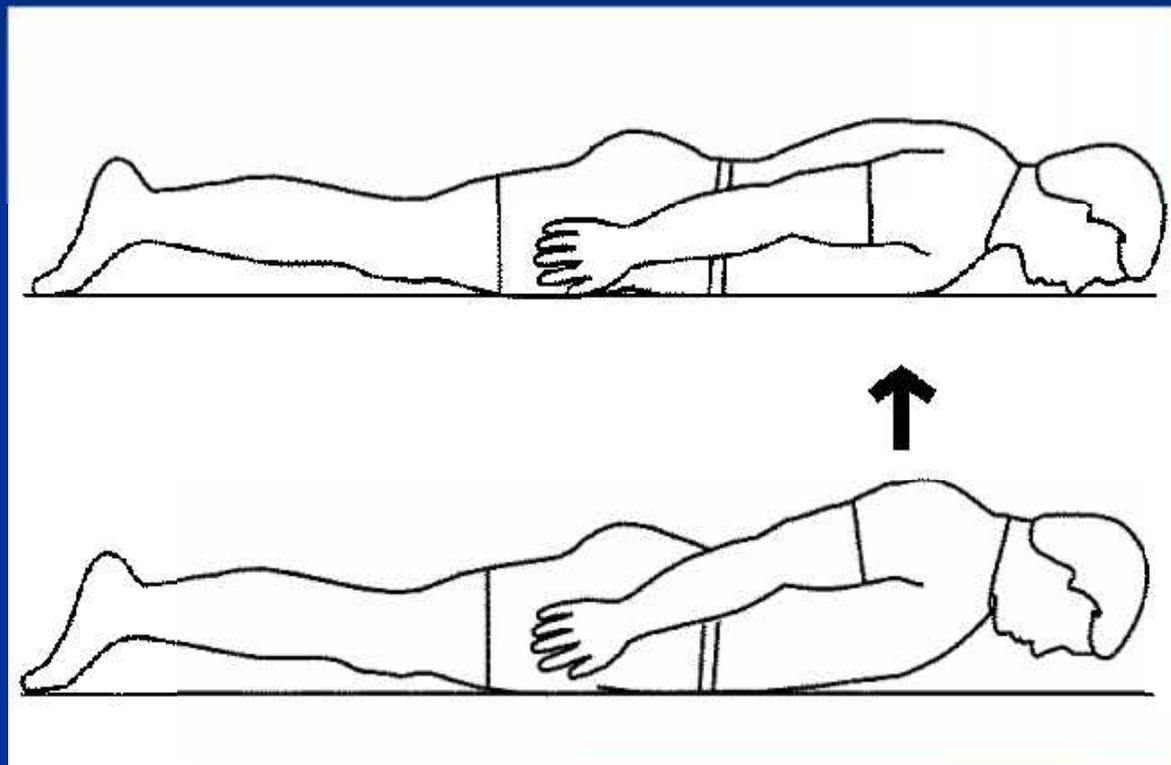


6. Skip Ups

- Not Step Ups
- Pull upper foot off step before second foot makes step up

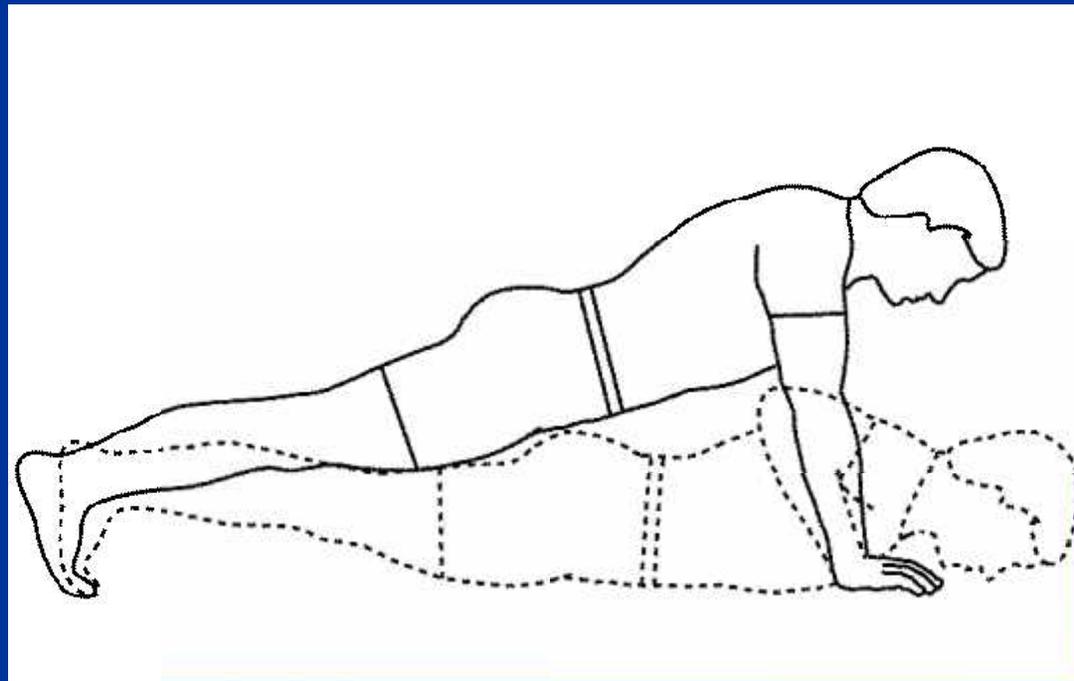


7. Back Lifts



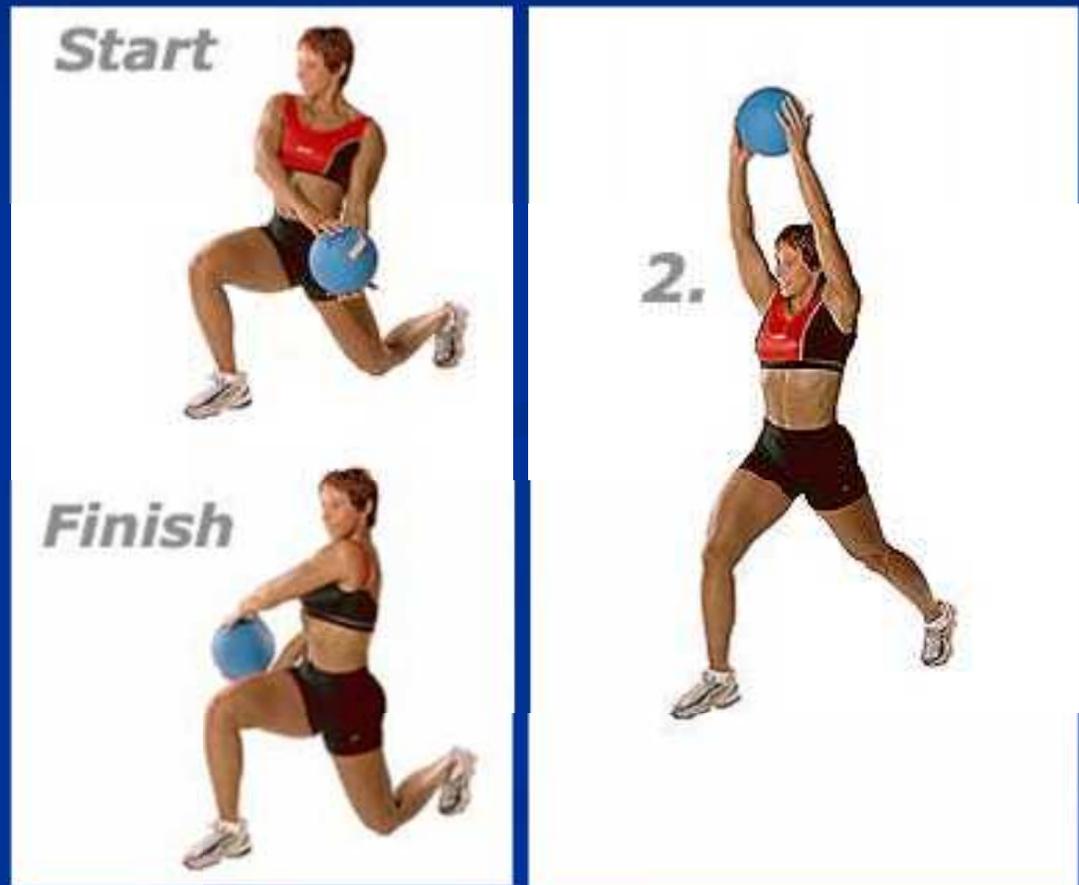
8. Push Ups

- If it's a good station, repeat it one or more times.

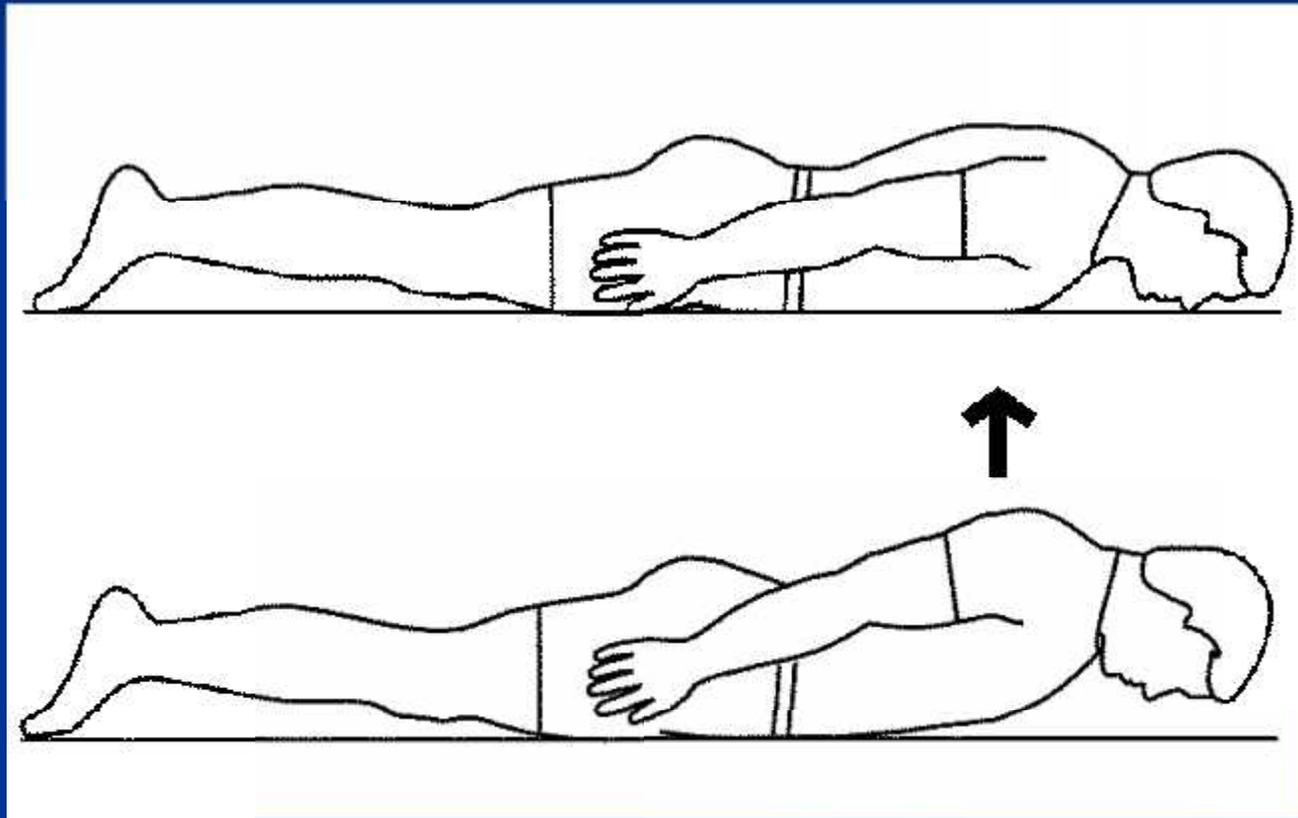


9. Lunge

- with med ball chop

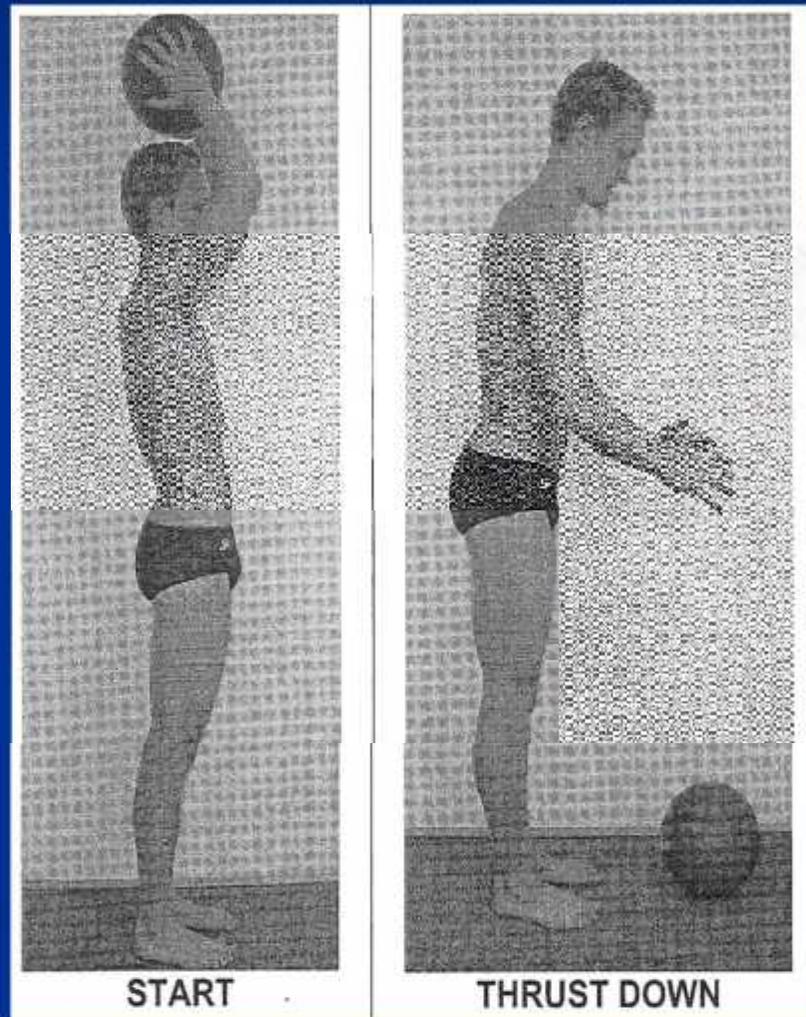


10. Back Lifts



11. Throw Downs

- up on toes with twist to the side
- Throw the ball down with one arm “like a back stroke pull”



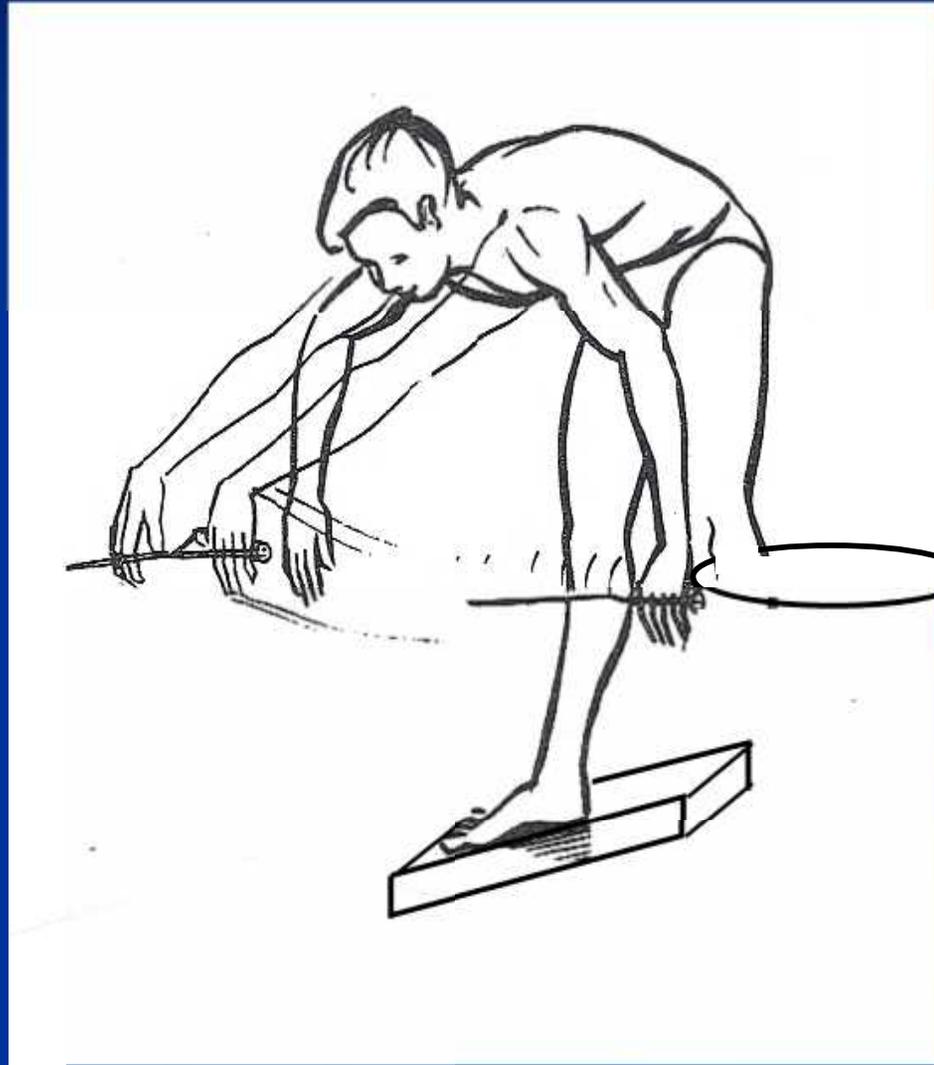
12. In-Line Squats

- In-line squats with medicine ball extension on balance beam

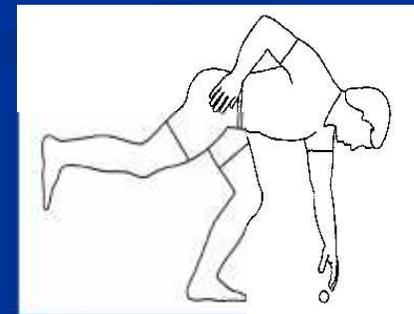
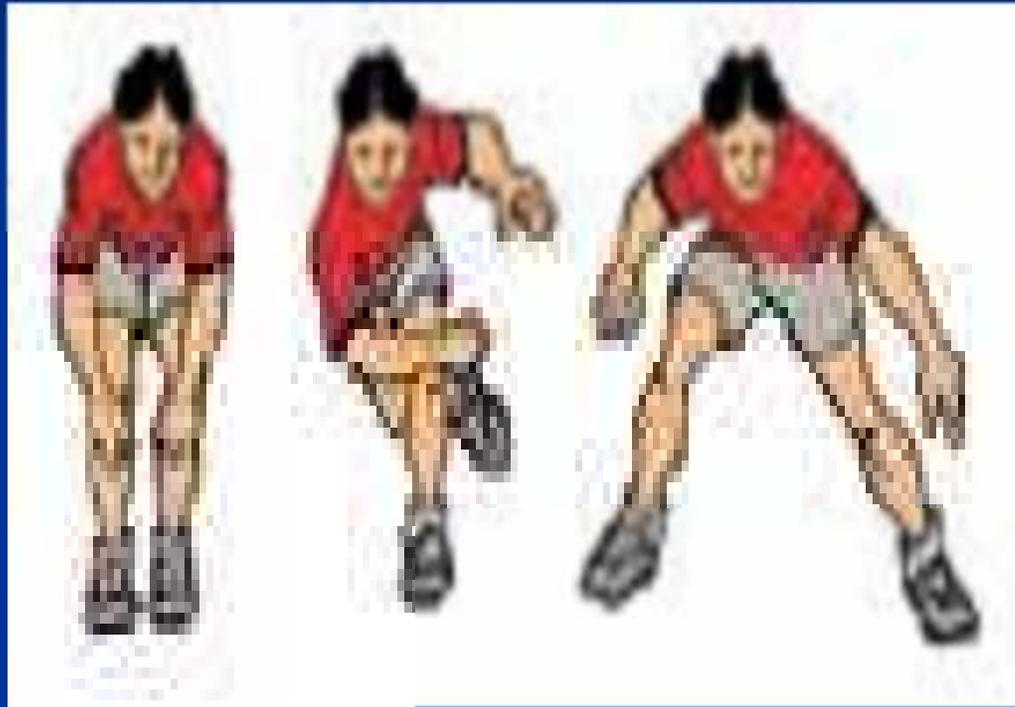
13. Disco

- With Dumbbells on balance beam, one foot on the balance beam
- Touch the floor to side of foot, curl, cross, and extend the dumbbell over head to opposite side.

14. Freestyle Pulls



15. Lateral Jumps



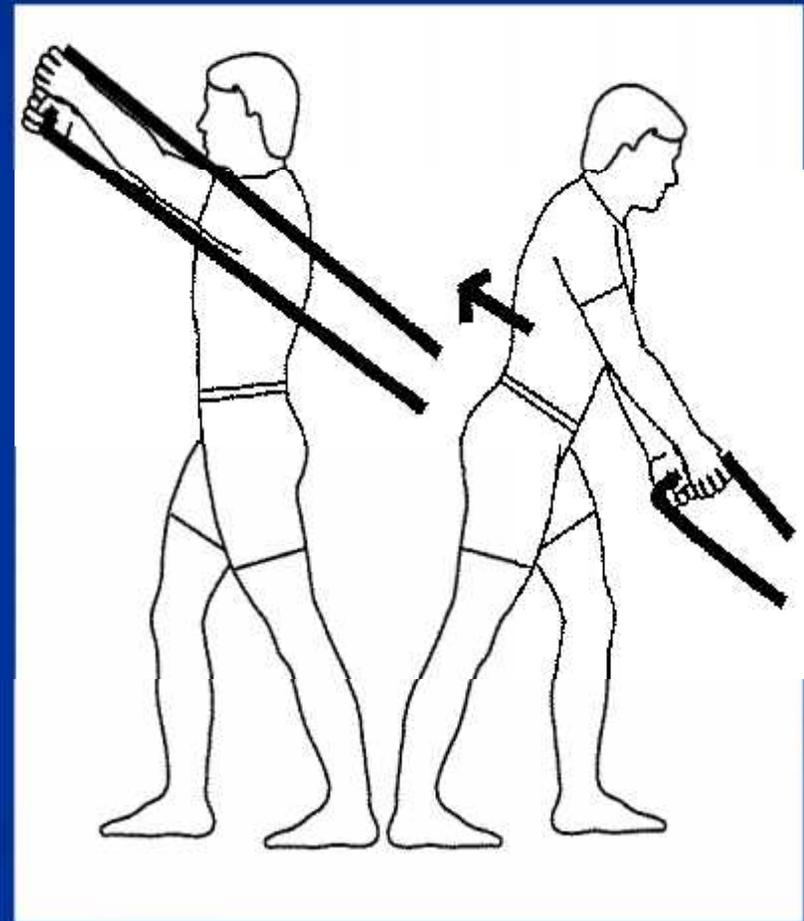
16. Sit and Twist

- Shoulders and Feet Up

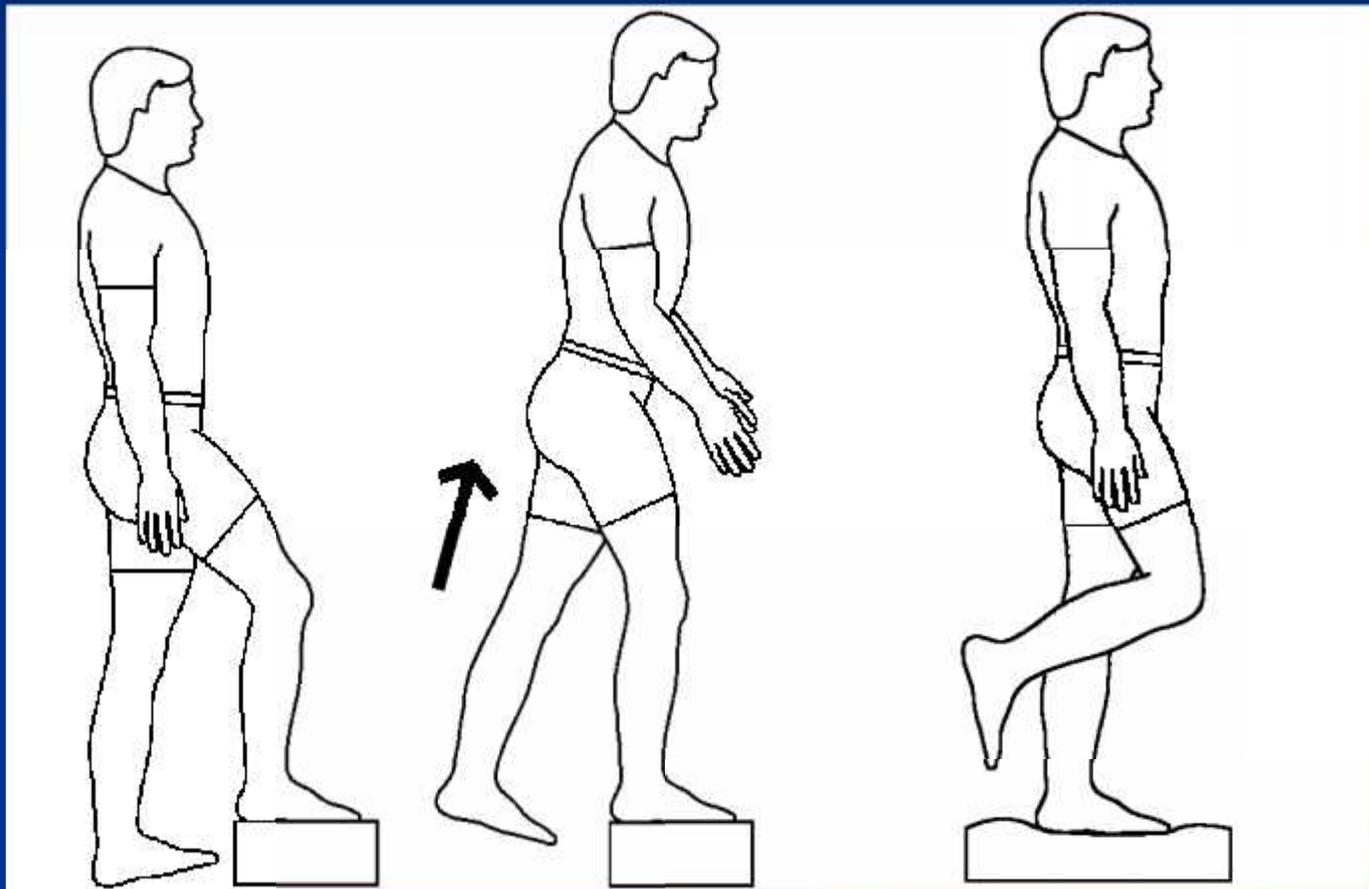


17. Lawn Mower

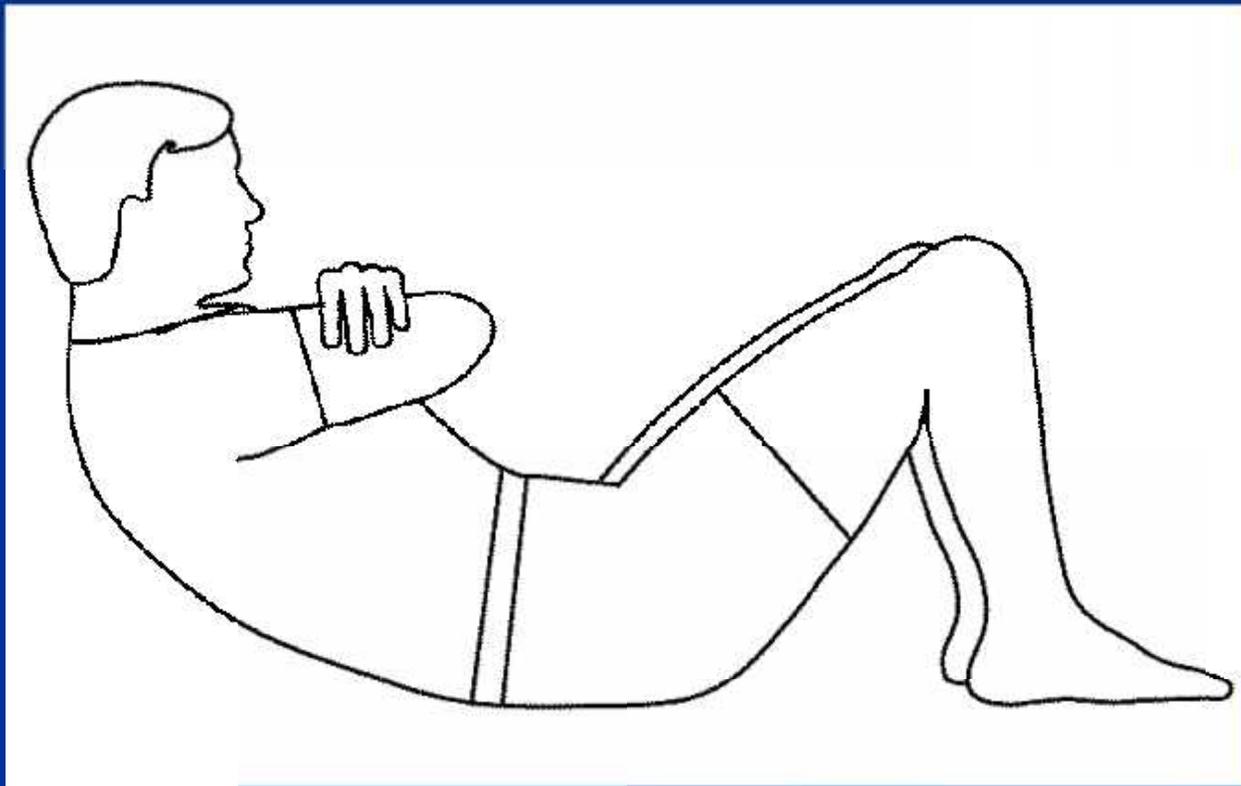
- Use one arm at a time
- alt 5 right, 5 left, one arm at a time
- big twist



18. Skip ups

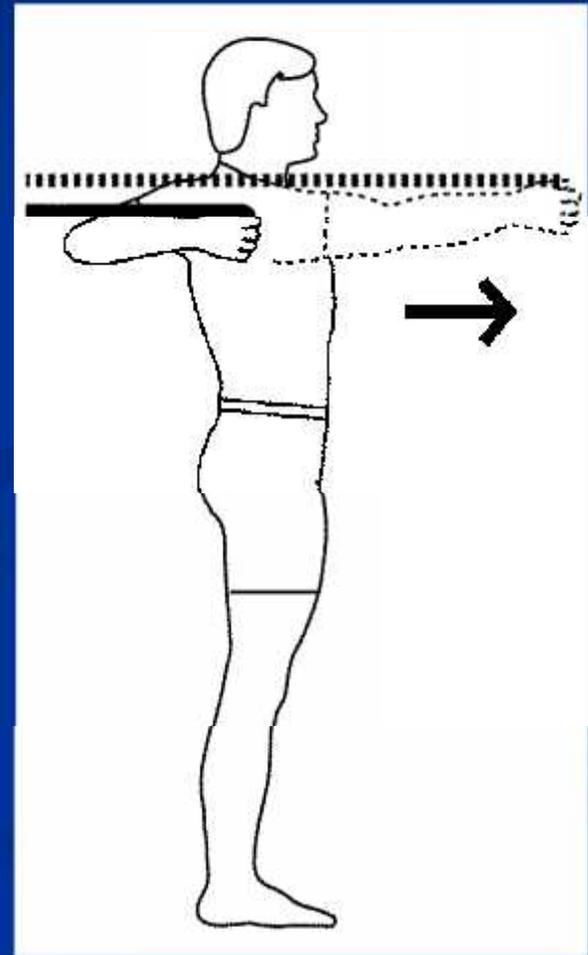


19. Sit Ups



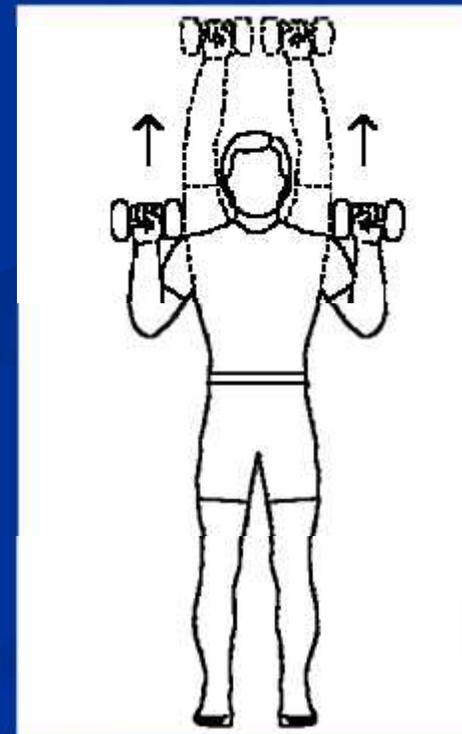
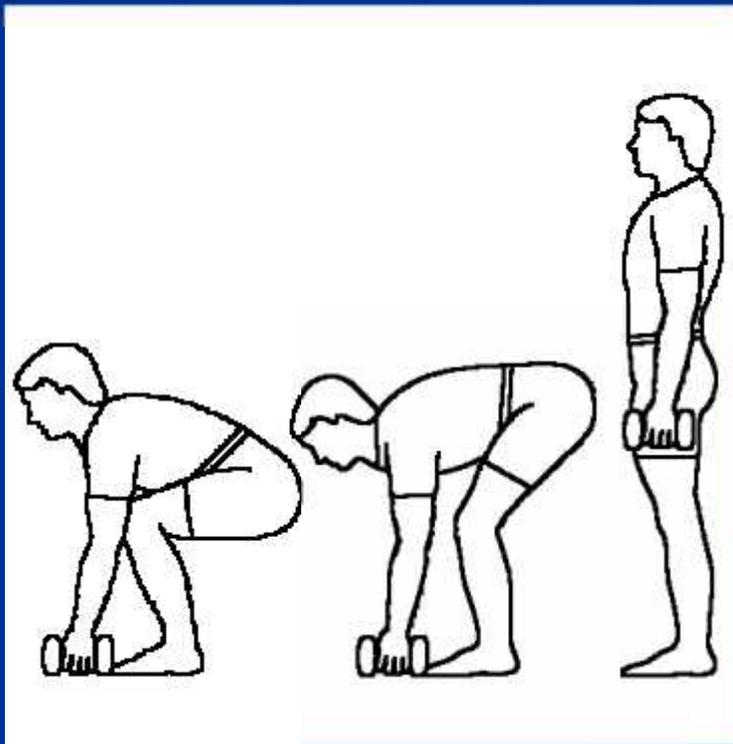
20. Boxing

- Alternate arms with big twist, feet anchored

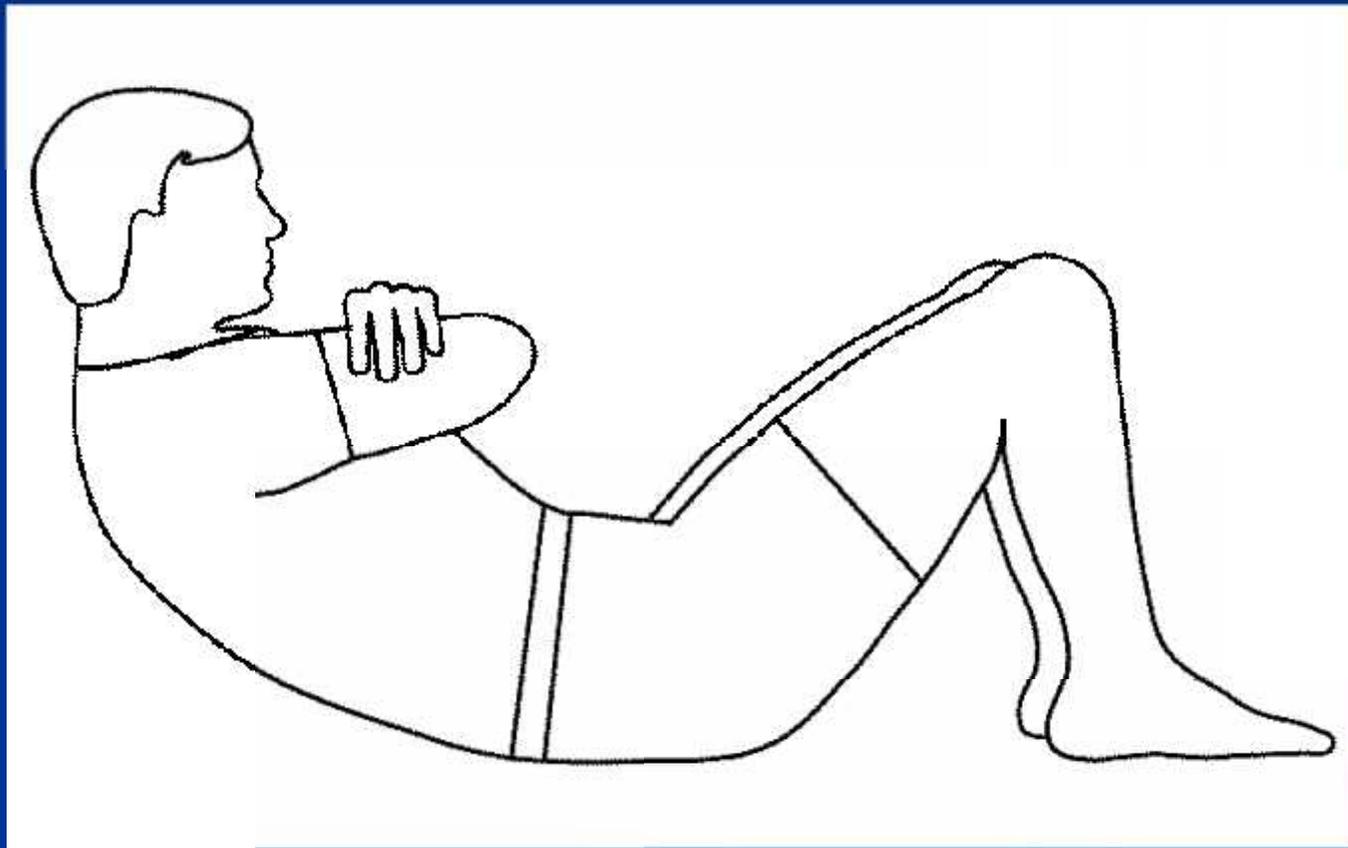


21. Squat Lift

- to overhead extension with dumbbells

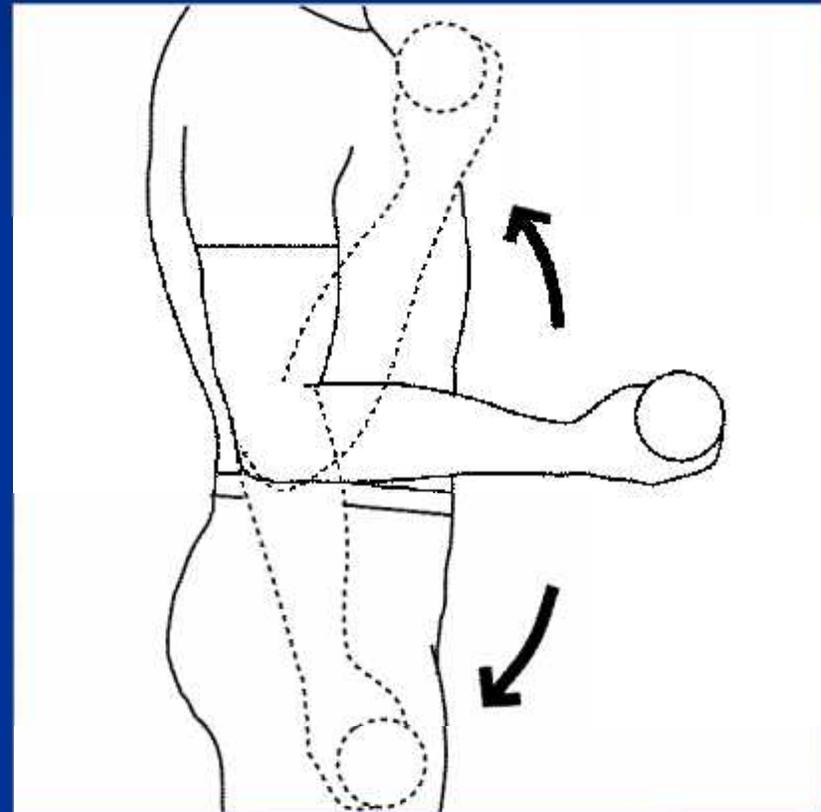


22. Sit ups



23. Bicep Curl

- to cross above opposite shoulder
- on one leg on balance beam



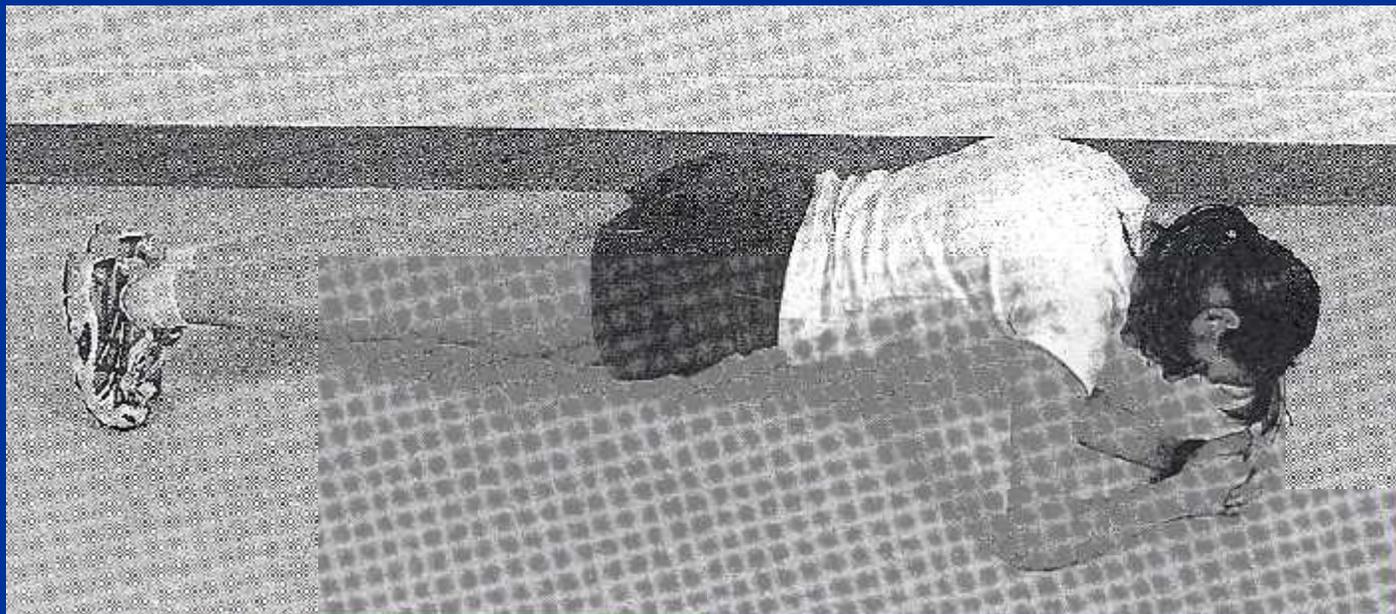
24. Lunge w/med ball

- Extend the ball forward with each lunge

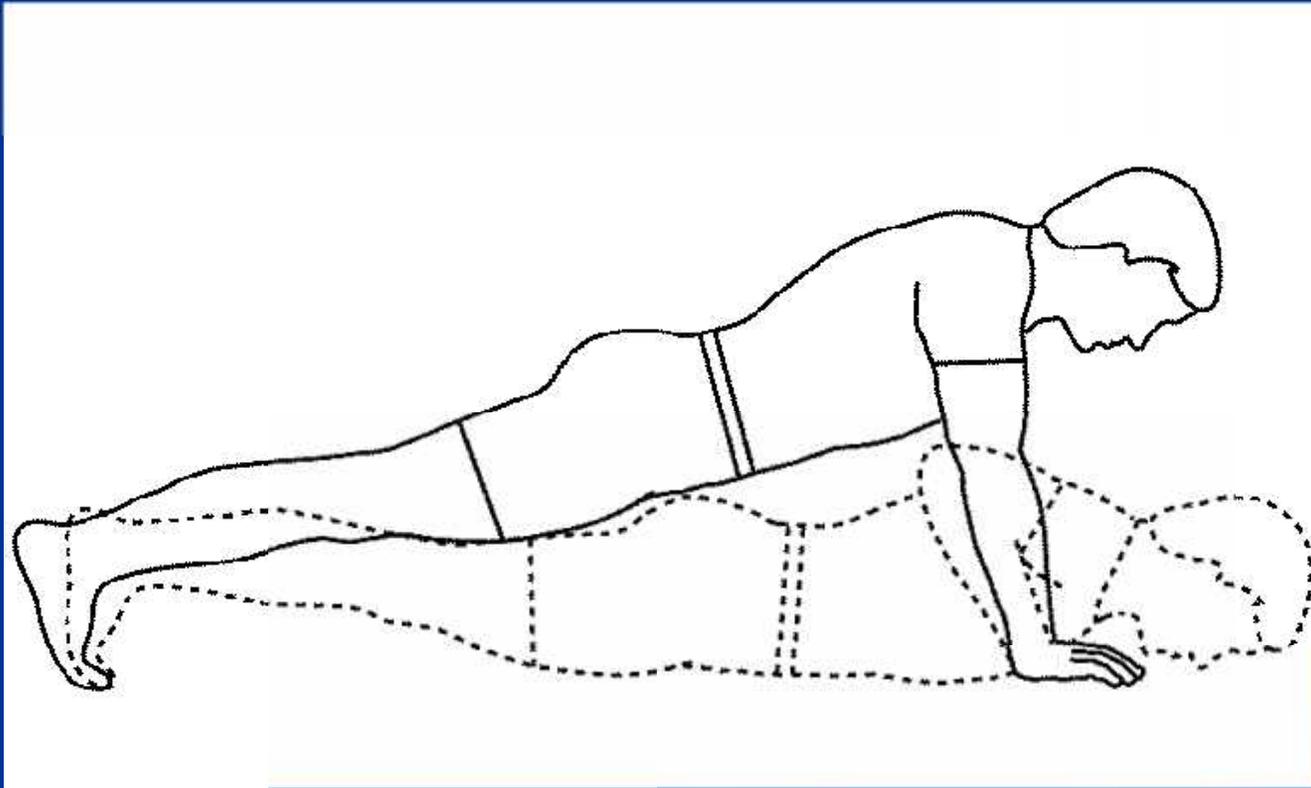


25. Front Bridge

- with alternating leg raises

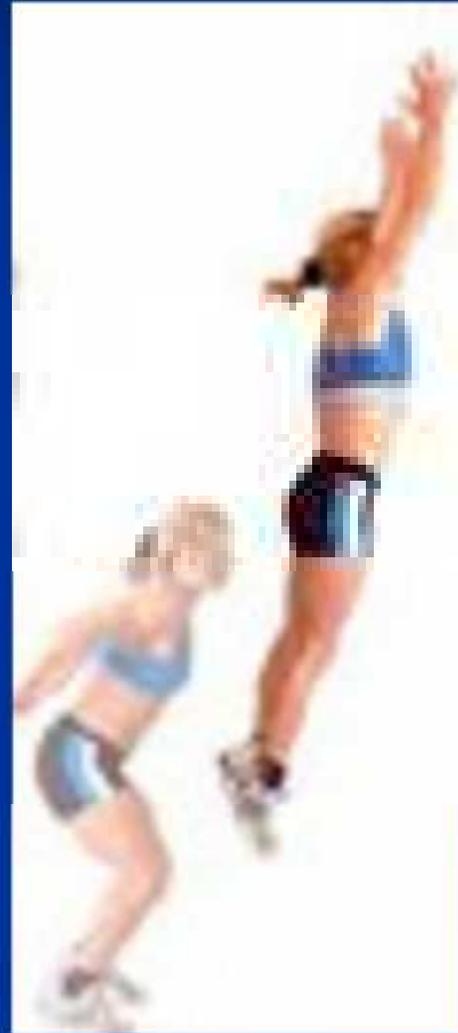


26. Push Ups



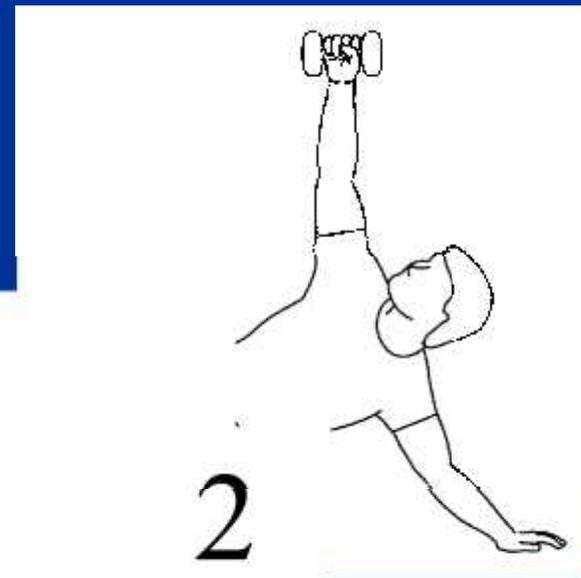
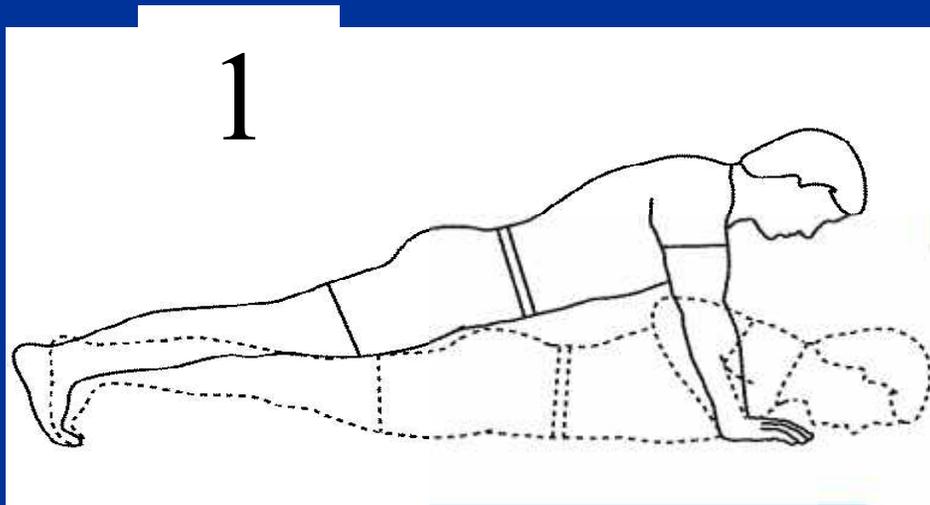
27. Swing Jumps

- Just like a relay swing start



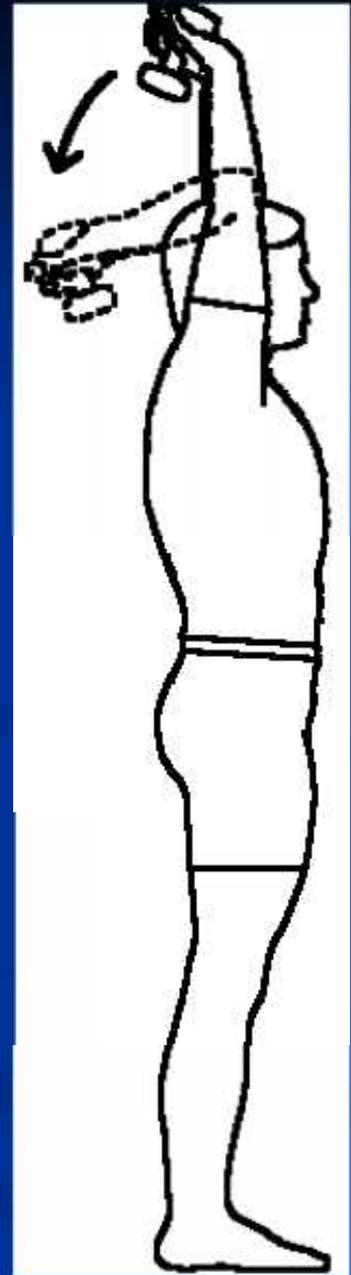
28. Rotation Push Ups

- With Dumbbells, if able



29. Triceps Curls

- Alternating with dumbbells on one leg



30. Swing Jumps

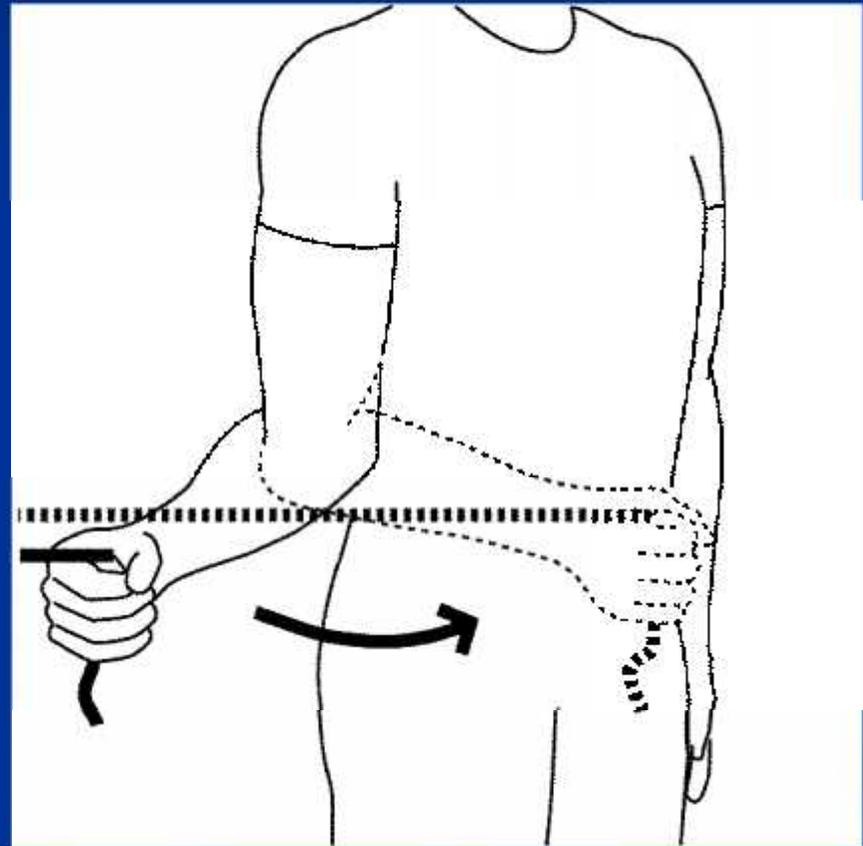


Next Circuit

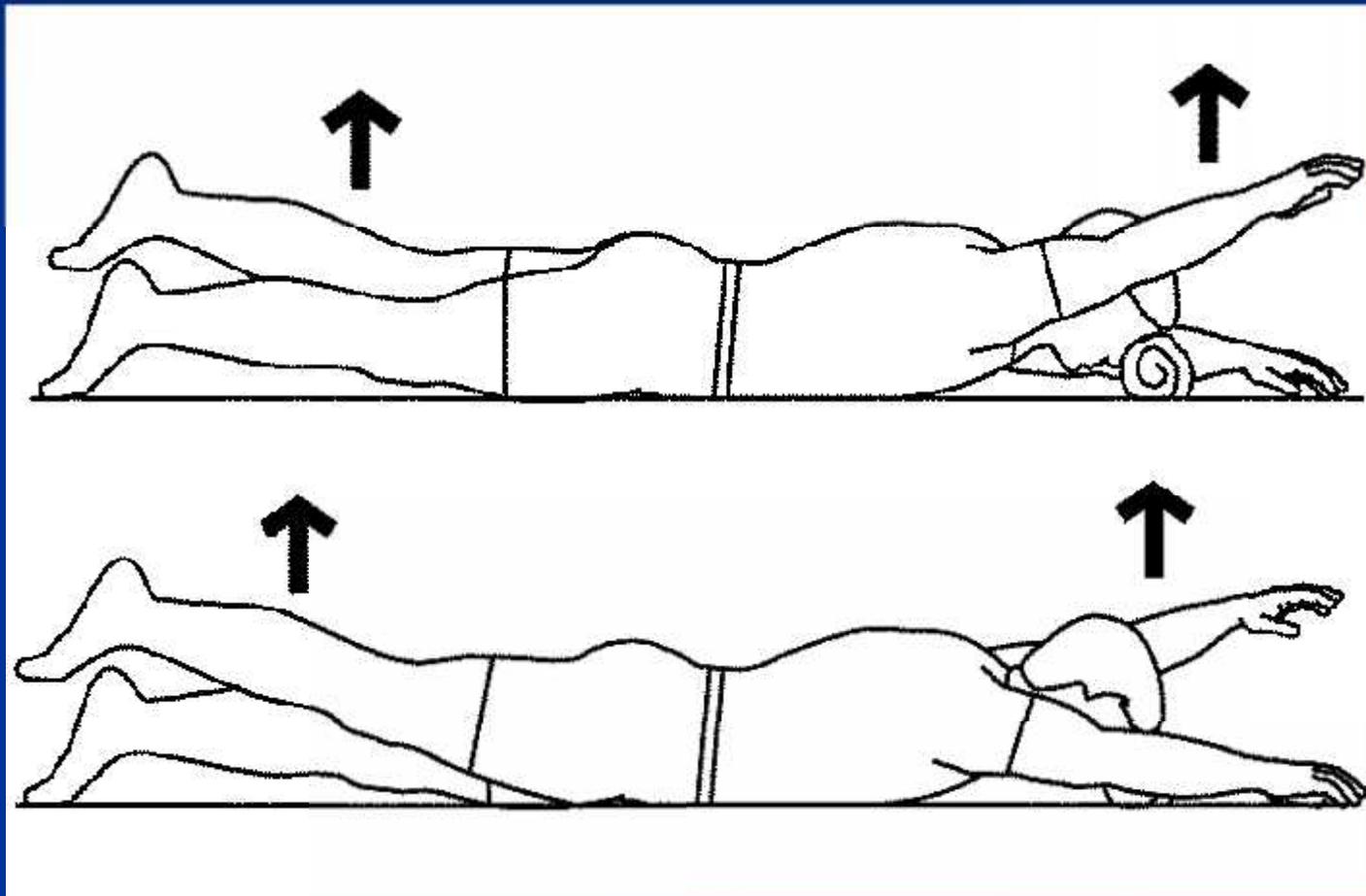
- Shoulder stability circuit
- Light weight
- Smooth movements
- “The difference between rehabilitation exercises and stability exercises... is the injury.” (Do stability to decrease chance of injury.)
- Start 15 on, 45 off, build to 45 on, 15 off.
- Do each station twice to accommodate both right and left sides

1. Internal Rotation

- standing with cords

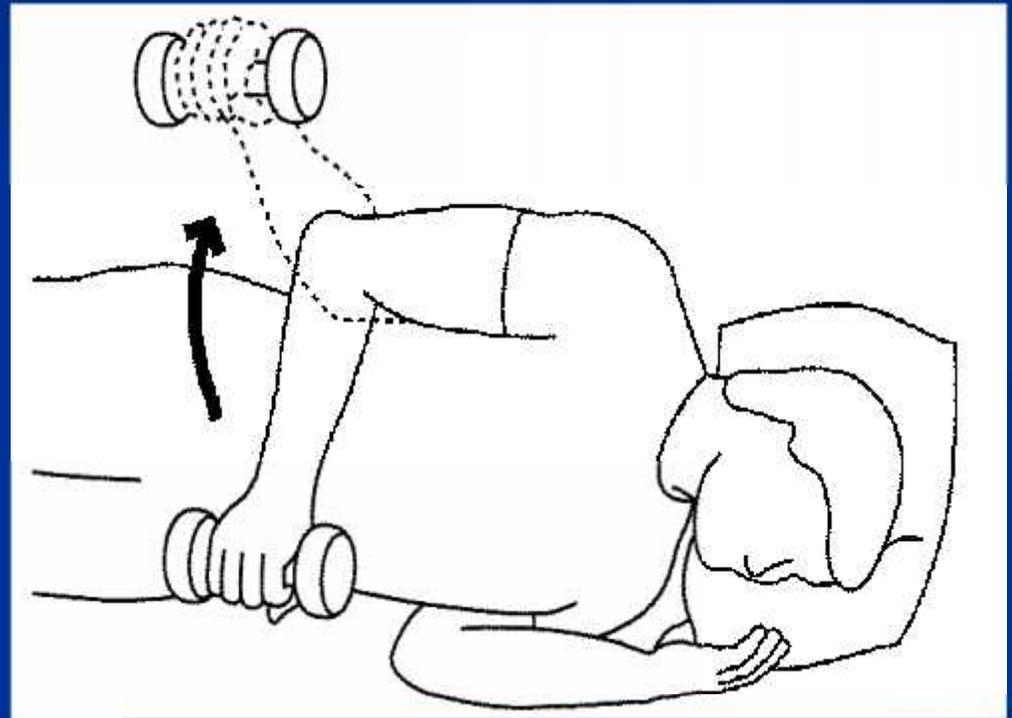


2. contra opposed lifts



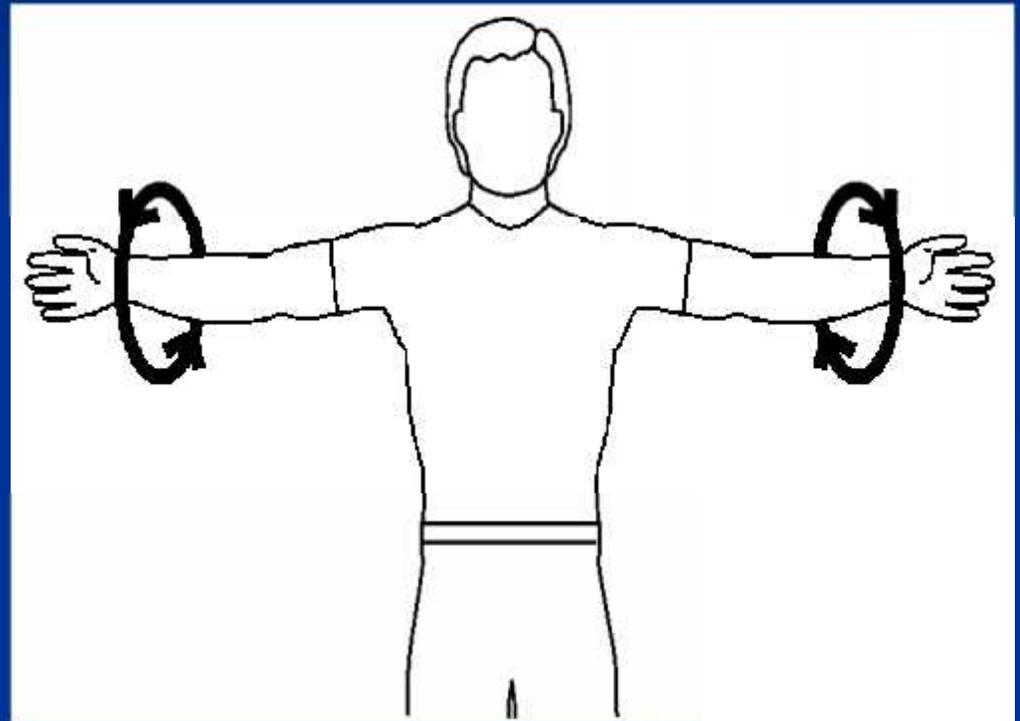
3. External Rotation

- on side w/water bottle or very light weight



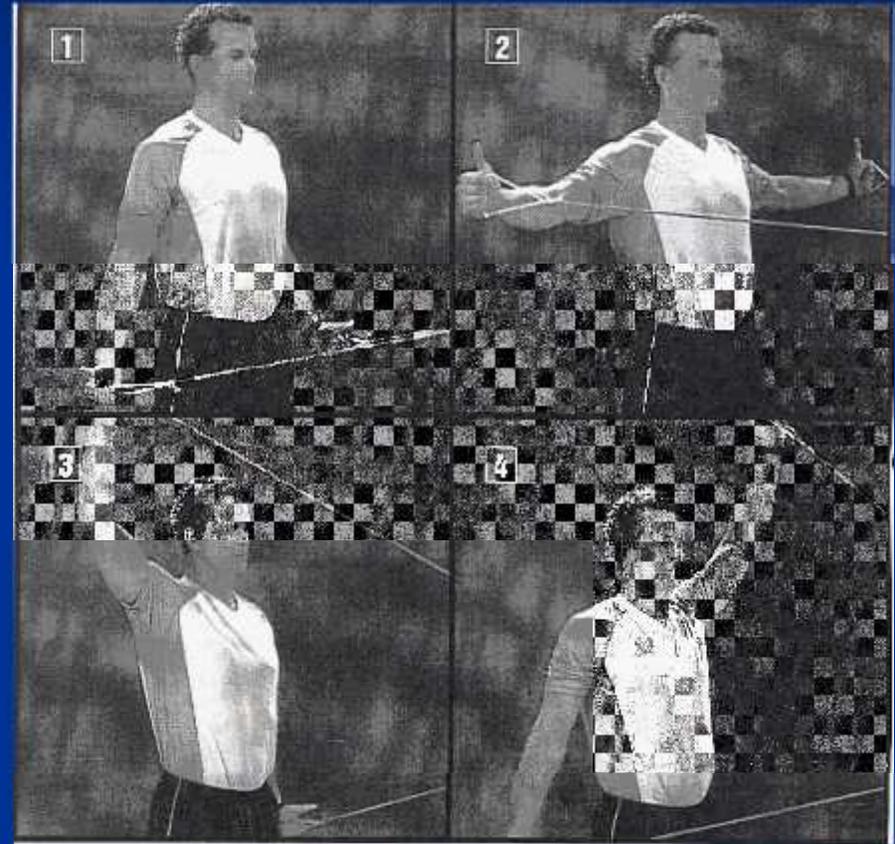
4. Shakers

- Thumbs up
- Short quick circles to side for 10 seconds
- Repeat to front



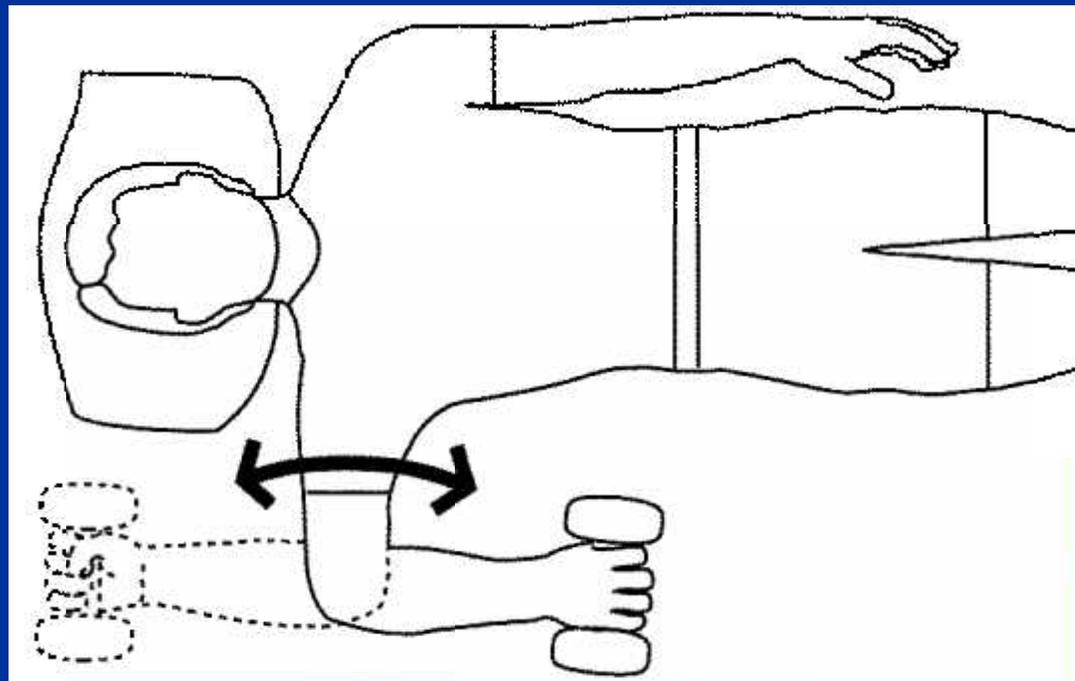
5. Shoulder Combo

- Keep Thumbs up or out
- Hold each position for 3 seconds
- To shoulder height
- To outside hips
- To diagonal
- To opposite diagonal

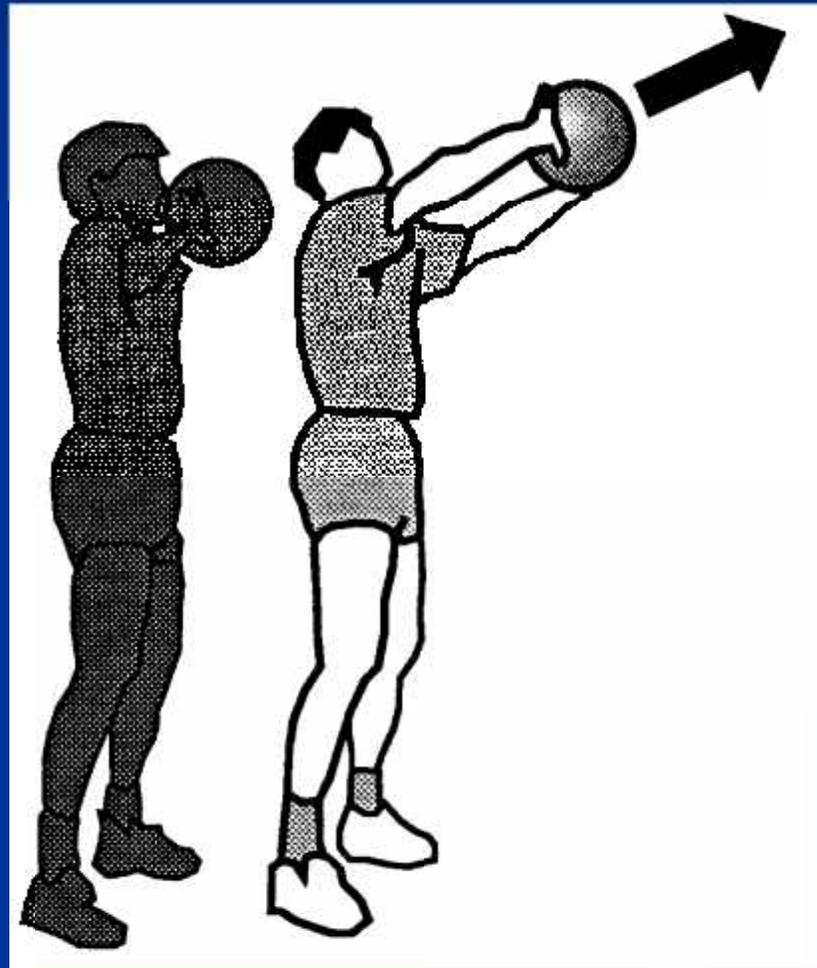


6. Bent arm pullovers

- Laying down, not standing

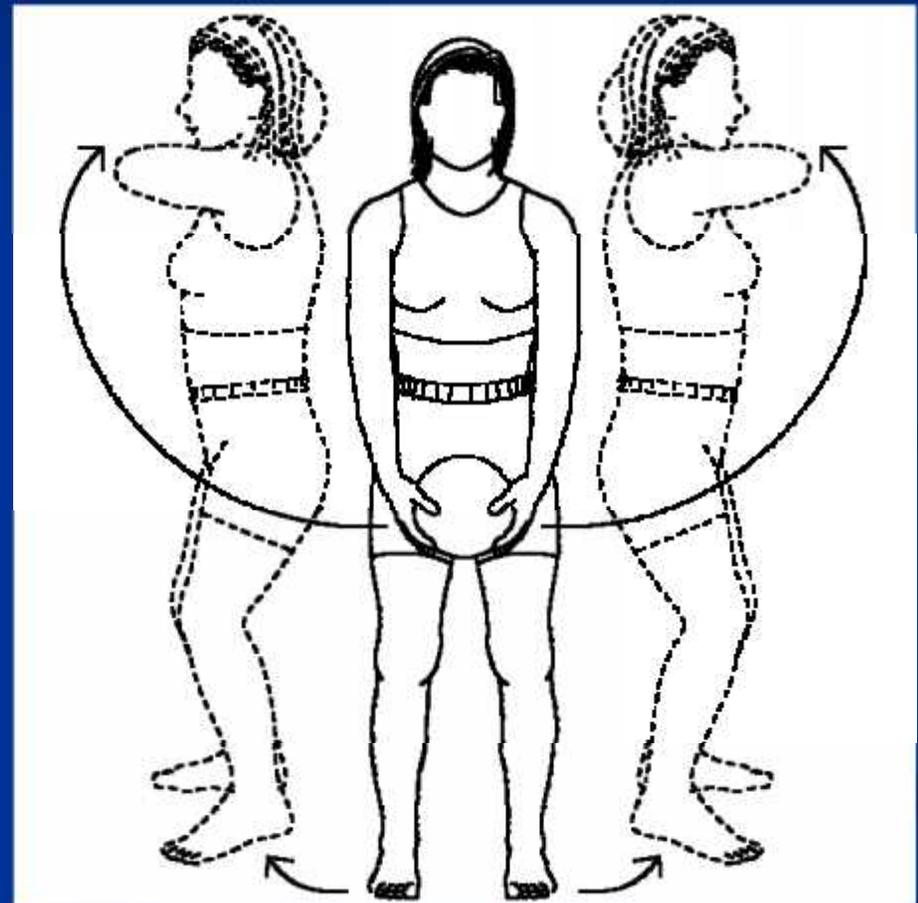


7. Medicine Ball chest pass with 3 partners



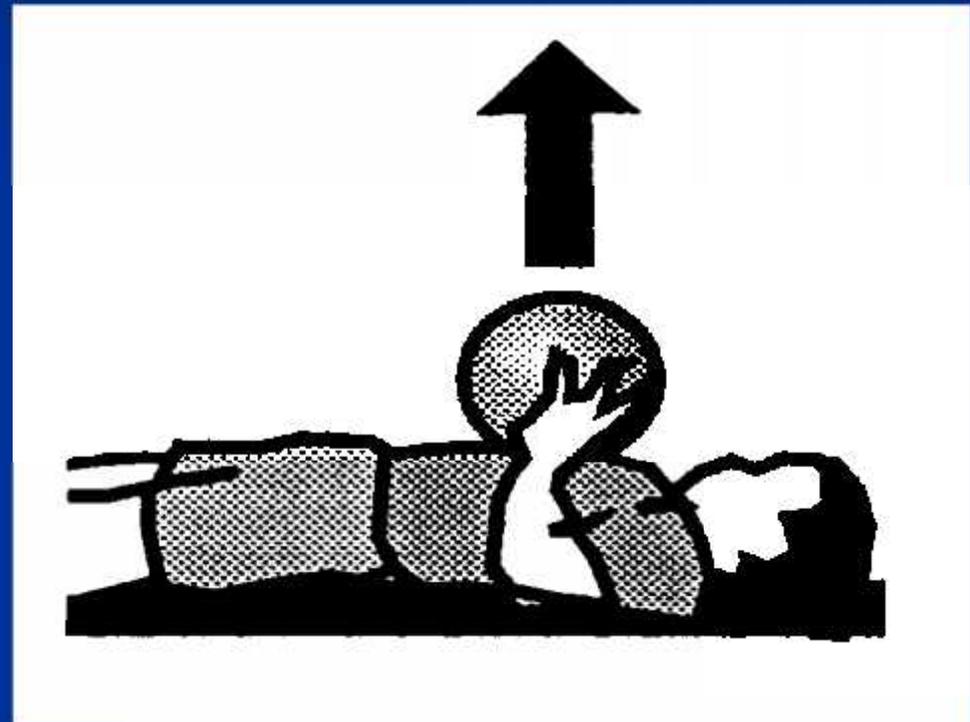
8. Medicine Ball High - Low handoff with 3 partners

- Receive low, handoff high
- Switch direction

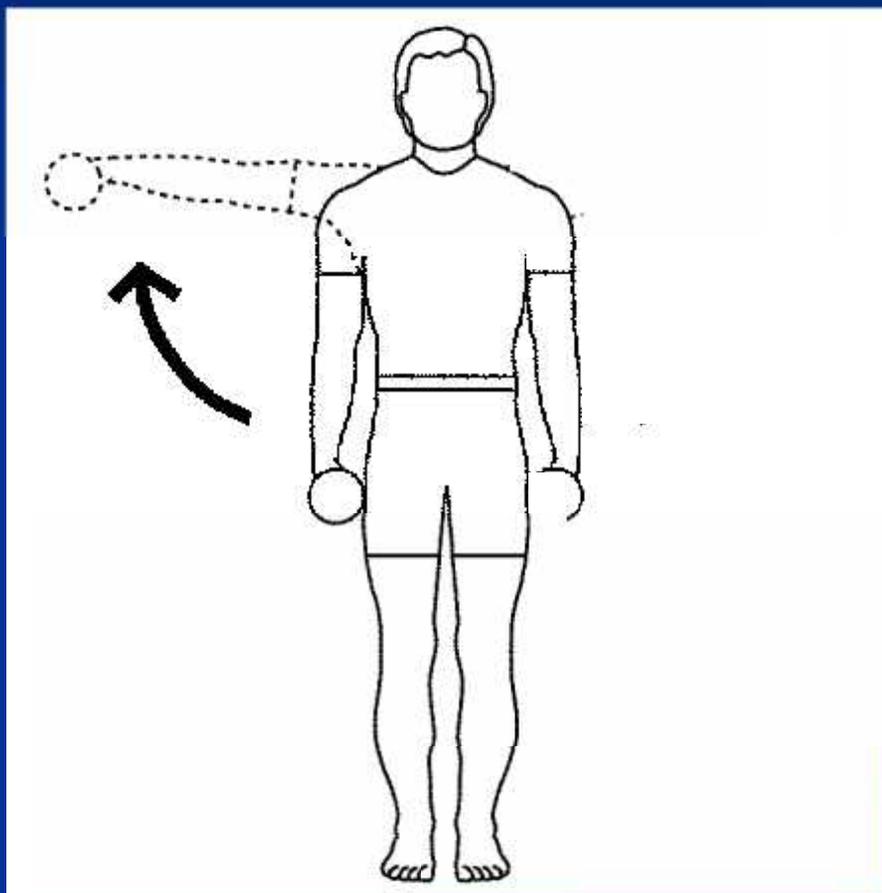


9. Medicine Ball bench press with shoulder lift

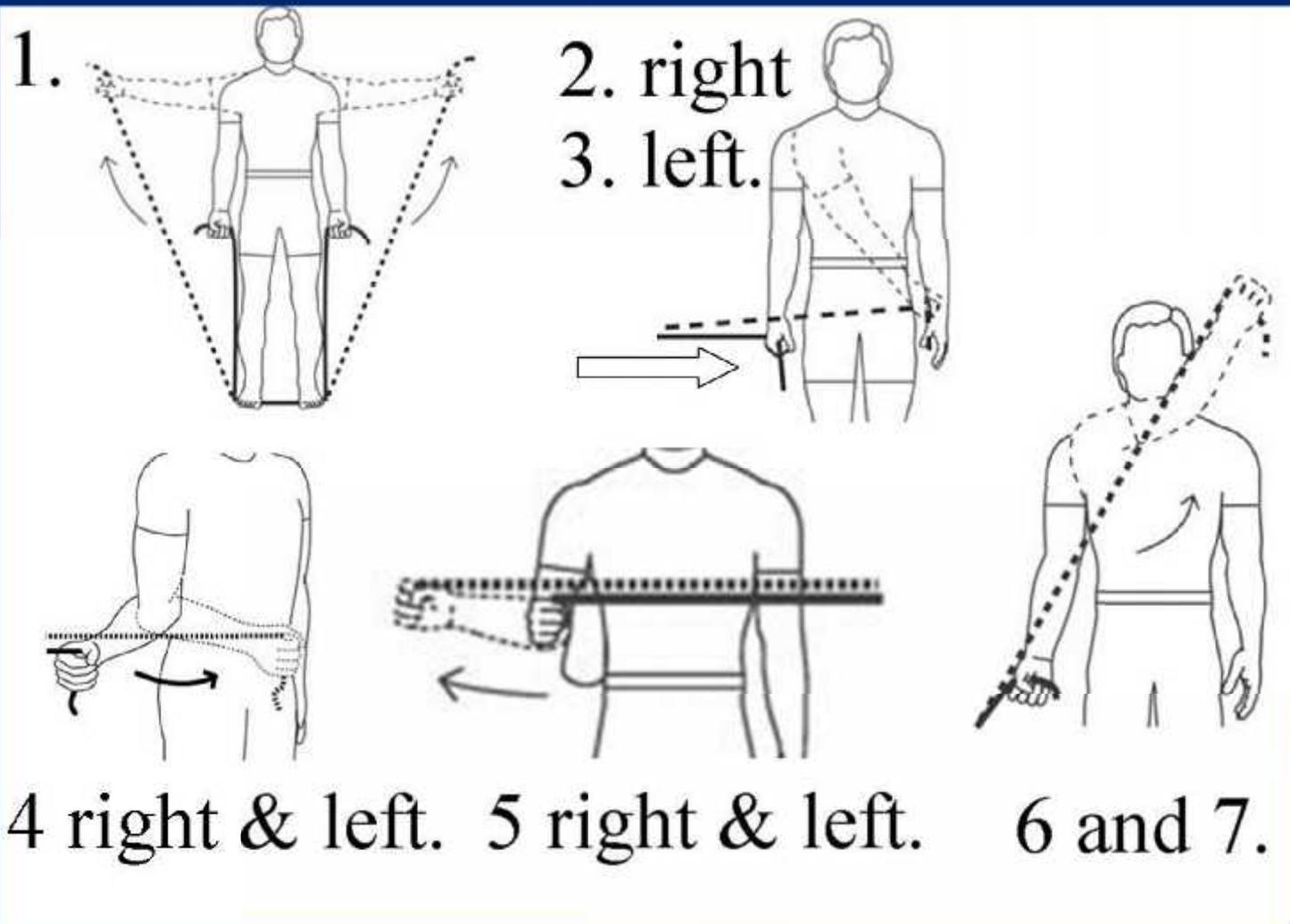
- At full extension lift shoulders off of mat.



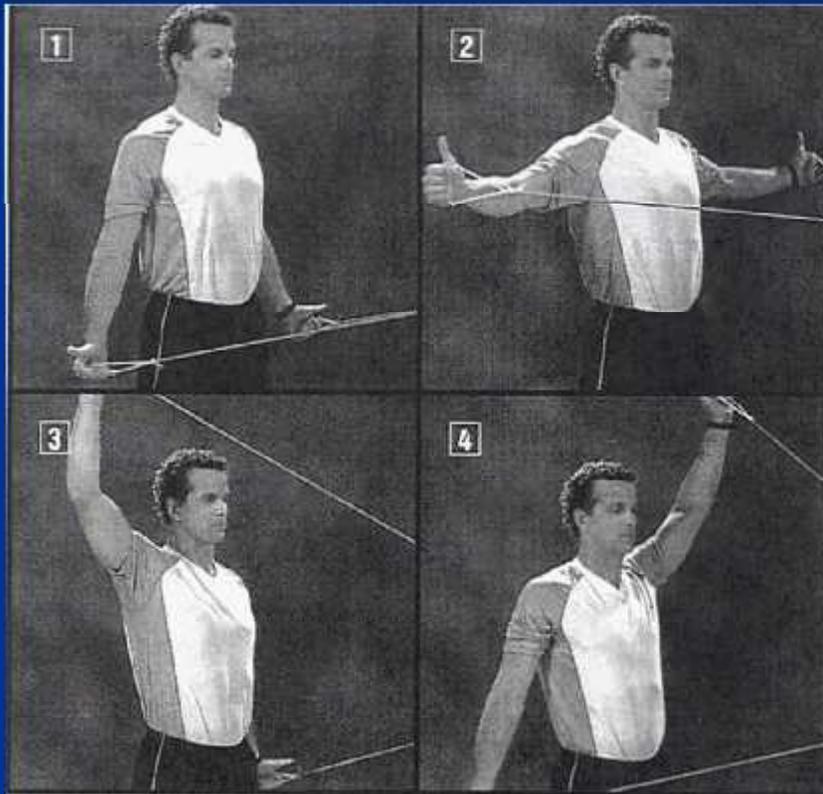
10. Half Angel Lifts with Dumbbells



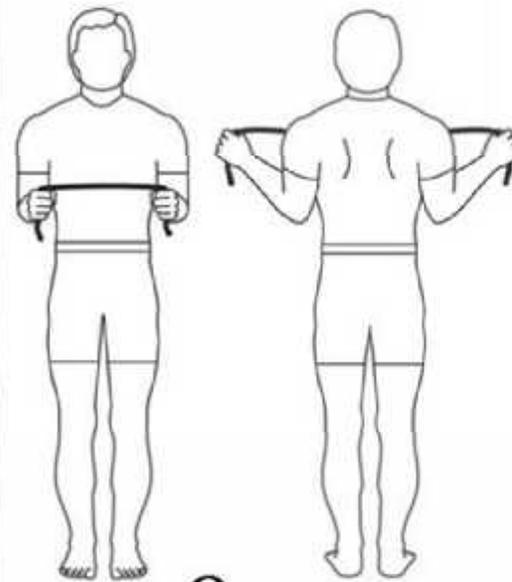
Shoulder Circuit with Thera-Bands, 1 of 2



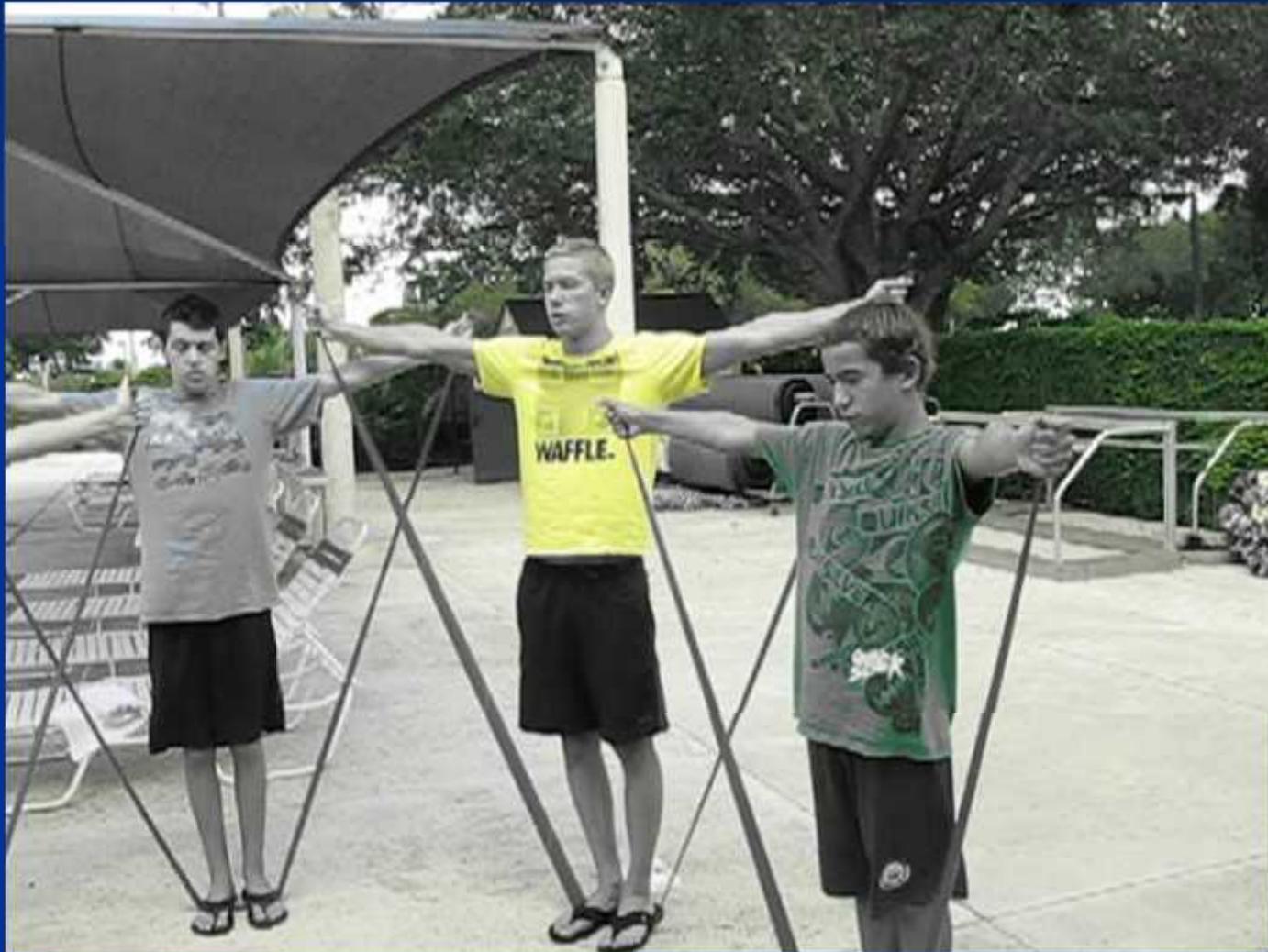
Shoulder Circuit with Thera-Bands, 2 of 2



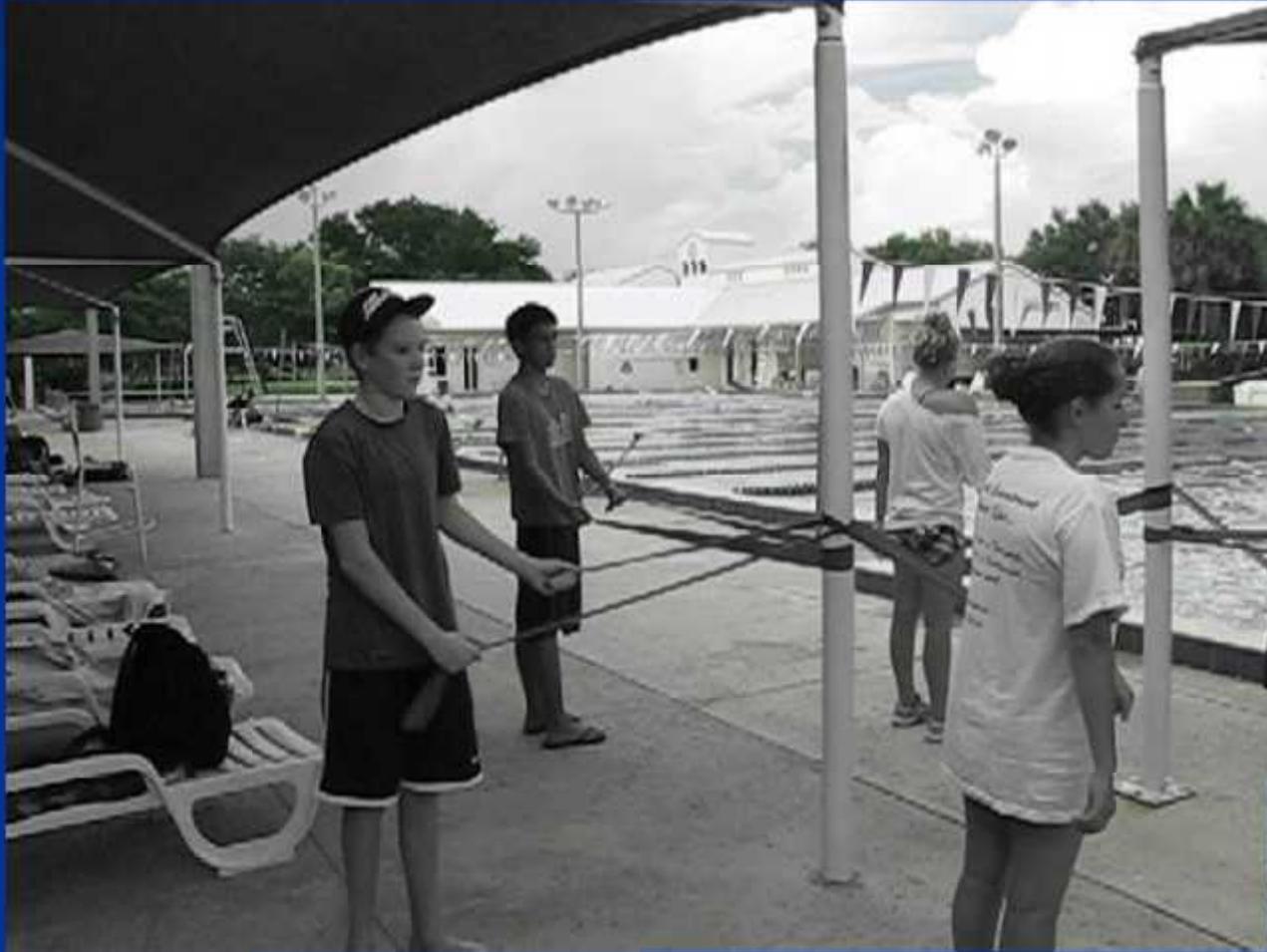
8.



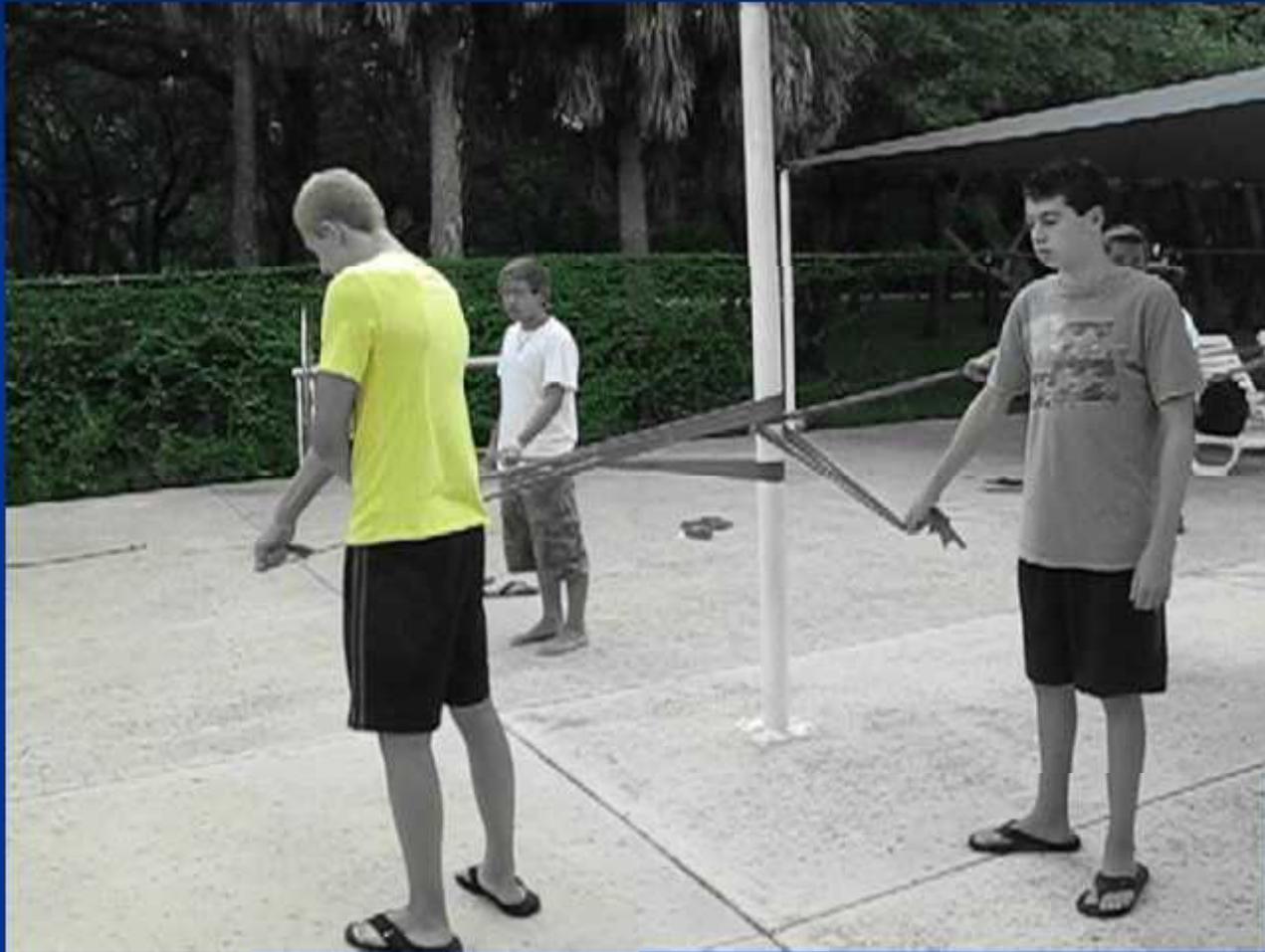
Angel Lifts, Station 1



Cross body External Extension Station 2



Cross body External Extension Station 3



External and Internal Rotation

Station 4



External and Internal Rotation

Station 5



Disco, Station 6



Disco, Station 7



Shoulder Complex, Station 8



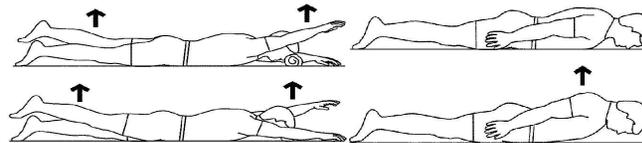
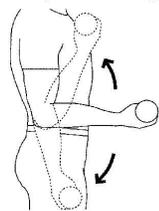
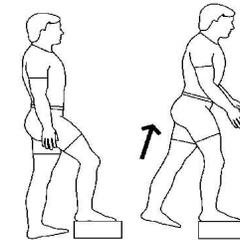
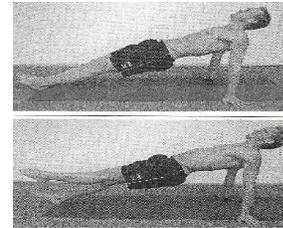
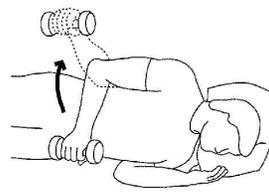
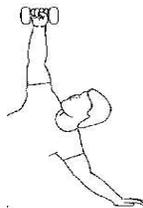
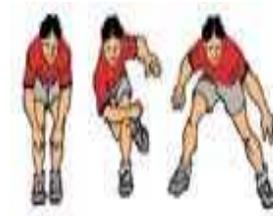
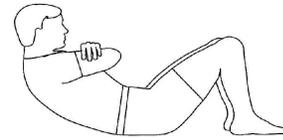
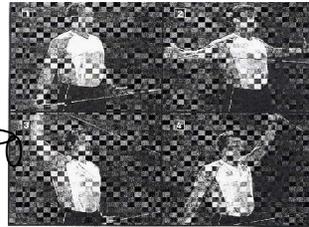
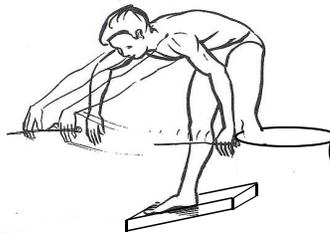
Pencil Squeeze, Station 9



Lat Pulldowns, Station 10

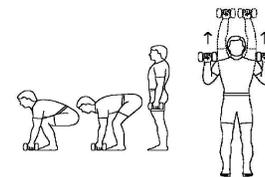
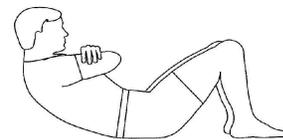
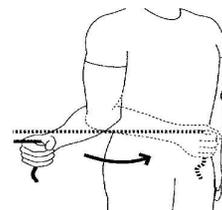
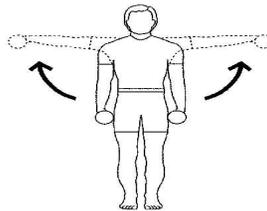
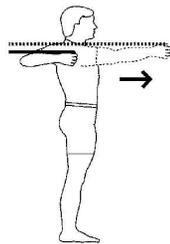


A Core and Shoulder Circuit

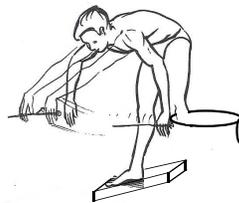
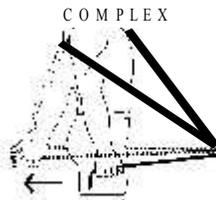
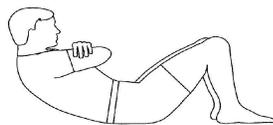
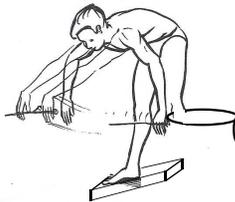
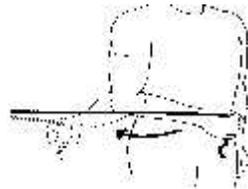
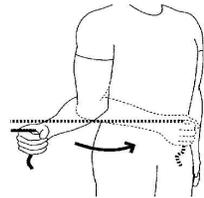
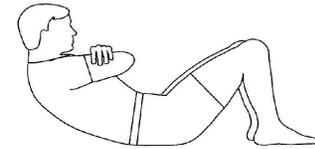
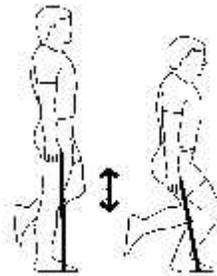
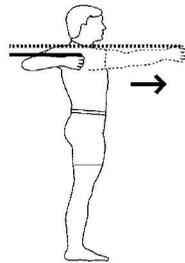
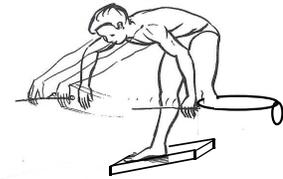
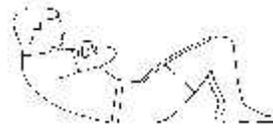
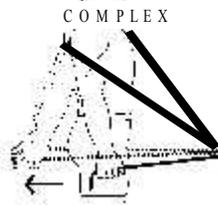
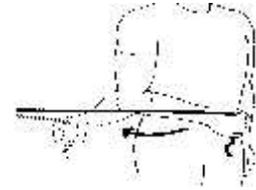
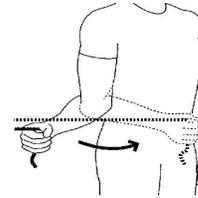
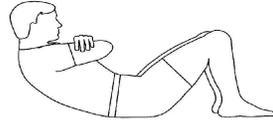


DISCO

Creating Pictures is easier for swimmers to follow



Another circuit



Age Group Dryland Training

- “Dryland” means an “exercise program,” NOT “Weight Training”
- Emphasis on technique and safety
- Discipline is key, no goofing around!
- Better NOT to partner boys and girls (but both can do the same program)
- Catch kids doing things right
- Have ribbons or small rewards for achievements
- Have “team goals,” When everyone can do 20 pushups, everyone gets....

Designing a Dryland Program For Age Group Swimmers

Same Process as for a Senior Program:

- 1. Read, study, form opinions and philosophy
- 2. Check Resources
- 3. Set goals

Designing a Dryland Program For Age Group Swimmers

4. Set the season Training Plan

a. cycles

- to keep interest, change the type of program every 2- 4 weeks

example:

cycle 1: “speed circuit”

cycle 2: running

cycle 3: “balls” (medicine, playground, exercise)

cycle 4: Jumping

- all cycles should have the same core exercises, but will have some special aspect.

Designing a Dryland Program For Age Group Swimmers

4 b. progressions

- with age group swimmers, increase work and reduce rest.

- do not emphasize increasing weights

Options:

1. “pick a card”
2. group stations
3. circuit with partners

Designing a Dryland Program For Age Group Swimmers

- 5. List the components (exercises)
- 6. Make time for education
 - Demonstrate each exercise, have the whole team do station 1, then 2, etc
 - Use direction cards, with pictures
- 7. Supervise it (or assign it)
 - a. If assigning it, review it
- 8. Get excited about it and have fun

Goals

- Balance: balance beams, one legged
- Rhythm and Coordination: swimming motions, ball throwing
- Body Awareness: contra opposed motions, cross body exercises
- Core Strength: planking, sit ups, pushups
- Practice swimming specific skills
- Fun

Resources

- Tons of places on the internet
 - Google “PE Activities for Children”
- Dr. Laura Cox “Dryland Training for Age Group Swimmers” book
- Dr. Monika Schloder
 - “Dryland Training for Age Group Swimmers” CD
PPT and video
 - “Dryland Training for Starts Turns Finishes” CD
PPT and video
- Physical Education Teachers

Some Practical Considerations

- ❑ Make it easy, different, fun
- ❑ Emphasis is on technique and safety
- ❑ Discipline is key, no goofing around!
- ❑ Better NOT to partner boys and girls (but both can do the same program)
- ❑ Catch kids doing things right

Some Practical Considerations

- Have ribbons or small rewards for achievements
- Have “team goals,” When everyone can do 20 pushups, everyone gets....
- Consider doing it AFTER in-water practice starts
- Create 2 to 3 week cycles – Points of Focus
 - Rhythm and balance, core and speed, swimming skills
 - Long enough to learn and improve, but short enough to keep from being bored

A Collection of Exercises

When looking for Age Group exercises: look for
safe

low resistance

builds balance and/or core

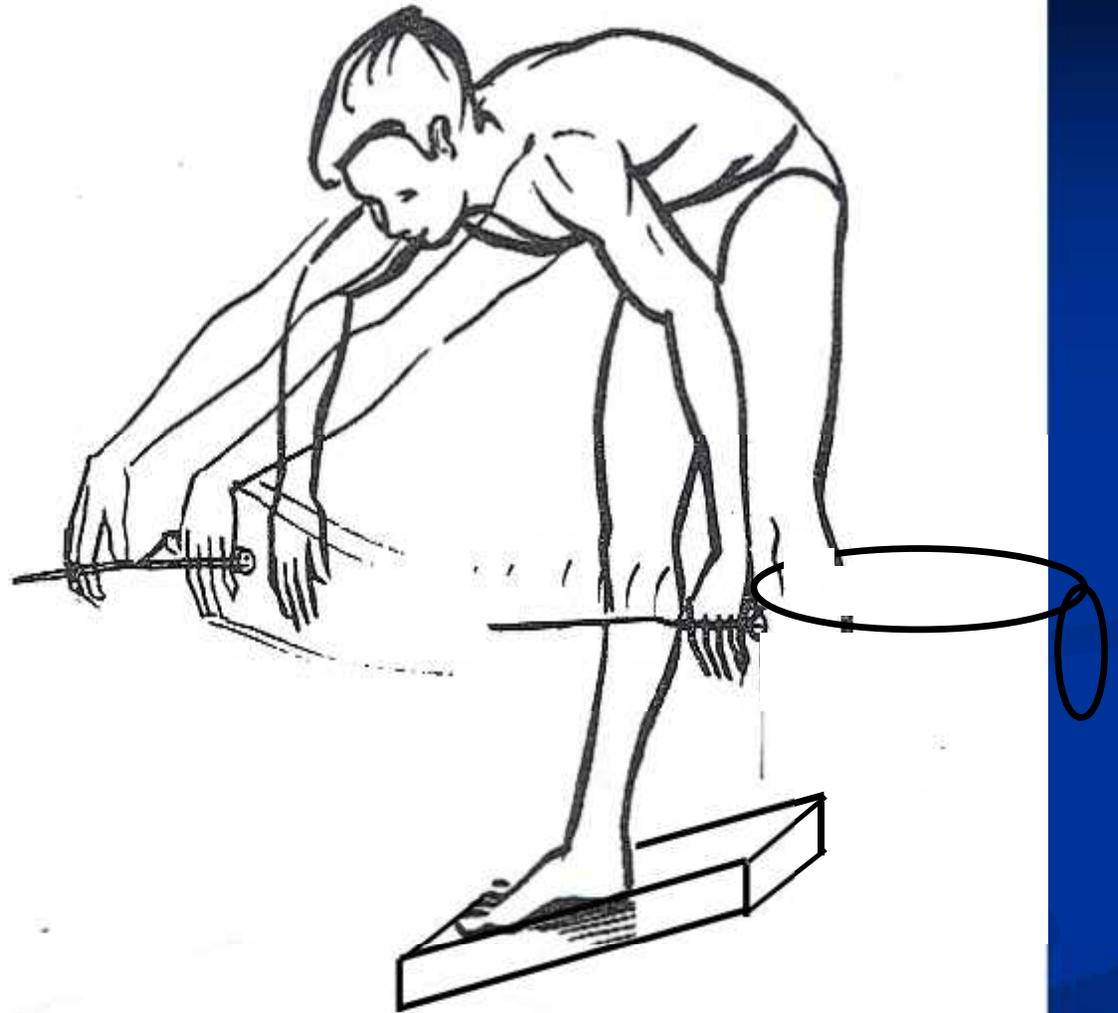
is easy to understand

has levels of difficulty ranging from easy to tough

On the Next Pages... a partial listing

5

- Level 1, no beam
- Level 2, beam
- Level 3, beam w



Agility, mobility



Back start arch



Backstroke Starts



Backstroke



Body Alignment



Breaststroke Turn



Breaststroke



Butterfly



Dynamic Moving



Dynamic Moving, Strength, Balance



Dynamic Stationary



Flexibility



Freestyle Turn



Free and Back Turn



Freestyle



Starts



Functional Strength



Awesome Strength Race



Active Flexibility



Race Finish



Rotator Cuff



Speep Power Flex Rhythm



Starts and Turns Power



Static Balance Beam



Static Balance Board



Strength Power Lower Body



Strength Power Core and Upper Body



An Age Group Dryland Program

Purpose: Flexibility and Core Strength

Length: 4 weeks

Method: Circuit, stations

Progression:

based on time, 20 sec on, 40 sec off first week

progress to 40 sec on, 20 sec off in week 4

Frequency: 3 times per week, 12 sessions total

An Age Group Dryland Circuit

Stations:

1. ice skater, flexibility
2. crawl forward and back 5 steps, core
3. fast swimmer, flexibility
4. crawl sideways and return 5 steps, core
5. pick up ball and stretch to toes, core
6. lunge forward, side, behind, core
7. rotation from pushup position, core
8. step ups, strength
9. pointed toes, flexibility
10. swing jumps, core and coordination
11. situps, core, strength
12. pushups, core, strength

Another Age Group Dryland Circuit

Stations:

1. ice skater stretch
2. crawl forward and back 5 steps, repeat
3. pushups
4. fast swimmer flexibility and coordination
5. alternating freestyle pulls on stretch cords, one legged on balance beam
6. pick up ball and stretch to toes, core
7. stand twist and throw down ball, catch ball switch sides and repeat.
8. backstroke alternating arms flex and coordination
9. lunge with ball extension
10. rotation from pushup position
11. step ups
12. pointed toes, flexibility
13. swing jumps, core and coordination
14. situps, core, strength
15. pushups, core, strength

An Age Group Dryland Program

Options:

1. “pick a card”
2. group stations
3. circuit with partners

No Weight Room?

- Use the Pool Deck
- Permission
- Clean up
- Safety issues
- No Pool Deck?
 - Hallways
 - Classrooms?

One Problem

- A. Pool use / money issues
("Why aren't we using the pool?")
- B. Parent issues
("We have to be in the water!")
- C. Coaching issues
("We have to be in the water!")

Solutions? Education, Education, Education

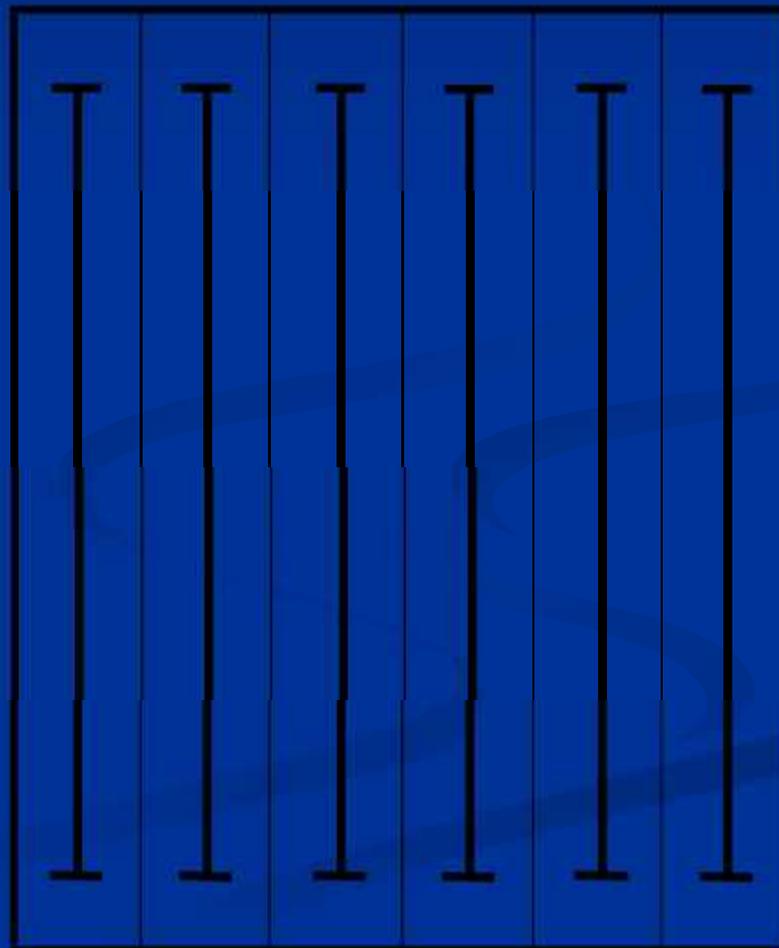
Solutions? Support, Support, Support

...or, using the pool as a dryland training station...

An Alternative Swim Practice Routine

How many ways can you use the pool and the deck?

Use your pool and the deck area for a station to station workout where small groups of 2 to 4 swimmers travel from one station to the next for a prescribed amount of time.



An Alternative Swim Practice Routine

Why?

Variety

speed oriented

motivating -- because of the change from the routine workout

very challenging (tiring)

Why not?

Takes time to plan and organize

Provides opportunity for chaos

Potential for injuries increases

An Alternative Swim Practice Routine

1. Discipline which leads to safety.

Keys to Discipline

- a. know what the rules are
- b. enforce the rules with consequences

No athlete's participation is worth the injury of another child

An Alternative Swim Practice Routine

2. Staff

- Actively supervising, encouraging, correcting
- Give feedback the Allan Jackson way, from the song “Drive”:

“turn it left, steer it right, straighten up girl now you’re doing just fine.”

An Alternative Swim Practice Routine

3. Planning/purpose

- create a library of exercises (see below)
- using your imagination
- different circuits for different objectives
- how long per station?
- How much time to switch?
- Do the math – re number of swimmers/stations/time

An Alternative Swim Practice Routine

4. Use Visible Placards
5. Interval timer with horn (or a coach with a stop watch and a whistle)
6. some dryland equipment
7. Instructions, teach the stations one at a time to the whole team first.
8. Recommendation: Start with a short circuit and build up because... what starts out as fun quickly turns into more work than they imagined.
9. Build a library with a broad base of dry land, water skills, and *imagination*.

A Dryland Program Using the Pool

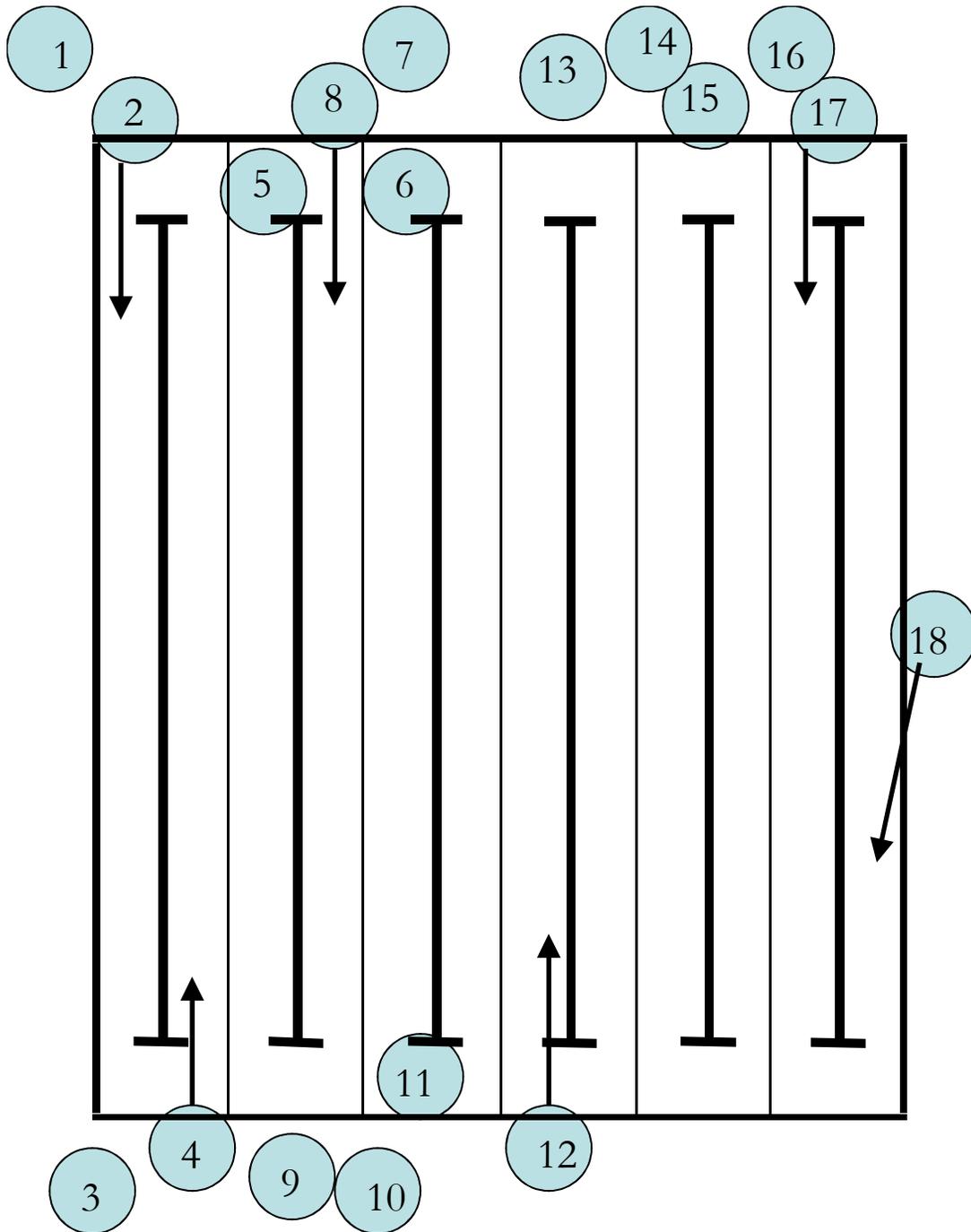
- Purpose: Flexibility and Core Strength and Speed and Endurance
- Length: 3 weeks
- Method: Circuit, stations
- Progression:
 - based on number of exercises, progressing from 10 to 20
- Frequency: 3 times per week, 9 session total

Stations:

This circuit will take 20-30 minutes.

1. hamstring stretch, sitting down
2. kick 25 breast
3. 10 swing jumps
4. 25 sprint free
5. 10 press ups in water
6. 5 tuck turns, 5 race finishes
7. 10 overhead med ball bounce throws with partner
8. 25 sprint fly
9. 10 push ups
10. 10 step ups
11. 5 run dives with flip at 6 yards, sprint finish
12. kick 25 breast
13. hamstring stretch sitting down
14. 10 swing jumps
15. 5 broad jumps into pool
16. 10 double arm chest pass med ball
17. swim 15 backstroke spin drill
18. 5 run dives to wall with turn

See Next Page



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Another Set of Stations:

- swing jumps
- push ups
- med ball bounce pass
- squats with chops with med ball
- triceps curl with med ball
- sit up med ball toss to partner
- tuck turns
- run dives with quick turn to finish
- 25 yard sprints
- 50 yard sprints
- relay starts with turnaround at 5 yard mark
- finishes from 10 yards
- blast offs to 10 yards
- press ups
- Broken 100
- rope drill
- 25 kick sprint
- 50 kick sprint
- Tuck turns, over the lane, and finish touch
- Underwater 25 fly kick
- Relay start race with partners
- Dumbbell trans crosses on physioball

Final Words

- Use your imagination
- Keep your eyes open, collect ideas
- Commit to a program and follow through
- Safety above all else
- Enjoy

Thanks for coming!

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