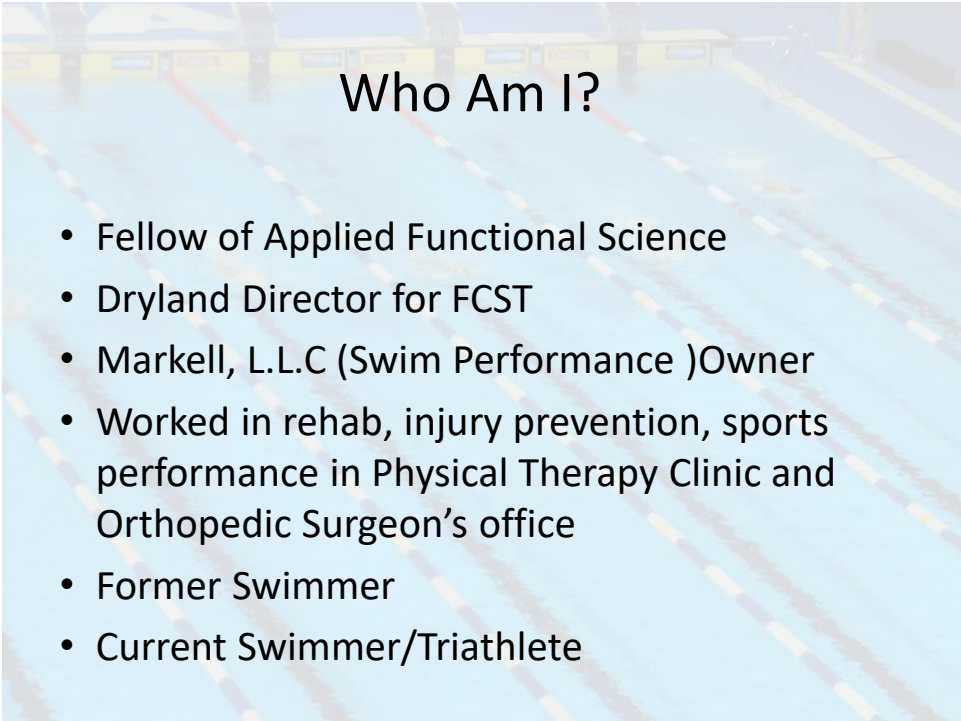




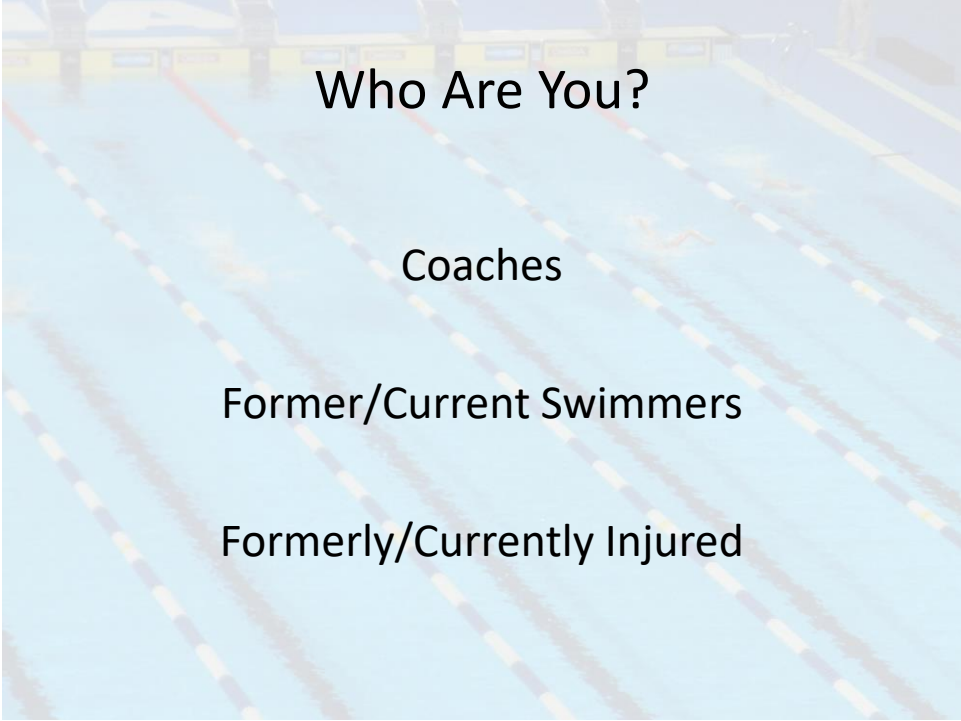
# Achieving Success Through Functional Dryland Training

Markell Lyng, FAFS, FMR, PCM, CSCS



## Who Am I?

- Fellow of Applied Functional Science
- Dryland Director for FCST
- Markell, L.L.C (Swim Performance )Owner
- Worked in rehab, injury prevention, sports performance in Physical Therapy Clinic and Orthopedic Surgeon's office
- Former Swimmer
- Current Swimmer/Triathlete

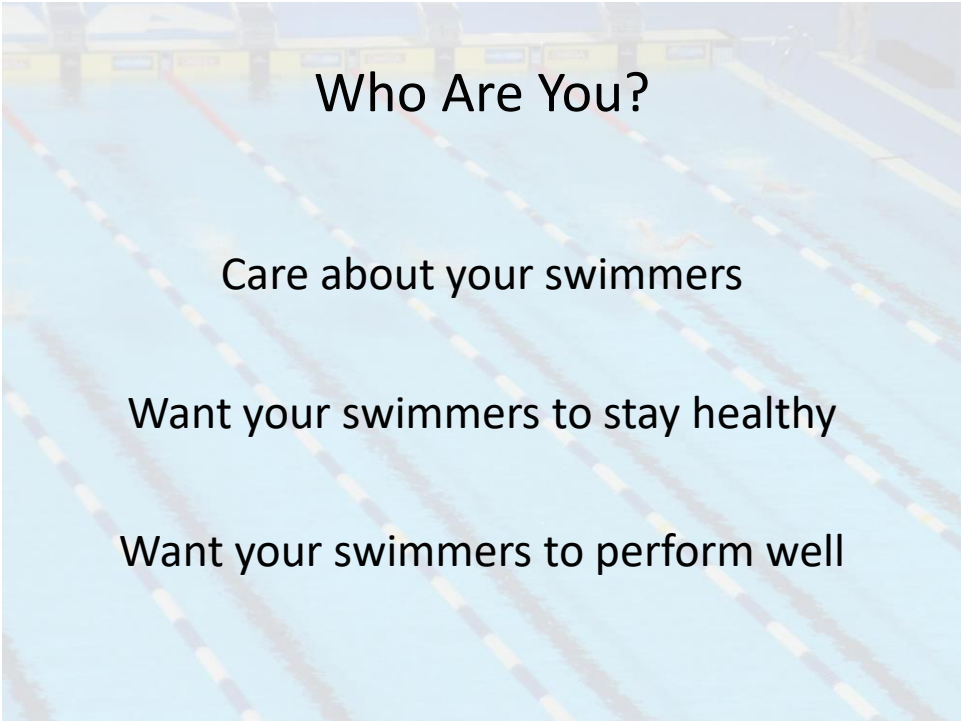


## Who Are You?

Coaches

Former/Current Swimmers

Formerly/Currently Injured



## Who Are You?

Care about your swimmers

Want your swimmers to stay healthy

Want your swimmers to perform well

## Why is it Personal to Me?

Years of shoulder pain

Large reason I didn't swim in college

Glenohumeral Joint Reconstruction

## Goals

Support Coaches

Help Swimmers Stay Healthy and Swim Fast

Educate Parents – assists “buy in”

Different Types of Dryland

**No Dryland**

Different Types of Dryland

**General Strength**

Different Types of Dryland

# Specific Strength

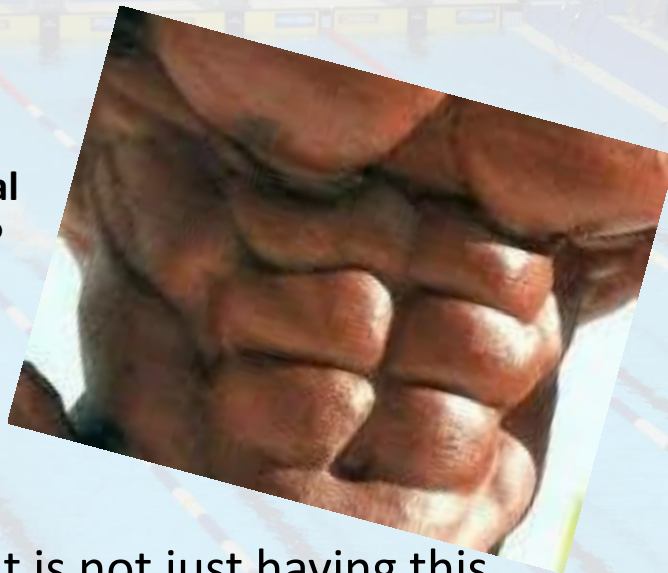
Different Types of Dryland

# Functional Dryland

## What is Functional Strength?

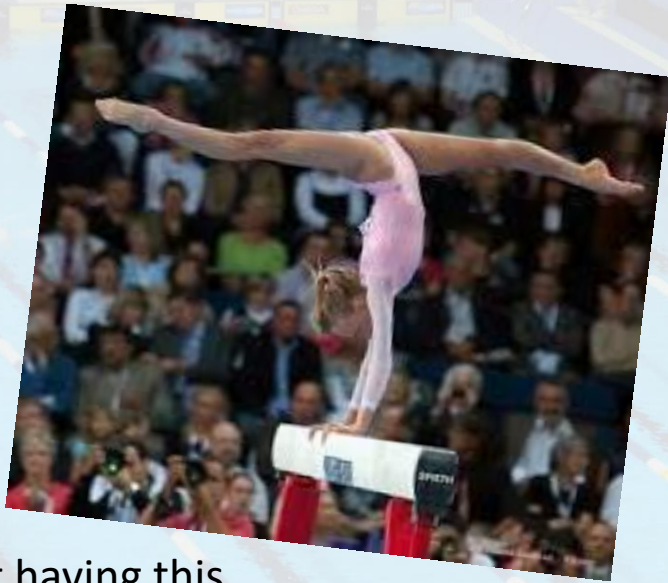
Functional swimming strength is gained by doing exercises that enable a swimmer to have the strength, coordination, power, timing, balance and control that allows a swimmer to subconsciously engage the needed muscles in the correct sequence to produce the best body position, maximal force against the water, and propulsion through the water, while protecting the swimmer from injuries.

**What is  
Functional  
Strength?**



It is not just having this

## What is Functional Flexibility?



It is not just having this

## The Body Is a Chain Reaction



## The Problem

**Body Position** - even if a swimmer is in freestyle (backstroke, breaststroke, or butterfly) body position on the ground, a ball, BOSU etc., it is quite different than floating on the surface of the water. When the swimmer is in the water they are fighting against the force of gravity while trying to move forward. This is very different than being supported by equipment or the ground.

## The Problem

**Force** - you are applying force to a resistive force that is moving in a way un-like other surfaces on the land. You can not gain the same momentum against water like you can on land. **Ground Reaction Force** – the “ground” that a swimmer’s body is reacting to in the water is far different than any surface or equipment outside of the water.



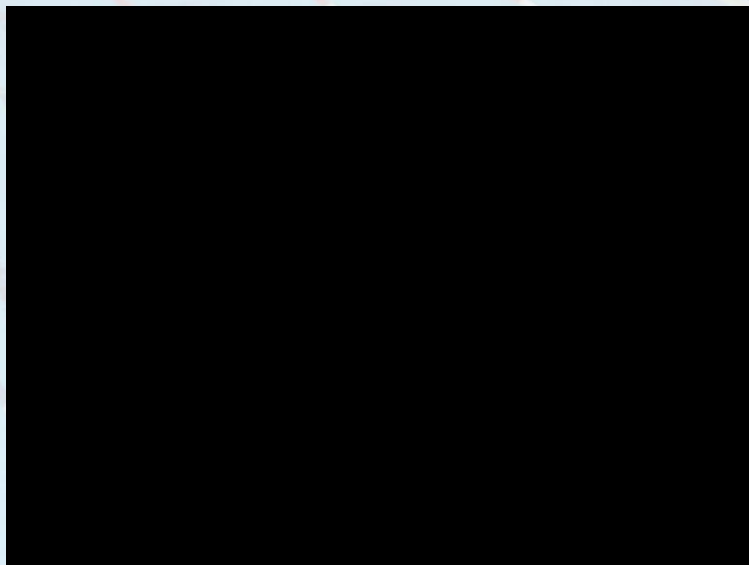
## The Problem

**Balance** - the balance required in the water is not the same the balance required to do a similar movement on the land. A small change to gain this balance can decrease the efficiency of the stroke or the power the swimmer can generate.

## Lunge



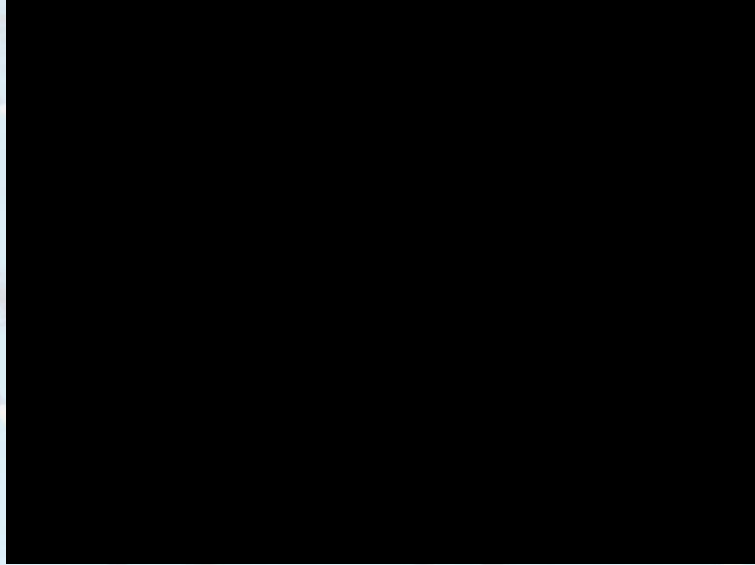
## Lunge to Balance Matrix



## Squat



## Squat Matrix



## Plank



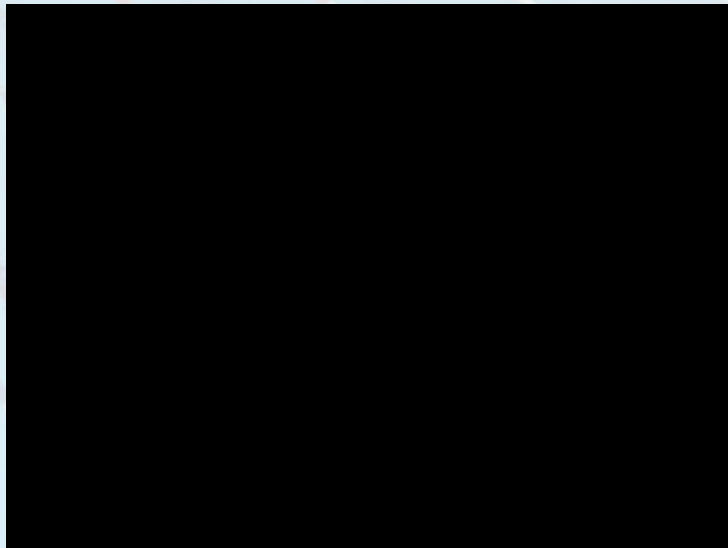
## Pelvic Driver Matrix



## Side Plank/Side Bridge



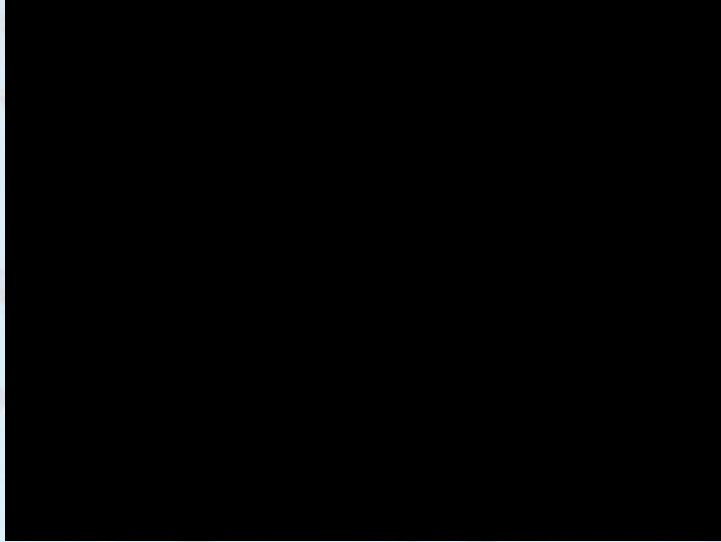
## Side Bridge Matrix



## Push-up



## Push-up Matrix



## Single Leg Balance



## Single Leg Balance Matrix



## Implementation

Keep doing what you  
are doing...  
and add to it

<b>FCST</b>		<b>First Colony Swim Team Dryland Expectations and Guidelines</b>			
Group	Sessions per week	Time	Key Skills	Focuses	Example Exercises
White	3	7-10 minutes	play, run, jump, tumble	create motor skills and coordination	rolling, jumping, running, leap frog, side roll, forward roll, wheel barrel, crab walk, bear crawl
Red	3	10-15 minutes	run, jump, crawl, tumble	body awareness, create athleticism, multi-sport play	jumping rope, push up progression, balance drills, jumping, hopping
Blue 1/Blue 2	4	15-20 minutes	skipping, lunging, squatting, push-up skills, jumping	start to build general fitness and strength, general athleticism, control, use all 3 planes for mastered skills	squatting, lunging, push up progression, tri plane footwork skills (running, jumping, skipping, hopping, shuffling)
Group	Sessions per week	Time	Key Skills	Focuses	Example Exercises
Age Group 1	4	15-25 minutes	push-up skills, jumping, squatting	build general fitness and strength, general athleticism, body awareness and control, use all 3 planes	single leg exercises, jumps in all 3 planes (speed, height, distance), dead bug, superman, pelvic driver, lunging/squatting in multiple directions
Age Group 2	4	20-30 minutes	advanced plane, lunging, jumping, squatting, balance	general fitness and strength, body awareness and control	single leg jumps in 3 planes no foot touch, lunges/squats/push-ups in all directions, all JJ matrix patterns, inchworm, +5 push ups
Age Group 3 Pre Sen1	5	25-35 minutes	balanced jumping, power, advanced core control, reaction time	general fitness and strength, intro to senior level movements	intro in movement patterns for Med Ball Exercises, lunge jumps, 20 correct dead bug, single leg jumps in 3 planes, squat jumps, loop bands
Pre Senior 2/Pre Sen.3	5*	30-45* minutes	swimming specific movements, advanced balance drills, start building strength	general fitness and strength, prepare for senior training	intro medicine balls - non partner, intro Kettle Bell Exercises, squats on 1/2 foam, superman's and dead bug on blue disk
Group	Sessions per week	Time	Key Skills	Focuses	Example Exercises
Senior 1	5*	30-45* minutes	pull ups, push-ups, medicine balls, strength	general fitness, advanced movements, strength	medicine ball partner and individual - phase 1&2, exercises on 1/2 foam and blue disk, 10 correct push-ups, girls 1 correct pull up, boys 3 correct pull up
Senior 2	5*	30-45* minutes	pull ups, push-ups, medicine balls, kettle bells, strength and power	swimming specific strength, advanced swimming specific fitness	medicine ball partner and individual- advanced phase, all Kettle Bell exercises, girls 3 pull up min., boys 5 pull up min., 20 correct push-ups, simple cord exercises
Senior Elite	5*	30-45* minutes	advanced swimming specific exercises, advanced strength and power exercises	advanced swimming specific strength, power, and fitness	30 correct push-ups, girls 7 pull ups, boys 10 pull ups, Medicine Ball and Kettle Bell exercises on 1/2 foam & blue disk, advanced cord exercises, boxes, dumbbell weights

\* This should reflect the total weekly dryland time it is acceptable with Senior and PreSenior Groups to do fewer sessions that are longer to meet the weekly required dryland time

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