

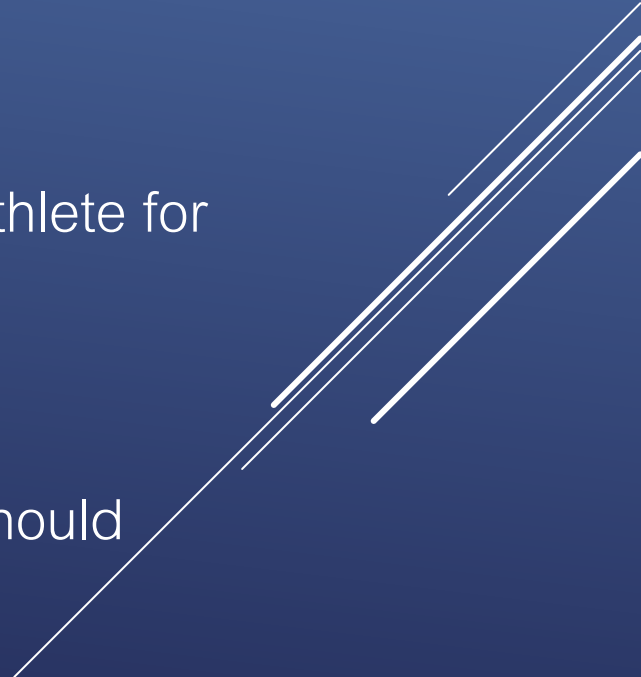
# The Athletic Warm-up

*The first step to improving athletic performance*

by Patrick Pyle (Houston, Texas)

patrickpyle25@gmail.com

A series of several parallel white lines of varying thicknesses, slanted diagonally from the bottom left towards the top right, crossing the right side of the page.

- The athletic warm-up is the introduction of the athletic training session or competition.
  - Objective benefits include increased body core temperature, increased neuromuscular activations and coordination, improved cardiovascular and energy substrate function.
  - A logical progression of warm-up components should prepare the athlete for the succeeding athletic task(s).
  - The warm-up is the first teaching block of the training session and should demand competency.
- 

# dy-nam-ic


*adjective*

(of a process or system) characterized by constant change, activity, or progress


“the warm-up is dynamic”

A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

## Considering movement exercises for the warm-up

- What is the foundational objective of the training session?
  - What is the time allocation?
  - What is the surface and area available to use?
  - What components are available to use?
  - What is the athlete's competency?
  - What is the air temperature and climate situation?
- 
- A decorative graphic consisting of several parallel white lines of varying lengths and orientations, located in the bottom right corner of the slide.

## Considering the warm-up *(cont.)*

- Progression
  - Rep Scheme/Exercise Time Signature
  - Intensity/Rest
  - Specific Demand Preparation
- 

# Basic dynamic movement patterns

- Pushing
- Pulling
- Rotational
- Hinging
- Squatting
- Lunging




# Three Planes of Motion

- Sagittal Plane
- Frontal Plane
- Transverse Plane

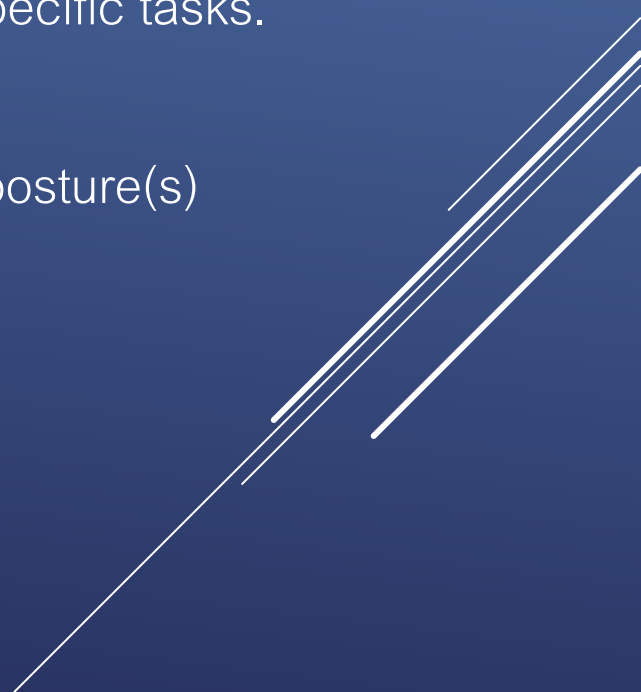


There are many tools available to use... learn them, understand them, and use them effectively. If the objective is to prepare the athlete to sprint, use tools that will progress the athlete to sprinting. If the objective is to jump, the specific demands of a warm-up will likely be run and jump based.





# Beginning the warm-up

- The warm-up evolves the athlete from a physiological state of homeostasis, to a state of increased physical demand preparedness and mental awareness.
  - The warm-up should start with low-level movement activity and progress to specific tasks.
  - Upon the start of the warm-up, immediate attention should be given to body posture(s) and competency.
  - The 'class' has started... use it to teach.
- 

## Dynamic Mobility/Flexibility Exercises

- Easy Skip w/Active Arm Swings
- Side Shuffling and Carioka
- Leg Swings/Arm Circles
- Increased cardiovascular output





Video: Carioka

## Dynamic Mobility/Flexibility Exercises *(cont.)*

- Full Body/Bi-Lateral
  - Joint Function and Mobility
  - Connective Tissue and Skeletal Muscle elasticity and pliability
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.






Video: Forward Lunge/Low Step and Scoop

## 'Running Drills'

*Yes, they're great!*

- Running Drills segment run/sprint cycles into parts and allow for kinesthetic development. They are great Motor Learning tools.
  - Running Drills also develop Strength, Mobility, and Work Capacity
  - Multi-tool (rehab, special 'endurance')
- 



Video: A-Skip Drill





Video: B-Skip Drill





Video: B-Skip Drill




Video: Butt-Kick Running Drill





Video: Straight Leg Bound Drill

# Specific Exercises

- Acceleration Drills/Accelerating Runs
  - Maximum Velocity Drills/Maximum Velocity Runs
  - Hurdle Drills/Hurdling
  - Jump Drills/Bounding/Specific Jumping
  - Throwing Drills/Throwing
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.



Video: Skipping Jump Takeoff Drill





Video: Technical Sprint Acceleration

## **DYNAMIC WARM-UP #1**

EASY "A" SKIP = 20 CONTACTS  
BACKWARD SKIP = 20 CONT.  
WALKING ROTATIONS = 30M.  
EASY "B" SKIP = 20 CONT.  
SKIP ARM SWINGS = 30M.  
WALKING ARM CIRCLES AND SWINGS = 30M.  
HIP ROTATIONS X 10/LEG  
SKIP ARM SWING = 30M.  
EASY ACCELERATION = 30M. (60%)  
NECK CIRCLES, HIP CIRCLES, TORSO CIRCLES X 10/SIDE  
LOWER LEG CIRCLES, ANKLE CIRCLES X 10/SIDE  
LOW LEVEL LEG SWINGS X 10 SIDE TO SIDE  
EASY ACCELERATION = 30M. (60%)  
WALKING ARM CIRCLES AND SWINGS = 30M.  
LATERAL SQUAT SHIFT = 30M.  
BACKWARD RUN = 30M.  
FORWARD LOW WALK = 30M. (FULL EXTENSION)  
WALK BACK = 30M.  
EASY ACCELERATION = 30M. (70%)  
WALK BACK = 30M  
LEG SWINGS X 10 SIDE TO SIDE  
LEG SWINGS X 10 FRONT TO BACK  
CARIOKA = 30M. RIGHT  
CARIOKA = 30M. LEFT  
SEATED SINGLE LEG ALTERNATING KNEE DROP X 10 (5/LEG)  
SHOULDER HIP BRIDGE HOLD 3X3 SECONDS (3SEC.=HOLD/3SEC.=REST)  
SEATED SINGLE LEG ALTERNATING KNEE-DROP X 10 (5/LEG)  
SHOULDER HIP BRIDGE HOLD 3X3 SECONDS (3SEC.=HOLD/3SEC.=REST)  
SEATED SINGLE LEG ALTERNATING KNEE-DROP X 10 (5/LEG)  
—  
ACCELERATION = 40M. (70%)  
—  
ACCELERATION = 40M. (80%)  
—  
ACCELERATION = 40M. (90%)  
—  
ACCELERATION = 40M. (100%)  
—  
ACCELERATION = 40M. (100%)

## GENERAL WARM-UP #1

EASY SKIP 100M  
SIDE SHUFFLE 100M (SWITCH @ 50M)  
EASY SKIP 50M  
BACKWARD SKIP 50M  
LIGHT STRIDE 100M

LEG SWINGS X 10/LEG (SIDE-SIDE, FRONT-BACK)

LIGHT STRIDE 100M  
SIDE SHUFFLE 100M (SWITCH @ 50M)  
EASY SKIP 50M  
BACKWARD SKIP 50M  
LIGHT STRIDE 100M

SAIGON STRETCH X 10SEC  
STANDING QUAD X 10SEC/LEG  
CALF STRETCH X 10SEC/LEG  
SEATED SINGLE LEG HAM X 10SEC/LEG  
SEATED CROSSOVER HUG X 10SEC/LEG  
TRUNK SIDE BEND X 10SEC/LEG  
LUNGE HOLD X 10SEC/LEG

KNEE LIFTS X 10 CONTACTS (FRONT TO SIDE)  
STANDING SINGLE ARM CIRCLES X 10 (FORWARD AND BACK)

ANKLE POPS 30M  
"A" SKIP X 20 contacts  
BUTT KICKS 30M  
"B" SKIP X 20 contacts  
STRAIGHT LEG BOUNDS 30M  
FAST LEG CYCLE X 50M

2 X 100M (70-80%) WALK BACK



### **CIRCUIT 1**

BODY WEIGHT SQUATS X 10

PUSH-UPS X 10

STANDING TORSO ROTATIONS X 20

REVERSE LUNGES X 10 (5/leg)

DIAGONALS X 10/side

LONG CRUNCH X 10-20

ALTERNATING BACK-HYPERS X 10-20

DOUBLE LEG POGOS X 20+ (active ankle)

### **CIRCUIT 2**

LONG CRUNCH X 10-20

REVERSE CRUNCH X 10-20

PRONE FIRE HYDRANT X 5-10/leg

GOOD MORNINGS X 10 (slight knee bend)

STANDING TORSO ROTATIONS X 20

LATERAL LUNGE X 5-10/leg

PRONE GLUTE RAISE X 5-10/leg (push heel)

L-OVERS X 10-20 (bent knee or straight leg)

BODY WEIGHT SQUATS X 5-10

DOUBLE LEG POGOS X 20+ (active ankle)

### **Dynamic Warm-Up #4 - Basketball Court**

Easy Skip/Backward Skip - 4 x 30m (down and back = 2)

Side Shuffle - 4 x 30m

Easy Skip/Backward Skip - 4 x 30m

Side Shuffle - 4 x 30m

Easy Skip/Backward Skip - 4 x 30m

Carioka - 4 x 30m

Easy Skip/Backward Skip - 4 x 30m

Carioka - 4 x 30m

Hurdle Mobility Series 3 x 5 hurdles

Neck Circles x 10/side

Hip Circles x 10/side

Torso Rotations x 10/side

Ankle Circles x 10/side

Lower Leg Circles x 10/side

Gastroc-Soleus Stretch x 20sec./leg

Walking Zombies x 30m

Speed Skaters x 10

Walking varying foot/ankle position x 30m

Scorpion and Iron Cross x 10/each

Low Step and Scoop x 30m

Leg Swings - Front/Back/Side-Side x 10/each

Alternating Pogo-Pops x 30m

Walk

'A' Skip x 30m

Walk

Butt-Kick x 30m

Walk

'B' Skip x 30m

Walk

'Short' Straight Leg Bound 2 x 30m (walk back)

'Short' Fast Leg Cycle 2 x 30m (walk back)

8 x 15m Accels (4-right, 4-left ..... walk back)

### **SPRINT COMPREHENSIVE WARM-UP**

EASY SKIP 100M

SIDE SHUFFLE 100M (SWITCH HALF-WAY)

EASY SKIP 100M

CARIOKA 100M

EASY STRIDE 100M

CARIOKA 100M

BACKWARD STRIDE 100M

WALK W/ARM CIRCLES, CROSSES, ETC. 50M

EASY ACCELERATION 50M

HEAD CIRCLES, TRUNK ROTA., HIP CIRCLES, ANKLE AND LOWER LEG CIRCLES

STANDING CALF STRETCH 10 SEC/LEG

WALKING ZOMBIES 50M

SPEED SKATERS 10

WALKING W/VARIOUS ANKLE POSITIONS (WORK FROM HEELS TO TOES) 50M

SCORPIONS AND IRON CROSSES 10/SIDE

LOW STEP AND SCOOP 50M

LEG SWINGS 10/LEG (SIDE TO SIDE, FRONT TO BACK)

ALTERNATING POGO-POPS 30M (increase amplitude over distance, walk back)

"A" SKIP X 20 CONTACTS (WALK BACK)

BUTT KICKS 30M (WALK BACK)

"B" SKIP X 20 CONTACTS (WALK BACK)

STRAIGHT LEG BOUND 30M (WALK BACK)

LUNGE HOLD 10 SEC/LEG

RUNNING 'A' DRILL 2x10sec (WALK BACK)

2X100M STRIDES 70% AND 80% (WALK BACK)

3 X 30-30-30 (ACCEL-FLOAT-SPRINT) (8min rest))

### HIGH JUMP COMPREHENSIVE WARM-UP

EASY SKIP 50M  
SIDE SHUFFLE 50M (SWITCH HALF-WAY)  
EASY SKIP 50M  
CARIOKA 50M (RIGHT)  
EASY STRIDE 50M  
CARIOKA 50M (LEFT)  
BACKWARD STRIDE 50M  
WALK W/ARM CIRCLES, CROSSES, ETC. 50M  
EASY ACCELERATION 50M

HEAD CIRCLES, TRUNK ROTA., HIP CIRCLES, ANKLE, LOWER LEG CIRCLES 10  
STANDING CALF STRETCH 10 SEC/LEG  
WALKING ZOMBIES 50M  
SPEED SKATERS 10  
WALKING W/VARIOUS ANKLE POSITIONS (WORK FROM HEELS TO TOES)  
SCORPIONS AND IRON CROSSES 10  
LOW STEP AND SCOOP 50M  
LEG SWINGS 10/LEG (SIDE TO SIDE, FRONT TO BACK)

ALTERNATING POGO-POPS 30M (increase amplitude over distance, walk back)  
"A" SKIP 20 CONTACTS (walk back)  
BUTT KICKS 30M (walk back)  
"B" SKIP 20 CONTACTS (walk back)  
STRAIGHT LEG BOUND 30M (walk back)  
LUNGE HOLD 10 SEC/LEG

#### IN SPIKES:

SKIPPING TAKE-OFFS 2X30M  
ZIG-ZAG RUNS 2X50M (ACCELERATE CURVES, FLOAT STRAIGHT)  
CIRCLE RUNS 2X/SIDE  
CIRCLE RUNS W/POP-OFFS 2X/LEG  
ACCELERATIONS 3X30M @ 90-100% (3-5min rest)



# From the researchers...

International Journal of Sports Physiology and Performance, 2013, 8, 77-83  
© 2013 Human Kinetics, Inc.

INTERNATIONAL JOURNAL OF  
**SPORTS PHYSIOLOGY  
AND PERFORMANCE**  
[www.IJSP-Journal.com](http://www.IJSP-Journal.com)  
ORIGINAL INVESTIGATION

## Improvement of 800-m Running Performance With Prior High-Intensity Exercise

Stephen A. Ingham, Barry W. Fudge, Jamie S. Pringle, and Andrew M. Jones

Prior high-intensity exercise increases the oxidative energy contribution to subsequent exercise and may enhance exercise tolerance. The potential impact of a high-intensity warm-up on competitive performance, however, has not been investigated. **Purpose:** To test the hypothesis that a high-intensity warm-up would speed  $\text{VO}_2$  kinetics and enhance 800-m running performance in well-trained athletes. **Methods:** Eleven highly trained middle-distance runners completed two 800-m time trials on separate days on an indoor track, preceded by 2 different warm-up procedures. The 800-m time trials were preceded by a 10-min self-paced jog and standardized mobility drills, followed by either  $6 \times 50$ -m strides (control [CON]) or  $2 \times 50$ -m strides and a continuous high-intensity 200-m run (HWU) at race pace. Blood [La] was measured before the time trials, and  $\text{VO}_2$  was measured breath by breath throughout exercise. **Results:** 800-m time-trial performance was significantly faster after HWU ( $124.5 \pm 8.3$  vs CON,  $125.7 \pm 8.7$  s,  $P < .05$ ). Blood [La] was greater after HWU ( $3.6 \pm 1.9$  vs CON,  $1.7 \pm 0.8$  mM;  $P < .01$ ). The mean response time for  $\text{VO}_2$  was not different between conditions (HWU,  $27 \pm 6$  vs CON,  $28 \pm 7$  s), but total  $\text{O}_2$  consumed (HWU,  $119 \pm 18$  vs CON,  $109 \pm 28$  ml/kg,  $P = .05$ ) and peak  $\text{VO}_2$  attained (HWU,  $4.21 \pm 0.85$  vs CON,  $3.91 \pm 0.63$  l/min;  $P = .08$ ) tended to be greater after HWU. **Conclusions:** These data indicate that a sustained high-intensity warm-up enhances 800-m time-trial performance in trained athletes.

## Conclusion

A dynamic movement warm-up routine that is constructed and performed with competence and diligence is a multi-faceted and critical tool in the development and maintenance of relative athletic qualities. In scientific research settings, many variations of dynamic movement preparation routines have proven with certainty that movement-based preparation methodically progressing from overcoming general homeostasis and evolving to specific physical and physiological tasks will produce the highest and most consistent levels of athletic physical performance.

There is not a universal 'end-all, be-all' warm-up routine, but there are logical exercises to be used as tools in preparation for a specific task.

Thank you for your time!

Patrick Pyle

[patrickpyle25@gmail.com](mailto:patrickpyle25@gmail.com)

