Build powerful, efficient skating strides while you're young



Repetitions become permanent habits so dryland & on-ice reps must reinforce skating mechanics you'd like to build.





5 fundamentals to guide your training

1) *Faster skaters have wider strides like speed skaters. It's hip Abduction, Rotated into eXtension (A-R-X) .*
2) *Quick feet on the ice are developed by short off-ice sprints.*
3) *Each stride finishes with body & leg eXtended in a Straight Line (SLX).*
4) *Arms naturally & vigorously multiply lower body force.*
5) *Fatigue destroys skating efficiency & power. Therefore ...*

Any so-called "endurance skating drill," builds slowness.

The power base of an efficient stride: ARX

Abduction-Rotation-eXtension is improved as much off-ice as by skating, but it's a moot point. Skating + Dryland is best.



Acceleration



1

Right Leg Abducts Rotates & Extends

2

Left Leg Abducts Rotates & Extends

What isn't shown without video is the rotation of the entire pelvis from right to left to start the 2nd stride

Abduction: The difference between sprinting and skating



Sprinters thrust straight back; that's hip extension.

... Skaters thrust to the side, that's hip abduction.

But as you rotate toward the next stride you will extend from the hip as you leave the ice behind.

Never think about blade angles and other details while skating.

They are learned and optimized by feel and reflex.

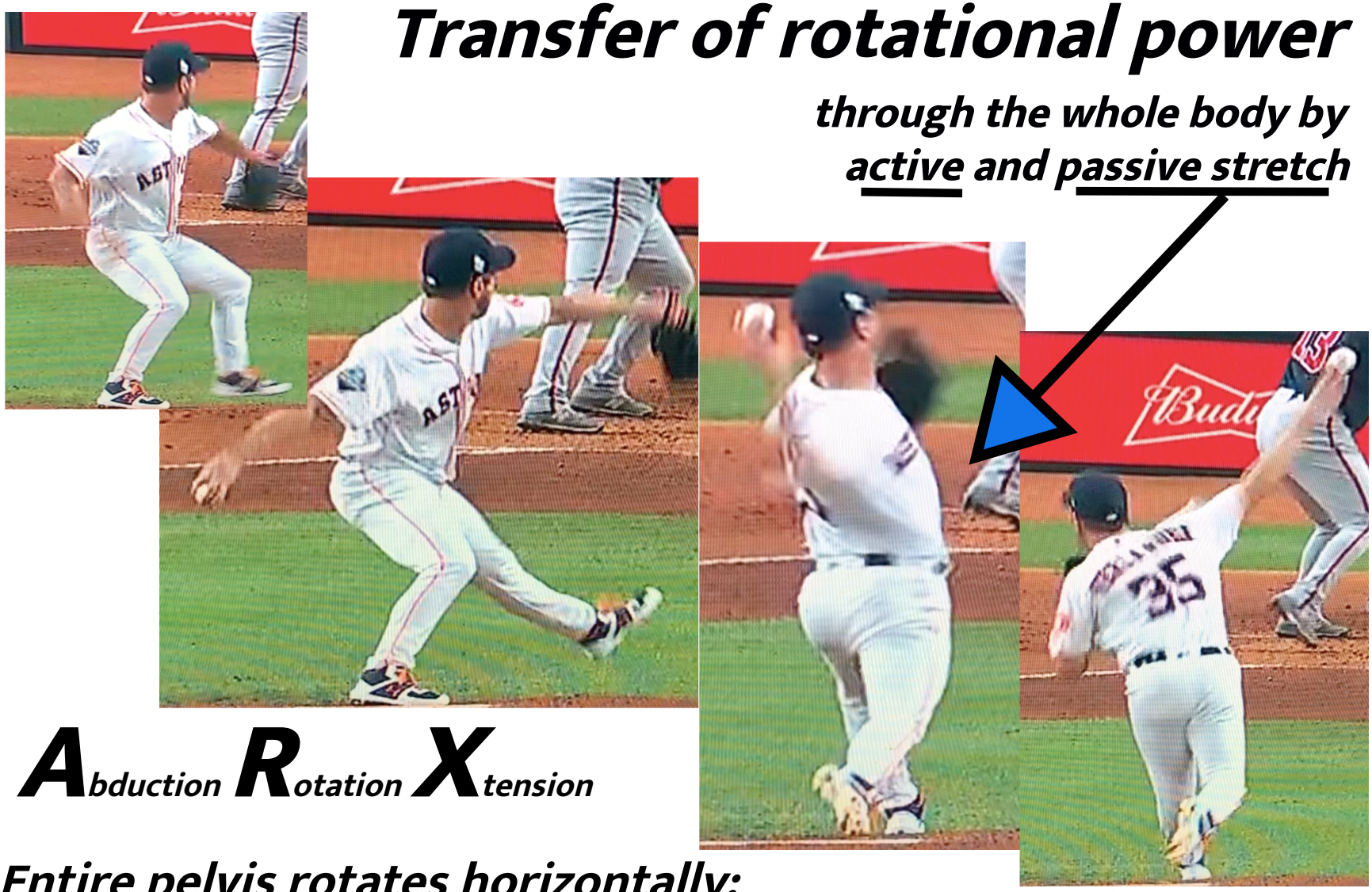
I mention them for Dryland planning.

During acceleration the force is more straight back, with the blade perpendicular to the force.

At high speed each stride starts with force to the side and skate blade is NOT perpendicular

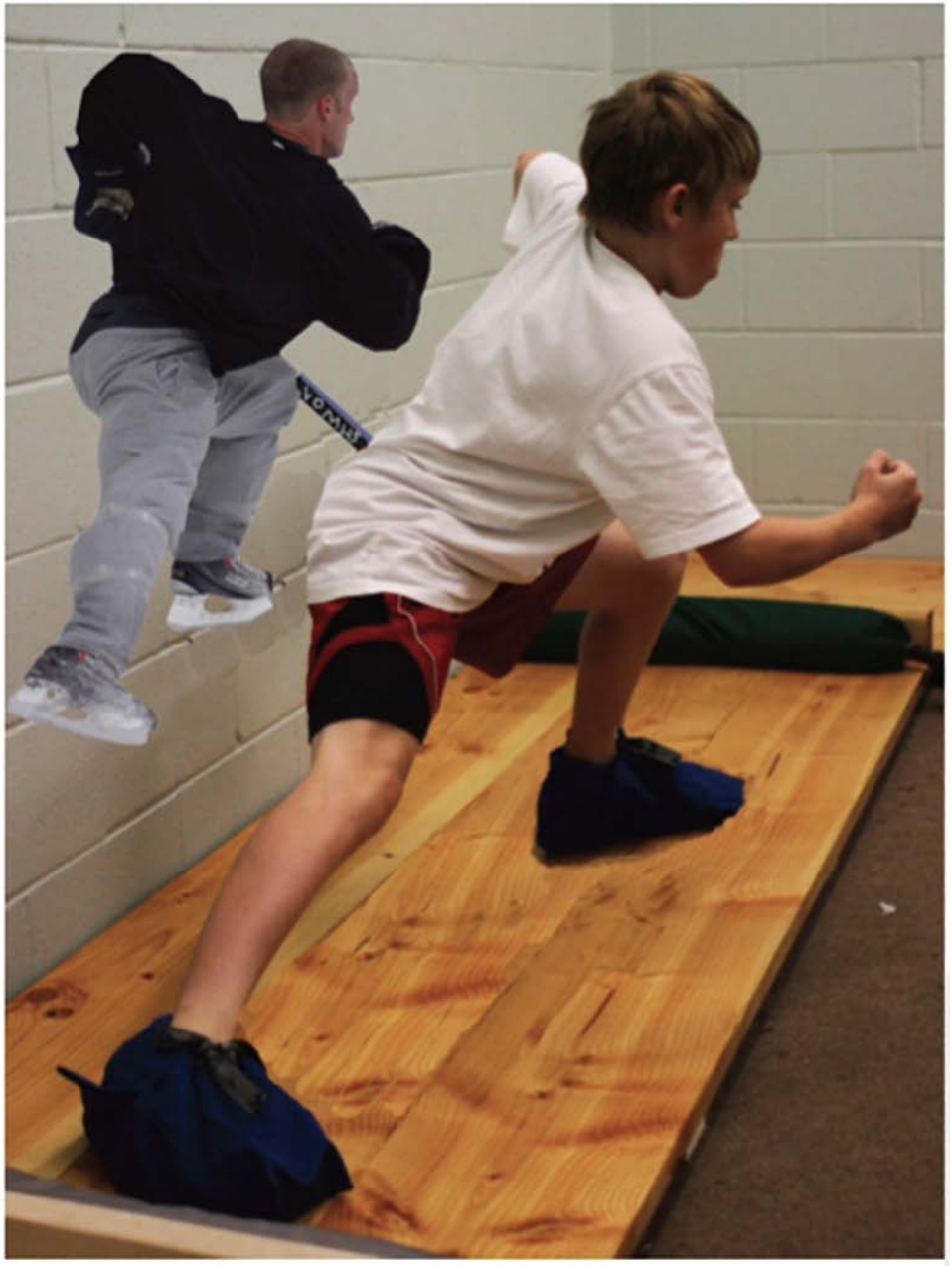
Transfer of rotational power

through the whole body by
active and passive stretch



***A**bduction **R**otation **X**tension*

Entire pelvis rotates horizontally;
Femur rotates at the ball-socket hip joint;
Ankle rotates in every plane.



A-R-X at the hips

(Abduction-Rotation-Extension)

It's a major force in every skating stride; yet it has hardly been given a second thought in weight rooms.

Why is that?

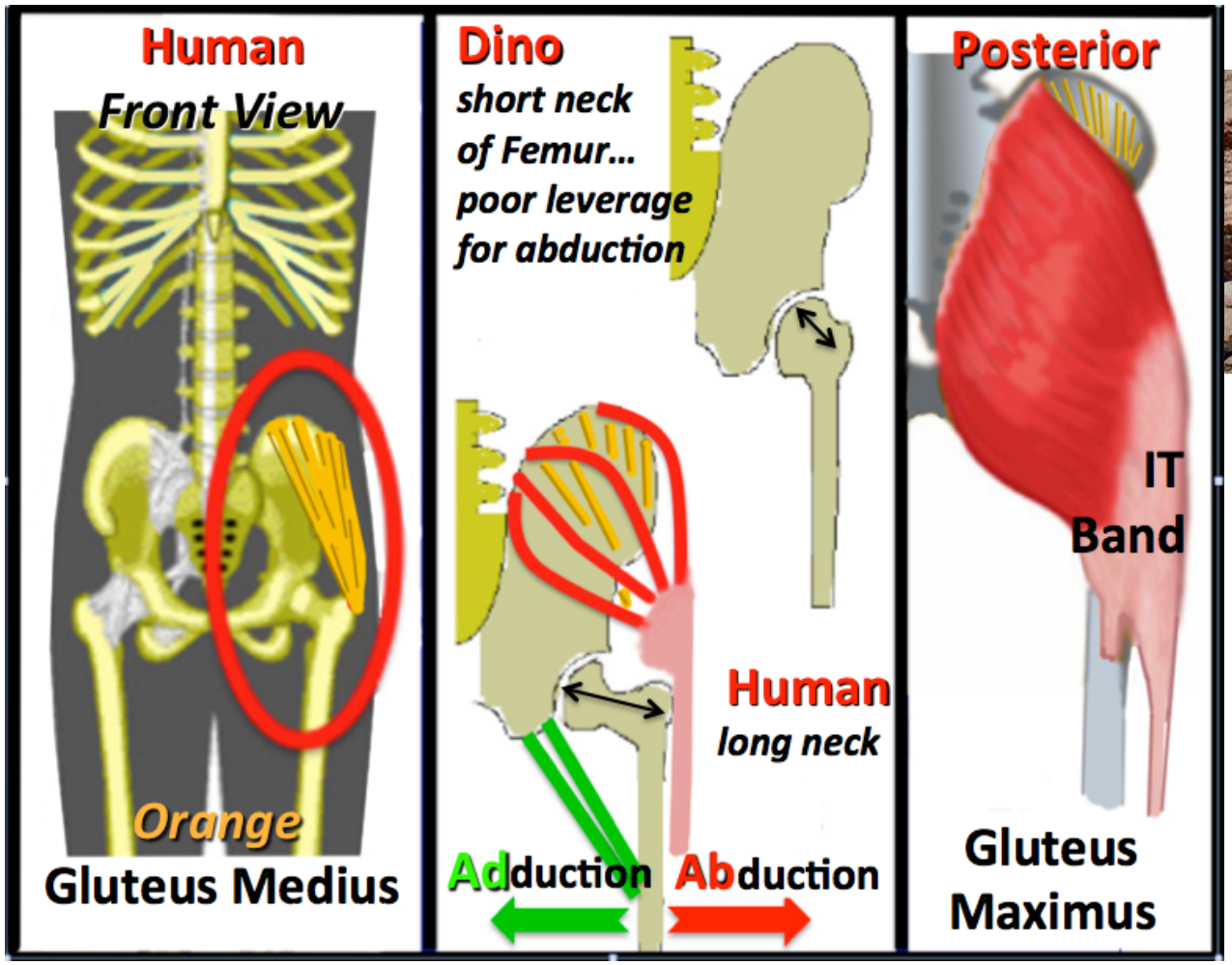
It's simple. Most programs are not built for hockey

not wrong, just incomplete

Time Out!

Why Dinosaurs were not good skaters

Evolution gave us hip joint anatomy more suited to skating than a Dino's. The longer neck of the human femur (shown left & center), and its orientation from the ball-and-socket joint gives all 3 gluteal muscles a leverage advantage in abducting the femur. Notice the short neck of the dinosaur femur. Not shown is that the ball-and-socket joint in the dinosaur pelvis is oriented more to the back for running, and downward for support. In case you don't like my diagrams, I found a real photo. The Dino who owned this femur could hold up lots of weight, but couldn't abduct very well, so he apparently had to use figure skates with toe picks.





The finish of an efficient stride: SLX

Efficient' means your whole body works together like an orchestra: to get the most out of each stride



Abduction

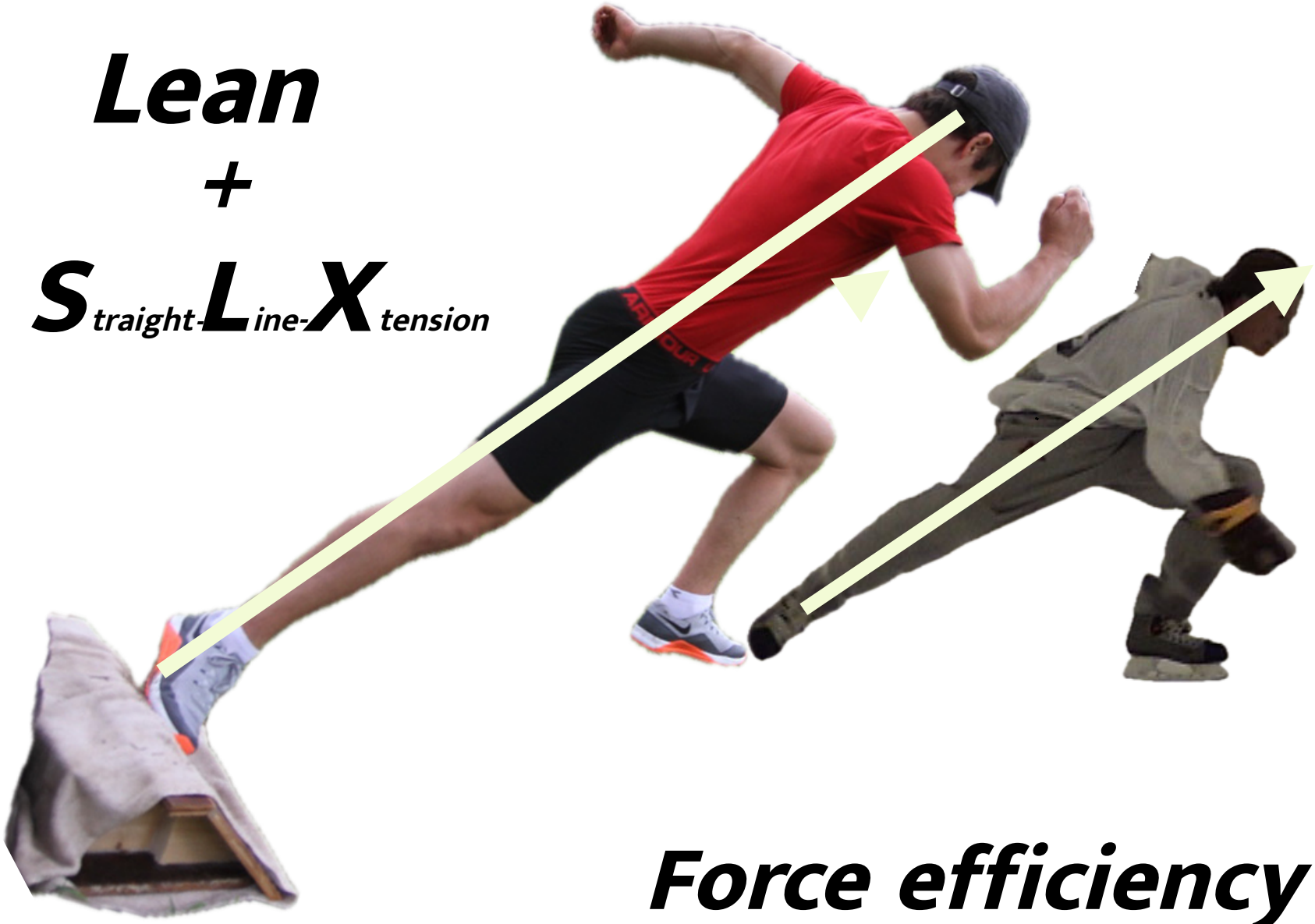
rotated into

Straight-Line-Xtension

at the end of each stride

Kyle Okposo at 15 y/o developed the powerful stride that would lead to an NHL career : 18+ seasons, 1051 games

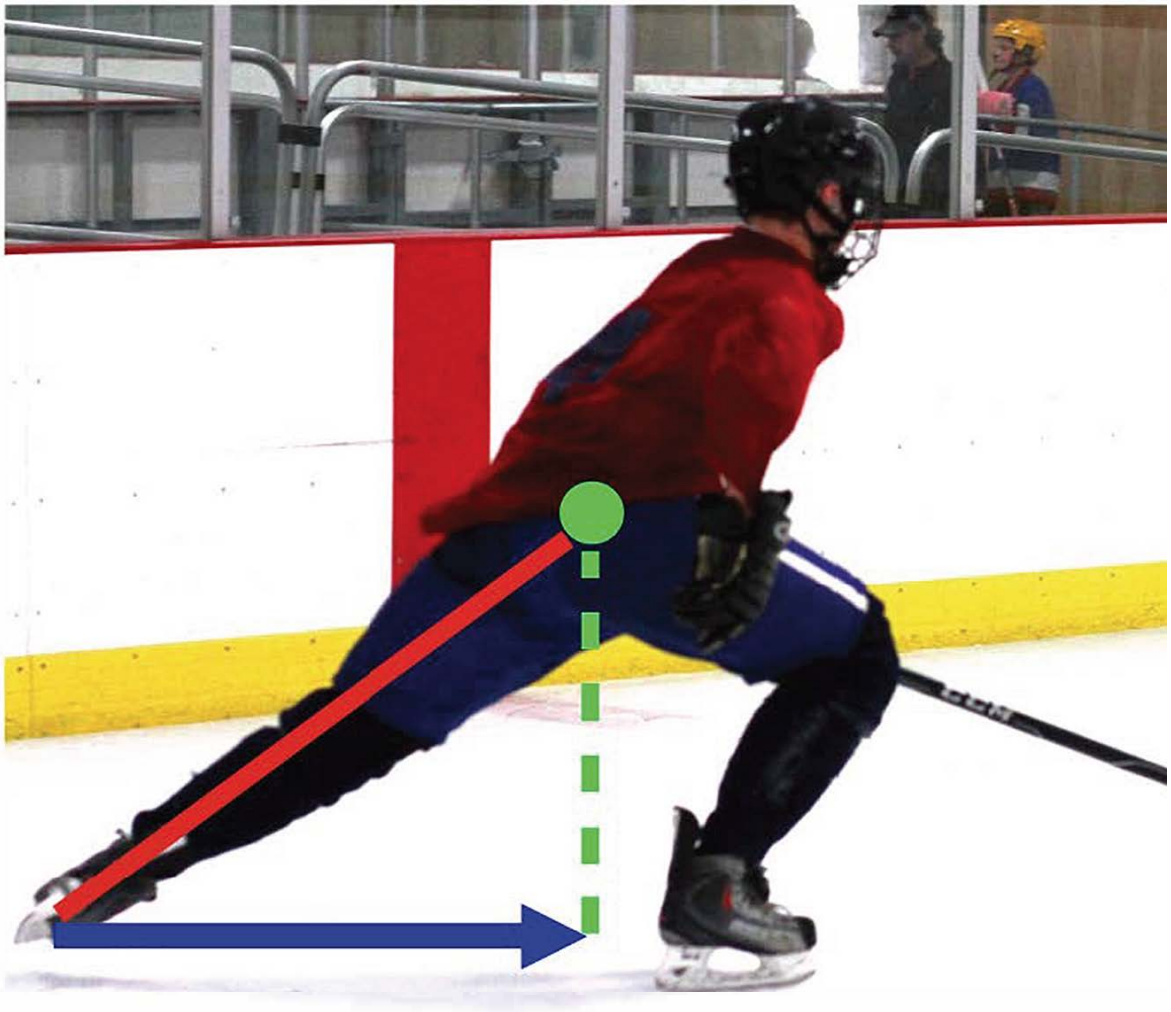
Lean
+
S traight-L ine-X tension



Force efficiency

Finish each stride with your body and drive-leg in a straight line .

Acceleration: 1) Quick strides + 2) Great force each stride



Force is most efficient if your body reaches Straight Line Extension at the end of each stride

... but ...

don't let this slow your stride rate.

1) Quick strides: sprints & hills 3-5x per week
2) Efficient Force ▮ passes through the center of mass ●
   Acceleration Force ▮ is greatest with maximum lean


Russian Box Jumps
Lifelong skating power



Heiden jumps

Elevate your head on takeoff to promote SLX. Avoid ankle sprains; you don't need to jump super-wide.

Touch your back foot so balance does not limit your explosiveness. Touch your hand if necessary.



Execute one thought

Elevate your head

then, one-leg jumps

automatically

teach your body to apply force through your Center of Mass

Straight-Line-Xtension isn't automatic with Two-legged jumps until you use your arms aggressively

Great Dryland Exercise for Skating Acceleration and Prevention of Hip-flexor & Groin Strains



1) Stand 3' From Starting Block.



2) Step back to starting block

2) Lean-Recoil-Explode



3) Jump/Rotate. This is a Skating Stride.



4) Sprint

Straight Line Xtension
hip Abduction Rotation Xtension

Skating-specific exercises match both SPEED & RANGE of MOTION

Arms and shoulders are force multipliers.

Do NOT restrict natural athleticism, just because someone made up a rule to limit arms!

You cannot jump, skate or sprint as fast without vigorous, natural arm-shoulder 'leadership.'

Improvements would be limited.

Build speed with arms leading.

Carrying & catching pucks is a different (important) project and requires on-ice & off-ice training as well, of course.

However, skating speed development requires all hands on deck. This means we cannot limit arm movement any more than sprinters would





Train rules-free as a cheetah does. Unsubstantiated myths have restricted development.



Dryland or on-ice drills, where the arms are busy, are important practice ..... but for speed development, the drills must be 'arms free.' We would not tell a track sprinter that whenever he tries to run full speed, he must be carrying a football, just because he plays on the football team.





Abduction-Rotation-Xtension and knee-bend habits programmed into the CNS.

Don't stickhandle before knee bend is perfected.


Some explosive drills can involve arms to prepare for handling pucks, but most should not

Heiden Jumps on a Thick Mat or Port-a-Pit

Reduces impact, so it's safe at the start of the training season.

It adds instability to prepare for unpredictable ice surfaces in games and practices.





Without sounding so dumb as to paint all women and girls with one brush ...

I'll simply say that most I've worked with prefer highly dynamic workouts in which they burn calories. Males, on the other hand, prefer the anabolic effects of weight training. They like to get big.

That difference in motivation is worth considering as you plan speed-strength training programs.













Explosive uphill 'skate-sprints' require aggressive arms, shoulders and Abduction-Rotation-Xtension, just like skating.

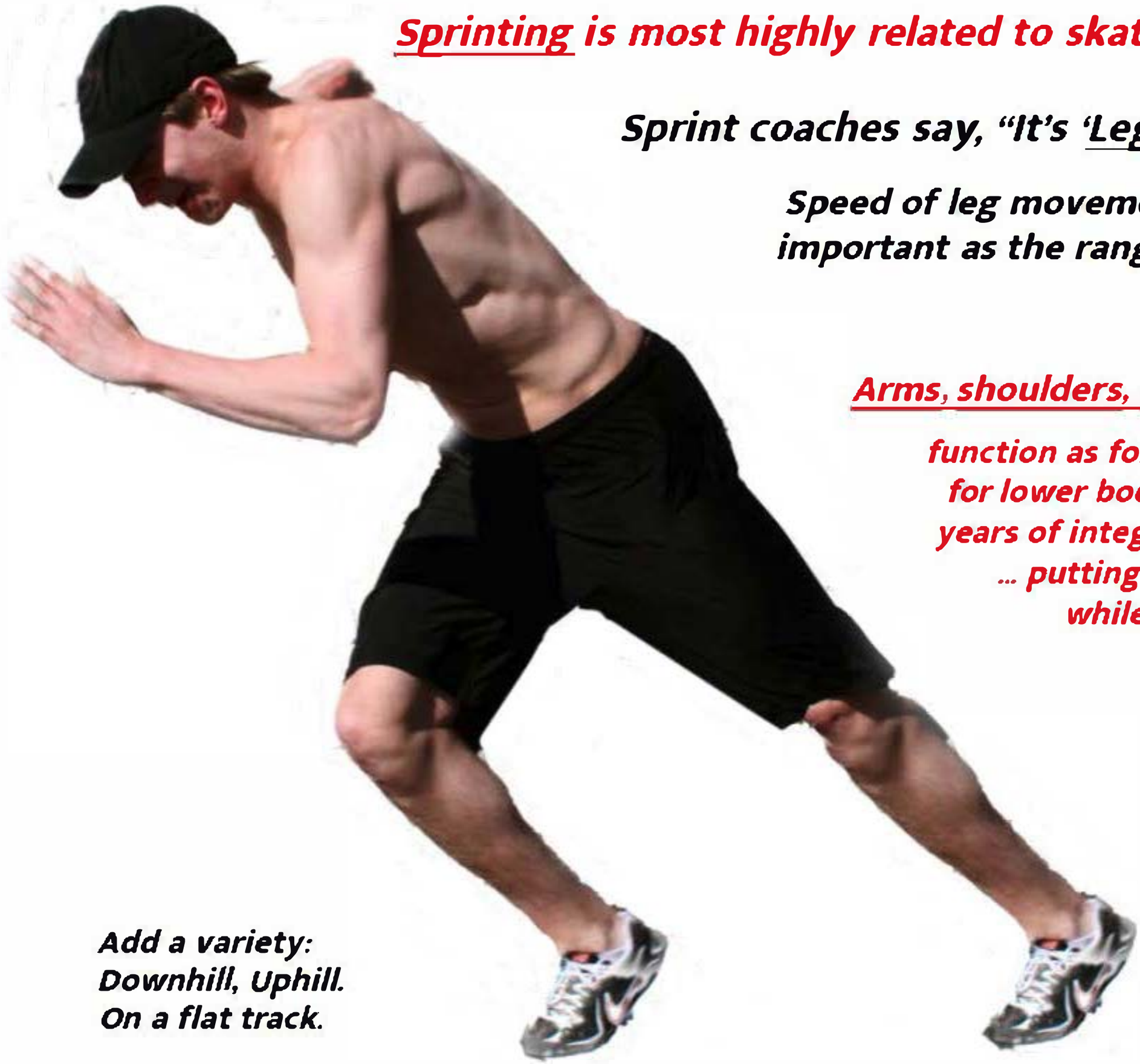
Note: slight abduction increases leverage when you sprint uphill, so feel free to swing your arms across your body.

Thousands of test cases show – of all dryland exercises …

***Sprinting** is most highly related to skating speed**

Sprint coaches say, "It's 'Leg turnover."

Speed of leg movement is just as important as the range of motion



Arms, shoulders, core muscles

function as force multipliers for lower body power from years of integrated training … putting it all together while you're young.

Add a variety:
Downhill, Uphill.
On a flat track.

* *Consistently*
0.75 < r < 0.95

Arms: Force multipliers



Finally, all the groin and hip-flexor injuries in the NHL are totally predictable if EXPLOSIVE WIDE HIP ABDUCTION is left out of the off-ice workouts.

How could we expect no groin injuries after training all summer in a phone booth?



