LADDER RUN: Give the body the opportunity to practise and play with changed and strengthened muscles.

THE ABCs OF SMART TRAINING

Follow the "ABCs of smart training" to increase your clients' training potential, improve their skills and decrease injury potential. **PART 2** By Carl Petersen

AGILITY TRAINING AND ACCELERATION (QUICKNESS) DRILLS

Sports require quick stops and starts, lateral movements, backpedaling, crossover turns and pivots. Some form of agility and coordination training should be included as part of each athlete's daily sessions. Don't create an athlete who can play but can't move.

Points to remember when training for agility

- Always start with in athletic stance.
- Agility and acceleration (quickness) drills must be structured so the muscles learn to fire quickly and in a coordinated manner.
- Quickness within two steps in all directions is key in most sports.
- Agility and acceleration allow smaller athletes to compete well and gives larger athletes another weapon in their arsenals.
- Agility can be gained by playing different sports and dynamic games that involve lateral movement and quick stops and starts or by doing circuit drills that incorporate different exercises.

BALANCED BODY STRENGTHENING

Balanced training ensures that equal stress is put on the different parts of the body in different planes of movement. This achieves a good balance of stress for the body's upper and lower extremities and three-dimensional core cylinder. It is difficult to prove that muscle strength imbalances are the primary cause of injury or decreased performance. We can, however, view muscle imbalances as one of the many potential risk factors increasing the chance of injury or decreased performance.

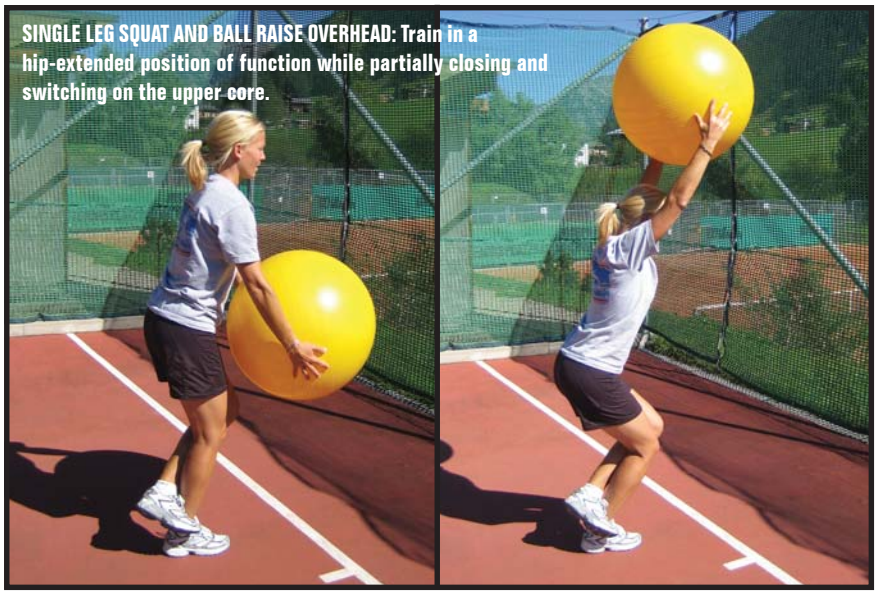
Planes of motion: coronal, sagital and transverse. (courtesy Racquet TECH Publishers)

Work both sides equally to get a good balance for these pairs

- right and left sides
- flexor and extensor muscles
- medial and lateral rotators
- upper and lower body and core

Strength training should include exercises for all of the above areas. Try 2–3 upper body, 2–3 lower body and 3–4 core exercises to ensure a good balance.

SPLIT SQUAT DIAGONAL PULL: Split squats with diagonal pulls work the upper and lower body in different planes of motion.



SINGLE LEG SQUAT AND BALL RAISE OVERHEAD: Train in a hip-extended position of function while partially closing and switching on the upper core.

CLOSED and PARTIALLY CLOSED CHAIN EXERCISES

To understand the concepts of closed, partially closed, and open kinetic chain, view the body as a length of chain.

Closed kinetic chain exercises occur when the hands or feet support the body weight. They are best referred to as dynamic and functional with the whole body working as an integrated unit. Examples of this are lunges and squats.

Partially closed chain exercises partially support the body weight and require an integrated response from the muscles of the body. Examples of this are push-ups where the hands and feet partially bear the weight. Another example is resistance band exercises which load resistance through the hands and arms and into the torso.

In all ground-based sports, all of the body movements work within a kinetic chain linkage from the ground through the trunk. Mixes of kinetic chain training should be utilized based on the needs of the individual and the demands of the sport.

Exercise Performance Guidelines

- Exercises should be performed in a controlled, coordinated and functional manner.
- Exercises should work the hip in an extended position because it is the position of activity and function.
- Exercises like step-ups, split squats and lunges can be made more functional by adding elastic tubing to partially close the upper core chain.
- Activation of the kinetic chain sling patterns from the legs through the hips and back to the shoulder restores the force-dependent motor activation pattern and normal biomechanical positions.

DIVERSITY IN DRILLS AND TRAINING

Training with diversity means using a variety of methods in a weekly program. For example, aerobic training may use a mix of running, elliptical trainer, cycling, swimming or in-line skating to get the desired effect of aerobic fitness. Besides offering a greater range of non-weight-bearing alternatives for training, diverse training promotes development of fundamental skills.

Keys to diversifying training

- Analyze the sport-specific movements and add movement and challenge.
- Alter the type of exercises.
- Alter the sequence of exercises.
- Change the tempo to avoid drudgery and overtraining.
- Add weights, balance equipment, balls, and stretch cords to increase the core component.
- Have specific training goals that make sense and have appropriate application to the sport.

SUPINE BRIDGE WITH CORD
For example, core training can mix bridging on the floor, kneeling, standing, stepping, lunging and incorporate balls, bands and balance.

EXERCISE AT A SLOW AND CONTROLLED TEMPO (SOMETIMES)

Some exercises should be performed slowly. Controlled repetitions that take 2–4 seconds to complete help increase tension in the muscle fibres and build strength without too much stress on the soft tissues. Avoid using momentum or performing exercises that are uncontrolled.

SINGLE LEG SQUAT (SIDE): A slow tempo increases hip stability.

FUNCTIONAL TRAINING

Functional movement requires that all the joints in the kinetic chain and in the neurological system work in concert in a coordinated and harmonious manner.

Tips for functional training

- Use multi-dimensional, multi-joint movement, not just isolated actions at one joint.
- Start by practising parts of the movement; then, combine the parts into movement drills; then, practice and rehearse the movement drills; then, incorporate them into the activity or sport.
- Integrate multiple joint movements linking the closed and partially closed kinetic chain.
- Functional training does not isolate muscles in a single plane of movement; instead, it requires stabilization in three planes of motion during dynamic movement.
- Functional training must be dynamic in nature and require the participant to accelerate, decelerate, stop on a dime, change directions, react to ground forces and constantly adjust and react to different situations. FTC

SIDE LUNGE WITH BALL ROTATION: Functional training develops powerful and coordinated multi-joint and multi-dimensional movement.

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