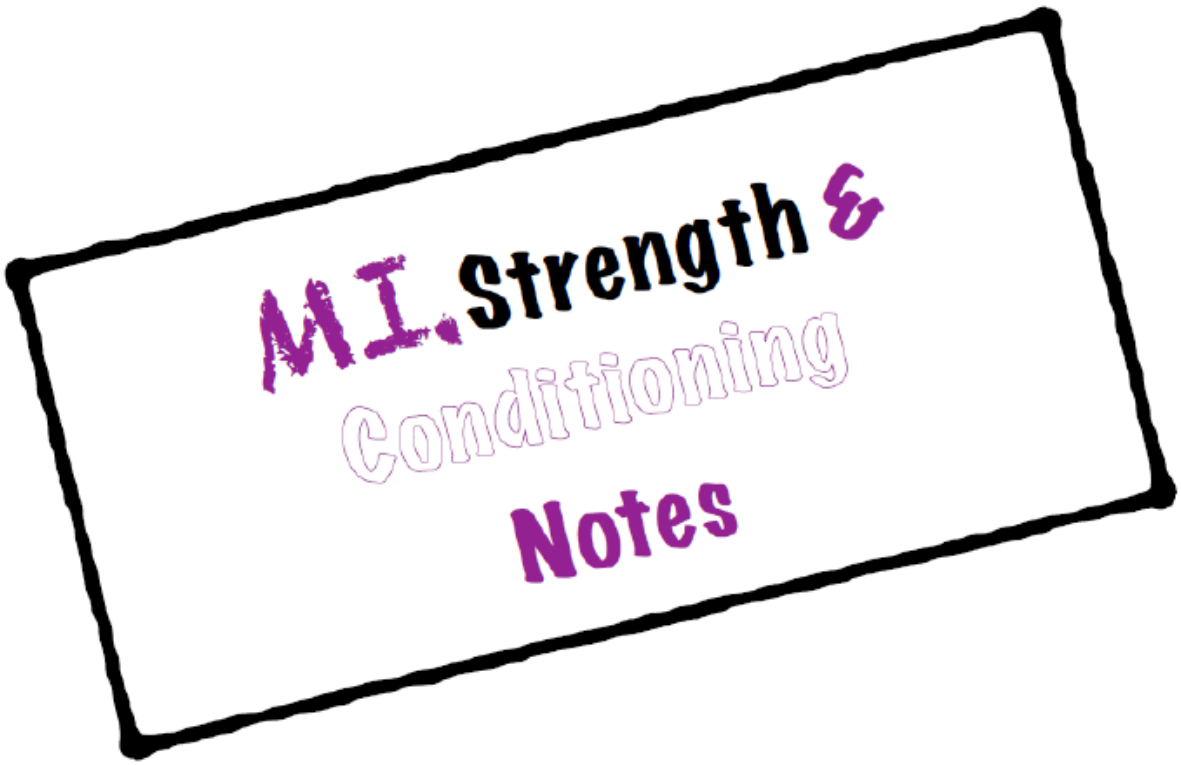
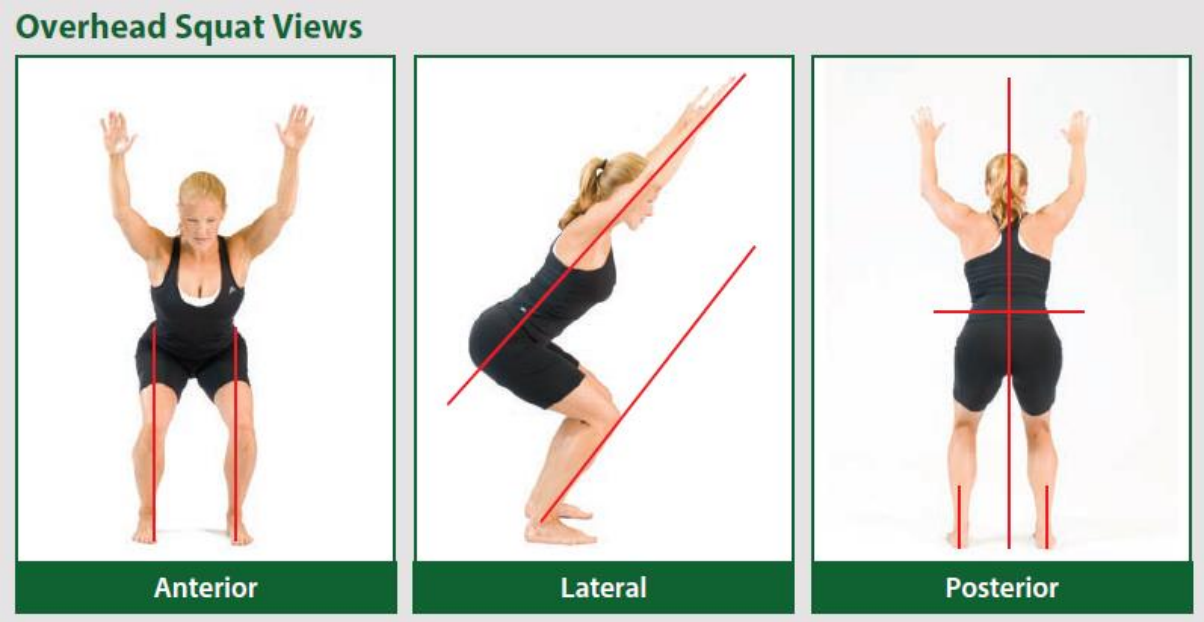


Overhead Squat & Dynamic Athletic Screening



Dynamic Movement Screening

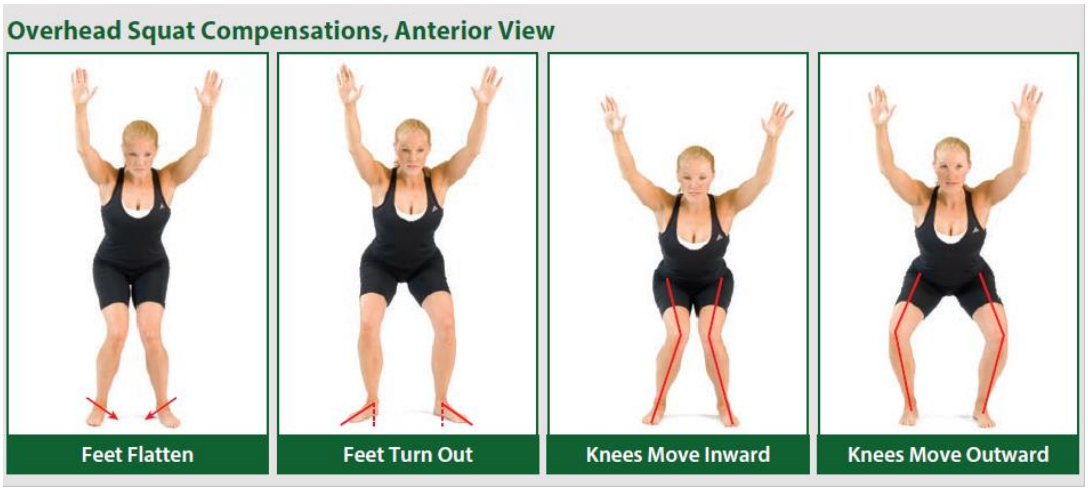
The purpose of the overhead squat screening is to evaluate issues in the hips, shoulders and ankles due to joint immobility, overactive muscles and lack of neuromuscular control. The results of this screening will help you properly design an appropriate exercise program based on the athlete's individual movement compensations. (For example, select stretching exercises to reduce muscle tension of overactive muscles. Select assisting and activation exercises for underactive muscles.)

Lateral	Anterior	Posterior

View the athlete from three perspectives: lateral, anterior and posterior. The overhead squat should be performed without shoes in order for you to have a better view of the foot and ankle. Some coaches repeat the screening with running shoes and compare the results to determine if the shoes are affecting stability, balance, and joint mobility.

You will view the athlete 5 times from each view while performing the movement (taking pictures for analysis). From the anterior view you should focus on the feet and knees. From the lateral view you should focus on the lumbo pelvic hip complex and arms, and from the posterior view you should focus on the ankle and heel, and the hips.

THE FRONT (ANTERIOR) VIEW



Preparation

To prepare for the movement, the athlete should stand feet facing forward, hip width apart and arms to the side. The athlete should raise his or her hands over head with elbows fully extended and palms facing forward.

Movement

With the arms overhead, instruct the athlete to squat to the height of a chair seat, maintain that position for 1-2 seconds, then return to the starting position. From the anterior view the coach should focus on the feet and knees. From the lateral view the coach should focus on the lumbo pelvic hip complex and arms, and from the posterior view the coach should focus on the ankle and heel, and the hips.

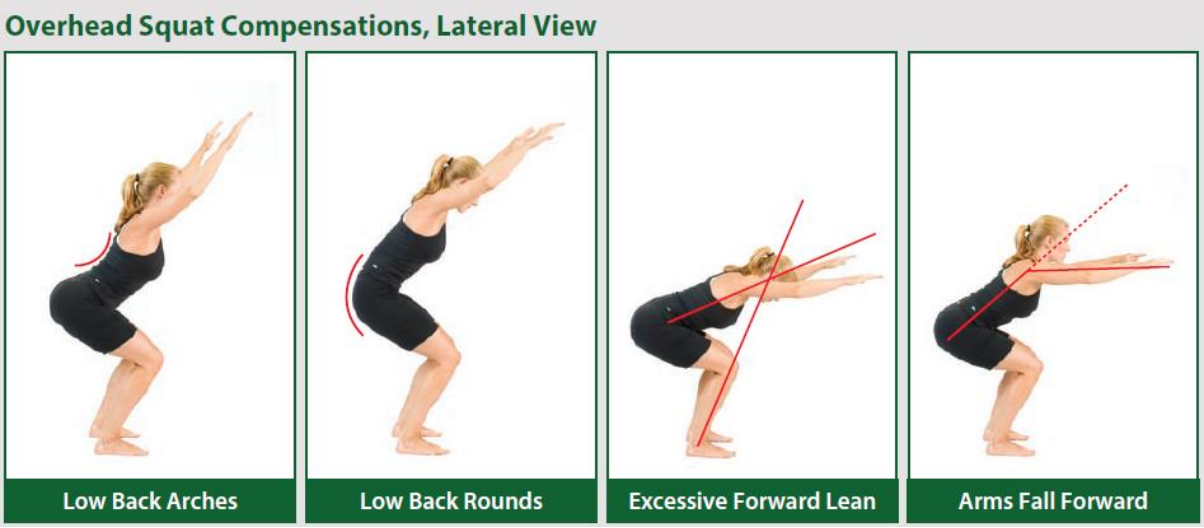
From the front view the feet, ankles and knees, shoulders and head

	The feet should remain straight ahead; observe to see if the feet turn out, or their feet flatten.
	The knees should track in line with the toes; Observe to see if their knees move inward
	Shoulders should be level and depressed, not elevated.

THE FRONT (ANTERIOR) VIEW ANALYSIS

Checkpoint	Expected	Possible compensation	Probable overactive muscles	Probable underactive muscles
Feet	Feet stay straight	R- Foot turn out L- Foot turn out R- Flat feet L- Flat feet	Soleus gastrocnemius Bicep femoris (short head)	Med. gastrocnemius Med. hamstring Gracilis Sartorius Popliteus
Knees	Knees track in line with 2nd and 3rd toes	Knees move inward (adduct and internally rotate)	Adductor complex Bicep femoris (short head) Tensor fascia latae (TFL) Vastus lateralis	Gluteus medius Gluteus maximus Vastus medialis oblique (VMO)
Shoulders	Level and depressed	R –Shoulder elevated L- Shoulder elevated	Upper trapezius Sternocleidomastoid Levator scapula	Mid/lower trapezius
Head	Neutral position	Chin jutting out	Levator scapula Sternocleidomastoid Upper trapezius	Deep cervical flexors

THE SIDE (LATERAL) VIEW



Preparation

To prepare for the movement, the athlete should stand laterally to the coach with hip width apart with feet facing forward, and arms to the side. The athlete should raise his or her hands over head with elbows fully extended and palms facing forward.

Movement

With the arms overhead, instruct the athlete to squat to the height of a chair seat, maintain that position for 1-2 seconds, then return to the starting position. As the athlete performs each squat evaluate the body positions starting with the feet and moving up to the head. (This may take up to 5 repetitions to obtain all the information.)

From the side view the feet, knees, lumbo-pelvic hip complex, shoulders and neck

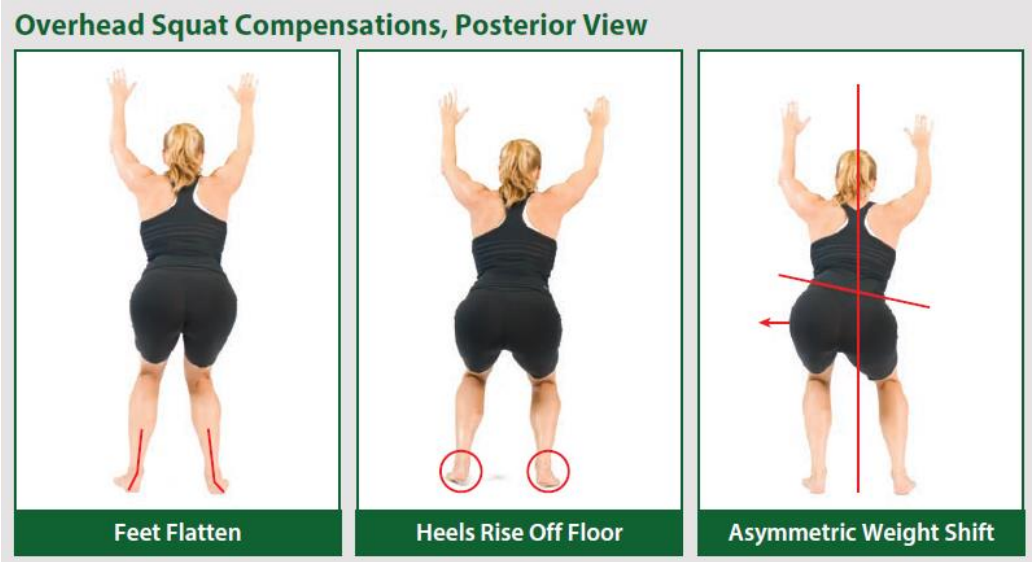
	The knees should be tracking in line with the toes; not moved inward (adducted and internally rotated).
	The lower back should be neutral and aligned with shoulders/arms; not arching or rounding
	The upper body should not demonstrate an excessive forward lean.
	Shoulders should be aligned with arms and back; not falling forward
	Head and chin should be in a neutral position; chin should not be jutting out

THE SIDE (LATERAL) VIEW ANALYSIS

Checkpoint	Expected	Possible compensation	Probable overactive muscles	Probable underactive muscles
Knees	Knees do not move past the toes	Knees move inward (adduct and internally rotate)	Adductor complex Bicep femoris (short head) Tensor fascia latae (TFL) Vastus Lateralis	Gluteus medius Gluteus maximus Vastus medialis oblique (VMO)
Lumbo-pelvic region	Lower back neutral and aligned with shoulders, arms	Lower back arches	Hip flexor complex Erector spinae Latissimus dorsi	Gluteus maximus Hamstrings Intrinsic core stabilizers
		Lower back rounds	Hamstrings Adductor magnus Rectus abdominis External obliques	Gluteus maximus Erector spinae Intrinsic core stabilizers Hip flexor complex Latissimus dorsi
		Excessive forward leaning	Soleus Gastrocnemius Hip flexor complex Abdominal complex (rectus abdominus, external oblique)	Anterior tibialis Gluteus maximus Erector spinae
Shoulders/ Arms	Shoulders and arms in line with back and hip	R –Shoulder falls forward L- Shoulder falls forward	Latissumus dorsi Pectoralis major/ minor Teres major	Mid/lower trapezius Rhomboids Rotator cuff
Head	Neutral position	Chin jutting out	Levator scapula Sternocleidomastoid Upper trapezius	Deep cervical flexors

* Intrinsic Core Stabilizers include: transverse abdominis, multifidus, internal oblique, transversospinalis, pelvic floor muscles

THE POSTERIOR (BACK) VIEW



Preparation

To prepare for the movement, the athlete should stand facing away from the coach. Feet should be hip width apart, and arms to the side. The athlete should raise his or her hands over head with elbows fully extended and palms facing forward.

Movement

With the arms overhead, instruct the athlete to squat to the height of a chair seat, maintain that position for 1-2 seconds, then return to the starting position. As the athlete performs each squat evaluate the body positions starting with the feet and moving up to the head. (This may take up to 5 repetitions to obtain all the information.)

From the front view the feet, ankles and knees, shoulders and head

	The feet should remain flat on the ground; heels should not be elevated.
	The heels should remain on the ground, not elevated.
	The pelvis should remain symmetrical from midline, not shifted right or left

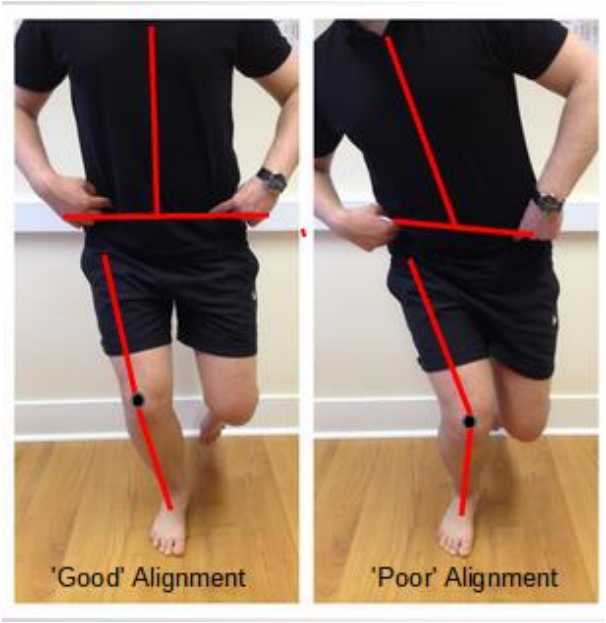
THE POSTERIOR (BACK) VIEW ANALYSIS

Checkpoint	Expected	Possible compensation	Probable overactive muscles	Probable underactive muscles
Feet	L- Slight arch in foot R- Slight arch in foot	L- Flat foot R- Flat foot	Peroneal complex Toe extensor complex Lateral gastrocnemius Bicep femoris Tensor fascia latae (TFL)	Posterior tibialis Anterior tibialis Medial gastrocnemius Gluteus medius
Heel	L- Heel on ground R- Heel on ground	L- Heel elevate R- Heel elevate	Soleus Gastrocnemius	Anterior tibialis
Lumbo-Pelvic hip complex	Symmetrical on midline	Asymmetrical weight shift	Adductor complex (on same side of shift) Tensor fascia latae (TFL) Piriformis Bicep femoris Gluteus medius (on opposite side of shift)	Gluteus medius (on side of shift) Adductor complex (on opposite side of shift)

SINGLE LEG SQUAT ANALYSIS

The purpose of the single-leg squat screening is to evaluate dynamic flexibility, core strength, balance and neuromuscular control.

The results of this screening will help the coach identify movement pattern compensations and possible muscle imbalances. Select stretching exercises to reduce muscle tension of overactive muscles. Select auxiliary and activation exercises for underactive muscles. Select unilateral exercises to improve balance and stability. You will view the athlete from the anterior perspective. The screening should be performed without shoes to better view the ankle and foot positions. Some coaches choose to repeat the screening with running shoes and compare the results.



Preparation

To prepare for the movement, the athlete should stand hip width apart with feet facing forward. The foot, ankle, knee and lumbo-pelvic-hip complex should be in a neutral position. Instruct the athlete to put his or her hands on the hips and focus on an object straight ahead.

Movement

Instruct the athlete to squat to a comfortable level, maintain the position for 1-2 seconds, and return to the starting position. As the athlete performs each squat evaluate the body positions starting with the feet and moving up to the shoulders (this may take up to 5 repetitions to obtain all the information).

Lateral	Anterior	Posterior

Look for the following:

	The feet should remain straight ahead, not pronating or turned out or supinating.
	The knees should be tracking in line with the foot (2nd and 3rd toes), not moving inward (adducted and internally rotated).
	The hips should be level; one side should not be elevated or dropped.
	Shoulders should be level and depressed, not elevated.

SINGLE LEG SQUAT ANALYSIS

Checkpoint	Expected	Possible compensation	Probable overactive muscles	Probable underactive muscles
Feet	Remain forward	R- Foot turn out L- Foot turn out	Soleus; Gastrocnemius; Bicep femoris (short head)	Medial gastrocnemius; Medial hamstring; Gracilis; Sartorius; Popliteus
Knees	Knees track in line with 2nd and 3rd toes	Knees move inward (adduct and internally rotate)	Adductor complex; bicep femoris (short head); tensor fascia latae (TFL); vastus lateralis	Gluteus medius; Gluteus maximus; Vastus medialis oblique (VMO)
		Knees move outward (abduct and externally rotate)	Gluteus medius; Gluteus maximus; Vastus medialis oblique (VMO)	Adductor complex; Bicep femoris (short head); Tensor fascia latae (TFL); Vastus lateralis
Hips	Hips should be horizontally level	Hip hike on opposite side of stance leg	Quadratus lumborum; gluteus minimus on stance leg	Adductor complex; Gluteus medius on stance leg
		Hip drop on opposite side of stance leg	Adductor complex on stance leg	Gluteus medius on stance leg; Quadratus lumborum on stance leg
Torso	Neutral trunk (no rotation)	Inward Trunk Rotation on stance leg	Internal oblique; TFL; Adductor complex on stance leg; External oblique opposite side of stance leg	Internal oblique on opposite side of stance leg; External oblique on stance leg; Gluteus medius/maximus
		Outward rotation on stance leg	Internal oblique on opposite side of stance leg; External oblique and piriformis on stance leg	Internal oblique on stance leg; External oblique; Adductor complex on opposite side of stance leg; Gluteus medius/ maximus
Shoulders	Horizontally level and depressed	R –Shoulder elevated L- Shoulder elevated	Upper trapezius; sternocleidomastoid; Levator scapula	Mid/lower trapezius