Most Prevalent Mobility and Stability Issues In WCGA Gymnasts

Top Six Mobility Issues at WCGA

- Poor Wrist Mobility
- Poor Shoulder Flexion Mobility and Shortness of Latissimus Dorsi Muscle
- Decreased Mobility of Thoracic Spine
- Poor Hip Extension Mobility
- Poor ankle Mobility
- ▶ Tight Hamstrings

Poor Wrist Flexibility/Mobility

Substitution	Symptoms	Solution	In Gym Examples
Elbow	Wrist jamming	Dowel stretch with	Elbow
hyperextension	(pain) with	elbow extension	Hyperextension:
	tumbling and vault	and elbow flexion	Raina, Shyann,
Shoulder flexion			Makenzie, Aver,
posturing in upper	Elbow	Don't allow	Maddie, Lexi
extremity weight	Hyperextension	gymnasts to	
bearing leading to	injuries	hyperextend	Carpal Bone
poor		elbows during	Injuries:
handstand	Carpal Bone	stretch!!!!	Ella, Sierra
alignment	Injuries		
		Elbow flexion	
		(biceps) strength	
		Eccentric wrist	
		extension strength	

Poor Wrist Mobility Substitutions



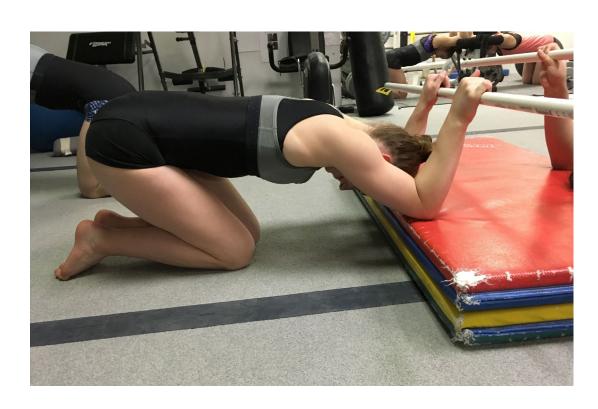




Poor Shoulder Flexion Mobility Shortness of Latissimus Dorsi Muscle

·	Olivia R., Ava (bull dog,) Ella, Gina -
which leads to compression of low back Difficulty with getting hands to vault board quickly and/or Difficulty with skills. reaching for backhand springs, etc. Poor handstand alignment Shoulder Pain in end flexion and thoracic extension vs. I we of shoulder flexion and thoracic extension vs. I we of shoulder flexion and thoracic extension vs. Foverextension of flumbar spine for skills. Open shoulder with pelvic tilt protocol AND/OR Lat Stretches End range shoulder Stretches End range shoulder Shoulder Pain in end use of shoulder flexion and thoracic extension vs. Foverextension vs. AND/OR Stretches End range shoulder Stretches End range shoulder	Hyperextension of low back. Hannah, Elizabeth - Getting hands back for vault board/tumbling. Reed - Shoulder pain Mel - substitutes poor shoulder mobility in end range with increased thoracic extension (position on bars is an example)

Poor Shoulder Mobility and Decreased Lat length Substitutions





Decreased Mobility of Thoracic Spine

Substitution	Symptoms	Solution	In Gym Examples
Increased compression of thoracic spine OR Impingement of shoulders in end range OR Increased lumbar spine extension Poor handstand alignment	Thoracic spine pain and/or Low back pain OR Shoulder Pain in end range Difficulty with getting hands to vault board quickly and/or Difficulty with reaching for backhand springs, etc.	Thoracic spine mobilization Training to facilitate use of shoulder flexion and thoracic extension vs. overextension of lumbar spine for skills. Self-Release techniques to decrease muscle hypertonicity in thoracic spine.	Elizabeth, Hannah, Graham, Brayden, Nyah, Olivia

Substitutions: Increased lumbar spine use, inability to reach backward for tumbling, shoulder impingement in end range.







Poor Hip Extension Mobility

Substitution	Symptoms	Solution	In Gym Examples
Hyperextension of lumbar spine	Low Back Pain Facet	Hip Flexor stretches -with careful	Olivia R., Ava (bull dog,) Ella, Gina, David, Brayden,
Increased hip angle	inflammation/frac ture	observation to ensure no substitutions!!!!!!	Graham, Sydney
Uneven length of hip flexors	SI dysfunction/pain	Back Extensor stretches	
contribute to SI dysfunction	Back leg difficulty with split motions	Lower abdominal strengthening Glut Med	
	Excessive lumbar extension with split motions	strengthening Open Hip with pelvic tilt protocol	
	Hip position in	petvie tite protocot	
	splits is rotated which can contribute to SI problems		

Poor hip extension length substitutions

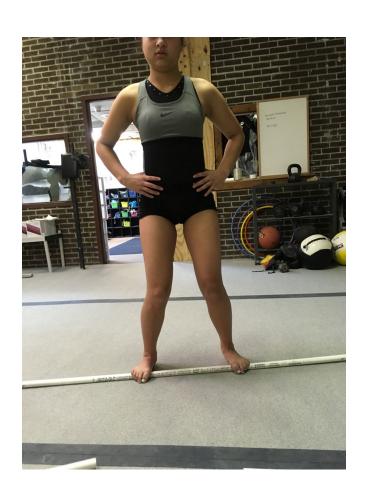




Poor Ankle Mobility

Substitution	Symptoms	Solution	In Gym Examples
Knee valgus in	Frequent ankle	Ankle mobilization	Cassie, Briana,
landing position	jamming/pain (coming up short)	with strap Ankle stretches	Natalie, Carly, Maddie, Makenzie,
Uneven mobility	(coming up short)	with knee in	Nyah, Ava R.
can lead to SI	Pain in front of	extension and	Shianne, lots and
dysfunction	ankle	knee in flexion	lots!!
	Heel cord	with careful observation to	
	strain/sprain/tear	avoid substitutions	
	·	Squats on dowel	
	Altered landing	with careful	
	position leading to	observation to avoid substitutions	
	knee pain	Lunges with	
	Uneven load with	careful	
	compression	observation to	
	leading to SI pain	avoid substitutions	
		Jumps with careful observation to	
		avoid substitutions	

Poor ankle mobility can lead to knee valgus. Ankle stretching should include the ankle joint not just heel cord stretching





Tight Hamstring Length

Substitution	Symptoms	Solution	In Gym Examples
Strain to back with splits, leaps, jumps	Forward leg difficulty with leaps/jumps	Hamstring stretches focusing on stabilizing	Zachary, Brinley, Nyah, Lily, Many many
Uneven hamstring	Excessive lumbar	pelvis with hamstring	
length can contribute to SI	extension with split positions	lengthening End range	
dysfunction Overstretching of	Hip position in splits is rotated	strengthening with stabilized pelvis Careful attention	
back flexors	which can cause SI problems	to substitution with split	
		stretching and strengthening	

Zach is stretching his back not his hamstrings.

Lily is stretching correctly and has very limited hamstring length. Brinley is demonstrating limitations in split.







Top Five Stability Issues at WCGA

- Poor Wrist Extension Strength
- Poor Shoulder Strength in End Range
- Poor Posterior Chain Strength often accompanied with over contraction of hip flexors and poor lower abdominal control
- Decreased Knee Strength/Control
- Poor Ankle Stability

Poor Wrist Extension Strength

Substitution	Symptoms	Solution	In Gym Examples
Elbow hyperextension Shoulder flexion posturing in UE weight bearing (Compounded with elbow flexion and wrist extension	Wrist jamming (pain) with tumbling and vault Elbow hyperextension injuries Carpal bone injuries Poor end range wrist extension control and eccentric wrist extension control	Dowel stretch with elbow extension and elbow flexion. Don't allow gymnasts to hyperextend elbows during this stretch!!!! Concentric Elbow Flexion (Biceps) strength. Eccentric wrist extension strength	Raina, Shyann, Makenzie, Avery, Maddie,Lexi - Elbow hyperextension Sierra, Ella - Carpal bone injuries

Poor Shoulder Strength in End Range

Substitution	Symptoms	Solution	In Gym Examples
Poor Shoulder	Low back pain	Lat stretches	Olivia R., Ava (bull
Flexion Mobility	OR	Training to	dog,) Ella, Gina -
	Shoulder Pain in	facilitate use of	Hyperextension of
Shortness of Lat	end range	shoulder flexion	low back.
muscle group	Diff: It it I	and thoracic	Hannah, Elizabeth
	Difficulty with end	extension vs.	
Overse of Lumber	range contraction	overextension of	Getting hands
Overuse of lumbar	of shoulder flexion	lumbar spine for	back for vault
spine extension which leads to	and abduction	skills. Open shoulder	board/tumbling. Reed - Shoulder
compression of low	Weakness of	with pelvic tilt	pain
back	scapular retractors	protocol	Ava R - chronic
	and rotator cuff	AND/OR	scapular pain
	muscles	Lat Stretches	, ,
		End range shoulder	
		stretches	
		End range shoulder	
		strengthening	

Poor Posterior Chain Strength often accompanied with over contraction of hip flexors and poor lower abdominal control

Substitution	Symptoms	Solution	In Gym Examples
Hyperextension of lumbar spine	Low Back Pain	Hip Flexor stretches - with careful	In general I have found that our gymnasts have
Increased hip angle	Facet inflammation/fracture	observation to ensure no substitutions!!!!!! Lower abdominal	very weak posterior chain strength and control. They are very
Decreased strength of Glut Med, Multifidus,	SI dysfunction/pain	strengthening Glut Med strengthening	strong in the "hollow" position which serves
Back Extensors, and lower abdominals	Muscle imbalance and asymmetry can lead to	Control/contraction of back extensors	them well for gymnastic skills.
	SI dysfunction and LBP	Open Hip with pelvic tilt protocol	However, most back injuries occur with
		Controlled dynamic contraction with Protocol using	extension and rotation. This is the area which I feel we
		push/pull and med ball exercises	are most vulnerable and can improve on
			the most.

Decreased Knee Strength/Control

Substitution	Symptoms	Solution	In Gym Examples
Knee valgus in landing and take off position Locking out knee	Knee pain Tightness/pain in ITB Pain with Growth Spurts	Monitor growth spurts as knee pain is more prevalent during this time Roll out quads and ITB Knee strengthening with focus on vastus medialus Landing/take-off drills with proper knee positioning Lunges and knee dips with monitoring of proper knee position	Hannah, Ella, Lauren, Lilly

Poor Ankle Stability

Substitution	Symptoms	Solution	In Gym Examples
Knee valgus in	Frequent ankle	Ankle	Cassie, Briana,
landing position	sprains	strengthening	Natalie, Carly,
		protocol	Maddie, Makenzie,
	Frequent ankle	Lunges with	Nyah, Ava R.
	jamming/pain	careful	Shianne, lots and
	(coming up short)	observation to avoid substitutions	lots!!
	Pain in front of	Jumps with careful	
	ankle	observation to	
	anice	avoid substitutions	
	Heel cord	**Ankle	
	strain/sprain/tear	strengthening	
	·	should be done	
	Altered landing	without tape in	
	position leading to	order to	
	knee pain	strengthen full	
		ROM!!	
	Uneven load with		
	compression		
	leading to SI pain		