Appendix Table A1a. List and descriptions of variables included in initial analysis*

Variable Name	Description
TibiaLength_cm	Tibia Length
HipStrengthHeightRatio	Peak isokinetic hip abductor torque (normalized to height)
HipStrengthThighRatio	Peak isokinetic hip abductor torque (normalized to thigh length)
IsokHip	Peak isokinetic hip abductor torque
IsokKneeExt	Peak isokinetic knee extensor torque
IsokKneeFlex	Peak isokinetic knee flexor torque
KT20	Joint laxity
KT30	Joint laxity
KneeExtStrengthNormalizedNmkg	Peak isokinetic knee extensor torque (normalized to weight)
Qangle	Standing quadriceps angle
QuadHamRatio	Ratio of peak isokinetic knee extensor strength to knee flexor strength
AnkleAngleZEROYMINLAND	Peak rearfoot eversion angle during landing
AnkleAngleZEROYROMLAND	Rearfoot eversion angular range of motion during landing
AnkleMomentPROXIMALXIMPSTANCE	Plantarflexor impulse (area under moment curve) during stance
AnkleMomentPROXIMALXMAXLAND	Peak plantarflexor moment during landing
AnkleMomentPROXIMALXROMLAND	Plantarflexor moment range of values (max – min) during landing
AnkleMomentPROXIMALYROMLAND	Rearfoot eversion moment range of values (max – min) during landing
AnkleMomentPROXIMALZIMPLAND	Internal ankle rotator impulse (area under moment curve) during land
AnkleMomentPROXIMALZIMPSTANCE	Internal ankle rotator impulse (area under moment curve) during stance
AnkleMomentPROXIMALZMAXLAND	Peak internal ankle rotator moment during landing
AnkleStiffnessIntercept	y-intercept of regression equation modeling ankle stiffness (ankle angle vs. ankle moment)
AnkleStiffnessR2	R^2 value of regression equation modeling ankle stiffness (ankle angle vs. ankle moment)

AnkleStiffnessSlope	Slope of regression equation modeling ankle stiffness (ankle angle vs. ankle moment)
BodyCOGZMAXLAND	Highest vertical position of the body's center of gravity during landing
BodyCOGZMINLAND	Lowest vertical position of the body's center of gravity during landing
BodyCOGZROMLAND	Range of vertical displacement of the body's center of gravity during landing
GRFUnfilteredZIMPLAND	Vertical GRF impulse (area under GRF curve) during landing
GRFUnfilteredZIMPSTANCE	Vertical GRF impulse (area under GRF curve) during stance
GRFUnfilteredZMAXLAND	Peak vertical GRF during landing
GRFUnfilteredZMAXTO	Peak vertical GRF during toe-off
HipAngleZEROXMAXLAND	Peak hip flexion during landing
HipAngleZEROXROMLAND	Hip flexion range of motion during landing
HipAngleZEROYIC	Frontal plane hip angle at initial contact
HipAngleZEROYMAXLAND	Peak hip adduction angle during landing
HipAngleZEROZMAXLAND	Peak hip internal rotation angle during landing
HipAngleZEROZMINLAND	Peak hip external rotation angle during landing
HipAngleZEROZROMLAND	Transverse plane hip angular range of motion during landing
HipJointCenterZROMLAND	Range of vertical displacement of the hip joint center during landing
HipMomentPROXIMALXMAXLAND	Peak hip extensor moment during landing
HipMomentPROXIMALXMINLAND	Peak hip flexor moment during landing
HipMomentPROXIMALYIMPSTANCE	Frontal plane hip impulse (area under the moment curve) during stance
HipMomentPROXIMALYMAXLAND	Peak hip abductor moment during landing
HipMomentPROXIMALYMINLAND	Peak hip adductor moment during landing
HipMomentPROXIMALYROMLAND	Frontal plane hip moment range of values (max – min) during landing
HipMomentPROXIMALZMAXLAND	Peak hip external rotator moment during landing
HipMomentPROXIMALZMINLAND	Peak hip internal rotator moment during landing
HipMomentPROXIMALZROMLAND	Transverse plane hip moment range of values (max – min) during landing

HipStiffnessR2	R^2 value of regression equation modeling hip stiffness (hip angle vs. hip moment)

*List of variables does not include the 4 knee measures for defining the knee LPA nor 4 hip measures used for defining the hip LPA. These are presented in Table 2.

Appendix Table A1b. List and descriptions of variables included in initial analysis* continued

Variable Name	**Description**
HipStiffnessSlope	Slope of regression equation modeling hip stiffness (hip angle vs. hip moment)
KneeAngleZEROXMINLAND	Peak knee flexion during landing
KneeAngleZEROXROMLAND	Knee flexion angular range of motion
KneeAngleZEROYIC	Frontal plane knee angle at initial contact
KneeAngleZEROYMAXTO	Peak knee adduction angle during toe-off
KneeAngleZEROYMINLAND	Peak knee abduction angle during landing
KneeAngleZEROYROMLAND	Frontal plane knee angular range of motion during landing
KneeAngleZEROZROMLAND	Transverse plane knee angular range of motion during landing
KneeFrontalPlaneAngleYMINLAND	Peak knee frontal plane projection angle during landing
KneeMomentPROXIMALXMINLAND	Peak knee extensor moment during landing
KneeMomentPROXIMALXMINTO	Peak knee extensor moment during toe-off
KneeMomentPROXIMALXROMLAND	Knee extensor moment range of values (max – min) during landing
KneeMomentPROXIMALYMINLAND	Peak knee abduction moment during landing
KneeMomentPROXIMALZROMLAND	Transverse plane knee moment range of values (max – min) during landing
KneeStiffnessIntercept	y-intercept of regression equation modeling knee stiffness (knee angle vs. knee moment)
KneeStiffnessR2	R^2 value of regression equation modeling knee stiffness (knee angle vs. knee moment)

KneeStiffnessSlope	Slope of regression equation modeling knee stiffness (knee angle vs. knee moment)
TrunkAngleLABXMINLAND	Peak trunk flexion during landing
TrunkAngleLABXROMLAND	Trunk flexion angular range of motion during landing

*List of variables does not include the 4 knee measures for defining the knee LPA nor 4 hip measures used for defining the hip LPA. These are presented in Table 2.

Appendix Table A2. PFP status by the hip and knee profile for the 739 athletes who completed the baseline

	Hip Profile		**Knee Profile**	
	high-risk	low-risk	high-risk	low-risk
PFP (absent)	390(63.8%)	221(36.2%)	264(43.2%)	347(56.8%)
PFP (present)	79(68.1%)	37(31.9%)	59(50.9%)	57(49.1%)

Appendix Table A3. Pubertal status by the hip and knee profile for the 506 athletes who completed the baseline and the follow-up visit

	Hip Profile		**Knee Profile**	
	high-risk	low-risk	high-risk	low-risk
Baseline				
Pre-pubertal	257(82.9%)	53(17.1%)	91(29.4%)	219(70.6%)
Post-pubertal	97(49.5%)	99(50.5%)	119(60.7%)	77(39.3%)
Follow-up				
Pre-pubertal	162(69.5%)	71(30.5%)	87(37.3%)	146(62.7%)
Post-pubertal	127(46.5%)	146(53.5%)	154(56.4%)	119(43.6%)