from the injury. BB and meniscal/cartilage lesions were analyzed on MRI, while a video analysis of mechanisms of ACL injury and injury dynamics were assessed from the videos.
Results The most common pattern of BB present in 8 cases (53%) was a femoral BB >5 mm in the central portion of the lateral femoral condyle and in the posterior portion of the lateral tibial plateau. In all these cases, the injury occurred with single-leg load during a pivoting maneuver while changing direction during pressing (33%), dribbling (7%), goalkeeping (7%) or in response of being being tackled on the upper body (7%). All these injuries occurred without direct contact, high horizontal speed and with an abducted hip.

Other patterns included BB only in tibia (20%), tibia and femur BB <5 mm (7%) or no BB (20%). In these cases, injury occurred due to direct contact (20%), recovery balance after kicking (13%) or jumping (7%), and while tackling (7%).
Conclusions A characteristic and well-defined BB pattern, with BB in both tibia and femur, was identified in ACL injuries without direct contact and while the football players had single-leg loading while pivoting trying to perform a sudden change of direction.

402 LATERAL-HEEL RELEASE-SETTINGS FOR SPECIAL SKI-BINDINGS

Rick Howell. *Howell Ski Bindings, Stowe, USA*

10.1136/bjsports-2021-IOC.367

Background Lateral-heel ski-binding release is favorably associated with the attenuation of combined abduction-moment/torsional-tibia-torque developed during Slip-Catch trauma on skis - which combined-loading is associated, biomechanically, with ACL injury.
Objective Derive a range of lateral-heel release-settings indexed to a range of 'torsional-tibia-torque release-settings' (torsional-settings). Hypotheses: a range of torsional-settings can be indexed to a range of lateral-heel release-settings to mitigate ACL injuries on skis.

Design, Setting

Biomechanical, Observational. International alpine skiing-binding test-method standards were expanded to include measurement of lateral-heel release. The toe-piece of the binding was calibrated to produce a range of torsional-settings as a function of a range of body-weights. A range of lower-leg lengths (denoted between the distal-heel and the centre of the knee) were culled from gender-specific biometric data, matched to body weights. Adding lower-leg length to boot-sole thickness, binding and ski-thickness - a range of 'total-length abduction-lever-arms' (TLALA) were matched to the range of body-weights. Lateral-heel release was hunted by adjusting the lateral-heel release-mechanism such that when (a) abduction-force was applied 5cm aft ward of a range of 'transition points' ('transition-point' = TLALA transposed horizontally to rear-portion of ski), lateral-toe release occurred; and when (b) abduction-force was applied 5cm forward of the transition-points, lateral-heel release occurred. Lateral-heel release-force was measured by a transducer positioned on the ski at the projected interface of the boot-sole/ski-binding heel.
Patients None.
Interventions Additional lateral-heel release-settings.
Main Outcome Measurements Lateral-heel release-force.

Results

Abstract 402 Table 1

Torsional-tibia release-torque [daNm]	Lateral-heel release (force) setting [daN] Females - Males
3.0	12 - 18
4.0	20 - 24
5.0	25 - 28
6.0	30 - 32
7.0	35 - 37
8.0	40 - 40

Conclusions A range of lateral-heel release (force) settings were indexed to a range of standardized torsional-settings. A prospective intervention study is needed to correlate lateral-heel release to a mitigation of ACL injuries.

403 INCIDENCE OF PEDIATRIC ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTIONS IN NORWAY FROM 2005 TO 2019

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Background The incidence of paediatric anterior cruciate ligament (ACL) reconstructions is increasing in the USA and Australia, but the incidence in Norway is unknown. The health burden regarding short- and long-term complications from ACL injury is high, and there are also risks of complications associated with reconstructions.
Objective The primary aims were to determine the incidence of paediatric ACL reconstructions in Norway and to detect changes in incidence during the past 14 years.
Design Retrospective observational register study.
Setting Data were retrieved from the nationwide Norwegian Knee Ligament Register (NKLR) which collects data on all cases of ACL reconstructions in Norway.
Patients (or Participants) Girls aged 14 years or younger, and boys aged 16 years or younger, with primary ACL reconstruction registered between January 2005 and December 2019.
Main Outcome Measurements Annual incidence of paediatric ACL reconstructions, stratified by age and sex.
Results For boys, the annual incidence increased from 21 per 100,000 in 2005 (95% CI, 15–27) to 30 in 2019 (95% CI, 23–37). For girls, the incidence increased from 14 (95% CI, 9–19) to 28 (95% CI, 20–36). A total of 26,106 patients (all ages) underwent ACL reconstruction between 2005–2019. Of these, 818 (3.1%) were boys, and 470 (1.8%) were girls. The mean age at time of surgery was 15.3 years (SD 0.94) for boys, and 13.7 years (SD 0.57) for girls. Of the surgically treated patients, 55,6% (455) of the boys were 16 years of age, and 77.4% (364) of the girls were 14 years of age. The sports where most injuries occurred were football, handball and alpine.

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Correction: *402 Lateral-heel release-settings for special ski-bindings*

Howell R. 402 Lateral-heel release-settings for special ski-bindings. *Br J Sports Med* 2021;55:A153.

Important data was missing from the table in this abstract. The correct table should be:

Torsional-Tibia Release-Torque (daNm)	Test sole Length[4] (cm)	Skier-Weight Length[4](cm)	Type-2 (daN) Males	Total abduction Transition-Point Females	Lever-Arm (cm) Males	Lateral-Heel force Setting Females	Release-(daN) Males
3.0	28.0	47	35	49.0	46.0	**12**	**18**
4.0	29.8	54	48	51.0	50.5	**20**	**24**
5.0	31.4	67	61	53.5	54.5	**25**	**28**
6.0	32.7	81	73	55.5	57.5	**30**	**32**
7.0	33.9	96	89	57.0	60.0	**35**	**37**
8.0	35.0	111	104	58.0	62.0	**40**	**40**

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Check for updates

Correction: *402 Lateral-heel release-settings for special ski-bindings*

Howell R. 402 Lateral-heel release-settings for special ski-bindings. *Br J Sports Med* 2021;55:A153. doi: 10.1136/bjsports-2021-IOC.367

The headings in the previous correction notice were incorrect. The correct table should be:

Intervention, Main Outcome Measurements, Results: The indexed-relationship between the *independent variable, torsional-tibia release-torque (italic)*—and the main interventional outcome, lateral-heel release-force (**bold**):

Torsional-Tibia Release-Torque (*daNm*)	Test Sole Length[4] (cm)	Skier-Weight, Type-2 (ISO 8061) (daN)		Total Abduction Lever-Arm Transition-Point (cm)		**Lateral-Heel Release-Force Setting (daN)**	
		Females	Males	Females	Males	**Females**	**Males**
3.0	28.0	47	35	49.0	46.0	**12**	**18**
4.0	29.8	54	48	51.0	50.5	**20**	**24**
5.0	31.4	67	61	53.5	54.5	**25**	**28**
6.0	32.7	81	73	55.5	57.5	**30**	**32**
7.0	33.9	96	89	57.0	60.0	**35**	**37**
8.0	35.0	111	104	58.0	62.0	**40**	**40**

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