<table>
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<th>Study</th>
<th>Objective</th>
<th>Statistical analysis</th>
<th>Variables from multivariate model</th>
<th>Variables adjusted for</th>
<th>Significant risk factors</th>
<th>Non-significant risk factors</th>
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<tr>
<td>Ahn et al. 2012</td>
<td>Determine the incidence of knee OA in the 3 compartments of the knee joint separately, determine the factors associated with the onset of OA in the 3 compartments separately, evaluate clinical outcomes over a long-term follow-up period after ACL reconstruction with BPTB autograft.</td>
<td>Multiple logistic regression</td>
<td><strong>Dependent</strong>: medial, lateral and PF radiographic knee OA &lt;br&gt; <strong>Independent</strong>: time from injury to reconstruction, age, BMI, MPTA, anatomical axis angle, femoral tunnel position high and low, shallow and deep, sagittal tibial tunnel position, coronal tibial tunnel position, medial partial meniscectomy, subtotal meniscectomy, KT-2000 arthrometer at follow-up ($\geq 3$ mm), Lachman test grade at follow-up</td>
<td>N/A</td>
<td>For the medial compartment: medial partial meniscectomy and sagittal tibial tunnel position &lt;br&gt; For the lateral compartment: BMI at the time of surgery</td>
<td>All independent variables in the model except for those mentioned as significant risk factors. &lt;br&gt; There were no significant risk factors of OA in the PF compartment.</td>
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<tr>
<td>Bourke et al. 2012</td>
<td>Report the outcome of ‘isolated’ ACL ruptures treated with anatomical endoscopic reconstruction using hamstring tendon autograft</td>
<td>Logistic regression</td>
<td><strong>Dependent</strong>: radiographic knee OA &lt;br&gt; <strong>Independent</strong>: further surgery and tunnel placement</td>
<td>N/A</td>
<td>Any further knee surgery</td>
<td>Non-ideal tunnel placement</td>
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<tr>
<td>Study</td>
<td>Objective</td>
<td>Methodology</td>
<td>Dependent</td>
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<tr>
<td>Cantin et al. 2016</td>
<td>Assess the cartilage outcome after ACL reconstruction at a minimum 10 years of follow-up based on a multicenter study and to identify the prognostic factors of this cartilage outcome.</td>
<td>Univariate logistic regression. Multivariate logistic regression.</td>
<td><strong>Dependent:</strong> Radiographic knee OA</td>
<td>N/A</td>
<td>Age over 34 years at the time of surgery, residual laxity, stage 3 and 4 intraoperative cartilage lesions, medial and lateral meniscectomy. Gender, activity level, tibial or femoral tunnel positioning, type of sport, type of graft, stage 4 lateral chondropathy.</td>
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<tr>
<td>Janssen et al. 2013</td>
<td>Analysis of long-term clinical and radiological outcomes after ACL reconstruction with special attention to knee osteoarthritis and its predictors.</td>
<td>Univariate logistic regression. Multivariate logistic regression</td>
<td><strong>Dependent:</strong> Radiographic knee OA</td>
<td>N/A</td>
<td>Age &gt; 30 years, ICRS grade 3 in any knee compartment at the time of ACL reconstruction, history of medial meniscectomy, patients who scored grade D on one-leg hop test. Gender, Time to ACL reconstruction, BMI, complications, preoperative Lysholm score, preoperative Tegner score, preoperative IKDC subjective grade, leg circumference, ROM, One-leg hop test A-B, IKDC grade A-D, ICRS grade 0-1, lateral meniscectomy prior to or during ACL reconstruction.</td>
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<tr>
<td>Leys et al. 2012</td>
<td>Compared the results of isolated endoscopic ACL</td>
<td>Logistic regression (unclear if it)</td>
<td><strong>Dependent:</strong> osteoarthritic radiological change</td>
<td>N/A</td>
<td>PT graft</td>
<td>HT graft, tunnel positioning, graft inclination, further</td>
</tr>
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</table>
reconstruction utilizing a 4-strand hamstring tendon (HT) or patellar tendon (PT) autograft over a 15-year period with respect to reinjury, clinical outcomes, and the development of osteoarthritis was univariate or multivariate) was univariate or multivariate) Independent: PT or HT graft, tunnel positioning, graft inclination, further surgery.

Oiestad et al. 2010 Identify risk factors for knee OA 10–15 years after ACL reconstruction

Independent: age, sex, additional injury, graft type, time from injury to surgery, BMI, KT-1000 manual maximum tests (difference), and knee function variables at 6 months, 1 year, and 2 years postoperatively (the Cincinnati knee score, the triple jump test, the stair hop test, and the muscle strength tests)

Dependent: radiographic and symptomatic radiographic knee OA

Independent: age, sex, additional injury, and graft type

Dependent: radiographic and symptomatic radiographic knee OA

Dependent: patellofemoral OA

Dependent: patellofemoral OA

Independent: age, gender, and BMI at the 12-year follow-up

Independent: age, gender, and BMI at the 12-year follow-up

Independent: age, gender, and BMI at the 12-year follow-up

Radiographic OA: Increased age at surgery, additional injury

Symptomatic OA: Impaired self-reported knee function 2 years postoperatively, loss of quadriceps strength between 2 and 10-15 years

Radiographic OA: Increased age at surgery, additional injury

Symptomatic OA: Impaired self-reported knee function 2 years postoperatively, loss of quadriceps strength between 2 and 10-15 years

Quadriceps muscle weakness measured in absolute values (joules) or absolute values normalized to BW (%BW), functional tests

Quadriceps muscle weakness measured in absolute values (joules) or absolute values normalized to BW (%BW), functional tests

Quadriceps muscle weakness measured in absolute values (joules) or absolute values normalized to BW (%BW), functional tests

Knee laxity, self-reported knee function, quadriceps

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<th>Univariate Analysis</th>
<th>Multivariate Analysis</th>
<th>Binary Logistic Regression</th>
<th>Dependent</th>
<th>Independent</th>
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<td>Pernin et al. 2010</td>
<td>Determine how the status of the medial meniscus and the medial compartment articular cartilage observed at the time of ACL reconstruction affects results more than 24 years after surgery</td>
<td>Univariate regression. Multivariate regression. Binary logistic regression with block-entry method.</td>
<td><strong>Dependent:</strong> Medial compartment radiographic OA.</td>
<td>N/A</td>
<td>Medial meniscectomy and medial compartment articular damage at the time of initial surgery. Mean time between injury and ACL reconstruction, mean age at time of injury, mean age at time of surgery, medial chondral lesion at the time of surgery</td>
<td>Residual laxity, time from injury to surgery (sjekk tabell6).</td>
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<tr>
<td>Shelbourne et al. 2012</td>
<td>Determine how knee ROM deficits would correlate with the prevalence of arthritic changes observed on radiographs after ACL reconstruction</td>
<td>Univariate logistic regression. Multivariate logistic regression.</td>
<td><strong>Dependent:</strong> Radiographic knee OA.</td>
<td>Subanalysis was performed based on the status of the medial and lateral meniscus at the time of surgery or at the time of Abnormal knee flexion at early follow-up, abnormal knee extension at final follow-up, abnormal knee flexion at final follow-up, partial medial</td>
<td>Abnormal knee flexion at early follow-up, abnormal knee extension at final follow-up, abnormal knee flexion at final follow-up, partial medial</td>
<td>Lateral meniscus removed</td>
<td></td>
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</table>
Shelbourne et al. 2017 | Determine the prevalence rate and factors that were associated with the development of OA 20 years after ACL reconstruction with patellar tendon autografts | Multivariate binary logistic regression. | **Dependent:** Radiographic knee OA  
**Independent:** Age at surgery, sex, type of injury (acute/chronic), medial and lateral meniscus status, articular cartilage damage, knee extension and flexion. | N/A | Medial meniscectomy, knee extension less than normal at the time of discharge from physical therapy, older age at surgery.  
Sex, injury type, lateral meniscectomy, articular cartilage damage, flexion loss. |

Streich et al. 2013 | Evaluation of ACL reconstruction using a four-stranded single-bundle reconstruction with a semitendinosus tendon graft with extracortical fixation | Linear regression.  
Multiple regression. | **Dependent:** Radiological knee OA  
**Independent:** age, BMI, gender, functional outcome, time from injury to index operation, initial or secondary meniscal surgery, KT-1000 and pivot shift. | Positive pivot shift test at follow-up, higher BMI. | Age, gender, time from injury to initial surgery, primary and subsequent meniscal surgery, functional outcome or the KT-1000 arthrometer |

Thompson et al. 2015 | Report the 20-year outcomes of isolated ACL ruptures treated with endoscopic reconstruction using middle-third patellar tendon | Logistic regression.  
Multivariate Cox regression | **Dependent:** Radiographic knee OA  
**Independent:** graft type, further surgery and tunnel placement | N/A | BPTB graft, graft angle of >17 degree  
Not described
tendon autografts.

OA, osteoarthritis; ACL, anterior cruciate ligament; BPTB, bone-patella tendon-bone; PF, patellofemoral; BMI, bodymass index; MPTA, medial proximal tibial angle; N/A, not applicable; ICRS, Clinical cartilage injury evaluation system; IKDC, International Knee Documentation Committee; ROM, range of motion; HT, hamstringtendon; PT, patellartendon; BW, bodyweight; VAS, visual analogue scale; KOOS, knee injury and osteoarthritis outcome score