Marked Increase in the Incidence of ACL Reconstructions in Young Females in the Last 16 Years (2000-2016)

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ACL reconstruction surgery (ACLR) in New Zealand is funded by the Accident Compensation Corporation (ACC).

All data for primary ACLRs from January 2009 and December 2016 were reviewed.

Incidence rates for ACLRs were calculated for each year of the study to find the mean, using population estimates from Statistics New Zealand.\(^1\)

Data were compared to a previous study of 7,375 patients undergoing primary ACLR between 2000-2005.\(^2\)
Results

20,751 primary ACLRs performed from 2009-2016

61% male and 39% female

Mean age 29 years

Overall incidence of primary ACLRs 58.3 per 100,000 person-years

Incidence increased by 11% from 2009 to 2016

This represents a 58% increase over the incidence from 2000-05

[GRAPH for increase in incidence over study period]?
ACL Reconstructions in Females

Peak incidence in younger females

*Data sourced from Gianotti et al. 2009*
ACL Reconstructions in Females

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The **peak** incidence in females shifted from ages 20-24 to **15-19 years**

The **greatest increase** in incidence was in females **15-19 years**, of **120%** from **2000-05** to **2009-16**

Overall incidence in females **44.9 per 100,000**
Overall incidence was greater in males than females (72.2 and 44.9 per 100,000 respectively) and the peak remained at 20-24 years.

*Data sourced from Gianotti et al. 2009
The incidence of ACLRs following sporting injuries also peaked in females aged 15-19 years.
## Cause of injury

<table>
<thead>
<tr>
<th>Sport</th>
<th>Count of ACLRs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netball</td>
<td>3088 (19.5)</td>
</tr>
<tr>
<td>Rugby Union</td>
<td>2925 (18.5)</td>
</tr>
<tr>
<td>Football</td>
<td>2712 (17.1)</td>
</tr>
<tr>
<td>Touch Rugby</td>
<td>1223 (7.7)</td>
</tr>
<tr>
<td>Skiing - Snow</td>
<td>1104 (7.0)</td>
</tr>
<tr>
<td>Basketball</td>
<td>682 (4.3)</td>
</tr>
<tr>
<td>Rugby League</td>
<td>663 (4.2)</td>
</tr>
<tr>
<td>Hockey</td>
<td>276 (1.7)</td>
</tr>
<tr>
<td>Trail Biking, Motocross</td>
<td>248 (1.6)</td>
</tr>
<tr>
<td>Martial Arts</td>
<td>203 (1.3)</td>
</tr>
<tr>
<td>Motorcycling</td>
<td>186 (1.2)</td>
</tr>
<tr>
<td>Cycling</td>
<td>185 (1.2)</td>
</tr>
<tr>
<td>Other</td>
<td>2327 (14.7)</td>
</tr>
<tr>
<td><strong>Total ACLRs following sport</strong></td>
<td><strong>15822</strong></td>
</tr>
</tbody>
</table>

Sport was the cause of injury in 76% of cases, which increased by 12% over the study period (69% to 81%). This is 11% more than reported in 2000-05 (65%).

Netball, rugby union and soccer accounted for 55% of all ACLRs following sporting injuries.
Conclusions

There has been a marked increase (120%) in the incidence of ACL reconstructions in **young New Zealand females** over the last 16 years.

Overall incidence remains **higher in males**. The proportion of ACLRs following **sporting injuries** has increased.

Evidence suggests sport may be the cause of the high incidence in **young females**.

**Injury prevention strategies** should target these high-risk groups, especially young females.
References
