Introduction
Cycling is sustainable mode of transportation that has many individual and population health benefits: increases in physical fitness; declines in body weight; lower risks of associated diseases; and reductions in air, noise, and water pollution. Unfortunately, the risk of injuries discourages people from cycling. In addition, injuries result in trauma and costs at both the individual and societal levels.

To identify ways to prevent injury events, we are conducting a multicenter case-crossover study focusing on “Bicyclists’ Injuries and the Cycling Environment” (the BICE Study).

Methods
Adult cyclists who lived and were injured in either Vancouver or Toronto and visited the emergency departments of Toronto General, Toronto Western, St. Michael’s, Vancouver General or St. Paul’s Hospitals were screened for eligibility and recruited to participate in an in-person interview about their injury trip and circumstances. Here we report on the circumstances of the first 300 eligible injury events, 150 in each city (May to December 2008).

We summarize descriptive data about the cyclists (age, sex), the trip (purpose, prior use of drugs and alcohol, city), the injury event (crash vs. fall and sub-classifications of these, and whether a motor vehicle was involved or not) and the injury (Canadian Trauma Score (CTAS) and hospitalization).

Analytical comparisons were made using Chi² (e.g., comparisons of cyclist and trip characteristics between cities) and by calculating odds ratios (e.g., comparisons of injury circumstances by cyclist and trip characteristic). Adjusted analyses were conducted using multiple logistic regression, with two models, one for each of the following covariates: 1) crash vs. fall, and 2) motor vehicle involved vs. not.

Results
The median CTAS was 3 (inter-quartile range: 3-4). Of the 300 cyclists studied, 27 (9%; 95% Confidence Interval: 5.8-12.2%) had injuries severe enough that they were admitted to hospital. Injury circumstances were broadly classified as:

- collisions (218 cases; 72%; 95% CI: 66.9-77.1%) or falls (84 cases, 28%, 95% CI: 22.9-33.1%) and
- involving motor-vehicles (145 cases; 48%, 95% CI: 42.4-53.7%) or falls (84 cases; 28%, 95% CI: 22.9-33.1%) and
- involving motor-vehicles (145 cases; 48%, 95% CI: 42.4-53.7%) or falls (84 cases; 28%, 95% CI: 22.9-33.1%),
- Motor-vehicle involved (n=145) vs. not (n=155)

Characteristics significantly (p < 0.05) related to injury circumstances in logistic regression models

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Injury Circumstances</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Crash vs. Fall</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>City</td>
<td>Crash vs. Fall</td>
<td>&lt; 0.05</td>
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<tr>
<td>Trip Purpose</td>
<td>Crash vs. Fall</td>
<td>&lt; 0.05</td>
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<tr>
<td>Motor-vehicle involved</td>
<td>Crash vs. Fall</td>
<td>&lt; 0.05</td>
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</tbody>
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Circumstances of Injuries to Cyclists
Resulting in Emergency Department Visits in Toronto & Vancouver

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