

# Contingency Tables

- Tables representing all combinations of levels of explanatory and response variables
- Numbers in table represent **Counts** of the number of cases in each cell
- Row and column totals are called **Marginal counts**

# Example – EMT Assessment of Kids

- Explanatory Variable – Child Age (Infant, Toddler, Pre-school, School-age, Adolescent)
- Response Variable – EMT Assessment (Accurate, Inaccurate)

<b>Assessment</b>			
<b>Age</b>	<b>Acc</b>	<b>Inac</b>	<b>Tot</b>
Inf	168	73	<b>241</b>
Tod	230	73	<b>303</b>
Pre	254	53	<b>307</b>
Sch	379	58	<b>437</b>
Ado	652	124	<b>776</b>
<b>Tot</b>	<b>1683</b>	<b>381</b>	<b>2064</b>

# Pearson's Chi-Square Test

- Can be used for nominal or ordinal explanatory and response variables
- Variables can have any number of distinct levels
- Tests whether the distribution of the response variable is the same for each level of the explanatory variable ( $H_0$ : No association between the variables)
- $r = \#$  of levels of explanatory variable
- $c = \#$  of levels of response variable