

Life-tables and withdrawals

Number at risk

$$\# \text{ Alive} - \frac{\# \text{ Withdrawals}}{2}$$

Proportion died

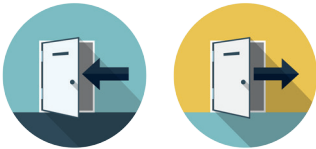
$$\frac{\# \text{ Who died}}{\# \text{ At risk}}$$

Proportion survived

$$1 - \frac{\# \text{ Who died}}{\# \text{ At risk}}$$

Cumulative proportion survived to end of each year

Multiply the proportion of people who survived each individual year.



Study participants come and leave throughout the study due to various reasons.

| Year after treatment | Alive | Died | Withdrew | Number at risk | Proportion died during year | Proportion survived during year | Cumulative proportion survived to end of year |
|----------------------|-------|------|----------|----------------|-----------------------------|---------------------------------|---|
| Year 1 | 500 | 223 | 24 | 488 | 0.457 | 0.543 | 0.543 |
| Year 2 | 253 | 111 | 17 | 244.5 | 0.454 | 0.546 | 0.297 |
| Year 3 | 125 | 39 | 10 | 120 | 0.325 | 0.675 | 0.200 |
| Year 4 | 76 | 13 | 8 | 72 | 0.181 | 0.819 | 0.164 |

$$\# \text{ At risk}_{Y_1} =$$

$$500 - \frac{24}{2} = 488$$

$$P_{D1} =$$

$$\frac{223}{488} = 0.457 \approx 46\%$$

$$P_{S1} =$$

$$1 - 0.457 = 0.543 \approx 53\%$$

$$\text{Cumulative proportion survived end of } Y_4 =$$

$$0.543 \times 0.546 \times 0.675 \times 0.819 = 0.164 \approx 16\%$$