

# Dichotomous Outcomes

Dichotomous outcome (0,1)  
 $W: W=1 \quad Y \geq C$   
 $W=0 \quad Y < C$   
 see HW1 logistic regr.

measured outcome  $Y$ , "t-test" on group membership  $G$

$$E(Y|G) = \beta_0 + \beta_1 G$$

$$\beta_1 = \mu_1 - \mu_0$$

is outcome associated with Group membership?  
 (either rct or observational self-selection)

## Group Effects w/ Dichotomous Outcome

2x2 tables  
 (independence <sup>hypoth</sup> no group effect)

	0	1
W		
G		

note: point-biserial correlation (sample)

$$r_{YG} = \frac{\bar{Y}_1 - \bar{Y}_0}{s_y} \sqrt{\frac{n_1 n_0}{n(n-1)}}$$

$$n = n_1 + n_0$$

$\chi^2$  deviation from independence

phi coeff  $\sqrt{\chi^2/n}$

product moment correlation

other measures of association  $W, G$   
 relative risk, odds ratio

Same cautions, difficulties in experiments vs observational studies (self selection)  
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