# Review II:
# Bivariable associations

Biometry 755

Spring 2009



## Question 1

*"Age was significantly associated with disease status (P = 0.001)."*

If age is measured continuously and disease status is binary, what statistical test(s) is(are) appropriate to assess this association?

A. t-test
B. chi-square test
C. Wilcoxon rank-sum test
D. A and B
E. A and C

## Question 2

*"Age was significantly associated with disease status (P = 0.001)."*

If age is measured continuously with a distribution that is approximately unimodal and symmetric, and disease status is binary, what statistical test(s) is(are) appropriate to assess this association?

A. t-test
B. chi-square test
C. Wilcoxon rank-sum test
D. A and B
E. A and C



## Question 3

*"Age was significantly associated with disease status (P = 0.001)."*

If age is measured continuously with a distribution that is positively skewed, and disease status is binary, what statistical test(s) is(are) appropriate to assess this association?

A. t-test
B. chi-square test
C. Wilcoxon rank-sum test
D. A and B
E. A and C

## Question 4

*"Age was significantly associated with disease status (P = 0.001)."*

If age is measured continuously with a distribution that is approximately unimodal and symmetric, and disease status is a three-level ordinal variable, what statistical test(s) is(are) appropriate to assess this association?

A. t-test
B. Wilcoxon rank-sum test
C. Kruskal-Wallis test
D. Fisher's exact test
E. one-way ANOVA



## Question 5

*"Age was significantly associated with disease status (P = 0.001)."*

If age is measured continuously with a distribution that is positively skewed, and disease status is a three-level ordinal variable, what statistical test(s) is(are) appropriate to assess this association?

A. t-test
B. Wilcoxon rank-sum test
C. Kruskal-Wallis test
D. Fisher's exact test
E. one-way ANOVA

## Question 6

*"Age was significantly associated with disease status (P = 0.001)."*

If age is a three-level ordinal variable and disease status is binary, what statistical test(s) is(are) appropriate to assess this association?

A. Fisher's exact test
B. chi-square test
C. one-way ANOVA
D. A and B
E. A and C



## Question 7

*"Age was significantly associated with disease status (P = 0.001)."*

If age is a three-level ordinal variable, disease status is binary, and the expected cell frequency for at least one cell of the $3 \times 2$ contingency table is less than 5, what statistical test(s) is(are) appropriate to assess this association?

A. Fisher's exact test
B. chi-square test
C. one-way ANOVA
D. A and B
E. A and C

## Question 8

*"Serum creatinine levels were significantly higher in subjects after treatment relative to baseline (P = 0.001)."*

If serum creatinine levels were measured on subjects at baseline and again after an intervention, then the reported p-value most likely is the result of _____.

A. Fisher's exact test
B. a t-test
C. a paired t-test
D. Wilcoxon signed-rank test
E. McNemar's test



## Question 9

*"Serum creatinine levels were significantly higher in subjects after treatment relative to baseline (P = 0.001)."*

If serum creatinine levels were measured on subjects at baseline and again after an intervention, and its distribution is approximately unimodal and symmetric, then the reported p-value most likely is the result of _____.

A. Fisher's exact test
B. a t-test
C. a paired t-test
D. Wilcoxon signed-rank test
E. McNemar's test

## Question 10

*"Serum creatinine levels were significantly higher in subjects after treatment relative to baseline (P = 0.001)."*

If serum creatinine levels were measured on subjects at baseline and again after an intervention, and its distribution is positively skewed, then the reported p-value most likely is the result of _____.

A. Fisher's exact test
B. a t-test
C. a paired t-test
D. Wilcoxon signed-rank test
E. McNemar's test



## Question 11

*"Serum creatinine levels were significantly higher in subjects after treatment relative to baseline (P = 0.001)."*

If serum creatinine is dichotomized as high or low and measured on subjects at baseline and again after an intervention, then the reported p-value most likely is the result of _____.

A. Fisher's exact test
B. a chi-square test
C. a t-test
D. a paired t-test
E. McNemar's test

## Question 12

*"Serum creatinine levels were significantly correlated with elevated HbA1c (P = 0.001)."*

If both serum creatinine and HbA1c are measured continuously, then the reported p-value most likely is the result of _____.

A. a t-test
B. a paired t-test
C. a chi-square test
D. a test of the significance of a Pearson correlation coefficient
E. a test of the significance of a Spearman correlation coefficient



## Question 13

*"Serum creatinine levels were significantly correlated with elevated HbA1c (P = 0.001)."*

If both serum creatinine and HbA1c are measured continuously, but at least one has a distribution that is positively skewed, then the reported p-value most likely is the result of _____.

A. a t-test
B. a paired t-test
C. a chi-square test
D. a test of the significance of a Pearson correlation coefficient
E. a test of the significance of a Spearman correlation coefficient