KINE 3635
In class questions: Cohort study

Question 1)

The evidence supporting obesity as a risk factor for colon cancer remains inconclusive, especially among women. A study (*Am J Epidemiol* 1999;150:390-398) reported the association between obesity (measured at baseline) and colon cancer morbidity as determined from review of medical records and death certificates in a nationally representative cohort of men and women age 25-74 years who participated in the First National Health and Nutrition Examination Survey from 1971 to 1975 and were subsequently followed up through 1992. The following table is from this study for men and women combined.

Baseline body mass index*	Number of incident cases of colon cancer	Population at risk
<22	28	10,695
22-<24	41	7,784
24-<26	36	7,322
26-<28	40	6,527
28-<30	35	4,224
30+	42	6,981

* kg body weight per height in meters squared

   a) Which research design has been used in this study?
   b) Calculate the relative risk (RR) of colon cancer for each of the BMI categories using the lowest BMI category as referent. Interpret your results.
   c) Calculate the RR of colon cancer for BMI ≥ 22 (combined) compared to <22 BMI category. Interpret the result.

Question 2)

Age-related maculopathy is a leading cause of blindness among people 65 and older in the United States. Residents of a community were asked to participate in a study to determine whether cigarette smoking was related to age-related maculopathy. At a baseline examination, participants were asked to report their smoking habits. After 5 years, participants had an examination to determine whether they had developed age-related maculopathy. The following table presents the number of cases of age-related maculopathy measured at the follow-up examination among the 1682 male participants ages 43-86 who did not have age related maculopathy (ARM) at the baseline examination:

	Smoking status	N	Cases of ARM
Alcohol Drinkers	Never smokers	368	56
	Ever smokers	864	200
Non-alcohol Drinkers	Never smokers	200	20
	Ever smokers	250	30

a) What is the study design?
b) Does this study show any association between smoking and maculopathy?

<u>**Question 3)**</u>

The following **two** abstracts summarize the results of epidemiologic studies. For each of the abstracts:
1)   Indicate the study design.
2)   Indicate the "exposure/ risk factor" and the "disease/ outcome"
3)   Construct one 2x2 table summarizing the results of the study in the following manner:

Exposure	Disease		
	Yes	No	Total
Yes	a	b	a+b
No	c	d	c+d
Total	a+c	b+d	a+b+c+d

4)   Based on the 2x2 table, calculate the appropriate measure of association between the independent variable and the dependent variable.

<u>**ABSTRACT 1**</u>

Prevalence of headache among handheld cellular telephone users in Singapore: a community study. Chia SE, Chia HP, Tan JS. <u>Environ Health Perspect.</u> 2000 Nov;108(11):1059-62

We carried out a ▮▮▮▮▮▮▮▮ community study in Singapore to determine the prevalence of specific central nervous system (CNS) symptoms among hand-held cellular telephone (HP) users compared to nonusers and to study the association of risk factors and CNS symptoms among HP users. A total of 808 men and women between 12 and 70 years of age, who lived in one community, were selected using one-stage cluster random sampling and responses to a structured questionnaire. The prevalence of HP users was 44.8%. Headache was the most prevalent symptom among HP users compared to non-HP users, with ▮▮▮▮▮▮▮ prevalence rate ratio of 1.31 [95% confidence interval, 1.00-1.70]. There is a significant increase in the prevalence of headache with increasing duration of usage (in minutes per day). ▮▮▮

▮▮▮▮▮▮▮ The use of HPs is not associated with a significant increase of CNS symptoms other than headache. ***Note:*** *the prevalence of headache among HP users was 60.3%.*

<u>**ABSTRACT 2**</u>

Cutting birth defects for diabetic moms (In Health, May-June 1991)

San Franciso- Doctors know that children born to diabetic women are 5 times more likely to have serious birth defects than those with healthy mothers. Now, new research shows that diabetic moms-to-be can reduce this risk by closely controlling the elevated levels of sugar in their blood before as well as during their pregnancy. University of California obstetrician John Kitzmiller tracked 194 pregnant diabetics who had volunteered for an intensive diabetes management program. 84 of the women joined the program an average of 4 months before they became pregnant; the rest signed up at least 6 weeks into their pregnancies. Once enrolled, the women checked and adjusted their blood sugar levels as many as 7 times a day – far more than do most diabetics. Twelve of the women (11%) who joined the program while pregnant gave birth to infants with heart deformities or other problems. Only one mother from the pre-pregnancy group had a child with a deformity, the same rate as among health women. According to Kitzmiller, such defects form when a diabetic's high blood sugar prevents a fetus's organ from developing properly during its first 8 weeks – often before a woman even knows she's pregnant. By the time she sees her doctor, the damage is done. As a result, says Kitzmiller, many physicians advice diabetic women not to get pregnant. Instead he says, the advice should be: Don't get pregnant unless you're prepared.