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EARLY CIGARETTE USE BEHAVIORS AND ALCOHOL

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ABSTRACT

Although much work has been done on the onset of cigarette smoking in adolescent and adult community samples, little work has focused on the identification of initial behaviors that signal risk of escalation in cigarette use. Analyses of retrospective data obtained in an ongoing study of male adolescent twins (N=509; 15 to 20 years of age), ascertained from Missouri birth records, suggest that the interval between smoking first and second whole cigarette predicts later risk of regular and of heavy cigarette smoking. Boys smoking their first and second whole cigarettes on the same day were up to 4 times (95% CI: 1.65-11.20) more likely to report a history of smoking 100+ cigarette lifetime, and up to 17 times (95%CI: 3.04-102.08) more likely to report a history of heavy smoking (more than 10 cigarettes per day). The strength of these associations was not diminished by controlling for early cigarette experimentation, smoking among peers, and initial reactions (i.e., experiences of dizziness and/or a buzz) with first cigarettes; each of which demonstrated strong associations with transitions to both regular and heavy smoking. In addition, this early characteristic of cigarette smoking appears to run in families together with later stages of cigarette and alcohol use. These findings suggest that the interval between first and second whole cigarette may prove to be a useful predictor of vulnerability for continued cigarette use for future research and preventive efforts.

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SAMPLE

Population-based cohorts of like-sex male twins, 11-20 years of age (born 1991-1982), were ascertained through Missouri Birth Records, and new cohorts of 11-year old pairs continue to be recruited. To date, 76% of families identified from birth records have been successfully contacted, and 91% of families successfully contacted have been enrolled in this study (parent, usually the mother, completed a brief screening interview). A diagnostic telephone interview has been completed with at least one twin from 810 families, and in 85% of these families interviews with both twins were completed. The sample for this poster included only the older boys, those 15-20 years of age (N=509 individual twins) at the time of interview.

RESEARCH QUESTIONS

1) How early in the smoking career can we detect markers of increased risk of escalation to regular smoking or heavier use of cigarettes?

2) Do these show evidence of important familial (e.g., genetic) effects?

3) Do those early cigarette smoking characteristics run in families together with alcohol use and related problems?

Aspects of early cigarette use that we considered are:

- Cigarette use among peers

- Young age of cigarette experimentation

- Reactions to first cigarettes

     (i.e., experiences of dizziness and/or a buzz)

- Time interval from first to second cigarette ever tried

- Smoked a whole cigarette the first time tried cigarettes

- Smoked a whole cigarette the second time tried cigarettes

- Time interval from smoking first to second whole cigarette

- Inhaling cigarette smoking into the lungs while smoking 1st, 2nd or 3rd cigarette ever tried.

LIFETIME CIGARETTE USE

(Total N=509)

Ever tried a cigarette	**(n=259)**	**51%**
Ever tried to	**(n=299)**	**59%**

Among those who have tried cigarettes…

Smoked 100 or more cigarettes lifetime	**(n=75)**	**29%**
Heavy Smoking (>10 cigs/day)	**(n=38)**	**15%**

Among those who have tried alcohol…

Drank at least 1 drink a month for 6 moths in a row	**(n=95)**	**32%**
DSM-IV alcohol dependence (with time clustering)	**(n=47)**	**16%**

VARIABLES PREVIOUSLY FOUND TO CONTRIBUTE TO ESCALATION IN ADOLESCENT SMOKING

Association with Smoking 100 or More Cigarettes Lifetime Multivariate Analysis

	OR (95% CI)
Smoking in Peers (at least some vs. none)	4.07 (2.02, 8.18)
Smoked Before Age 11	3.54 (1.40, 8.97)
Smoked Before Age 15	NS
Dizziness with First Cigarettes	NS
Buzz with First Cigarettes	5.63 (2.45, 12.98)

VARIABLES PREVIOUSLY FOUND TO CONTRIBUTE TO ESCALATION IN ADOLESCENT SMOKING

Association with Heavier Lifetime Smoking (>10 cigs/day)
Multivariate Analysis

	OR (95% CI)
Smoking in Peers (at least some vs. none)	7.50 (2.83, 19.88)
Smoked Before Age 11	8.68 (2.51, 30.03)
Smoked Before Age 15	3.07 (1.01, 9.27)
Dizziness with First Cigarettes	4.91 (1.79, 13.49)
Buzz with First Cigarettes	NS

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Association with Smoking 100 or More Cigarettes Lifetime

CONTROLLING FOR SMOKING IN PEERS, INITIAL EXPERIENCES WITH CIGARETTES, AND YOUNG AGE OF EXPERIMENTATION WITH CIGARETTES

	UNADJUSTED OR (95% CI)	ADJUSTED OR (95% CI)
Smoked Whole Cigarette the 1st Time Tried	NS	__
Smoked Whole Cigarette the 2nd Time Tried	NS	__
Inhaled Into Lungs 1st, 2nd or 3rd Cigarette Ever Tried	0.31 (0.15, 0.62)	0.34 (0.16, 0.75)
Tried Smoking Cigarettes 2nd Time within a week of 1st Time Tried	3.15 (1.49, 6.64)	NS
Smoked 2nd Whole Cigarette within a week of 1st Whole Cigarette	3.82 (1.65, 8.87)	4.30 (1.65, 11.20)

Association with Heavier Lifetime Smoking (>10 cigs/day)

CONTROLLING FOR SMOKING IN PEERS, INITIAL EXPERIENCES WITH CIGARETTES, AND YOUNG AGE OF EXPERIMENTATION WITH CIGARETTES

	UNADJUSTED OR (95% CI)	ADJUSTED OR (95% CI)
Smoked Whole Cigarette the 1st Time Tried	NS	__
Smoked Whole Cigarette the 2nd Time Tried	NS	__
Inhaled Into Lungs 1st, 2nd or 3rd Cigarette Ever Tried	NS	__
Tried Smoking Cigarettes 2nd Time within a week of 1st Time Tried	4.22 (1.44, 12.34)	NS
Smoked 2nd Whole Cigarette within a week of 1st Whole Cigarette	17.57 (3.68, 83.76)	17.61 (3.04, 102.08)

Association with Smoking 100 or More Cigarettes Lifetime: A Multivariate Analysis

CONTROLLING FOR SMOKING IN PEERS, INITIAL EXPERIENCES WITH CIGARETTES, AND YOUNG AGE OF EXPERIMENTATION WITH CIGARETTES

	OR (95% CI)
Smoking in Peers (at least some vs. none)	4.55 (1.76, 11.77)
Smoked Before Age 11	NS
Smoked Before Age 15	NS
Dizziness with First Cigarettes	NS
Buzz with First Cigarettes	NS
Inhaled Into Lungs 1st, 2nd, Or 3rd Cigarette Ever Tried	0.40 (0.18, 0. 86)
Smoked 2nd Whole Cigarette Same Day as 1st Whole Cigarette	9.50 (2.22, 40.65)
Smoked 2nd Whole Cigarette Next Day After 1st Whole Cigarette	13.25 (2.98, 58.96)
Smoked 2nd Whole Cigarette Within a Week After 1st Whole Cigarette	9.95 (2.09, 47.49)
Smoked 2nd Whole Cigarette Within A Month After 1st Whole Cigarette	NS

Association with Heavier Smoking (>10 cigs/day) Multivariate Analysis

CONTROLLING FOR SMOKING IN PEERS, INITIAL EXPERIENCES WITH CIGARETTES, AND YOUNG AGE OF EXPERIMENTATION WITH CIGARETTES

	OR (95% CI)
Smoking in Peers (at least some vs. none)	9.68 (3.21, 29.20)
Smoked Before Age 11	23.74 (4.77, 118.12)
Smoked Before Age 15	11.02 (2.28, 53.26)
Dizziness with First Cigarettes	12.66 (2.34, 68.47)
Buzz with First Cigarettes	NS
Smoked 2nd Whole Cigarette Same Day as 1st Whole Cigarette	17.37 (1.93, 155.88)
Smoked 2nd Whole Cigarette Next Day After 1st Whole Cigarette	19.27 (1.76, 210.86)
Smoked 2nd Whole Cigarette Within a Week After 1st Whole Cigarette	NS
Smoked 2nd Whole Cigarette Within A Month After 1st Whole Cigarette	NS

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But, does a short time interval between first whole cigarettes run in families?

Respondent Smoked 2nd Whole Cigarette Same Day as 1rst Whole Cigarette

(Controlling for age of twin pair)

CoTwin Smoking	*OR (95% CI)*
Ever Tried Cigs	0.66 (0.23, 1.93)
Smoked at Least 2 Whole Cigs Lifetime	1.40 (0.46, 4.23)
Smoked 2nd Whole Cig Same Day as 1rst	3.11 (1.10, 8.84)

Respondent Smoked at Least 100 Cigarettes Lifetime

(Controlling for age of twin pair)

CoTwin Smoking	OR (95% CI)
Ever Tried Cigs	0.27 (0.06, 1.16)
Smoked at Least 2 Whole Cigs Lifetime	1.65 (0.50, 5.37)
Smoked 2nd Whole Cig Same Day as 1rst	4.01 (1.39, 11.52)

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Respondent Smoked Heavily (>10 Cigs/Day)

(Controlling for age of twin pair)

CoTwin Smoking	OR (95% CI)
Ever Tried Cigs	0.22 (0.02, 2.18)
Smoked at Least 2 Whole Cigs Lifetime	0.92 (0.15, 5.61)
Smoked 2nd Whole Cig Same Day as 1rst	3.17 (0.74, 13.58)

But, does a short time interval between first whole cigarettes run in families together with use of alcohol?

Respondent Reports Drinking at Least One Drink Every Month for 6 Months in a Row
(Controlling for ever use of alcohol and age of twin pair)

CoTwin Smoking	OR	(95% CI)
Ever Tried Cigs	3.36	(0.79, 14.28)
Smoked at Least 2 Whole Cigs Lifetime	11.32	(2.83, 45.35)
Smoked at Least 2 Whole Cigs Lifetime	10.18	(2.55, 40.57)

Respondent Reports History of DSM-IV Alcohol Dependence

(Controlling for ever use of alcohol and age of twin pair)

CoTwin Smoking	OR	(95% CI)
Ever Tried Cigs	2.58	(0.22, 30.78)
Smoked at Least 2 Whole Cigs Lifetime	10.83	(1.23, 95.24)
Smoked 2nd Whole Cig Same Day at 1st	10.11	(1.10, 93.24)

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CONCLUSIONS

1) Among measures of different aspects of early cigarette use, assessed in this retrospective study of adolescent male Missouri twins, the interval between very first and second whole cigarette smoked proved to be a good predictor of vulnerability for escalation in cigarette use, at least in adolescent boys.

2) Once we accounted for this measure of early cigarette use, the importance of initial reactions to cigarettes and a young age of first experimentation were substantially reduced; only the effect of smoking peers remained significant in the progression to regular cigarette use.

3) Dizziness with first cigarettes and a young age of cigarette experimentation both remain important predictors of a transition to heavier cigarette use, along with smoking in peers, after accounting for a short time interval between smoking first cigarettes in these boys.

4) Interestingly, our results suggest that inhalation of smoke into the lungs while smoking first cigarettes may reduce risk for escalation in cigarette use.

5) Our results suggest that a short time interval between the very first and very second whole cigarette runs in families.

6) There is a familial association between this characteristic of first cigarette use and regular smoking—and a trend with progression to heavier smoking in these adolescent boys.

7) There is a familial association between this characteristic of first cigarette use and alcohol use and related problems.