

Teen: Hard rock taints the brain

Experiment gets top honors

Knight-Tribune News Service

SUFFOLK, Va. — Your mom was right. Rock 'n' roll really does rot your brain.

That's according to David Merrell, a 16-year-old Nansmond River High School student whose high school science experiment supports what parents have been saying for years: Hard rock taints the brain — well, at least the brains of mice.

Using 72 male laboratory mice, a stopwatch, a 5-by-3-foot maze and the music of Mozart and Anthrax, Merrell worked with an Old Dominion University statistician to establish that hard rock impedes learning.

In the process, the junior captured top honors in regional and state science fairs and earned accolades from the Navy and the CIA.

"Don't let your kids listen to hard rock music," he said. "I

think it has a major negative effect."

To prove his point, Merrell assembled three groups of 24 mice: a control group, a hard-rock group and a classical group. To ensure scientific validity, each white mouse weighed between 15 grams and 20 grams, was 4 to 6 weeks old and was bred to ensure no genetic abnormalities existed.

The mice spent the first week getting used to their controlled environment in Merrell's parents' basement. They received measured feedings and 12 hours of light each day. Each mouse navigated the maze to establish the base time of about 10 minutes.

Then Merrell started piping in music 10 hours a day. The control group navigated without music. He put each mouse through the maze three times a week for three weeks.

The results: The control group shaved five minutes from its

original time.

The mice that navigated the maze with Mozart knocked 8½ minutes off their time. But the group listening to hard rock bumped through the maze, dazed and confused, taking an average of 30 minutes, tripling the amount of time it previously took to complete the maze. Most noticeably, the hard-rock mice didn't sniff the air to find the trails of others that came before them.

"It was like the music dulled their senses," Merrell said. "It shows point-blank that hard rock has a negative effect all around. I can't think of a positive effect that hard rock has" on learning.

In fact, Merrell thinks the negative effects go beyond learning.

During the four-month experiment, Merrell housed each mouse in a separate aquarium. That's because last year, for a similar project, he kept all the hard-rock mice together, all the classical mice together and all the control

mice together. The results were horrific.

"I had to cut my project short because all the hard-rock mice killed each other," Merrell said. "None of the classical mice did that at all."

Merrell's awards include first place in the behavioral science division at the Virginia State Science and Engineering Fair and the Tidewater Science Fair. He also won Northern Virginia Community College's Veterinary Technology Award and accolades from the Newport News Arts Commission, the Science and Humanitarian Symposium at James Madison University, the Navy and the CIA.

Merrell himself isn't a fan of hard rock, so his discovery won't affect his lifestyle too much. But other teens might feel the heat.

"At the actual fairs, parents would see it and come back with their kids," Merrell said. "They'd say, 'See, I told you hard rock would do that.'"

Name _____

Date _____

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Page _____

1. READ THE ARTICLE & HIGHLIGHT/UNDERLINE IMPORANT PHRASES.

2. What is the scientific problem Merrell is trying to answer? (use SM Notes)

3. Possible research topics (3) _____

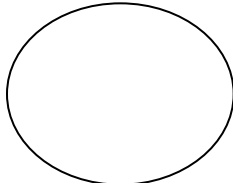
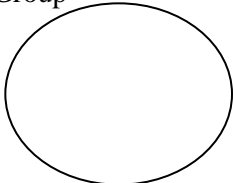
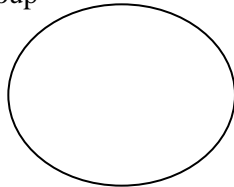
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Author's Last Name, First Name. (Year, Month Day). Title of Article, Name of Newspaper, page
number, section letter column numbers.

5. What is the ONE experimental variable Merrell selected to test in his experiment?

6. List 10 controls Merrell used to keep the contest fair. Be specific.

- 1. _____ 2. _____
- 3. _____ 4. _____
- 5. _____ 6. _____
- 7. _____ 8. _____
- 9. _____ 10. _____

7. Merrell used 3 groups of mice in his experiment. List each specific group in the ovals below.

Control Group	Experimental Group	Experimental Group
		

8. What is the purpose of having a control group in the experiment?

9. Results: complete the data table below.

	_____ Group	_____ Group	_____ Group
Base Time (minutes)	10 minutes	10 minutes	10 minutes
Ending Time (minutes)			

10. What is a “base time” in this experiment and why was it important to establish?

11. **Based on the design of this experiment**, do you believe these results are valid and explain why? _____

12. If you were to perform this experiment, what part of the experimental design would change?

13. How could the knowledge from this experiment be used in a real life situation (application)?

14. Scientists should not be biased when they conduct scientific research. Define bias. Was Merrill biased in this experiment? Justify your answer.

15. Explain if you are biased on this topic.
