

Murder on the Iditarod Trail?

A Forensics Mystery



A team of sled dogs pulls an empty sled into the Rohn checkpoint along the Iditarod trail. Trail volunteers immediately begin a search for the missing musher. After two hours of searching, one volunteer radios back that the musher's body has been found dead. Mysteriously, the body was discovered well off of the trail partially covered with fallen brush.

All mushers are ordered to hold their positions at their respective checkpoints while an investigation begins. Questioning of trail workers and mushers ensues and finally turns up some possible leads. A trail veterinarian mentions that she noticed two different mushers with stains on their gloves that resembled blood. Both mushers are immediately located and asked to give up their gloves for investigation.

You are part of a forensics team, flown in from Anchorage, and you receive the following items to test:

Sample 1: Stained cloth from Suspect 1

Sample 2: Stained cloth from Suspect 2

Sample 3: Blood collected from the victim's body

First, test the stains to determine if they are caused by blood. Place a drop of phenolphthalein/peroxide solution on each stain. A purple-violet color reaction indicates that blood may be present. The absence of this reaction indicates that blood is not present.

Color reaction for Sample 1: _____

Color reaction for Sample 2: _____

Based on the results of this test, which musher (Suspect 1 or Suspect 2) becomes your top suspect? _____

When confronted, your top suspect claims to have bumped his face on his sled during a fall. He mentions suffering a nosebleed, thus accounting for the bloodstain. Your team has now recovered a full blood sample (Sample 4) from the suspect's glove. It is suitable for blood typing. You ask for and receive a blood sample from the suspect (Sample 5). Proceed as follows to type your three blood samples:

1. Using the dropper vial, place a drop of Sample 3 (the victim's blood) in each well of the blood typing slide. Replace the cap on the dropper vial. Always replace the cap on one vial before opening the next vial to prevent cross contamination.
2. Add a drop of synthetic anti-A serum (blue) to the well labeled A. Replace the cap.
3. Add a drop of synthetic anti-B serum (yellow) to the well labeled B. Replace the cap.
4. Add a drop of synthetic anti-Rh serum (clear) to the well labeled Rh. Replace the cap.
5. Using a different color mixing stick for each well, gently stir the synthetic blood and anti-serum drops for 30 seconds. Remember to discard each mixing stick after a single use to avoid contamination of your samples.
6. Carefully examine the thin films of liquid mixture left behind. If a film remains uniform in appearance, there is no agglutination. If the sample appears granular, agglutination has occurred. Determine the blood type of the sample using the data table below. Answer yes or no as to whether agglutination occurred in each sample. A positive agglutination reaction indicates the blood type.
7. Record the results for the first blood sample in the data table (Positive for Agglutination, Negative for no sign of Agglutination).

Data Table

	Sample 3	Sample 4	Sample 5
Anti-A			
Anti-B			
Rh			
Blood Type			

Thoroughly rinse the blood typing slide, and then repeat steps 1 through 7 for Samples 4 and 5, recording the results of each test as you go.

Based on your results, did the blood collected from the suspect's glove come from the suspect?

Could this blood have come from the victim? _____