“Tests Prove It’s True: Dogs Can Smell Cancer”

After reading the article, “Tests Prove It’s True: Dogs Can Smell Cancer” answer the following questions in complete sentences.

1. Who is the author of this news article? _______________________________________________________

2. What was the question scientists were trying to answer? _________________________________________
_______________________________________________________________________________________
_______________________________________________________________________________________
_______________________________________________________________________________________

3. What information did the scientists know about that caused them to ask this question?
   A. ____________________________________________________________________________________
   ____________________________________________________________________________________
   ____________________________________________________________________________________
   B. ____________________________________________________________________________________
   ____________________________________________________________________________________
   ____________________________________________________________________________________

4. How many dogs were used in the experiment? _________________________________________________

5. How did the scientists chose these dogs? _____________________________________________________

6. What were the different types of urine used when training the dogs? ________________________________
   _________________________________________________________________________________________
   _________________________________________________________________________________________

7. In the actual experiment, how many urine samples were used? _____________ How many urine samples
   were from bladder cancer patients? ____________ From volunteers? _________________

8. What were the results of the experiment? (Use numbers in your answer.) ____________________________
   _________________________________________________________________________________________

9. Why did the scientists think that the dogs didn’t identify some of the cancer patient’s urine? (Two reasons)
   _________________________________________________________________________________________
   _________________________________________________________________________________________

10. What part of the experiment surprised the scientists? ___________________________________________
   _________________________________________________________________________________________
   _________________________________________________________________________________________

11. If you were to test this hypothesis, how would you set up your test? _______________________________
   _________________________________________________________________________________________
   _________________________________________________________________________________________
Study Shows Dogs Able to Smell Cancer
By EMMA ROSS, AP Medical Writer

LONDON - It has long been suspected that man's best friend has a special ability to sense when something is wrong with us. Now the first experiment to verify that scientifically has demonstrated that dogs are able to smell cancer.

Experts say it's unlikely that pooches will become practical partners in cancer detection any time soon, but the results of the study, outlined this week in the British Medical Journal, are promising.

They show that when urine from bladder cancer patients was set out among samples from healthy people or those with other diseases, the dogs all ordinary pets were able to identify the cancer patients' urine almost three times more often than would be expected by chance alone.

"The issue is not whether or not they can detect cancer, because clearly they can. The issue is whether you can set up a system whereby they can communicate with you. That requires further ingenuity," said Tim Cole, a professor of medical statistics at Imperial College in London, who was unconnected with the study and is the owner of a chocolate Labrador retriever.

David Neal, a bladder and prostate cancer surgeon at Cambridge University in England, said it's plausible dogs might be able to pick up the scent of cancer because people with the disease shed abnormal proteins in their urine.

"I'm skeptical about whether it will be implementable, but scientifically it should be followed up," said Neal, a spokesman for Cancer Research UK, Britain's cancer society, who was not involved in the research. "It might be that the dogs are better than our current machines at picking up abnormal proteins in the urine. What are the dogs picking up? Can we get a machine that does the same?"

It is thought that a dog's sense of smell is generally 10,000 to 100,000 times better than a human's.

The idea that dogs may be able to smell cancer was first put forward in 1989 by two London dermatologists, who described the case of a woman asking for a mole to be cut out of her leg because her dog would constantly sniff at it, even through her trousers, but ignore all her other moles.

One day, the dog, a female border collie-Doberman mix, had tried to bite the mole off when the woman was wearing shorts.

It turned out she had malignant melanoma a deadly form of skin cancer. It was caught early enough to save her life.

Then in 2001, two English doctors reported a similar case of a man with a
patch of eczema on his leg for 18 years. One day his pet Labrador started to persistently sniff the patch, even through his trousers. It turned out he had developed skin cancer and, once the tumor was removed, the dog showed no further interest in the eczema patch.

A handful of similar anecdotes have since been reported, but the latest study is the first rigorous test of the theory to be published.

The experiment, conducted by researchers at Amersham Hospital in Buckinghamshire, England, and the organization Hearing Dogs for Deaf People, set out to prove whether dogs could be trained to detect cancer.

Six dogs all pets of the trainers were used in the study. They included three working strain cocker spaniels, one papillon, a Labrador and a mongrel.

The trainers used urine from bladder cancer patients, from people sick with unrelated diseases and from healthy people to train the dogs over seven months to select the cancer-unique elements by process of elimination. They learned to ignore differences in the urine samples that were due to age, sex, infection, diet and other factors.

Urine from 36 bladder cancer patients and 108 comparison volunteers was used. Each dog had to sniff seven urine samples and lie down next to the one from a bladder cancer patient. The test was repeated eight times for each dog, with new urine samples every time.

Taken as a group, they correctly selected the right urine on 22 out of 54 occasions, giving an average success rate of 41 percent. By chance alone, you'd expect them to be accurate one-seventh, or 14 percent, of the time.

The two best dogs, Tangle and Biddy both cocker spaniels were right 56 percent of the time, according to trainer Andrew Cook. The papillon Eliza, tied with Bea, the third cocker spaniel, followed by the Labrador, Jade. Bringing up the rear was Toddy the mongrel.

"Toddy, bless him, was working at a rate no better than chance, really, but we still love him," Cook said.

One of the cancer patients was identified correctly by all six dogs, whereas two other cancer patients were consistently missed, indicating that perhaps the strength of the urine signal varies from person to person, or according to severity of the disease.

Perhaps the most intriguing finding, though, was in a comparison patient whose urine was used during the training phase. All the dogs unequivocally identified that urine as a cancer case, even though screening tests before the experiment had shown no cancer.

Doctors conducted more detailed tests on the patient and found a life-threatening tumor in the right kidney.