

KidsPost

It's good to get your hands dirty

At least that's what some scientists think after studying mice

"I took my Barbies out to play with me in the dirt," said Candace Smyth, a lawyer in Takoma Park, remembering growing up near her grandparents' farm in Alabama. "I was always outside, always in the dirt, until I got too old."

"I wish my girl could play in the dirt more," said Smyth of her 5-year-old daughter, Kate Oliphant.

But the family's back yard is small, and Kate's day-care and after-school activities and visits with friends and family sometimes "keep her indoors too much, and maybe we parents are too organized, too clean," the mom said with a laugh.

Now scientists are beginning to think there could be medical and educational reasons for parents and teachers to encourage kids to play in dirt.

That's what Dorothy M. Matthews and Susan M. Jenks, biology professors at Sage College in Troy, New York, think they discovered in testing mice who ate *Mycobacterium vaccae*, a harmless bacteria or germ found in dirt almost everywhere.

The professors made little sandwiches of white bread, with a little smear of the bacteria, topped with peanut butter.

"Mice love peanut butter," said Matthews. "It was their reward when they ran through our tests."

The professors gave one group of mice *M. vaccae* (pronounced "emm vah-kay") sandwiches and another group just little peanut butter sandwiches, then watched

how quickly the animals could work their way through a difficult maze to the peanut butter reward at the end.

"The mice fed *M. vaccae* navigated the maze twice as fast and showed far less anxiety than the other mice," Matthews said. "We did a second test, and removed *M. vaccae* from the first group's diet, and they still maintained their learning edge. And testing three weeks later — which for mice is about the same as 2½ years for humans — showed that mice exposed once to *M. vaccae* could remember what they learned for a long time."

"That's pretty cool," said Matthews, who remembers growing up in New York City, playing in the dirt of a back yard "with one little tree."

Other scientists who injected *M. vaccae* into mice found it stimulated neurons in the brainstem to start producing serotonin, said Matthews. Humans make serotonin in their bodies naturally, and it is a well-known contributor to feelings of well-being.

So does that mean dirt sandwiches are a new vitamin for learning?

"Oh, no," explained Matthews. "Please do not start eating dirt sandwiches!" It will take years of studies to find out if there is a real benefit from *M. vaccae* on children or adults, she said.

"But Mother Nature knows best," she added. "It's good for us to be outside on a lot of levels. People feel better when outside and active, and even on a chemical level, that exposure to the biologic world that in all likelihood we evolved with could help us live better lives."

"That's why children should be free to play in the dirt," she said. "It may decrease their anxiety and improve their ability to learn new things."

— Raymond M. Lane



CANDACE SMYTH

Kate Oliphant, 5, left, plays with cousin Emma Justice, 8. Scientists think playing in dirt may help kids to learn new things.