

by Ven\_Griva

A study out of The Ohio State University has found that eliminating household fleas can be done effectively without the use of toxic chemicals. All it takes is regular use of a vacuum cleaner.

Researchers have determined that vacuuming kills fleas in all stages of their lives, with an average of 96 percent success in adult fleas and 100 percent destruction of fleas in their immature pupal or larval stages.

The results of the study were published recently in the journal *Entomologia Experimentalis et Applicata*.

Lead study author W. Fred Hink, professor emeritus of entomology at OSU and a longtime researcher in nontoxic controls of fleas on pets, sought to test the effects of vacuuming on all flea life stages and whether any extra disposal steps or additional chemical controls are necessary.

"I did not include eggs in the vacuum study, but I'm sure they would not have survived," Hink said.

The results were so unexpectedly effective that the OSU insect specialists repeated their experiments several times to verify their findings. The vacuum tests were conducted on the cat flea, or *Ctenocephalides felis*, the most common type of flea known to torment pets and humans.

Scientist also examined vacuum bags for toxicity and exposed fleas to churning air in separate tests to further explore potential causes of flea death. They concluded that the damaging effects of the brushes, fans and powerful air currents in vacuum cleaners combine to kill the pests.

"No matter what vacuum a flea gets sucked into, it's probably a one-way trip," said Glen Needham, study co-author and associate professor of entomology at OSU.

Needham suspects that vacuum brushes wear away the cuticle, a waxy outer layer on fleas and most insects that allows the bugs to stay hydrated. Without the cuticle, adult fleas, larvae and pupae probably dry up and die, he said.

"We didn't do a postmortem, so we don't know for sure. But it appears that the physical abuse they took caused them to perish," he said.

For years homeowners have been advised to vacuum their carpeting to remove fleas. Some recommendations suggested immediately after vacuuming that the vacuum bag's contents should be emptied, burned or frozen to guarantee the bloodsucking parasites are indeed dead. The study found it is unnecessary to take steps beyond merely vacuuming.

"Vacuuming is a great strategy because it involves no chemicals and physically removes the problem," Needham said.

The vacuum study was partially funded by the Royal Appliance Manufacturing Co.

## DAILY CONSTITUTIONAL

Another study, this one from Italy, appears to add to the growing body of evidence that humans need exercise for their minds to work at their peak late into life.

People age 65 and older who regularly walk and get other forms of moderate exercise appear to significantly lower their risk of developing vascular dementia, the second most common form of dementia after Alzheimer's disease, says a study published Dec. 19 online in *Neurology*, the journal of the American Academy of Neurology.

The four-year study followed nearly 750 men and women in Italy who were older than 65 and showed no signs of memory problems at the start of the study.

Researchers measured how much energy participants exerted weekly by walking and climbing stairs. The study also took into account other moderate activities such as housework, yardwork, gardening and light carpentry. By the end of the study, 54 participants had developed Alzheimer's disease and 27 had developed vascular dementia.

The study found the top one-third of participants who exerted the most energy walking were 27 percent less likely to develop vascular dementia than those people in the bottom one-third of the group.

"Our findings show moderate physical activity, such as walking, and all physical activities combined lowered

the risk of vascular dementia in the elderly independent of several sociodemographic, genetic and medical factors," said study author Dr. Giovanni Ravaglia of the University Hospital S. Orsola Malpighi in Bologna, Italy.

"It's important to note that an easy-to-perform moderate activity like walking provided the same cognitive benefits as other, more demanding activities," he said.

Ravaglia said it's possible that physical activity might improve cerebral blood flow and thus lower the risk of developing vascular dementia. More research is needed to determine the connection between physical activity and a person's memory.

E-mail Ven Griva or write to P.O. Box 120190, San Diego, CA 92112.

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