The wind is howling. Temperatures are well below freezing. And you're curled up on the sofa with the cat, a good book and a crackling fire. How could you possibly feel so lousy?

Maybe it's the indoor air that's chock full of allergens or irritants.

"Depending on what you're allergic or sensitive to, winter can be a really awful time of year," says Dr. Robert Bush, allergy and asthma researcher and professor emeritus at the University of Wisconsin School of Medicine and Public Health (SMPH).

Allergens are substances that create an allergic response – material like pet dander, dust mites, mold, mice and cockroaches. Irritants can cause symptoms but not an allergic response. They include dust particles and fine particulates like fuels, gases and odors.

Bush points out one misconception about dust-mite allergies when people are cooped up in winter. He says dust mites can be less of a problem in winter as compared to more moderate times of the year.

“Dust mites thrive in humidity. When you turn on the heating system, the air dries out and dust mites die,” says Bush.

Even so, some dust mites can survive and a tidy but closed-up house may provide plenty of troubling allergens.

“Even very clean homes have some things that can trigger allergies,” Bush observes.

Recent research shows the average home can have several potential allergy sources. A study in the March, 2008 issue of the Journal of Allergy and Clinical Immunology said 52 percent of American homes have six or more allergens and 46 percent had three or more at high levels.

“If you’re having allergy symptoms, it’s tough to pinpoint the source unless you get an allergy skin test or blood test,” says Bush.

“You need to know what’s causing your symptoms to develop an effective plan.”

Bush says after you have identified what’s bothering you, there are a number of steps to reduce allergy triggers or irritants in your home:

- Control humidity levels

Bush says ideally, home humidity levels should range between 30 to 40 percent. Providing an environmental balance with humidity is especially important in bedrooms.

- Remove or change things that harbor allergens

The American Academy of Allergy, Asthma and Immunology (AAAAI) says carpet removal can make a big difference. For dust mites, encase pillows and mattresses in anti-allergy pillowcases and covers. Wash rugs and bedding regularly in hot water.

- Monitor heating and air-exchange systems

Replace furnace filters regularly. Have a heating and air-conditioning engineer check your home's air exchange rate.

- Watch for and eliminate mold sources

Bush says if there is a mold level in your home during winter, there is an indoor source like a water leak or standing water. The only way to eliminate mold is to remove the moisture that's causing it. A musty or moldy smell alone doesn't necessarily mean your home has a mold problem.

- Avoid allergy sources

If you're allergic to pet dander, the only effective way to eliminate the allergen is to keep pets out of the house. Bush says it takes six months to clear a home of allergy sources from pets. If removing the pet is not practical, keep it outdoors and out of the bedroom as much as possible.

- Take care when vacuuming

Bush says there isn't much research on the effectiveness of HEPA-filtered vacuum cleaners.

He says this type of vacuum might reduce pet-allergen exposure but not necessarily dust mites. There's evidence that a regular vacuum cleaner with a double-layered bag could help with dust mites. Since vacuuming flings dust and particles into the air, it might be helpful to wear a mask while vacuuming.

Regardless of what you or family members are allergic to, a combination of steps is the best way to make indoor air more comfortable.

"Changing one thing won't do much. The trick is to find a combination that really works for you and stick to it," said Bush.