Houseplants for Home Health

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Helping both physical and mental health

With fall and winter approaching, and spending more time indoors, let's re-visit the beneficial effects of houseplants. Greenery, especially lightly scented foliage, makes us feel more comfortable, relaxed and positive. Depending on color, scent and size, houseplants can increase our comfort, relax our breathing, and even make us feel more affectionate. Studies show that simply viewing and tending to plants usually refreshes us. Indoor plants are effective air purifiers by adding oxygen and moisture to the air, thereby improving our respiration.

Virginai Lohr, professor of horticulture at WSU-Pullman, studied the question: Why do we respond positively to plants indoors? Besides feeling better with clean air, identifying quality habitats is probably an evolutionary trait that became innate in humans. Early humans in East Africa recognized the safety of climbable trees, like those with short trunks and spreading canopies (such as *Acacia tortillas).* Scientists found that bright green foliage (often a sign of healthy plants) has the physiological impacts of calming heart rate and relaxing blood pressure.

A 2013 Chinese study used office environments with and without plants to measure human comfort. Japanese and Korean university collaboration considered students' physiological responses to an activity working with plants versus doing a computer task. Indian researchers have scientifically evaluated interior plants' physiological benefits to improving air quality.

A Chinese project titled "The Effect of Indoor Plants on Human Comfort" was conducted in Shanghai offices using 24 student participants. It included self-evaluation of an office space with and without plants and measured subjects' physiological responses. The study used six common plants in three different ways to test responses to plants' odor/scent, color and size. They selected common plants. For scent, from light to strong, they chose lavender, common mint (*Mentha haplocalyx*), and apple scented geranium (*Pelargonium odoratissimum*). For color, the comparison was lavender representing green, snake plant (*Sansevieria trifasciata*) representing tinted or variegated green, and poinsettia for its bright red and green colors. The size comparison from small to large was lavender, snake plant and elephant ear (*Alocasia Rhizome*).

The participants mostly preferred green, lightly scented, small plants. Comprehensive physiological measurements included electroencephalograph (EEG) to assess brain activity to indicate temperature comfort, electrocardiogram (ECG) to check heart rate rhythm and blood flow, electromyography (EMG) to measure muscle contraction and relaxation, oxygen-hemoglobin saturation, fingertip blood flow, skin resistance and respiration rate. In brief, the qualitative and quantitative results jibed: green was most comforting, slight scent preferred together with small size.

A peace lily with pothos is happy in indirect light. *Photo by Nancy Crowell / WSU Skagit County Master Gardeners.*

Horticulturalists and botanists in Korea and Japan cooperated in research that concluded interaction with indoor plants reduces psychological and physiological stress by suppressing autonomic nervous system activity in young adults. Twenty-four college students were given two tasks. One was to transplant an indoor plant and the other was to carry out a computer task. Students' heart rates and blood pressure were measured during each task. Not surprisingly, the results showed working with a plant proved more relaxing than computer work.

In the US, the most important pollutants of our indoor air are: mold and pollen, tobacco smoke, household products and pesticides, gases (such as radon and carbon monoxide), materials used in the building (such as asbestos, formaldehyde and lead).

Researchers have studied the effects of different air contaminants on a variety of indoor plants. The plants included large indoor *ficus*, palms, *dracaena* and bamboo; medium-sized peace lily, ferns and *chrysanthemums*; as well as the succulent *Aloe vera* and the moth orchid (*Phalaenopsis*). The best indoor plants for removing formaldehyde, benzene and carbon monoxide from indoor air are large plants, which enhances their effectiveness.

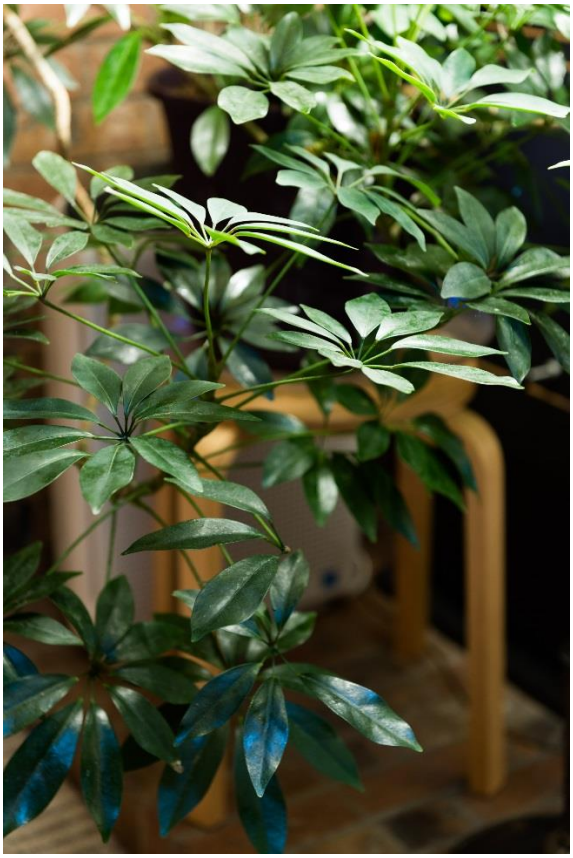
- Areca Palm (*Chrysalidocarpus lutescens*)
- Lady Palm (*Rhapis excelsa*)
- Bamboo palm (*Chamaedorea seifrizii*)
- Rubber Plant (*Ficus robusta or Ficus elastica*)

- Dracaena “Janet Craig” snd “Warneckei”(*D. deremensis* and *D. Warneckei*)
- Philodendron (*Philodendron sp.*)

Other highly beneficial plants in air remediation include:

- English Ivy (*Hedera helix*)
- Spider plant (*Chlorophytum comosum*)
- Peace lily (*Spathiphyllum wallisii*)
- Snake plant (*Sansevieria trifasciata*)
- Red edged and cornstalk dracaena (*D.marginata* and *D. fragrans*)
- Chrysanthemum (*Chrysanthemum morifolium*)
- Flamingo lily (*Anthurium andraenum*)

In conclusion, the physical and mental health benefits of indoor plants are irrefutable. Which ones should you choose? Your interior spaces will determine the size of the houseplants you want to accommodate. The bigger the plant, the more likely it is to reduce indoor air pollution. In terms of color, it’s your choice. Do bright green plants relax you more than variegated ones? Do unusual plants and shapes perk you up more than common varieties? You can count on office and house plants to refresh the air, relax your body and mind and perhaps make you feel more affectionate.



Left: Schefflera, a large indoor plant, maximizes air purification. **Right:** An air plant/spider plant is easy to care for indoors. *Photos by Nancy Crowell / WSU Skagit County Master Gardeners.*

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