

ALOHA + CLEAN AIR

# Clearing the Air

Mold & Home Air Filtration in Hawai'i

Simple, low-cost ways to keep mold down and breathe easier at home.



A friendly community talk



*A simple filter I made*

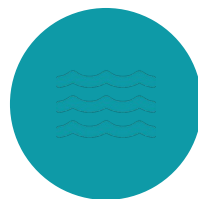
## WHY THIS MATTERS HERE

# Hawai'i is paradise — for us, and for mold

Our warm, damp island air is wonderful. It is also the perfect home for mold. The moisture that keeps everything green is the same moisture mold needs to grow — indoors, year-round.

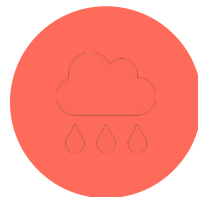


**The takeaway:** in Hawai'i, the conditions for mold are basically always present. So a little prevention goes a long way.



**60-90%**

Typical humidity across the islands, all year



**Above 60%**

Humidity where mold starts to thrive



**Indoors**

Bathrooms, closets & AC units stay damp

## KNOW YOUR OPPONENT

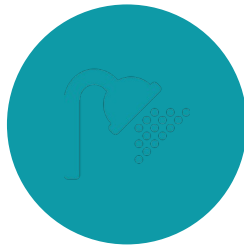
# What mold is — and where it hides

Mold is a tiny living thing that floats through the air as invisible spores, then settles and grows wherever it finds moisture and still air. Here's where it likes to set up shop:



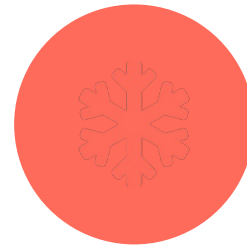
### **Closets & corners**

Still, humid, dead air



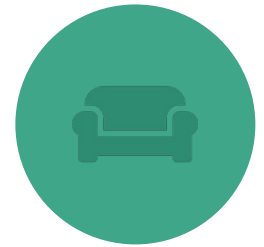
### **Bathrooms & showers**

Steam and damp tile



### **Window AC units**

Condensation collects



### **Behind furniture**

Walls that can't breathe

**If you can smell that musty “old” odor, the spores are already floating in the air around you.**

## WHY IT MATTERS FOR US

# Mold can be harder on older lungs



As we get older, our lungs and immune systems work a little harder. The same mold that barely bothers a child can cause real discomfort for us.



### **Coughing & wheezing**

Especially at night



### **Stuffy nose & sinuses**

That “always congested” feeling



### **Itchy eyes & throat**

Often mistaken for allergies



### **Worse asthma & allergies**

Mold can trigger flare-ups

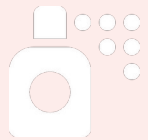


**Good news:** a few simple, low-cost steps make a real difference — and that’s what the rest of this talk is about.

THE WHOLE PLAN, IN THREE STEPS

# Clean it up, keep air moving, filter

1



## Clean it up

Scrub off mold that's already growing — with a mask on.

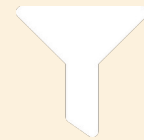
2



## Dry it & move it

Pull moisture out if you can — and never let air sit still.

3



## Filter the air

Pull the floating spores out with a simple filter.

## STEP 1 — CLEAN IT UP

# First, clean what's already growing

An air filter pulls floating spores out of the air — but it can't touch mold that's already growing on a wall or in a closet. You have to scrub that off first.



**Wear a mask!**

Cleaning mold stirs spores into the air. Use a proper respirator — I wear a P100 mask — and open the windows while you work.



**Use a no-bleach cleaner**

I used Concrobium Mold Control — made for hard surfaces.



**Scrub it off, then dry**

Wipe the mold away and let the surface dry fully.



**Big patch? Call a pro**

Larger than ~3×3 ft, or breathing trouble? Get help.

## STEP 2 — DRY IT & KEEP AIR MOVING

# Dry the air — or keep it moving

Mold needs moisture, so the best fix is to pull water out of the air. If you have AC or a dehumidifier, use them. But in many Hawai'i homes you just can't fully dry the air — so the next best thing is to never let it sit still.



### Dry it if you can

- Run the AC — it dries the air as it cools
- A dehumidifier pulls water out — aim under 50%
- Vent bathrooms & the kitchen when steamy



### When you can't, move it

- My jalousie windows never seal — humidity drifts in
- So instead I keep fans running and air circulating
- Open closets, leave gaps, don't let air go still



**My worst spot was a closet.** No airflow at all, so mold took over. I cleaned it all out — and now I'm opening it up so air can actually move through.

### STEP 3

# Now, filter the air

Once surfaces are clean and the air is moving, a filter and a fan pull the floating spores out of the room. But here's the surprise that most people get wrong...



**The most expensive purifier is often *not* the best one.**



# The truth about “HEPA” filters



## Dense HEPA filter

- Catches 99.97% of particles in one pass — impressive on paper
- BUT the material is so thick it chokes airflow
- Less air moved = the room actually cleans slowly
- Often pricey, and can be noisy



## Lighter MERV-13 filter

- Catches a little less per pass — but plenty for mold
- Air flows through easily, so the fan moves much more
- More air cleaned = the room clears much faster
- Cheap, quiet, and easy to find

THE ONE NUMBER THAT MATTERS

# Meet CADR — your air-cleaning speedometer



**CADR**

Clean Air Delivery Rate

**CADR = how much clean air a machine actually delivers each minute.**

In plain words: it's how fast the whole room gets cleaned — not how fine the filter is.



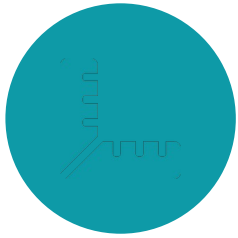
**Think of a window screen.**

A super-fine mesh stops everything — but barely any air gets through. A slightly looser screen with a strong fan behind it moves far more air, so the room clears faster. **That's why airflow beats fineness.**

THE SWEET SPOT

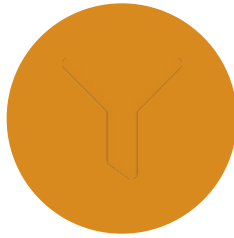
# MERV-13: the smart choice for mold

You don't need the priciest filter to catch mold. Mold spores are relatively large, and an inexpensive MERV-13 furnace filter grabs them while still letting plenty of air through.



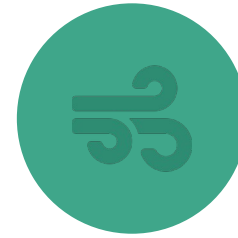
## 2-5 microns

Mold spores are big & easy to catch



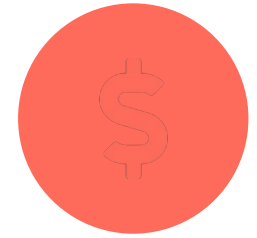
## MERV-13

Traps spores, pollen, dust & smoke



## High airflow

More air cleaned, room clears faster



## Low cost

A few dollars at any hardware store

## A QUICK SHOW & TELL

# The filter I put together

Four MERV-13 filters and a few quiet PC fans, taped into a box. It moves a lot of air, runs quietly, and barely uses any power. The parts ran me about \$105.



**~\$105**  
in parts



**Quiet**  
PC fans



**~10-15 W**  
barely any power



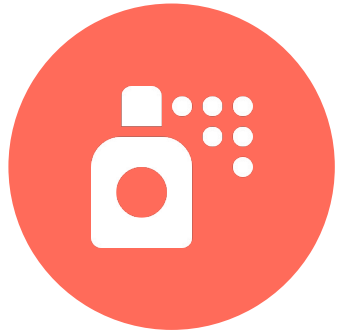
*Curious how it goes together? Catch me after — we can dig into it in class.*



*MERV-13 filter walls, fans on top*

IF YOU REMEMBER NOTHING ELSE

# Three things to take home



## 1. Clean it up

Scrub off mold first — wear a mask.  
A filter can't remove what's stuck  
to a wall.



## 2. Dry it & move it

Dry the air if you can (AC helps) —  
and never let it sit still.



## 3. Filter smart

MERV-13 plus good airflow (CADR)  
beats an expensive HEPA box.

MAHALO

# Let's clear the air together

Questions are welcome — and if you'd like a closer look at the filter, come find me after.



**Want to learn more?** The Hawai'i Dept. of Health (Indoor & Radiological Health Branch) has free guides on mold and indoor air.