

DON'T SHOOT THE BREEZE!

OR A STORY OF AIR PURIFICATION AND VENTILATION TO ELIMINATE HARMFUL EXPOSURES

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DISCLOSURES

NONE

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PART ONE: WHAT'S THE SITUATION?

- THE AIR AROUND US

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AIR-WHAT IS IT?

- AIR IS A FLUID
- IT IS MADE UP OF 5 COMPONENTS
 - NITROGEN-78%
 - OXYGEN-21%
 - ARGON-APPROXIMATELY 1%
 - + WATER AND CARBON DIOXIDE +?

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AIR IS A FLUID/WHAT IS A FLUID ?

- IT MAY BE A LIQUID OR A GAS
- IT WILL HAVE DEGREES OF COMPRESSIBILITY
- PRESSURE
- BUOYANCY
- VISCOSITY
- SURFACE TENSION

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FLUIDS MAY BE

- STEADY OR UNSTEADY
- COMPRESSIBLE OR INCOMPRESSIBLE
- VISCOUS OR NON VISCOUS
- ROTATIONAL OR IROTATIONAL

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AIR FLOW CHARACTERISTICS

- STEADY OR UNSTEADY
- UNIFORM OR NON UNIFORM
- LAMINAR OR TURBULENT

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HOW ENVIRONMENTAL CONTAMINANTS ENTER OUR BODIES

- OUR LUNGS - PRIMARY
- OUR SKIN
- OUR DIGESTIVE TRACT
- OTHER BODY OPENINGS, ie. EYES, NASAL LININGS, MUCOSA, ETC

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HOW DO ENVIRONMENTAL CONTAMINANTS GET TO US?

- THE **AIR** IN THE HOME WE BREATHE
- WE ARE NOT **LICKING** THE WALLS, VENTS, FLOORS OR FURNITURE

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THE AIR

- AND WHAT IS IN IT IS OUR **TARGET!**

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THE NATURE OF CONTAMINANTS IN THE AIR

- THEIR LEVELS VARY OVER TIME
- FORCES CAUSE SURFACE CONTAMINATION TO **RELEASE AND GO AIRBORNE**, MAYBE ONLY CLOSE TO THE SURFACE, OR FURTHER OUT?
- EXAMPLE: A SPORE TRAP AIR TEST CLOSE TO A WALL FULL OF HEAVY MOLD GROWTH MAY SHOW LITTLE SPORE DENSITY IN THE AIR, IF WHAT IS ON THE WALL IS NOT **AEROSOLIZING** AT THAT TIME

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FORCES THAT MAY AEROSOLIZE CONTAMINANTS INTO THE AIR

- AIR CURRENTS
- AIR PRESSURE CHANGES
- TEMPERATURE CHANGES
- **MOVEMENT WITHIN THE ROOM**
- CONVECTION CURRENTS
- TYPES OF HVAC SYSTEMS-FORCED AIR, RADIATOR, MINI-SPLITS, ETC
- STACK EFFECT

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IMPLICATIONS TO CONSIDER WHEN JUDGING A HOUSE "SAFE" WHEN USING PCR DUST TESTING

- PCR RESULTS, MOST OFTEN, DEPENDING ON LOCATIONS OF SAMPLING, OFFER BOTH A CURRENT AND PAST HISTORY OF CONDITIONS IN THE HOUSE, BUT, **THEY ARE NOT NECESSARILY AN INDICATOR OF CURRENT LOADS OF CONTAMINATION IN THE AIR**, AND ARE NOT REPRESENTATIVE OF ALL BREATHING AREAS IN THE HOME OVER TIME

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LIVING IN A LARGE EMPTY SHOEBOX

- IMAGINE LIVING IN THE BACK HALF OF A SUPER LARGE EMPTY SHOEBOX
- IMAGINE HALFWAY BACK ARE 4 LARGE HEPA AIR FILTERS
- IMAGINE A SANDSTORM OF PARTICLES CONTINUOUSLY EMITTING FROM THE FAR END GOING TO THE BACK END, AND THE DENSITY OF THE SAND VARIES FROM LIGHT TO MEDIUM TO HEAVY AND BACK AND FORTH OVER TIME

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LIVING IN A SHOEBOX

- IMAGINE NOW THAT THE FOUR AIR FILTERS ARE RUNNING AT TOP SPEED
- EACH FILTER HAS A TOP CAPACITY OF HOW MUCH SAND IT CAN TAKE OUT
- THEREFORE FROM TIME TO TIME THE FILTERS MAY TAKE ALL OF THE SAND OUT OF THE AIR OR MOST OF IT, OR JUST SOME OF IT, LEAVING BEHIND IN THE LIVING SPACE NONE, A LOT, OR A LITTLE SAND IN THE AIR THE PATIENT BREATHS
- IT IS THE SENSITIVITY OR "TRIGGER LEVELS" OF THE PATIENT THAT WILL CAUSE THEM TO REACT OR NOT!

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NOW ENTER THE BREEZE!

- NOW ON EITHER SIDE OF THE LIVING SPACE IN THE SHOE BOX, WE OPEN WINDOWS
- ON ONE SIDE WE BLOW AIR OUT OF THE WINDOW
- AND ON THE OTHER SIDE WE TAPE A FILTER ON THE OPEN WINDOW
- IN THIS MANNER, SO TO SPEAK, WE ARE BLOWING OUT THE CONTAMINANTS IN THE OLD AIR, AND REPLACING IT WITH SAFE CLEAN AIR

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EXTRA BIG BENEFITS OF THE BREEZE

- WE CAN ALSO ALTER THE BREEZE TO BRING IN FILTERED OUTDOOR AIR **FASTER** THAN THE EXHAUSTING OF CURRENT AIR
- ALL HOMES HAVE **NEGATIVE PRESSURE** FROM USING FANS AND STACK EFFECT, PUSHING AIR OUT OF THE HOME, AND REPLACING AIR FROM PATHWAYS OF LEAST RESISTANCE, WITH UNFILTERED OUTDOOR AIR AND FROM THE BUILDING ENVELOPE
- CREATING POSITIVE AIR PRESSURE WILL STOP OR SLOW DOWN THE SOURCE OF CONTAMINANTS FROM ENTERING THE LIVING SPACE

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PROOF IS IN THE PUDDING!

- WE HAVE HAD SEVERAL CASES AND NOW MORE CASES OF PATIENT IMPROVEMENTS FROM USING THESE TECHNIQUES

IN FACT, A PATIENT OF ONE OF OUR SM PHYSICIANS, IN A NEWER HOME IN CALIFORNIA. HAD TO STOP WORKING DUE TO SYMPTOM ISSUES. SHE FOLLOWED OUR CLEANING PROTOCOL TO RID OF CONTAMINANT BUILD UP AND HAD HER HVAC CONTRACTOR, FOLLOW OUR RECOMMENDATIONS OF EQUIPMENT AND METHODS OF INSTALLATION ON HER TWO HVAC SYSTEMS AND:

HAD SYMPTOMS REVERSED IN 2 DAYS!!!

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APPLICATION VERSUS REMEDIATION

- REMEDIATION IS MOST NEEDED TO HALT **SOURCES** OF CONTAMINATION PERFORMED WITH SAFE MATERIALS AND METHODS
- CLEANING OF PLATED OUT CONTAMINANTS MAY BE NEEDED IN VARYING DEGREES
- **IN LIGHT TO MEDIUM LEVELS OF SOURCES, THE RIGHT COMBINATION OF AIR PURIFICATION AND VENTILATION MAY BE ALL THAT IS NEEDED TO CORRECT THE EXPOSURES OF THE PATIENT FOR LESS COST**

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