



CONTINUOUS AIR & SURFACE PATHOGEN REDUCTION



WHAT IS CASPR AND WHAT DOES IT DO?

CASPR stands for "Continuous Air & Surface Pathogin Reduction". It is an innovative "not-touch" disinfection technology that utilizes a Natural Catalytic Converter to create Hydrogen Peroxide out of your ambient air.

The Hydrogen Peroxide molecules neutralize molds, viruses, bacteria, odors, and volatile organic compounds ("VOC's") at the cellular level then revert to hydrogen and oxygen molecules. There is no buildup of hydrogen peroxide; the technology is safe to use in occupied spaces for people, pets, and plants.

HOW EFFECTIVE IS CASPR?

Every CASPR product is effective against bacteria, viruses, molds, and even reduces VOCs and odors. By filling up space with oxidized air and blanketing all surfaces, CASPR provides that added protection and peace of mind we are all looking for.

Combat COVID with CASPR's Continuous Air & Surface Pathogen Reduction Technology. CASPR was able to inactivate 99.99% of the SARS-COV2 virus within 24 hours. Once CASPR reduces pathogens in your air and on your surfaces, it works continuously to keep them down.

CASPR FEATURES AND BENEFITS

- Has a kill rate of up to 99.96% on surfaces
- Runs 24/7 without an operator or chemicals
- Requires no training or additional labor cost
- Easy to install and low maintenance
- Effective against bacteria, viruses & mold
- Effective against odors and VOCs
- Noise & odor free without residue and produces no ozone
- Safe for occupied spaces and food preparation stations
- Provides a safe, healthy environment and peace of mind

CASPR PRODUCTS

- TRANSIT for vehicle use
- COMPACT for personal use
- CASPR PRO for commercial use

CASPR TRANSIT



CASPR TRANSPORT units have been specially designed for trucks, buses, trains, and other vehicles. They are easy to install, low- profile, silent, tamper resistant, and available in both AC and DC power options. Once installed and turned on, CASPR TRANSIT units provide continuous air and surface protection for your entire vehicle and its passengers while in use.

CASPR COMPACT

CASPR Compact units are designed to be used in areas where more permanent installation is not an option. This unit also displays the versatility of the CASPR Product line as a solution to take with you wherever you may go. Equipped with its own fan, this unit will provide the proper dose up to 1,500 sq.ft. Once turned on, CASPR Compact units provide continuous air and surface protection for your space.





CASPR PRO SERIES

CASPR PRO units are installed in your HVAC supply where they utilize ambient air to create active molecules, including hydrogen peroxide. These molecules then exit your HVAC ducts, circulate the targeted area, and land on all surfaces providing continuous micro-burden reductions. CASPR is up to 99.96% effective against molds, bacteria, and viruses, and has the added benefit of reducing odors and VOCs. Once these bad pathogens are neutralized at the cellular level, the oxidizing molecules created by CASPR then revert to their original state (hydrogen and oxygen).

TRUCKSUITE HEALTH POWERED BY CASPR



Why CASPR?

Runs 24/7 without an operator or chemicals

Requires no training or additional labor cost

Provides a safe, healthy environment and peace of mind

Is safe for occupied spaces and food preparation stations

Easy to install and low maintenance

Effective against bacteria, viruses & mold

Effective against odors and VOCs

Noise & odor free without residue

Produces no ozone





SURFACE PATHOGEN REDUCTION

The CASPR technology has a

kill rate of up to

CASPR is an innovative "not-touch" disinfection technology that utilizes a Natural Catalytic Converter (NCC) to create Hydrogen Peroxide out of your ambient air.

The hydrogen peroxide molecules neutralize molds, viruses, bacteria, odors, and VOCs, at the cellular level then revert to hydrogen and oxygen molecules. There is no buildup of hydrogen peroxide; the technology is safe to use in occupied spaces for people, pets, and plants.

Every CASPR product is effective against bacteria, viruses, molds, and even reduces VOCs and odors. By filling up space with oxidized air and blanketing all surfaces, CASPR provides that added protection and peace of mind we are all looking for.

Combat COVID with CASPR's Continuous Air & Surface Pathogen Reduction Technology. CASPR was able to inactivate 99.99% of the SARS-COV2 virus within 24 hours. Once CASPR reduces pathogens in your air and on your surfaces, it works continuously to keep them down.

CASPR recreates what naturally happens outdoors. The levels of Hydrogen Peroxide CASPR creates are similar to what is found in outside, 0.01 Parts Per Million (PPM), is roughly 100x below the OSHA guidelines.

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CASPR TRANSPORT

CASPR TRANSPORT units have been specially designed for trucks, buses, trains, and other vehicles. They are easy to install, lowprofile, silent, tamper resistant, and available in both AC and DC power options. Once installed and turned on, CASPR TRANSPORT units provide continuous air and surface protection for your entire vehicle and its passengers while in use.

EVERY SURFACE. EVERY SECOND EVERYWHERE. Proven safe in every environment to give you peace of mind.

CASPR COMPACT

CASPR COMPACT units are designed to be used in areas where more permanent installation is not an option. This unit also displays the versatility of the CASPR Product line as a solution to take with you where ever you may go. Equipped with its own fan, this unit will provide the proper dose up to 1,500 sq.ft. Once turned on, CASPR COMPACT units provide continuous air and surface protection for your space.





CASPR TESTED IN SCHOOL BUSES



CASPR Transit

Continuous Air &

Surface Pathogen

Reduction (CASPR)

technologies utilizes

a natural catalytic

process to produce

non-toxic pathogen

fighting oxidizers like

hydrogen peroxide

to continuously

disinfect the air &

surfaces.

EXECUTIVE SUMMARY

CASPR Transit Tested on Active School Buses

Many school systems are relying on periodic electrostatic spraying to provide a disinfected bus environment for their students and drivers. NDS tested active school buses in two different environments and found an average **3.4% reduction in the number of pathogen** on the buses comparing before and after the installation of the CASPR Transit units.

METHODOLOGY & TESTING

The first set of tests were done at a public school system in Georgia during the month of February when most of the windows on the bus were up due to the cold weather. The second testing environment was a public school system in Alabama during the month of May where temperatures had risen enough to cause the majority of windows to be down during the testing as these buses had no air conditioning units. For both tests, samples were collected prior to the installation of the CASPR Transit systems and then after a period of weeks another set of samples was collected. These buses were running their normal routes during the testing period. All swab samples were collected from relatively the same locations ensuring not to reswab a previously swabed area. These samples were then sent off to an independent laboratory to process and return with the Aerobic Colony Forming Unit (CFU) counts in order to compare the pre and post test results.

RESULTS & CONCLUSIONS



available upon request from casprtech.com.

93.4% Reduction in Pathogens

CASPR TESTED IN AMBULANCES



CASPR

Specifically

designed for

transportation

vehicles where

pathogens are high.

Transit Units

EXECUTIVE SUMMARY

Ambulance Transportation Vehicles

Currently in the US, both employee and patient safety are key issues in medical systems, extending beyond the walls of medical facilities to ambulances. In a limited space, employees perform patient care, often under extreme time pressure, within a small vehicle moving at high speed. In ambulances, both employees and patients can be exposed to potentially infectious agents during transport in the vehicle, with a higher risk of healthcare-associated infections (HAIs), from the enclosed space of an ambulance. While risks of emergency medical service (EMS) workers is well-documented, data about patient risk in ambulances is not available. Therefore, adoption of methods to improve occupational safety for the EMS workforce, while ensuring patient safety, is urgent.

Purpose

This study evaluates the efficacy of CASPR's Natural Catalytic Conversion (NCC) technology in an ambulance, compared to control ambulances without CASPR.

CASPR Technology

CASPR stands for "continuous air and surface pathogen reduction" and is a low maintenance natural catalytic converter that generates powerful oxidizers, including gaseous hydrogen peroxide (H2O2) from molecular oxygen and humidity of the ambient air and disburses low concentrations of oxidizers into the environment. The oxidizing molecules decompose pathogens in the air and on surfaces. The concentrations of those oxidizers are highly effective in reducing the bioburden, while safe for environments occupied by people and equipment of all kinds. CASPR is a novel technology for reducing bioburden in the air and on environmental surfaces.

RESULTS

Average CFU/cm² Reading per Location

The full test report is available upon request from casprtech.com The CASPR Test unit had 95.46% less CFU than the average of the two control units. The above chart shows the comparison of the average of each swab location across the four weeks of testing. These data points are related in CFU/cm2.

Swab Locations:

1. Stretcher bench right

2. Left table surface

3. Door handle side

4. Top of center seat

5. Cabinet behind the seat





CASPR Transit Units Specifically designed for transportation vehicles where pathogens are high.

EXECUTIVE SUMMARY

Claro published an article in the American Journal of Infection Control that identified the threshold for a safe medical environment that reduces HAIs is equal to or below 2.5 CFU/cm2. The average for all locations on the CASPR test unit was 0.35 CFU/cm2, which is 86% below the threshold. This study validates prior testing of the effectiveness of use of CASPR to reduce bioburden on environmental surfaces in the ambulance tested. The average for all locations on the two control units was 7.72 CFU/cm2, which is 209% above the threshold.

Data from test samples is provided for reference in Table 1 below. Data shown are the average CFU/cm2 for each location during the four-week testing period. The results for the control units are reported as the average of each location across both control units and the four weeks.

Table 1 - Average CFU/cm ² by location					
Testing Location	CASPR	Control			
Stretcher Bench Right	0.40	8.55			
Left Table	0.80	13.86			
Door Handle Side	0.10	7.79			
Top of Center Seat	0.30	0.95			
Cabinet behind Seat	0.15	7.43			

CONCLUSION

This study, comparing samples collected from surfaces in an ambulance with CASPR Transit and pooled samples from similar control ambulances, concluded 95% less in bacterial bad as measured with CFU/cm2. This study confirms prior testing of CASPR technology as a proven effective method for disinfection, inactivating viruses, fungi, and bacteria, in laboratory testing. Based on these results, and an awareness of the occupational risks for EMS workers, we believe that implementation of CASPR Transits across the entire fleet of



ambulances would provide a safer environment for both employees and patients transported to and from medical facilities.

The full test report is available upon request from casprtech.com

95% Less in Bacterial

Load

Safe_discreet and sile

APPLICATIONS

CASPR TESTED IN HOSPITAL SETTINGS



EXECUTIVE SUMMARY

NICU Testing Report

RISK ASSESSMENT

The neonatal intensive care unit (NICU) contains some of the most at-risk patients for healthcare associated infections (HAIs) within the hospital. Many neonates should also be considered immunocompromised, because of immature immune systems and/or congenital defects. (1) Therefore, methods to reduce or eliminate common pathogens are critical. Microbial testing of a novel CASPR system, which stands for "continuous air and surface pathogen reduction," technology, was conducted to assess the efficacy of this method of decontamination in NICUs.

EXECUTIVE SUMMARY OF AIR & SURFACE TESTING IN NICU PODS

This is a summary of the air and surface pathogen testing within the hospital environment. To assess the NICU environment, both air and surface testing in six NICUs in a children's hospital was conducted, using a novel CASPR system, which stands for "continuous air and surface pathogen reduction," technology. The study evaluated the efficacy of CASPR's Natural Catalytic Conversion (NCC) technology in six pods of the NICU, comparing initial samples without CASPR with samples collected from air following introduction of CASPR equipment for twenty one (21) days. The average of each swab location for monthly testing was reported from measurements in CFU/cm2. Outdoor air samples were collected.

CASPR

Continuous Air & Surface Pathogen Reduction (CASPR) technologies utilizes a natural catalytic process to produce non-toxic pathogen fighting oxidizers like hydrogen peroxide to continuously disinfect the air & surfaces.

The full test report is available upon request from CASPRTECH.com. Microbial Testing of Novel Technology: CASPR is a low maintenance natural catalytic converter that generates powerful oxidizers, including gaseous hydrogen peroxide (H2O2) from molecular oxygen and humidity of the ambient air and disburses low concentrations of oxidizers in the environment. The oxidizing molecules decompose pathogens in the air and on surfaces. The concentrations of those oxidizers are highly effective in reducing the bioburden, while safe for environments occupied by people and equipment of all kinds. CASPR is a novel technology for reducing bioburden in the air and on environmental surfaces. The technology is very low maintenance, safe, and discreet. Available units can be placed in the rooms of a Pod of a NICU to cover up to 1200 to 1500 square feet.

PRE & POST-SWAB RESULTS

Air samples collected on both March 14, 2023 and April 4, 2023 revealed trace to low spore levels that indicate healthy indoor environments that should not present health hazards due to mold or biological growth. After the CASPR devices were operational for tweaky One (21) days, testing revealed that no mold spores were detected at all in NICU Pods 2, 3 and 5b. Previously this level had only been achieved in Pod 2. All spore levels found in NICU Pods 1, 4 and 5 from the air samples collected on April 4, 2023, are consistent with corresponding outside spore counts collected that day and do not present a concern. 92.3% Reduction in Fungal Load ~



Air Sampling Table Fungal Spores: Pre and Post Installation

Sample Number	Sample Area	Pre-CASPR Spore Detection	Post-CASPR Observations	Post-CASPR Spore Detections Accespores-39 Basidiospores-115	
1-04	Pod 1	Basidiospores-39 Cladosporium-76	No visible issues		
2-04	2	No visible spores	No visible issues	No Spores Detected	
3-04	3	Basidiospores-39 Cladosporium- 76	No visible issues	No Spores Detected	
4-04	4	4 No visible issues Accospores-39 No visible issues Accospored Basidious Cladiosp	Ascoospores-76 Basidiospores-39 Cladosporium-39		
5-04	5(a)	Unoccupied due to restoration. Ascoospores-39 Basidiospores - 76	Reoccupied and open to Sb. No visible issues.	Cladosporium-305 Curvularia-39	
6-04	6/50	No visible issues Cladosporium- 76	No visible issues	No Spores Detected	
7-04	Outside	Ascospores-229 Basidiospores- 267 Cladosporium-115	T .	Ascospores-39 Basidiospores-381 Cadosporium-115	

The average for all NICU pods from post-CASPR fungal samples was 0.06 CFU/cm2. The average for all NICU pods from pre-CASPR fungal samples was 0.72 CFU/cm2. The comparison of the pre and post bacterial samples shows a 92.3% reduction in fungal load. This study validates prior testing of the effectiveness of the use of CASPR to reduce bioburden on environmental surfaces in the NICU pods tested.

		22	20 Not Provide Del Presente	Fur	ngal	Bacterial	
NICU POD	NICU Sa POD #	Sample # Location	Pre CFU/cm2	Post CFU/cm2	Pre CFU/cm2	Post CFU/cm2	
	1	1-01	Phone Handle	5	1	26	0
		1-02	Left Sink Floor	0	0	7	0
		1-03	Center Linen Can	0	0	2	0
	2	2-01	Phone Handle	0	0	0	0
		2-02	Return Air Vent	0	0	1	0
		2-03	Monitor Arm	0	0	0	0
	3	3-01	Left Sink Floor	1	0	51	0
		3-02	Top Trash Can	5	0	0	0
		3-03	Light Switch	1	0	1	0
	4	4-01	Scale Buttons	0	0	0	0
		4-02	White Shelf Tray	0	0	2	0
		4-03	Cabinet	0	0	0	0
	5	5-01	Glass Window on Door	1	0	6	1
		5-02	Sink Backsplash	0	0	1	0
		5-03	Soap Dispenser	0	0	0	0
	6	6-01	Sink Backsplash	0	0	0	0
		6-02	Food Refridg Door	0	0	0	0
		6-03	Return Air Vent	0	0	0	0
			Average	0.72	0.06	5.39	0.06

CONCLUSIONS

The CASPR Test units demonstrated effectiveness using a comparison of the average of each swab location with repeated testing pre- and post installation of CASPR, from samples collected from air and surfaces in a NICU in a health system. This study demonstrates the effectiveness of this novel technology, CASPR, capable of inactivating fungal spores, and bacteria, from the attached laboratory testing by an independent laboratory. Based on these results, a call for improving air quality in healthcare environments, and an awareness of the significant HAI risks for neonates in the NICU, we believe that implementation of CASPR units is essential within the NICU environment.

No Mold Spores Were Detected





Keeping the truck on the road and the trucker in the truck!

