The background of the entire page is a black field filled with numerous thin, parallel lines of varying shades of blue. These lines are arranged in a way that creates a sense of motion and depth, resembling light trails or fiber optic paths. They curve and flow from the top right towards the bottom left, creating a large, abstract shape that frames the text on the left.

# Innovating with Antimicrobial Light

An Executive Guide

**vyv**

*“There’s a way to  
do it better. Find it.”*

Thomas Edison

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# 1. A Time to Innovate

There's constant chatter about the 'new normal.' What might we expect in a post-pandemic world?

The COVID-19 pandemic created an upheaval that has changed us all in many fundamental ways. It has reordered our priorities – in our social life, in our work life, and the ways we relate and connect to the environments around us. Even though major global health organizations, like the CDC and the World Health Organization, have been shouting for years about microbial challenges like antibiotic-resistant “superbugs,” our collective pandemic experience has now heightened our awareness of the threats posed by invisible microbes. In the process, it has given the concept of “clean” a whole new meaning.

## Consumers have new demands when it comes to ‘clean’ that are leading to new product development opportunities

Even pre-COVID, market demand was moving toward “antimicrobial” as a differentiator, as part of a feature set for everything from trash bags and soaps to bath and shower walls. In the midst of the pandemic, consumers’ attitudes changed markedly and consumer expectations for clean environments and clearly articulated cleaning protocols have more than ever before become front-and-center. This consumer attitude has spurred on a race to innovate for a ‘new kind of clean.’

One thousand American adults were surveyed<sup>1</sup> amid the COVID-19 pandemic to better understand the shift in consumer behavior that was underway.

Americans’ expectations for businesses are clear:

**76%** will hold brands accountable for how they clean their spaces

**61%** want businesses to invest in automated cleaning

The good news for businesses is that more than half say they will pay more for stricter cleaning protocols:

**56%** will pay more for travel

**54%** will pay more for dining

**52%** will pay more for cleaner retail experiences

<sup>1</sup>2020 Vyv Survey — Wellness in a Post-COVID World

A year prior no one would have expected fast-food chains to post signs at their drive-through windows to emphasize to customers the specific brands of cleaners they used to keep their stores clean. Now it is commonplace.

The heightened awareness of microbial threats and accelerating trends toward health and wellness open new game-changing opportunities. By applying our own creativity and innovative thinking, we stand to help solve and address many of these global challenges that are now very real in most people’s minds. And as we innovate, we collectively will find new approaches to creating a cleaner world for us all. This guide is exactly that — an opportunity to point us toward a new way of thinking.

## 2. What is Continuous Non-UV Antimicrobial Light?

There are many ways to create a cleaner world: UV light, electrostatic sprays, cleaning and wiping, among others. Prior to the 2020 pandemic, a new concept emerged and began to take hold. It was the idea of “continuous cleaning” — the notion that both small spaces and large places can become significantly cleaner environments and remain that way. Whereas traditional cleaning is intermittent in nature, meaning that spaces are at their cleanest immediately following an intervention, continuous cleaning is fundamentally different. Because of its constant, 24/7 presence and effects, microbes can be stopped from growing almost immediately. This helps to make these spaces far cleaner, reducing the risks of microbial exposure in between traditional disinfection.

Some of the largest global companies are innovating new antimicrobial products and solutions with Vyv’s continuous cleaning, non-UV antimicrobial light technology.

At the core of a continuously cleaned environment is Vyv’s antimicrobial light technology. It is ideal for this kind of application because it meets international standards for continual and unlimited use around people, animals and plants. This technology has two key attributes that make it ideal in countless applications: it possesses powerful antimicrobial properties contained in a single LED diode, sized smaller than a thumbnail, which can be embedded in places extremely small and hard to reach.

As a result, Vyv’s continuous antimicrobial action can be neatly delivered as part of everyday appliances, lighting fixtures, and as componentry or a new feature set inside other devices and processes. With its highly flexible LED form factor, adding antimicrobial capabilities now has endless possibilities — from the bathroom shower and kitchen lights to nursery humidifiers and airplane lavatories, office buildings, workspaces; even behind elevator buttons. Continuous antimicrobial light now fills the gap that has existed to deliver sustained antimicrobial reductions, providing an important advancement to current disinfection methods.

Vyv’s technology harnesses its antimicrobial action from within the visible light spectrum (not ultraviolet), which is comprised of wavelengths of light at frequencies of 380-750nm. This spectrum is composed of the colors that we can see with the human eye, such as the colors of the rainbow. The discovery of visible light’s antimicrobial power was originally made in the late 1800s, when experiments with colored filters were used with natural sunlight to initially demonstrate the impact of certain light colors (light wave frequencies). Vyv has applied LED technology engineered to produce an abundance of light in the 400-420nm range. This range of light has been extensively researched, documented, and fully acknowledged to impact the growth of and kill<sup>2</sup> bacteria, fungi, yeast, and mold/mildew.

Numerous efficacy studies both in the laboratories and in active environments have been conducted by Vyv, the company’s clients and other renowned researchers at academic institutions. The results have been significant in documenting the reduction of microbial bioburdens in a vast array of applications. While efficacy testing has been performed by Vyv’s microbiology and engineering teams for customers, the majority of these studies have been performed by independent, third-party academic sources.

Some studies on the efficacy of Vyv’s technology include research performed at the NY State Department of Health Wadsworth Biodefense Lab; University of North Carolina–Chapel Hill; Duke University; Rensselaer Polytechnic Institute; Cornell Food Sciences; Mount Sinai Medical Center; Case Western University; and Bayfront Health System with a multitude of active use studies completed and ongoing. Detailed case studies and results are available upon request.

### 3. Is Vyv Antimicrobial Light the Same as UV Light?

The only thing Vyv technology has in common with UV is that they are both antimicrobial in nature. That is where the comparison ends. UV light occurs in the 100-380nm range. The wavelengths that are most germicidal and therefore most commonly used for sterilization or disinfection occur from 200-280nm. UV light works by penetrating into the nucleus of microbes, destroying nucleic acids and therefore disrupting their DNA. The DNA damage accumulates, leaving cells unable to perform vital functions, causing cell death.

Humans also have DNA, and because that DNA is damaged by UV wavelengths, this form of light at disinfecting or sterilizing doses is not approved for use around people, though it has excellent applications when human and animal safety considerations are not a factor.

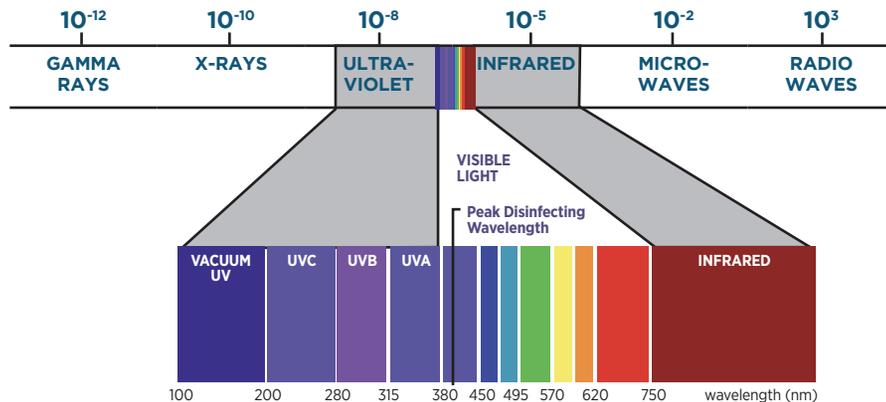


Figure 1. UV Light occurs from 100-380nm—Visible Light occurs from 380-750nm.

Vyv's killing and mechanism action is completely different. It works by activating porphyrin molecules found exclusively within certain microbial cells. When activated, the porphyrins produce excessive Reactive Oxygen Species (ROS), such as singlet oxygen, hydrogen peroxide, and hydroxyl groups. Once these ROS build up inside the cell, they become toxic to the cell itself, causing the destruction of multiple structures within the cell, stopping cell reproduction, leading to cell death.

Equally important when it comes to certain materials, UV light breaks down the chemical bonds in plastics, gaskets, insulation and similar materials. Vyv technology has been demonstrated not to negatively impact these materials critical to many of our customers' products, making it ideal for applications where the damaging effects of UV are undesirable or impractical.

In summary, Vyv technology is not ultraviolet (UV). It operates within the visible light portion of the spectrum and uses a completely different killing mechanism than UV, making the technology an ideal option for integration into new products and a wide range of processes in need of sustained antimicrobial action.

## 4. The Benefits of Integrating Antimicrobial LED Light

Adding antimicrobial light technology into a product or an application where microbial buildup can be problematic can add a high-value differentiator and new ways to market that can tap into an urgent consumer, commercial or industrial need.

Following are ways in which the addition of antimicrobial capabilities can enhance and differentiate existing products and processes, as well as laying the foundation for new product innovation.

- Add leading-edge, highly differentiated products to your product line-up and future product pipeline.
- Create new ways to enhance your customers' experience by directly addressing their elevated health and wellness concerns.
- Offer new ways to think about your company's distribution channels and expand your go-to-market opportunities.
- Enhance your approaches to addressing critical regulatory requirements.
- Go further in addressing the needs of your, and others, employee health and wellness issues.
- Add continuous antimicrobial action, killing 90%+ of bacteria and mold<sup>2</sup> (depending on the application) while avoiding the negative aspects of dangerous UV light, which present challenges and potential liabilities in many products or applications due to its known safety issues.
- Innovate with lower business risk through Vyv's turn-key innovation partnership model — a highly differentiated and supportive approach — that offers partners access to field-tested and proven technology; advanced sciences and clinical microbiology expertise; wrap-around engineering services including but not limited to in-depth feasibility studies; and prototyping, claims discovery, co-marketing support, and more.

## 5. How Partnerships Accelerate Innovation

Consider this: with advanced antimicrobial light technology, we can now fundamentally change the way we mitigate microbes in our homes, places of business, and public spaces. Imagine:

- A 'self-cleaning' shower that prevents mold from growing in your grout. Fighting the impact in your kitchen from the growth of *Salmonella* or *E. coli*. And contrary to expectations, making places like elevators and restrooms some of the cleanest spaces in a building.
- Reducing the impact of microbes in public spaces, restaurants, and the places we love to gather and socialize.
- A world where subway trains and transit buses, airplanes, healthcare facilities, fitness studios, and our workplaces are all being continuously protected and cleaned 24/7.

All of this is possible with the help of a new kind of antimicrobial light.

Some of the world's largest companies and brands have begun to introduce new antimicrobial products and solutions integrating Vyv's continuous action, non-UV antimicrobial LED technology. As of this writing, Vyv's technology is currently embedded in bathroom ventilation fans, nursery humidifiers, under-cabinet kitchen lights, overhead shower fixtures, airplane lavatories, within elevators, throughout hospitals, schools, food and pharmaceutical manufacturing and sports and athletic facilities, with the applications growing exponentially. These innovators have already begun to disrupt their own businesses and even their industries by understanding the criticality of implementing and offering new health and wellness solutions to their employees and customers.

This new era of heightened awareness of the dangers from germs is ushering in higher standards of sanitation in virtually every industry — from food processing, healthcare, and hospitality to commercial and retail spaces, office buildings, and schools — creating the opportunity to consider how to innovate, raise standards and meet and exceed market demand.

*‘The ability to identify and work with partners is a powerful source of competitive advantage, particularly when it comes to creating new growth products, solutions, and business models. Finding the right partner can supercharge your company’s innovation.’ — Harvard Business Review*

Partnering with a technology company to accelerate innovation has many benefits, especially when it’s the right fit. A recent [article on how partnerships drive innovation](#) in the *Harvard Business Review* suggested that when a company doesn’t have the internal capabilities to accomplish their goals, finding a partner to work with is the best way to go — but it’s essential to find the right partner, not just one that has the technical capabilities, but also has the right culture that allows it to adapt to the needs of its client. Vyv is that partner.

## 6. Real-World Innovations from World-Class Companies

Antimicrobial light technology can now be integrated into a wide range of consumer, commercial and industrial products, environments, and applications. Major companies and organizations have successfully integrated Vyv technology to solve daunting problems, accelerate their product development cycles and open up new market opportunities.

### Broan-NuTone

Broan-NuTone is the largest installed base manufacturer of ventilation fan products in North America. If you walk into almost any residential bathroom today, you’re likely to see a Broan or NuTone ventilation fan as they are in the vast majority of American homes. Their challenge was how to ‘reactivate’ this huge installed base by innovating in a way that made sense and adding real value to their core value proposition of air purification. With the rise of consumer interest in cleaner indoor air, adding antimicrobial light to the bathroom fan was a perfect fit.

Through their partnership with Vyv, they co-developed the new Broan-NuTone SurfaceShield™ ventilation fan with built-in antimicrobial light for kitchens and baths. This has enabled the company to go beyond net-new sales to re-engage their enormous existing customer base, helping to bring 20+ years of replacement sales forward to the present day. The results have exceeded expectations across the board and are a testament to the quality of the partnership.

*“By far, Vyv was the most highly engaged in trying to find a solution. Their people are wholly invested and so passionate about the business that they’re going to figure out what it takes to get things done. Their positive attitude makes it really easy to partner.” — Edwin Bender, VP of Marketing, Broan-NuTone*

### **Dorel Juvenile's Safety 1st**

Safety 1st, a division of Dorel Juvenile, one of the world's largest juvenile products companies, was searching for ways to expand beyond their traditional juvenile products channels, such as retail chain Buy Buy Baby. They were interested in expanding distribution of their products into new channels like pharmacy chains. After seeing their consumers' concern about dirty humidifiers and the need for constant cleaning, the team at Dorel saw the opportunity to embed Vyv's antimicrobial LEDs into their products.

Their innovative work integrating Vyv's antimicrobial LEDs into these products up doing away with short-life filters, which are problematic because consumers typically don't replace them frequently enough. This innovation made these appliances infinitely easier to clean much less often. When introduced to the market, the Safety 1st Stay Clean™ Humidifier was one of this multi-billion-dollar company's' strongest product launches; and it was done without major financial risk because of the resources and expertise available through their partnership with Vyv.

*“We worked as a team when it came to co-engineering, communicating regularly, and creating prototypes until we got the optimal product. We don't have a microbiologist on staff or a lab, so we relied on Vyv to do all the testing that supports our claims. Vyv provided end-to-end support”*  
— Lukas Tubby, Dorel Safety 1st, Design Engineer

For many businesses, incorporating antimicrobial light into their existing products provides unique competitive differentiation and a significant new value proposition. It can accelerate a replacement lifecycle and create a higher perceived value in commercial and consumer products and environments. And as in the case of Dorel, it offers the potential to break into new channels of distribution that were previously closed off or not easily accessible.

### **Delta Air Lines and New Jersey Transit**

Transportation companies Delta and New Jersey Transit tapped Vyv to find solutions that would fit their unique challenges and environments. Vyv's team of scientists worked collaboratively with the innovation team at Delta to identify an opportunity to use Vyv antimicrobial light in lavatories onboard 757 aircraft, as part of the Delta CareStandard, the global airline's commitment to a superior level of cleanliness, more space and safer service designed to ensure customers can travel with confidence.

“Innovation is central to everything we do at Delta. Our partnership with Vyv shows how we are adapting the vision we showcased at CES (the Consumer Electronics Show) to double-down on our commitment to customer health and safety,” said Bill Lentsch, Chief Customer Experience Officer. “This technology will provide another of the many layers we've put in place that, when working together, keep customers safe. For Delta, there's no more important goal for applied innovation.”

NJ Transit is the nation's largest statewide public transportation system, providing more than 925,000 weekday trips on buses, light rail, commuter rail and paratransit service. The agency selected Vyv as one of only four companies selected to participate in a test of their sanitation response plan.

*“This group of companies, and the technologies they developed, reveal the tremendous promise of the Transit Innovation Partnership, as transit agencies around the world work to combat the COVID-19 pandemic.”* — Kevin Corbett, NJ Transit, President & CEO

## 7. Five Steps to Innovating with Antimicrobial Light: Ideation to Launch

In a **2019 Innovation Survey, Gartner**, a leading research and advisory company, took a look at the challenges and opportunities marketers had when it came to innovation. One of the recommendations was to “use design-thinking principles to guide teams to think and act more like product managers to unlock new ideas for products and services. Design thinking is an effective approach used successfully by many large enterprise companies that creates new and surprising insights for integrating the needs of consumers, the possibilities of technology and the requirements of your business.”

Vyv’s team provides end-to-end development and innovation support every step of the way, which includes a tried-and-true process that incorporates the fundamentals of design thinking as well as expertise in designing for antimicrobial impact.

### Step 1 | Customer Understanding & Problem Definition

The pandemic has created a heightened awareness and demand for a new kind of clean. How are your customers affected? What are their concerns that a new product or application can help solve?

You might be thinking about ways to improve your current products to resonate with customers that are now keenly focused on germs. Your company may have been hit hard by the pandemic and is now challenged to develop new products or approaches for a post-pandemic world.

Based on all the knowledge you have about your customers, you’ll need to specifically define the problem that antimicrobial light might solve for them. In the case of Dorel’s Safety 1st, the team was keenly aware that reducing the time and effort spent cleaning their humidifiers was a significant opportunity.

Kellee Senic, Director of Product Marketing at Safety 1st, stated, “We began by looking at mom’s concerns. When we first looked for a better way to address the cleanliness of humidifiers, we saw that there were a couple of products already on the market that call out that they are ‘germ free’ or ‘antimicrobial,’ but there were always caveats. One uses UV light, which is dangerous to a child’s or any person’s eyes and skin. Another uses an additive in the plastic that’s not necessarily safe.” These findings set Dorel’s design engineer, Lukas Tubby, on a search for a safe and effective alternative.

Tubby reached out to Vyv to help him consider whether antimicrobial LEDs could be embedded inside the chamber in a humidifier to create a ‘self-cleaning’ feature without using dangerous UV light in a product that often would often be in a baby’s nursery.

As companies consider their customers’ needs relative to antimicrobial solutions, Vyv could be the right solution if:

- 1 Adding microbe-killing<sup>2</sup> technology to your product or space will solve a problem or add differentiation.
- 2 Safety for the people using the product or space is imperative.
- 3 Continuous, sustained reductions in bacteria, mold, mildew, yeast or fungi is more important than fast but intermittent disinfection.
- 4 Your application is such that the antimicrobial LEDs can be left on most of the day. The longer the exposure time, the more powerful the antimicrobial effect delivered. Vyv is a continuous solution, not intermittent like UV or chemicals.
- 5 Your application has access to electricity (AC or DC, input voltage and current may vary.)

## Step 2 | Ideation through Multiple Options for the New Product or Application

In this stage, additional considerations should be explored such as: how positioning antimicrobial benefits will be achieved with your go-to-market efforts, the feasibility of different options for integrating Vyv antimicrobial LEDs into your product or space; preliminary microbiology claims; and budget. Vyv's expert team will work with your team to align concepts and integration options with your company goals for the solution.

*"We got in touch and started the process of getting to know Vyv and evaluating whether their technology would work in our system. We introduced our idea, after which we started investigating the actual microbiology of it and went from there." — Lukas Tubby, Dorel*

## Step 3 | Prototyping & Design

Vyv's goal is to get prototypes into the hands of your users and focus groups as soon as possible to gain valuable market insights final design.

In this stage, the technical considerations explored include:

- The empirical measurement of how light is to be deployed for maximum antimicrobial dosage
- A simulation to determine placement of either Vyv's antimicrobial light fixtures within a space or Vyv's antimicrobial LEDs within a product or equipment to deliver optimal efficacy
- A review of any regulatory or environmental requirements (ex: EPA requirements or NSF ratings)
- Material compatibility analysis

Vyv engineer Cori Winslow, explains the specific steps she helped Dorel with — "After the Dorel design team determined that one application of interest was lowering the bacterial load within the humidifier itself, they brought our team into the conversation. They sent a sample of their product — sometimes a company will send CAD drawings. And then we did an initial feasibility report. We disassembled their product, dissecting it, and took a careful look inside."

*"The integration work of antimicrobial light into our humidifier was at the core of our design work together. I worked regularly, speaking many times per week with Vyv's engineers, making sure we were getting the maximum potential antimicrobial impact out of our design collaboration." — Lukas Tubby, Dorel*

## Step 4 | Test

The Vyv team tests and iterates every application to both ensure the microbiological claims and to optimize the end user's experience. Vyv scientists will also design, manage, and help perform efficacy studies at customer sites, whether these studies are performed in active environments or in controlled laboratory environments.

The Vyv team is equipped to:

- Consider the environment, whether it's deep inside a consumer product or appliance or in a large-scale industrial facility
- Evaluate the microbe challenge including sampling and quantification (defining the baseline bioburden)
- Recommend specific timings, locations and intervals for testing and re-testing to validate microbial reductions.

*"We don't have a microbiologist on staff because we don't typically do a ton of sanitation products and we certainly don't have the capabilities to do the testing. So, having Vyv do that for us was a huge part of our co-development with them and an enormous time savings." — Lukas Tubby, Dorel*

## Step 5 | Rollout

Vyv provides everything from detailed marketing claims that can be made using its proprietary technology within each unique application to building comprehensive communications plans, helping with go-to-market planning, regulatory roadmap and sharing the market success of its other partners so everyone can benefit from the results generated by the adoption of continuous-use antimicrobial light technology.

Vyv's wide-ranging 'white glove' partner support includes:

- Regulatory review and roadmap process.
- Approved and detailed antimicrobial claim information.
- Creative brand guidelines to maximize the value of having Vyv technology 'inside'.
- Language to clearly explain and fully leverage Vyv's value proposition and brand.
- Collaboration on product positioning.
- Messaging and supporting data to explain the impact of Vyv technology.
- Joint media and social support.
- Review of sales materials, web content, press announcements, and media kits to ensure accuracy of claims and technology descriptions.
- Sales support in the marketplace.
- *Vyv even helps with product naming.*

At Dorel, not only did the teams work hard to make sure the claims and marketing messaging were accurate and as powerful as possible, but the team also collaborated on the rollout and public relations efforts at launch. Kellee Senic stated, "We worked hard to reach our consumer audience through word of mouth, our influencers, and their stories on social media. Vyv had the B2B side and the tech side, so we were able to cover all the bases."

#### **And the result?**

The collaboration resulted in a true innovation in the category. The humidifier was given an innovation award by the Juvenile Product Manufacturers Association when it launched. The reception among customers has been stellar. According to Kellee, people really like that they don't have to clean it as often. One customer said in his five-star review:

*"Practically cleans itself! I love that as long as I keep the unit's LED lights on, I know that it is killing 99% of the bacteria and mold. Always my biggest pet peeve with humidifiers, cleaning them! Thank you for thinking of us parents." — Safety 1st customer*

## 8. How does Vyv Provide End-to-End Product Development Support?

Vyv complements its patented antimicrobial light technology with all the services needed to deliver the right antimicrobial action and efficacy for each application. Vyv's team of scientists, engineers, inventors, and marketers embrace the role of trusted advisor for every partner by sharing expertise gained through years of experience in diverse markets — health-care, residential, industrial public spaces and across many other industries.

**Vyv is engaged every step of the way, with the goal of ensuring the viability and efficacy of every solution that carries the Vyv name — from beginning to end.**

**Strategic Planning:** Our detailed consultative process involves expertise at all levels — from science to marketing — while working alongside our customers. Vyv's team is trained and has the deep knowledge and experience to ask the questions that help guarantee the efficacy of the ultimate solution.

**Multi-Disciplined Engineering:** Because the efficacy of antimicrobial light is one of Vyv's highest priorities, every application comes with detailed engineering analysis and planning. By definition, antimicrobial light technology must be viewed very differently than traditional overhead or embedded LED lighting. We do this through a comprehensive mix of prototyping, mechanical engineering, electrical engineering, and material science engineering.

**Microbiology Services:** Many customers and partners are not set up to do formal laboratory testing. Vyv's microbiology team has the experience to design and perform a wide spectrum of studies to generate the data

necessary so each Vyv solution can be evaluated completely and objectively as well as meet necessary regulatory standards domestically and internationally. These microbiologists and scientists are trained to look at every application from multiple angles to inform the best possible outcomes.

**Clinical Research:** Vyv is 100% committed to advancing the science of antimicrobial light technology. Vyv's experts are constantly evaluating all environments that apply its technology and reporting impact data to partners even for the most esoteric applications. Findings are aggregated in an in-depth knowledge base that is available to all Vyv customers and partners.

**Marketing Support:** Vyv assists partners by providing the data required to support product claims. Its team provides in-market knowledge gained through direct experience and the experience of other partners. The marketing team provides all the tools needed to enhance partners' brands, products, and services.

**Expertise:** As the world leader in non-UV continuous-use antimicrobial light technology with a team of experts, scientists, and inventors, Vyv is also a trusted expert that often advises clients on broader trends in the category of antimicrobial disinfection in addition to the science. .

Vyv's processes are built to be adaptable. Our team fully recognizes that innovation requires flexibility to meet you where you are in your development cycle and find ways to help accelerate outcomes.

*"I saw Vyv as a partner and a consultant because of their unique expertise. We worked with vendors all the time who said 'Here's my product. This is how it works, go do it.' But it was a much more collaborative design effort with Vyv; and for the Delta-specific application, Vyv became a trusted partner and an expert in the field. Vyv was with us 100% of the way."*  
— Tracy Bevington, former Director, Cabin Innovation, Delta Air Lines

## 9. When Should You Have Your First Conversation with Vyv?

The first conversation with Vyv can take place at any point in your process.

- Do you believe a higher degree of cleanliness would benefit your customers or employees, but you're unsure as to what the right solution might be?
- Do you have a specific product idea for embedding antimicrobial light technology, but you're not clear on its feasibility?
- Is the presence and proliferation of some combination of bacteria, fungi, yeast, mold or mildew having a negative impact on your product or process?
- Do your customers' expectations require a change and possible upgrade to your current cleaning practices?
- Do you see an opportunity to enhance your brand and add value to your products by adding the benefits of antimicrobial technology? Anywhere in your process is an excellent time to begin the discussion of whether antimicrobial light technology could be a fit to achieve your goals and solve challenges. These discussions typically lead to the best next steps to drive innovation and a cleaner world for us all.

The first step is easy. Simply [click here](#) to get started.

<sup>1</sup>2020 Vyv Survey — Wellness in a Post-COVID World

<sup>2</sup>MRSA and *E. coli* showed 90%+ reduction in controlled laboratory testing in 24 hours.

# About Vyv

Founded in 2013, Vyv, Inc.® is a health tech company and a market leader in antimicrobial LED light technology with solutions for homes, public places and virtually every industry.

The company's patented continuous-use, non-UV antimicrobial LED technology illuminates while creating an inhospitable environment for bacteria, fungi, yeast, mold and mildew to grow and survive. Vyv's team of inventors, microbiologists and engineers are focused on ways to apply this game-changing and planet-friendly approach to create a healthier and cleaner world for us all.

Vyv's mission is to create and deliver a distinctive new class of antimicrobial lighting solutions in the most sustainable and simplest ways. Working with our research partners, accreditation bodies and customers, and backed by our own and independent research and scientific and clinical studies, we are delivering a new foundation for a multi-layered defense system for creating cleaner environments for us all to enjoy.

Visit [www.vyv.tech](http://www.vyv.tech) or call 518-833-0261.