

# Engaging People in Their Health with Interactive Digital Health Tools

ConnectWell-Outgrow Case Study with CardioVisual to Determine Coronary Heart Disease Risk

## EXECUTIVE SUMMARY

Prior to 2020, digital health tools continued to gain momentum as a way to virtually engage individuals in their health and wellness. The pandemic has shown us that in-person care is not always possible for delivering healthcare to the population at large, due to the traditional system barriers that exist. To look at the impact that new digital health tools might have on filling that gap, an interactive digital health tool co-developed by ConnectWell and Outgrow integrated CardioVisual as a case study partner. The objectives included engaging CardioVisual's global audience in determining their risk for coronary heart disease through the utilization of a risk assessment tool and CardioVisual's interactive video-based education.

## QR CODE:



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## Background

The pandemic has dramatically changed utilization of healthcare services, where people receive care, and the modality of care. Healthcare providers have a key role to play when ensuring that the health and well-being of those they care for can continue to be met during the COVID-19 crisis. New resources and tools, available digitally and virtually, are required to fill the void that COVID-19 has created.

Another challenge which has become more extreme during the pandemic is the dissemination of misleading or inaccurate medical information via the Internet. This deeply compromises the efficacy of evidence-based interventions and undermines the credibility of scientific expertise, potentially resulting in longer-term consequences<sup>1</sup>. Where people get their health information matters. Many people continue to seek and receive health-related information from illegitimate sources, often generated from a simple Internet search or from their social media feeds. It is important to get health information from sources that are fact-checked, science-based, and up-to-date. For COVID-19, misinformation could mean the difference between life and death. So many COVID-19 myths are emerging and circulating that it is not possible to dispel them all. Instead, people need to know where to find trustworthy information about this deadly disease. Furthermore, providing a safe source to search from reputable organizations is key to helping people manage their health during the pandemic and beyond.



### Reduction in Utilization of Healthcare Services Due to COVID-19

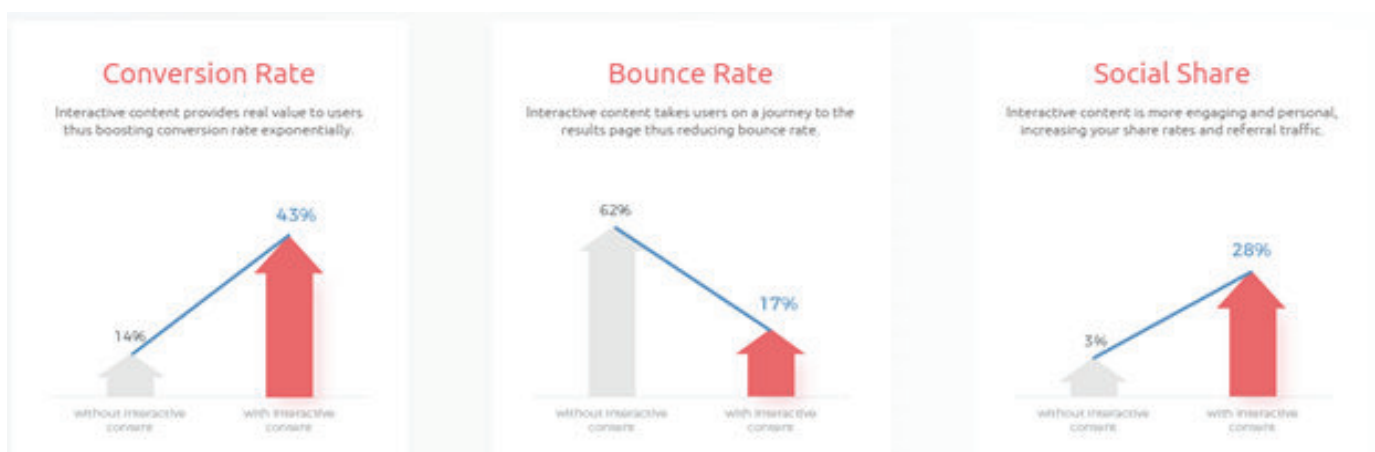
The pandemic has reduced utilization of healthcare significantly as people are wary of exposing themselves to COVID-19 by going to their doctor or a healthcare facility. According to the Centers for Disease Control and Prevention (CDC), by the end of Q2 2020,

41% of U.S. adults reported that they delayed or avoided healthcare due to COVID-19<sup>2</sup>. Another study showed that even with exponential growth in telehealth appointments, overall primary care doctor visits were still 21% lower in Q2 2020 when compared to the same quarter in 2019 and 2018. Vital health monitoring measurements related to those visits also declined, with blood pressure and cholesterol checks decreasing by 50% and 34%, respectively<sup>3</sup>. The Journal of the American Medical Association (JAMA) reported in the weeks following the start of the pandemic, the weekly number of newly diagnosed cancers for 6 cancers combined fell by 46.4% compared to the same

time period in 2019. Significant declines were seen in all cancer types — breast, colorectal, lung, pancreatic, gastric, and esophageal<sup>4</sup>. Extrapolating from those statistics, we can see that there is a healthcare avalanche awaiting us due to so many people delaying care.

High blood pressure and high cholesterol are risk factors for coronary heart disease, heart attack and stroke — and treating a person for coronary heart disease and other acute events is far costlier than managing high blood pressure and high cholesterol with diet, exercise, and medication. As people put off critical screenings such as colonoscopies and mammograms, we will see more cancer diagnoses for colon cancer and breast cancer emerge down the road at more advanced stages. This leads to a worsening in clinical outcomes, including an increase in mortality rates. These are just a few examples of the many consequences of people delaying care across a wide range of health conditions.

Engaging people with digital health tools allows for healthcare providers to reach people remotely, outside of traditional brick and mortar healthcare. Interactive content has been proven to be more powerful than non-interactive content with respect to engaging the target audience. In comparison to non-interactive content, conversion rates of interactive content are 3 times higher, social share rates over 9 times higher, while bounce rates are reduced by over 2.5 times<sup>5</sup>.



**Figure 1: Interactive content dramatically augments audience engagement by increasing conversion rate and social share, and reducing bounce rate**

## Collaboration Partners

ConnectWell and Outgrow co-developed a suite of turnkey digital health tools designed to engage people in their health and wellness. Tools combine the digital delivery expertise of Outgrow with ConnectWell's evidence-based health and wellness content. ConnectWell's content is sourced from the UC Berkeley School of Public Health.

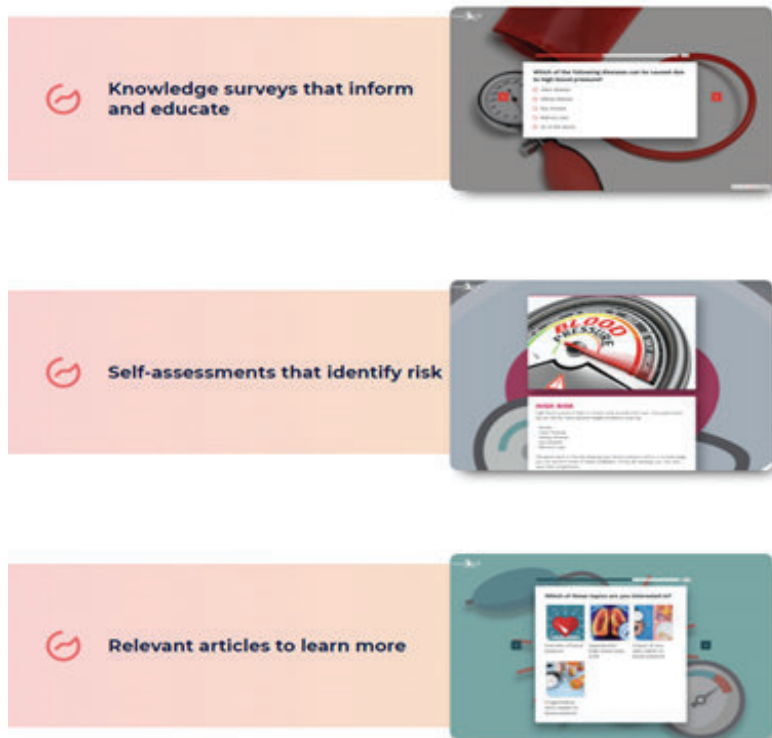
Since 1984 the UC Berkeley School of Public Health has been providing evidence-based wellness information that offers an actionable approach to preventing and managing disease and improving individual and community health. ConnectWell is the UC Berkeley School of Public Health's digital publishing and distribution partner and has transformed their content into an engaging user experience for a wide consumer audience.



Outgrow is an interactive digital platform that creates experiences that have a proven record of increasing engagement. The platform experience provides individual risk assessment scores for each user and increases the time spent on education, delivering value to those reached by the platform.

## ■ Interactive Digital Health Tools

ConnectWell-Outgrow tools are designed to stage a person as they move from knowledge to self-empowerment. Knowledge surveys inform and educate, self-assessments identify health risks, and relevant articles build knowledge. Together the tools provide education on disease management, including treatment options and lifestyle modifications. Tools encourage people to seek either preventive care or medical care when the need arises. Tools are interconnected so that users can advance their learning by moving from one tool to another. Each tool acts as a springboard for further engagement to another tool and more learning.



**Figure 2: ConnectWell-Outgrow Interactive Digital Health Tools**

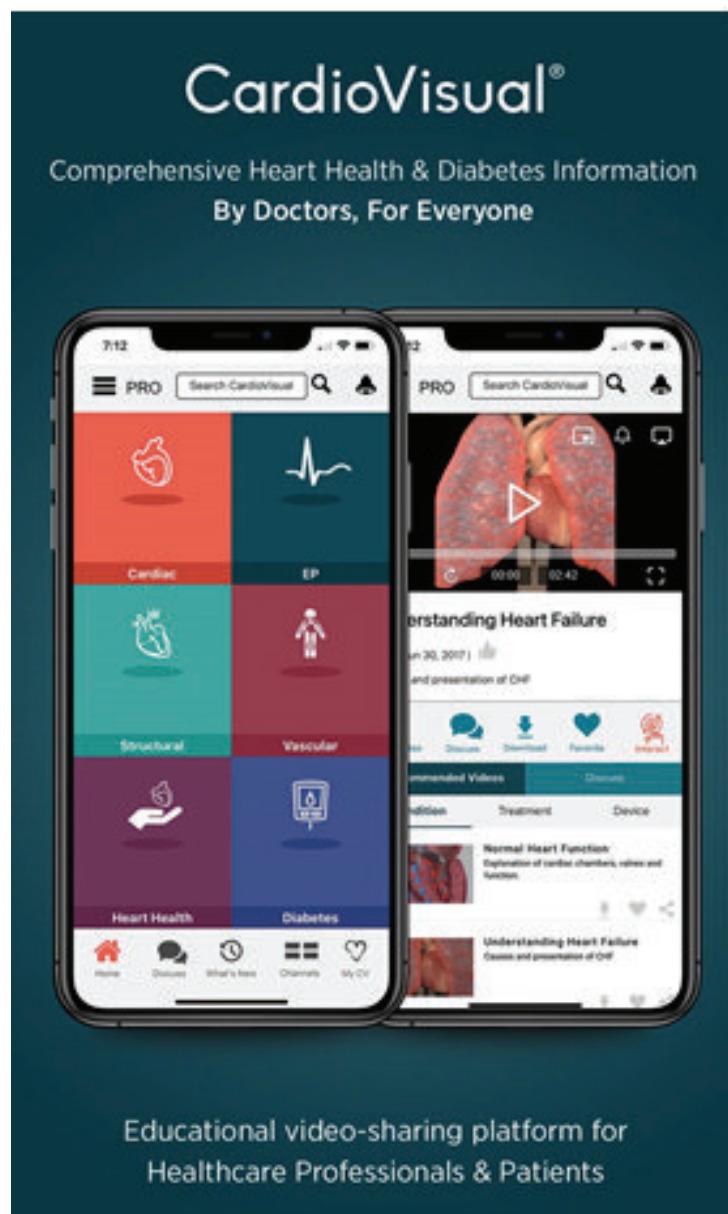
Tools can be placed on the “digital front door” of healthcare providers, in social media posts, in newsletters, emails, and other channels to reach large populations. Healthcare providers can create a “call to action” so that users can be connected to the “care funnel.” Whether that be an app for further learning, for scheduling healthcare appointments and lab tests, or for connecting patients to a call center, health coaching service, and other support programs, the “call to action” is a powerful way to get people to the next step of care they need.

Analytics provide insight for healthcare providers into which and how often the tools are used, and responses to surveys on an aggregate level provide a view of self-reported health status of responses. This product development combines the expertise of two innovative companies and is fully explained on this website <https://www.healthandwellness.tools/>.

## ■ Case Study Partner

CardioVisual is a platform that provides trusted clinician-approved, comprehensive video-based education on chronic conditions including cardiovascular disease and diabetes, for patients and providers alike. Given that coronary heart disease is a risk factor for severe illness from COVID-19, the CardioVisual App was the ideal platform to provide a Case Study for the ConnectWell-Outgrow Coronary Heart Disease Toolset.





**Figure 3: The CardioVisual platform delivers unbiased and reliable patient information and provides solutions to busy clinicians.**

**Learn more about the app [here!](#)**

The Coronary Heart Disease (CHD) Toolset co-developed by ConnectWell and Outgrow was customized to incorporate CardioVisual components, including directing users to CardioVisual's video content. The videos are sourced from experts in the field and include video animation that makes it easier for users to understand more complex subject matter. Users can connect to the CardioVisual App from any Android or Apple mobile device, tablet, laptop, or desktop computer.

*Research supports that “video-based educational delivery is effective for improving short-term health literacy, however a combination of approaches delivered over an extended period of time may support improving longer-term health outcomes”<sup>6</sup>.*

After viewers watch CardioVisual’s videos, they already have a sound knowledge foundation, allowing them to feel more comfortable initiating a conversation with their healthcare provider. As a result, they will have increased participation in their care, treatment, and decision making.

## **Coronary Heart Disease**

Coronary heart disease (CHD) continues to be a leading global killer of both men and women, and was the second leading cause of death worldwide in 2020, trailing only deaths due to COVID-19. CHD results in nearly 18 million deaths per year or approximately 30% of all deaths<sup>7</sup>. Most CHD can be managed or prevented by addressing modifiable risk factors. Tools that identify risk allow users to determine their likelihood for having an acute event, but also can facilitate behavioral and lifestyle change that can reduce risk and prompt users to seek medical care before an acute event occurs.

According to the Centers for Disease Control and Prevention (CDC), adults of any age with certain underlying medical conditions are at increased risk for severe illness from the virus that causes COVID-19. Severe illness from COVID-19 is defined as hospitalization, admission to the intensive care unit (ICU), intubation or mechanical ventilation, or death. Cardiovascular conditions such as heart failure, coronary heart disease (CHD), hypertension, or cardiomyopathies are included in the conditions that cause increased risk for severe illness<sup>8</sup>.



## User Journey

<b>STEP 1</b>	Users see the message about the CHD Risk Assessment Tool (in either social media feeds, email, on the CV App, or CV website)
<b>STEP 2</b>	Click on the link + Start the risk assessment for CHD
<b>STEP 3</b>	<p>At the end of the Risk Assessment on the results page:</p> <ol style="list-style-type: none"> <li>1. Go to the CardioVisual App           <ol style="list-style-type: none"> <li>a. Watch videos on CHD</li> </ol> </li> <li>2. Learn more: Start the Articles Recommendation Tool           <ol style="list-style-type: none"> <li>a. Read articles about CHD</li> <li>b. In the Articles Recommendation Tool, you can:               <ol style="list-style-type: none"> <li>i. Go to the CardioVisual App                   <ol style="list-style-type: none"> <li>1. Watch videos on CHD</li> </ol> </li> <li>ii. Test your knowledge: Start the Knowledge Test Tool                   <ol style="list-style-type: none"> <li>1. Go to the CardioVisual app at the end of the Knowledge Test                       <ol style="list-style-type: none"> <li>a. Watch videos on CHD</li> </ol> </li> <li>2. Learn more: Start Articles Recommendation Tool                       <ol style="list-style-type: none"> <li>a. Repeat cycle above</li> </ol> </li> <li>3. Test your risk: Start the Risk Assessment Tool                       <ol style="list-style-type: none"> <li>a. Repeat cycle above</li> </ol> </li> </ol> </li> </ol> </li> </ol> </li> </ol>

## Methods

### ■ Coronary Heart Disease (CHD) Risk Assessment Tool

The CHD Risk Assessment Tool was selected as the primary tool from which a user would start and then could learn more by going to the Articles Recommendation and Knowledge Test Tools. Critical to managing a health condition is knowing you have it in the first place. As an example, high blood pressure affects nearly half of adults in the U.S. yet about 33% don't know they have it<sup>9</sup>. And hypertension is a risk factor for CHD.

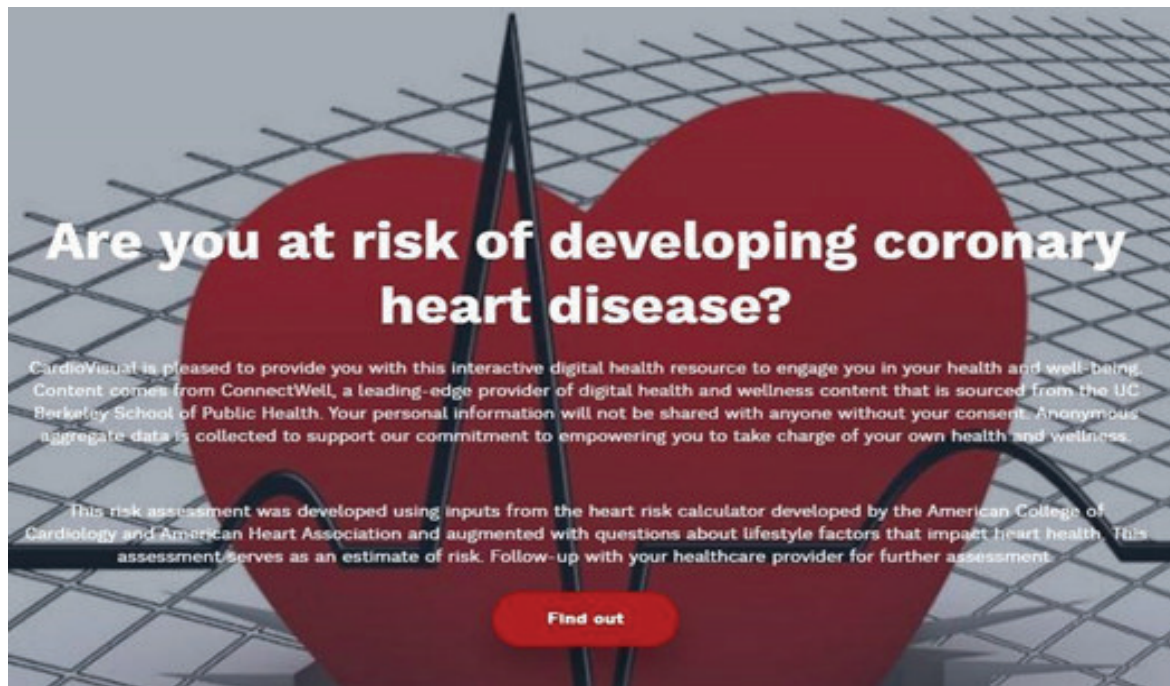


Figure 4: CardioVisual's Audience



**Figure 5: One of the two banners intended to guide users to the tool**

The CHD Risk Assessment provides the vehicle to make people aware of their heart health risks and then to learn more. The CHD Assessment Tool was disseminated to both patients and clinicians on CardioVisual's various multimedia platforms. These included Twitter, Facebook, LinkedIn, Instagram, email campaigns, webpage integration, newsletters, and activities within the CardioVisual App. Throughout the duration of the 30-day case study, over 60,000 impressions of the tool were made. Impressions account for the number of times the content was displayed on a user's feed. Once a user clicked on a link, they were directed to the CHD Risk Assessment Tool where they began their journey of learning more about CHD and its risks.



**Figure 6: Welcome Page of CHD Risk Assessment Tool**

The CHD Risk Assessment walks the user through a series of questions about their demographic profile (age, gender, race), health profile (medical conditions) and lifestyle habits, all of which contribute to CHD. Content comes from ConnectWell and is embedded in the Outgrow platform which provides an interactive and engaging user experience. At the end of the Risk Assessment, a user learns on the Results Page if they are at low, medium, or high risk for developing CHD based on their responses. Along with their calculated risk level, the user learns about the signs and symptoms of CHD to increase their awareness and to seek medical attention as needed.

*"It's time to move from reactive sick care to proactive healthcare with the use of easily accessible, interactive, and engaging digital health tools that enable people to be part of the care process."*

*-CardioVisual Team*

**SCROLL AND CONNECT TO THE CARDIOVISUAL APP FOR COMPREHENSIVE HEART AND DIABETES EDUCATION YOU CAN TRUST**

### HIGH RISK

Many people don't know they have coronary heart disease (CHD) or are prone to it. Also, many people don't see a doctor regularly to undergo routine screening tests such as a lipid profile, which measures amounts of triglycerides and "good" and "bad" cholesterol in the blood. In fact, millions of people who have CHD have no symptoms. This condition is called silent coronary heart disease.

Eventually, symptoms occur in many people with CHD. The most common initial symptom is chest pain. The chest pain can be a sign of stable angina or an indication of something more serious like unstable angina or a heart attack.

**Stable angina**  
Angina (chest pain) is a warning sign that your heart needs more oxygen. Angina is caused by a shortage of blood and oxygen to the heart due to a blockage of a coronary artery by plaque buildup.

**Types of symptoms**  
The most common symptoms of stable angina include:

1. Pressure or pain in the chest
2. Sensations of tightness, squeezing, burning, aching, heaviness, or choking in the chest
3. Pain in the left shoulder that radiates up to the neck and jaw
4. Pain in the inner part of the left arm that may travel down to the fingers

**Unstable angina**  
Unstable angina is between stable angina and a heart attack in severity. If you have unstable angina, it is a sign that not enough blood and oxygen are reaching the heart. The most likely cause is because a blood clot or spasm has narrowed—but not completely blocked—a coronary artery.

**Heart attack**  
Stable angina occurs when an artery is only partially blocked. A heart attack occurs when a coronary artery becomes completely blocked. The cause of this blockage is often a blood clot that forms where a plaque tears or ruptures.

Many people who have a heart attack have a history of angina and some individuals experience more frequent or severe angina in the days leading up to a heart attack. Others may have less obvious warning signs such as increasing fatigue and shortness of breath. But in many cases, a heart attack strikes suddenly and without warning.

Many of these symptoms of angina often go overlooked and untreated. Don't be afraid to talk to your doctor if you think you have any symptoms because they could lead to more serious problems in the future.

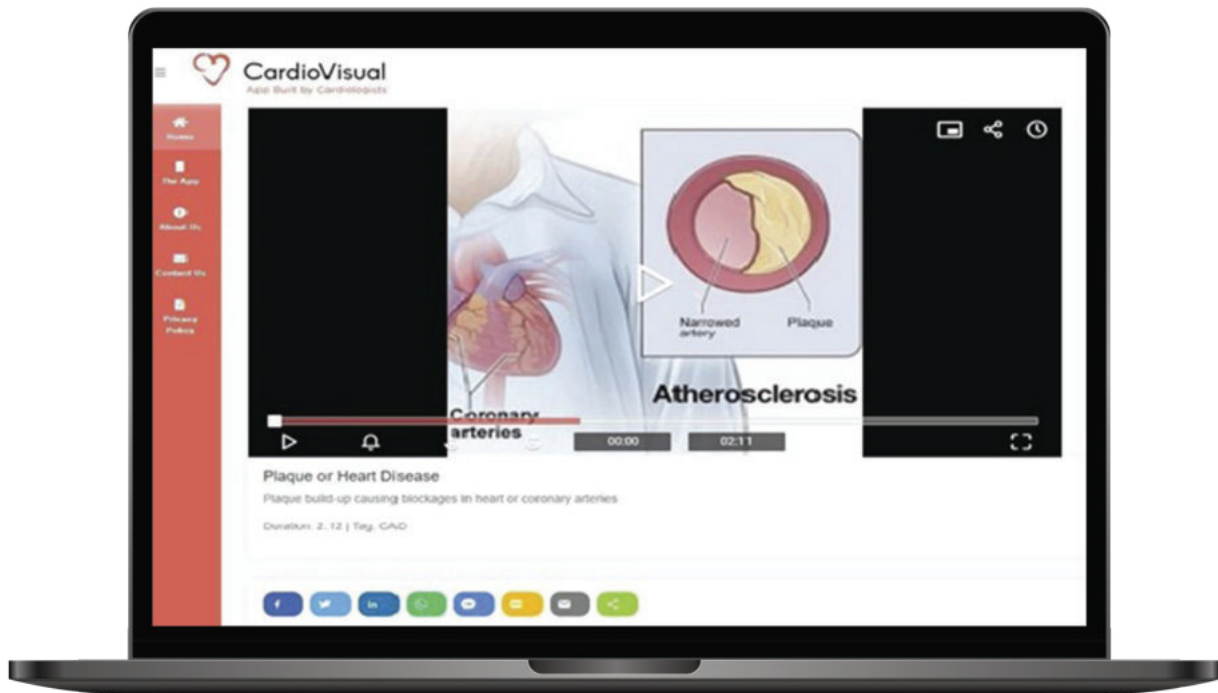
[Click here to learn more about coronary heart disease](#)

[Connect to CardioVisual app](#)

At the bottom of the Results Page a user can learn more by connecting to the CardioVisual App or by going to the Articles Recommendation Tool. The “Call to Action” that takes users to the CardioVisual App is embedded in the Risk Assessment, Knowledge Test, and Articles Recommendation Tools. This enables users to connect to CardioVisual from any of these tools and continue their CHD learning.

**Figure 7: Results Page CHD Risk Assessment Tool**



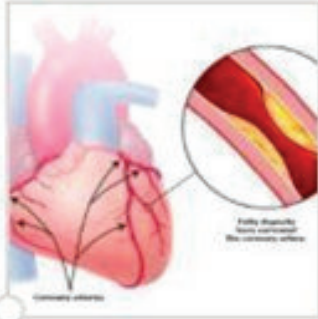


**Figure 8: CardioVisual app landing page that people are directed to when they click “Connect to CardioVisual app” from the Results Page of the CHD Risk Assessment Tool**

### ■ Coronary Heart Disease (CHD) Articles Recommendation Tool

After receiving their Risk Assessment, a user can also choose to “Learn More” where they will go to the Articles Recommendation Tool to spend as much time as they’d like reading articles they select. In the menu of topics, a user can learn about an overview of CHD, lifestyle habits, risk factors for the disease, and medications for CHD. Each menu selection has multiple articles on the topic providing the user with the ability to grow their knowledge, engage in their health, and have informed conversations with a healthcare provider.

## Which of these topics are you interested in?



Overview of coronary heart disease



Impact of your daily habits on your heart health



Risk factors of coronary heart disease

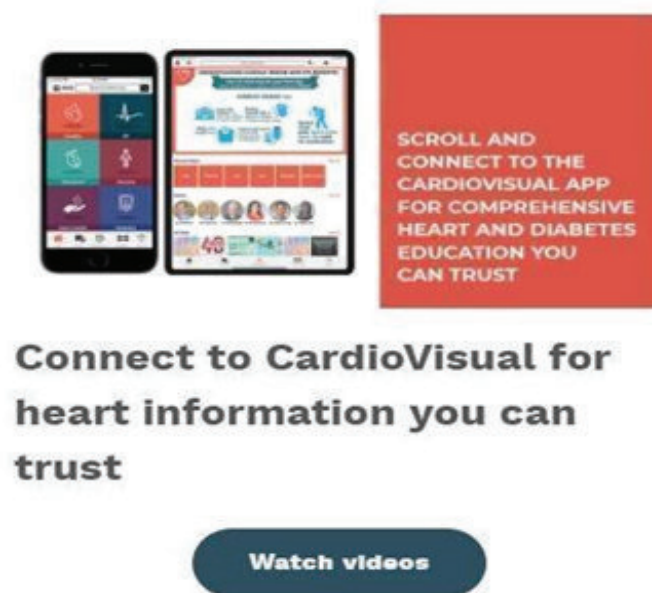


Drugs/medications and treatments related to coronary heart disease

**Figure 9: CHD Articles Recommendation Tool Menu**

For each article set a user chooses, they will always be presented with an option to connect to CardioVisual to watch supportive educational videos on CHD. Providing numerous touch points for a user to learn more increases the chances that a user will connect to CardioVisual and take advantage of the extensive video library.





**Connect to CardioVisual for heart information you can trust**

**Watch videos**

**Figure 10: On-ramp to CardioVisual from CHD Articles Recommendation Tool**

For each article set a user chooses, they will always be presented with an option to connect to the Knowledge Test Tool. Providing numerous touch points for a user advance to another tool, increases their knowledge about CHD. It also increases the chances that a user will connect to CardioVisual and take advantage of the extensive video library.



**Figure 11: On-ramp to Coronary Heart Disease Knowledge Test Tool from Coronary Heart Disease Articles Recommendation Tool**

## ■ Coronary Heart Disease (CHD) Knowledge Test Tool

The CHD Knowledge Test presents users with the opportunity to test their knowledge and have it reinforced with feedback from Outgrow's interactive platform.

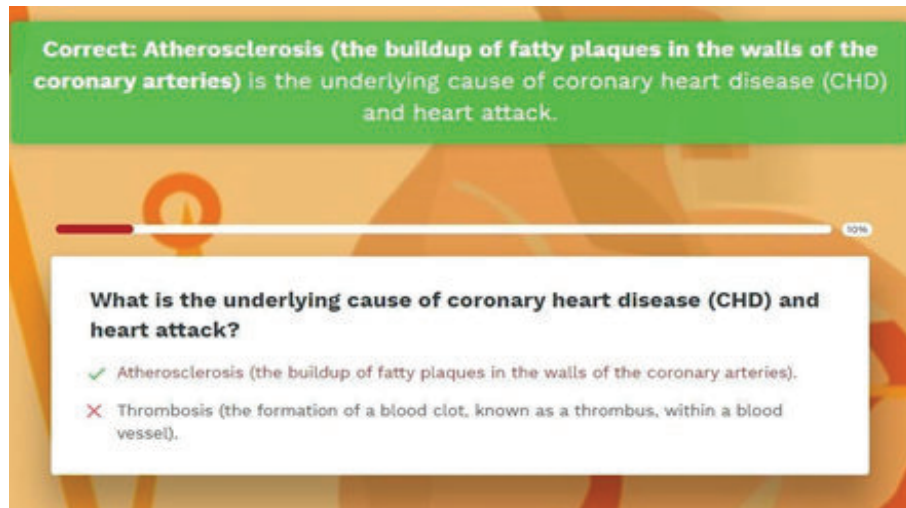


Figure 12: Example of question and feedback in Coronary Heart Disease Knowledge Test Tool

At the end of the CHD Knowledge Test, users can get to the Risk Assessment Tool, Articles Recommendation Tool, and the CardioVisual platform. The user is in the driver seat and chooses the next step in their journey to learn about CHD.

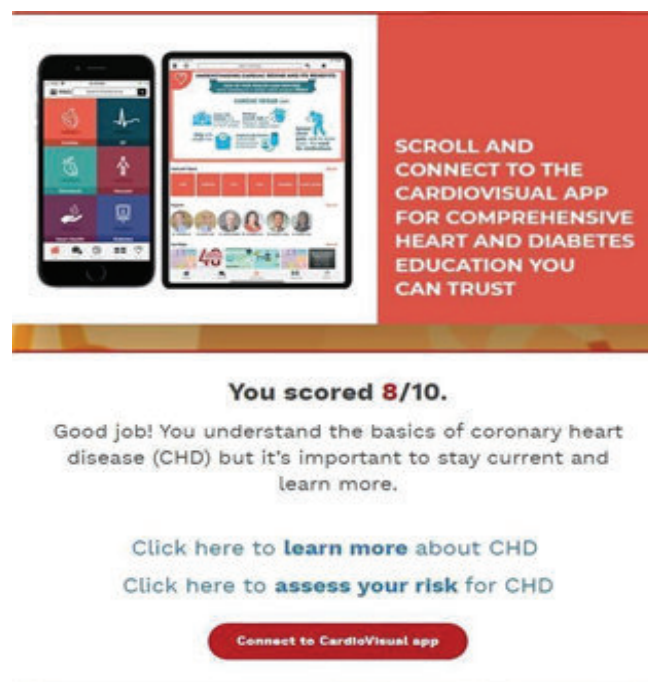


Figure 13: Results Page of Coronary Heart Disease Knowledge Test Tool

## Results

Achieving engagement and click through are particularly difficult in the healthcare sector. Healthcare-related posts typically have a lower than average click-through rate (CTR), at 1.79% compared to the average 1.91% across industries on search networks<sup>10</sup>. The CHD Toolset's click through rate was approximately 2.84% — a significant increase of 59% from the average. Once click through is achieved, important metrics are conversion, social share, and bounce rates.

The ConnectWell-Outgrow toolset in addition to the CardioVisual App, are both highly interactive user experiences. The user is in charge of their learning, answering questions and selecting content based on their knowledge gaps.

Rich data graphically displayed on a real-time basis is one of the many benefits of the Outgrow platform from which the tool was built. Responses in aggregate are provided to share insight into the characteristics of the users. In the month that the tool was launched from December 21, 2020 to January 21, 2021, there were 1704 views of the Coronary Heart Disease Risk Assessment, of which 949 users started the Risk Assessment, 732 users completed it, and 172 people took further action based on their Risk Assessment Result.

### 30-Day Case Engagement Study Statistics

Views	1704		
Starts	949	Bounce Rate*	42%
Completion	732	Completion Rate	77%
Further Action	172	Engagement Rate	23%

\*62% is bounce rate of non-reactive content

**Figure 14: Case Study statistics demonstrate effectiveness of CHD Risk Assessment Tool to engage people remotely in their health**

The Tool had a 44% bounce rate which is lower than that of non-interactive content. Bounce rate is the percentage of visitors who navigate away from the site after viewing only one page. The 43% completion rate is exactly aligned with the 43% conversion rate expected with interactive content. Furthermore, 23% of users took another step after completing the CHD Risk Assessment by either going to the CardioVisual App or the Articles Recommendation Tool.

We know that the CHD Risk Assessment Tool was shared by users via social media as displayed by the high direct access percentage (52%). Direct access is when someone receives a link directly from a contact versus accessing from social media or a 3rd party channel.

#### Traffic Sources

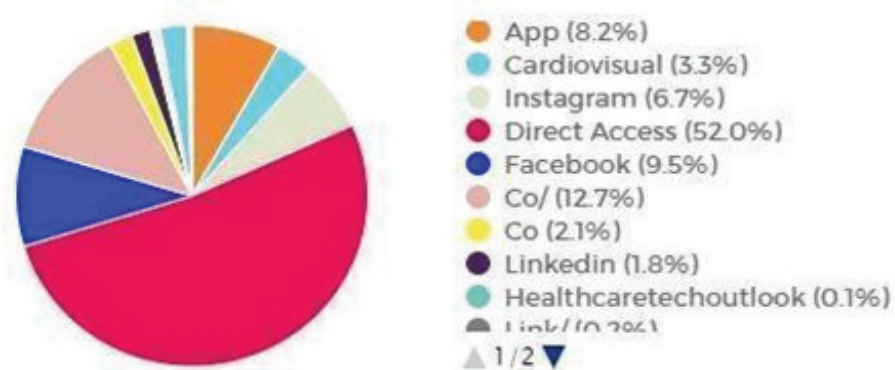


Figure 15: Case Study Analytics: Traffic Sources of Participants

*The CardioVisual team examining these results reported being “thrilled with the user engagement the tool brought to CardioVisual, reaching a global audience, and acquiring new users, and the ability to gain population health insight from the user’s self-reported responses.”*

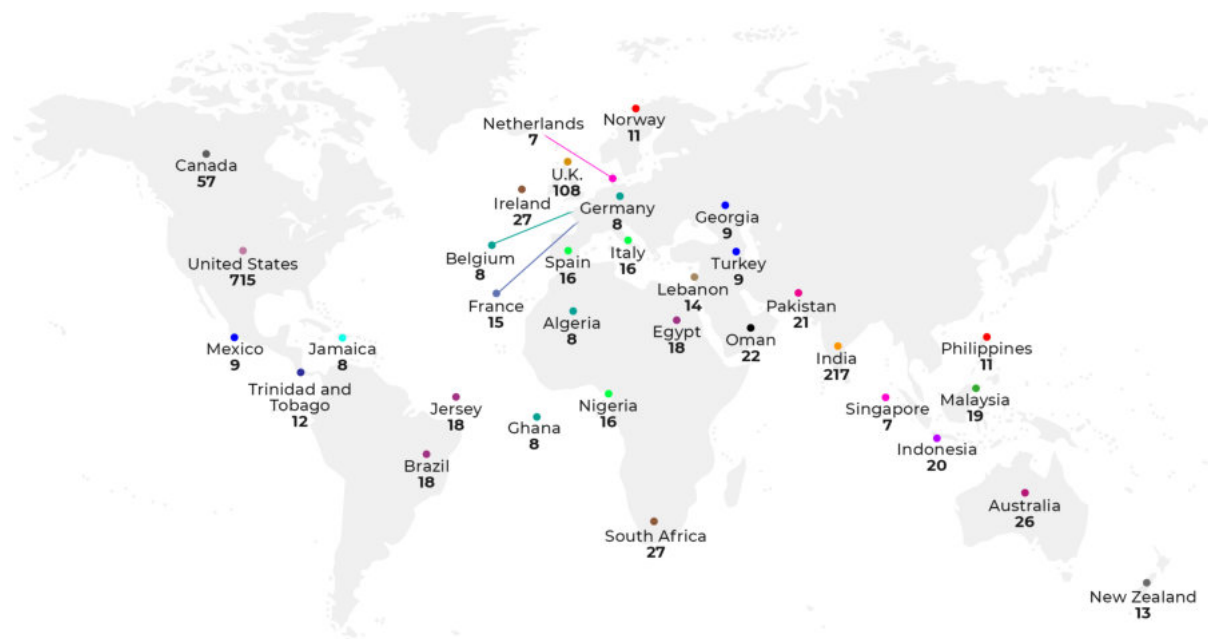
*-CardioVisual Team*

The CardioVisual platform successfully disseminated the Coronary Heart Disease Risk Assessment Tool co-developed by ConnectWell and Outgrow, to a global audience via in-app, email, and social media activities throughout CardioVisual’s multimedia platform.

## Top Geographies



### Breakdown of countries by number of users (7 and more):



### Breakdown of countries by number of users (6 or less):



Armenia, Bermuda, Cambodia, Chile, Costa Rica, Czechia, Ecuador, Ethiopia, Guatemala, Guernsey, Laos, Luxembourg, Maldives, Malta, North Macedonia, Portugal, Puerto Rico, Somalia, Sudan, Tanzania, Tonga, Tunisia, Ukraine, Uruguay, Zambia

Austria, Bahrain, Bangladesh, Bolivia, Cuba, Dominican Republic, Finland, Greece, Honduras, Hungary, Jordan, Kenya, Kuwait, Malawi, Mongolia, Namibia, Panama, Qatar, Republic of Moldova, Serbia, Venezuela, Uganda

Argentina, Bosnia and Herzegovina, Columbia, Croatia, Hong Kong, Iraq, Montenegro, Poland, Russia, Syria, Thailand

Albania, Antigua and Barbuda, Botswana, Denmark, Fiji, Israel, Nepal, Japan, Sri Lanka, Sweden, Switzerland, Taiwan, United Arab Emirates

Cyprus, Mauritius, Morocco, Myanmar, Surinam, Vanuatu, Vietnam

Bulgaria, Iran, Slovakia, Saudi Arabia



As noted in the graphic, and the data of users by country, the CHD Risk Assessment reached nearly all corners of the globe. The usage by country is consistent with CardioVisual's typical user base. According to the World Health Organization, "out of the 17 million premature deaths (under the age of 70) due to noncommunicable diseases in 2015, 82% are in low- and middle-income countries, and 37% are caused by cardiovascular diseases"<sup>7</sup>. The CHD Risk Assessment reached many of those countries, demonstrating the potential impact this tool can have on global health awareness, and lifestyle modification for the better.

The Toolset is particularly appealing to low and middle socioeconomic areas in developed countries, and to those who live in developing countries, as it is accessible from a smartphone — where no computer is required. The number of smartphone users in the world as of 2021 is 3.8 billion. This translates to 48.37% of the world's population owning a smartphone<sup>12</sup>. Users share phones with family members providing access to more people. Smartphone penetration and access to the Internet is expected to grow as the economy, work, education, and healthcare continue to be digitized.

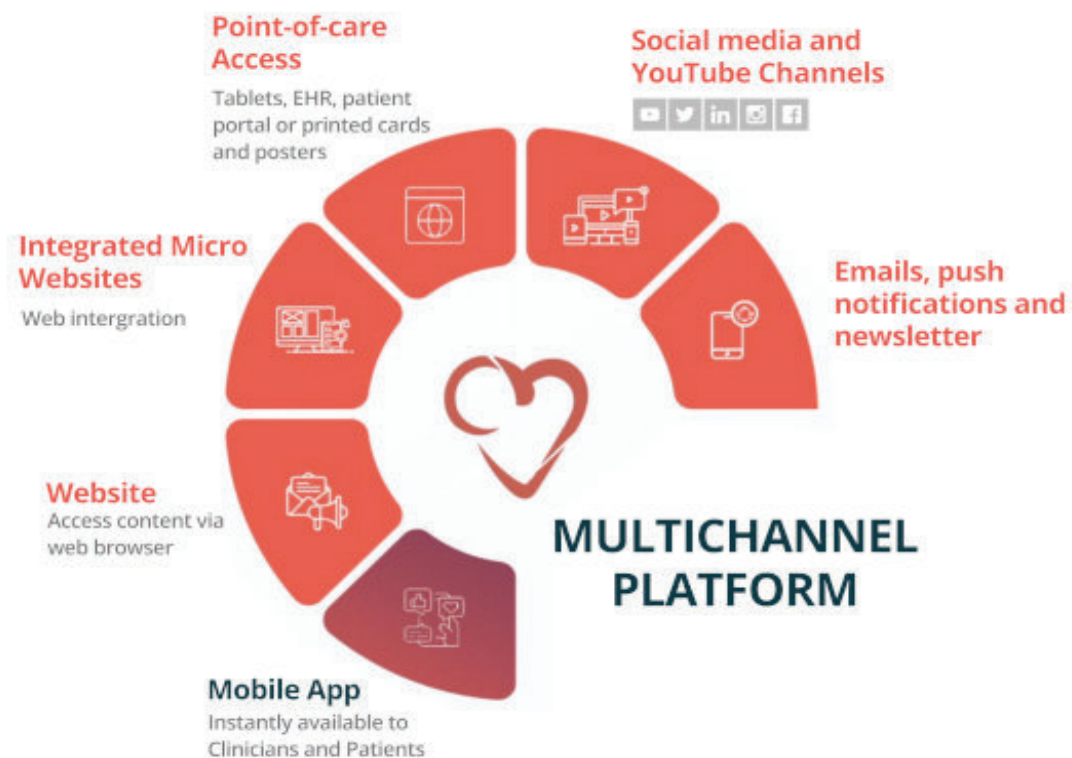


Figure 17: CardioVisual Multichannel Platform



Through the CardioVisual email platform alone, people in over 107 countries were reached with this tool. Via Instagram story, CardioVisual's followers were presented with a question regarding heart disease, and then were able up to access the online health risk assessment and learn more. Users engaged with the tool heavily on this platform and showed their interest in heart disease prevention. On LinkedIn, the tool was shared with predominantly an industry and clinician-based following. Providers are often looking for new ways to digitally engage their patients in their health and well-being.

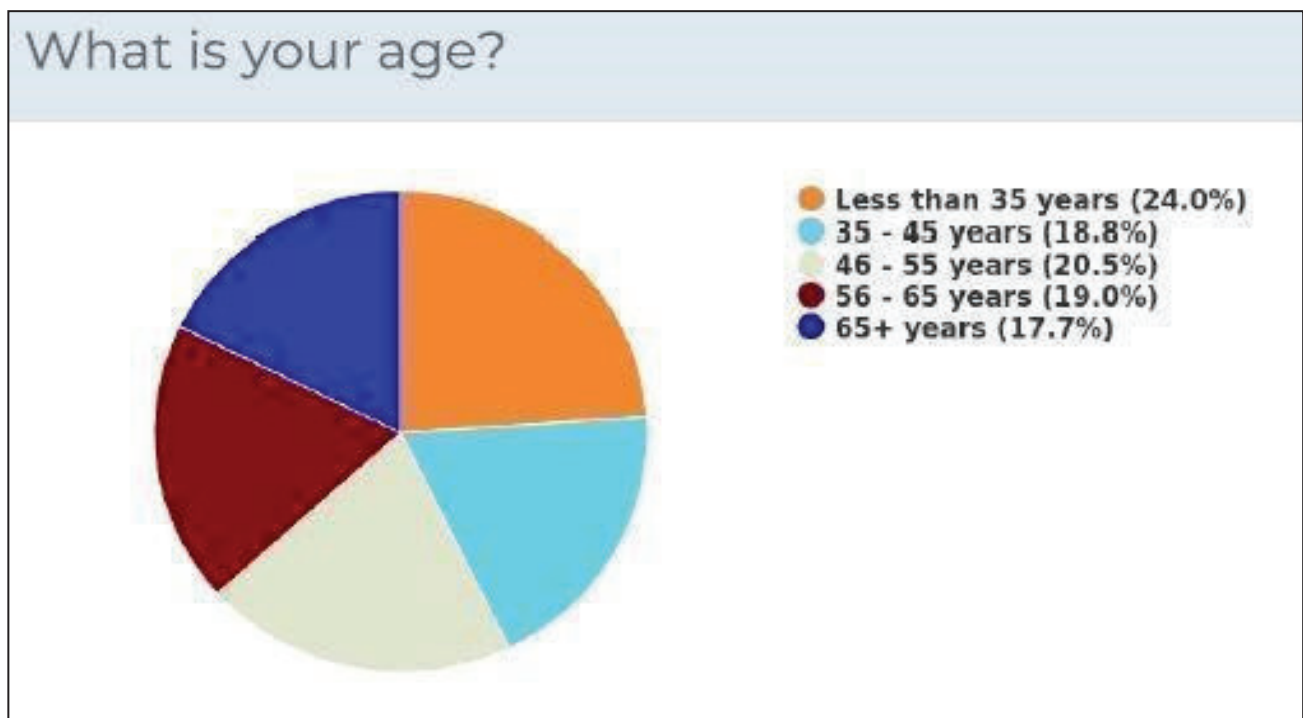
Digital distribution through the various traffic sources and the ability to share the tool with others enabled this highly engaging evidence-based tool to be shared globally. This demonstrates a novel way for people to assess their risk for a serious health condition and to take action by continuing to engage with the toolset and with the CardioVisual platform to learn more.

## Conclusion

The Coronary Heart Disease Tool, which was co-developed by ConnectWell and Outgrow, was disseminated via the CardioVisual platform to interactively engage CardioVisual's global audience. Finding creative ways to engage the audience is essential to helping people continue to focus on prevention of heart disease and self-management. The CHD Risk Assessment Tool, with a light promotion, was able to do just that — as supported by people visiting the CardioVisual platform. CardioVisual bridges the knowledge gap in patient education by providing reliable and trustworthy information.

The CHD Tool provided a safe place to search and explore and share with others to engage people in their heart health during a time when COVID-19 puts people with CHD at risk of serious illness, and assists with early detection and intervention for CHD. People are becoming increasingly interested in self-awareness and determining their health risks — especially during the COVID-19 pandemic. This case study demonstrates that easily accessible digital health tools can successfully engage a global audience. Our collaboration has led to an interactive learning experience that is tailored toward the learning and health needs of each user.

Of note, there was relatively equal distribution across the age groups which demonstrates interest in CHD risk regardless of age. Although many people in the younger age groups were at a lower risk for coronary heart disease, they continued their interactive learning experience by moving on to the other tools. It is likely that these actions indicate increased self-health awareness among a younger demographic and an interest in disease prevention rather than disease management.



**Figure 18: Case Study Analytics: Self-Reported Age Breakdown of Participants**

Prevention, rather than treatment after diagnosis, is trending in today's healthcare system to change the paradigm of our system to focus on healthcare rather than sick care. Prevention can lead to reduced morbidity and mortality rates, and improve overall patient outcomes. In addition, evidence supports that habits developed earlier in life are likely to track through to later life<sup>11</sup>. The younger demographic can modify their lifestyle and behaviors, if needed, to change the trajectory of their heart health.

Responses to the Risk Assessment are presented graphically which demonstrate the self-reported underlying health conditions and lifestyle habits of the population that are driving risk for disease. These are implications for clinical practice and areas that

healthcare professionals can address with their patients. Health education can be addressed for participants whose lifestyle habits would benefit from modification. Further evaluation can be addressed for participants whose underlying health conditions require medical attention. Participants can be triaged and directed to the care point that will help them on their path to improved outcomes.

Do you have any of these medical/physical conditions?

Options	Percentage(%)
Hypertension (High blood pressure)	23.29
Diabetes	6.56
Smoking	7.76
Depression	10.84
Stress	25.44
Sleep Apnea	9.50
Kidney Disease	1.34
High Triglycerides (fat in the blood)	8.57
High Cholesterol	22.62
Angina (Chest pain)	5.62
None of the above	35.07

Figure 19: Case Study Analytics: Self-Reported Medical Conditions of Participants

Physical activity level has an impact on coronary heart disease. How active are you?

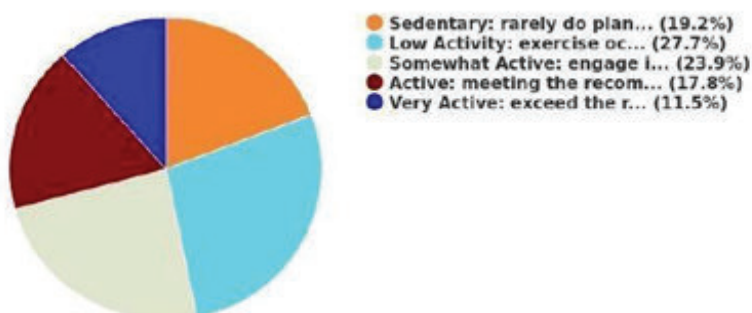
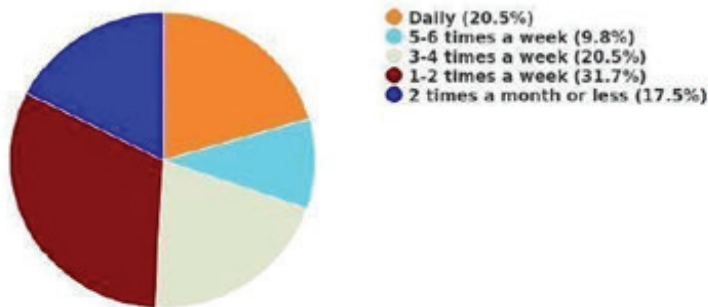
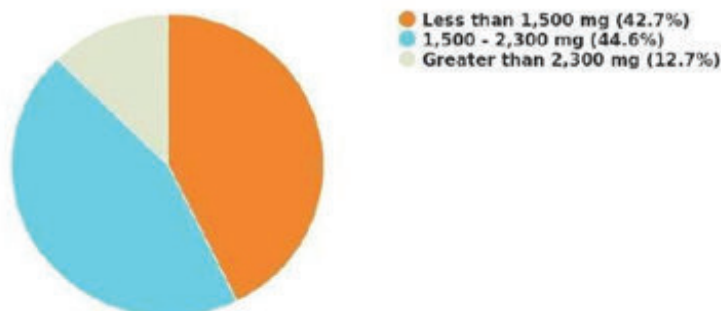


Figure 20: Case Study Analytics: Self-Reported Physical Activity of Participants

How often do you eat foods high in saturated fat (e.g. high-fat meat, high-fat dairy foods, coconut oil)?



A diet high in sodium increases risk for coronary heart disease (CHD). Estimate the amount of sodium you consume on average each day.



How often do you eat packaged or processed food that is high in sugar?

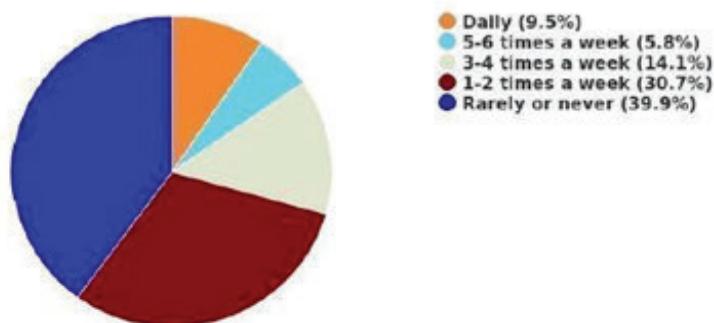


Figure 21: Self-reported Eating Habits

These Tools can leverage awareness for not only CHD but for other health conditions: blood pressure, cholesterol, diabetes, obesity, depression, lung disorders, cancer, digestive disorders, pain management, reproductive health, vision, dementia, and more. Early detection and intervention leads to improved outcomes and quality of life. These tools provide a cost-effective, streamlined, and timely way to assess people remotely for health risks. Empowering people with knowledge of their risk enables them to take action to move on to the next step of care based on their assessed level of risk. As the healthcare industry shifts toward prevention and early treatment, these tools are instrumental in assisting with the transition.

By scaling health awareness of disease and increasing health literacy, a stronger dialogue between patients and providers will result and this further supports improved outcomes. Furthermore, lifestyle factors are the most significant driver of chronic preventable diseases. These tools make people aware of the lifestyle factors that drive disease. This is a key step in educating people about what they can do to address their own health trajectory. In order to activate people as partners in their own care, interactive digital health tools that engage, educate, and move people to action are required. This Case Study has positively demonstrated the ability to scale health activation with these tools.



## References

1. Hartley, K., Vu, M.K. Fighting fake news in the COVID-19 era: policy insights from an equilibrium model. *Policy Sci* 53, 735–758 (2020).  
<https://doi.org/10.1007/s11077-020-09405-z>
2. “Delay or Avoidance of Medical Care Because of Covid-19–Related Concerns — United States, June 2020,” *Morbidity and Mortality Weekly Report*, U.S. Centers for Disease Control and Prevention, 11 Sept. 2020
3. “Use and Content of Primary Care Office-Based vs Telemedicine Care Visits During the Covid-19 Pandemic in the US,” *JAMA Network Open*, 2 Oct. 2020
4. “Changes in the Number of US Patients With Newly Identified Cancer Before and During the Coronavirus Disease 2019 (Covid-19) Pandemic,” *JAMA Network Open*, 4 Oct. 2020
5. <https://outgrow.co/why-interactive/>
6. Dahodwala, M., Geransar, R., Babion, J., de Grood, J., & Sargious, P. (2018). The impact of the use of video-based educational interventions on patient outcomes in hospital settings: A scoping review. *Patient Education and Counseling*, 101(12), 2116–2124. <https://doi.org/10.1016/j.pec.2018.06.018>
7. Cardiovascular diseases. (2019, June 11). World Health Organization.  
[https://www.who.int/health-topics/cardiovascular-diseases#tab=tab\\_1](https://www.who.int/health-topics/cardiovascular-diseases#tab=tab_1)
8. CDC Works 24/7. (2021, May 26). Centers for Disease Control and Prevention.  
<https://www.cdc.gov/>
9. 5 Surprising Facts About High Blood Pressure | cdc.gov. (2020, November 9). Centers for Disease Control and Prevention.  
[https://www.cdc.gov/bloodpressure/5\\_surprising\\_facts.htm](https://www.cdc.gov/bloodpressure/5_surprising_facts.htm)
10. Kim, L. (2020, July 21). Healthcare Marketing Insights for PPC Advertisers [Infographic]. WordStream.  
<https://www.wordstream.com/blog/ws/2016/08/12/healthcare-marketing#:~:text=Healthcare%20ads%20have%20a%20lower,more%20for%20those%20clicks%20%20too>
11. BMJ. (2020, January 9). Healthy habits in middle age linked to longer life free from disease.  
<https://www.bmj.com/company/newsroom/healthy-habits-in-middle-age-linked-to-longer-life-free-from-disease/>
12. Turner, A. (2021, May 1). How Many People Have Smartphones Worldwide (May 2021). BankMyCell.  
<https://www.bankmycell.com/blog/how-many-phones-are-in-the-world>



## About the Collaborators

### About ConnectWell

ConnectWell is a leading-edge provider of digital health and wellness content that is academically sourced and designed for a consumer audience to engage people in their total health and well-being. ConnectWell's public-private partnership with the UC Berkeley School of Public Health guarantees access to a vast library of health and wellness content that is continually reviewed and updated to include the latest standard of care guidelines and scientific findings on health, wellness, and disease management. ConnectWell licenses its content to healthcare providers, health plans, telemedicine providers, wellness engagement platforms, health device companies, employers, and benefits providers to engage their target audiences in their health and well-being.

### About UC Berkeley School of Public Health and Health & Wellness Publications

For more than 70 years, the UC Berkeley School of Public Health has been a leading institution in public health education and research, contributing to the improved health and welfare of communities, the state, and the world. The Health & Wellness Publications of the School of Public Health date back to 1984, when the Berkeley Wellness Letter was founded. UC Berkeley experts carefully examine the latest health and wellness information so readers can make quality lifestyle choices and self-care decisions.

### About Outgrow

Outgrow has been the G2 Crowd Market Leader in the interactive industry for 3 years in a row and has been ranked the #1 B2B Tech Company in New York. Outgrow's interactive experiences have a proven record of increasing engagement, providing personalized value to every single person, increasing the time they spend on educational efforts, the value they receive and their chances of making positive changes in their lives.

## About CardioVisual

MedicalVisual is a digital health technology company focused on creating technology solutions for the daily problems our busy clinicians and their patients face. CardioVisual, MedicalVisual's product, provides trusted and comprehensive video-based information for chronic conditions like cardiovascular disease and diabetes, allowing busy clinicians to easily share such information and save time while empowering patients with engaging and easy-to-understand information. The app has both a patient and provider version to make learning more guided and seamless. MedicalVisual's mission is to provide trusted information effectively to increase comprehension, compliance, and quality of care for patients. The platform includes clinician-led discussions and education.

## Contact Information

<https://www.healthandwellness.tools/>

<https://www.connectwell.health/>

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## QR CODE:

