Boosting the Insurance Industry with Software-based, Remote Health Data Monitoring

Blood Pressure Monitoring Available Now!

Empowering better decisions at lower costs with real-time health data

Differentiate Your Customer Experience

Evolving customer expectations are transforming the insurance industry. Today's customers won't wait to speak to an agent or get a check in the mail — they want the entire insurance experience to be completed from the palm of their hands and they want it personalized to suit their needs. Binah.ai helps insurers meet their clients' needs for digitally-enabled, faster, cheaper and personalized services. Using Binah.ai, insurers can remotely measure a variety of health data with their clients' consent by simply having them look at their smartphone, tablet, or laptop cameras.

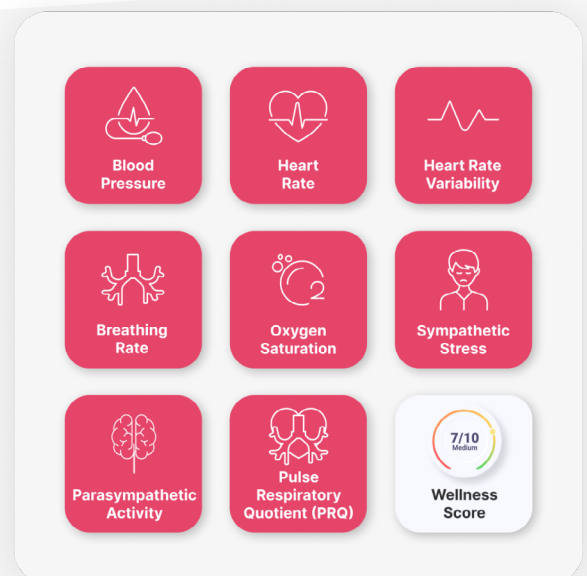## Make Underwriting More Efficient with Real-time Health Data

Reduce reliance on outdated legacy datasets and make underwriting faster, cheaper, and less intrusive. Our remote vital signs and stress monitoring technology removes the need for wearables or dedicated hardware and cuts costs on medical equipment and personnel, allowing for faster, cheaper general health and wellness checks. Use remote checks to triage STP applicants, improve dynamic underwriting and gain real-time insights into applicant or client health status.

Shift from Claims Payer to Lifelong Wellness Partner

Boost wellness program engagement and enable clients to keep track of their health straight from their personal smartphones, tablets or laptops. Using insights shared by clients, insurers can gamify wellness platforms, deliver personalized suggestions and rewards, and pave the way to a positive relationship with clients by helping them mitigate health risks and reduce premium prices.

Transform Any Camera-equipped Device into a Health and Wellness Monitoring Tool

Binah.ai's award-winning Health Data Platform offers insurers an unparalleled advantage by transforming smartphones, tablets and laptops into health and wellness monitoring tools. Using Binah.ai's AI-powered, video-based, software-only solution, insurers can remotely measure an extensive range of physiological parameters with client agreement. Parameters include: blood pressure, heart rate, heart rate variability (HRV SDNN and RRI raw data), oxygen saturation, breathing rate, sympathetic stress, parasympathetic activity, pulse-respiration quotient (PRQ), and our new wellness score.

Blood Pressure · Heart Rate · Heart Rate Variability · Breathing Rate · Oxygen Saturation · Sympathetic Stress · Parasympathetic Activity · Pulse Respiratory Quotient (PRQ) · Wellness Score (7/10 Medium)
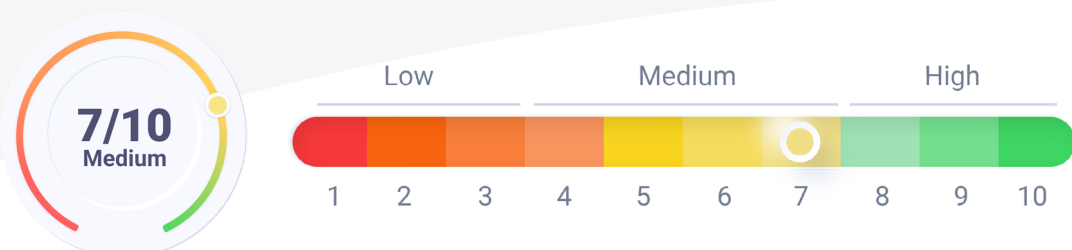
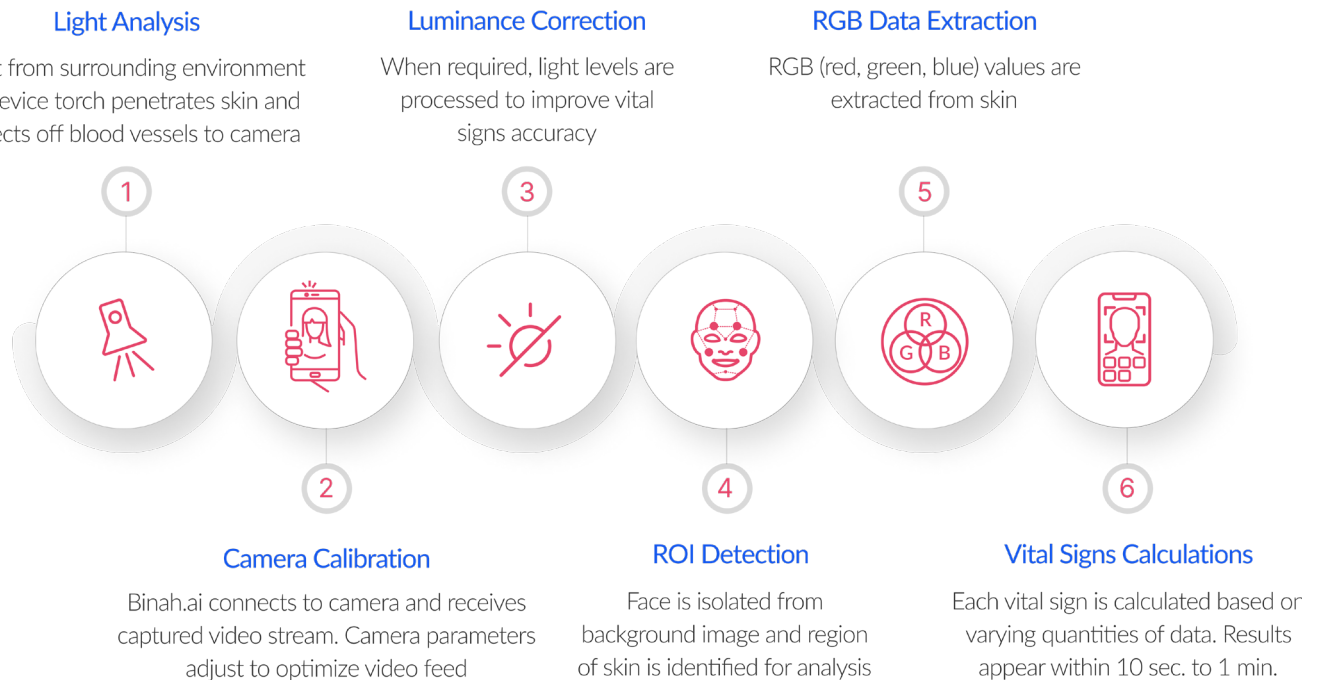ISO 13485:2016 · HIPAA COMPLIANT · GDPR Representation

New! Binah.ai Wellness Score

Enable clients to get one simple score that reflects general wellness levels in just 60 seconds. The wellness score is based on the physiological parameters measured by Binah.ai.

7/10 Medium

Low	Medium	High

1 2 3 4 5 6 7 8 9 10

How Binah.ai's Technology Works

Binah.ai uses a unique mix of signal processing and AI technologies to extract and analyze a video signal taken from exposed skin on the surface of a human face. Delivering consistent results in under one minute, Binah.ai's technology is agnostic to skin color and gender. Binah.ai offers two methods to extract health measurements: contactless and contact-based. The contactless extraction is based on a remote photoplethysmography (rPPG) signal, and the contact-based extraction, which may be done by placing a finger on the smartphone's rear camera, is based on a PPG signal. Binah.ai's stress measurements are calculated based on the Baevsky Stress Index.
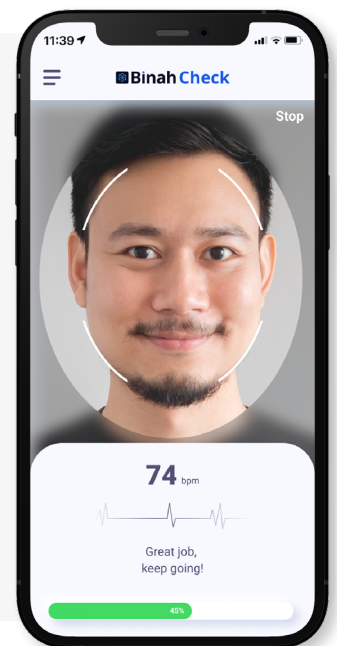
Light Analysis
Light from surrounding environment or device torch penetrates skin and reflects off blood vessels to camera

Luminance Correction
When required, light levels are processed to improve vital signs accuracy

RGB Data Extraction
RGB (red, green, blue) values are extracted from skin

Camera Calibration
Binah.ai connects to camera and receives captured video stream. Camera parameters adjust to optimize video feed

ROI Detection
Face is isolated from background image and region of skin is identified for analysis

Vital Signs Calculations
Each vital sign is calculated based or varying quantities of data. Results appear within 10 sec. to 1 min.

Delivery

Binah SDK (Software Development Kit)

- Supports: iPhone (8 and up), iPad (6th Gen and all iPad models released afterwards); Android 8.1 mobile devices; Windows 10 laptops and desktops
- Web Application Support: compatible with Safari and Google Chrome browsers - no app needed
- Support for landscape and portrait orientations

Binah Check - Ready-to-use Health and Wellness Monitoring Solution

- Immediately available on a per-user model, no integration needed
- Includes a SaaS-based management platform and end-user application.
- Available for: iPhone (8 and up) and Android smartphones, Windows 10 laptops and desktops
- Available through web application clients - no app download needed

No wearables needed

Insurance Applications

Underwriting/ Onboarding
Enhance self-reporting health questionnaires with real-time health data, collected remotely

Dynamic Underwriting
Improve risk management with hassle-free, real-time insight into your clients' health status

Wellness Programs
Boost engagement and support client wellbeing with a real-time monitoring solution, available 24/7

Triage STP and non-STP Applicants
Use remote, one-minute health and wellness checks to triage high and low-risk applicants

Know Your Customer (KYC)
Get a 360° user profile with critical health data for better, more efficient, and value-added customer support

Critical Health Risk Insights

Parameter	Normal range (Age 18+)	Health issues associated with abnormal levels
Blood pressure The pressure of circulating blood against artery walls	Systolic: <120 Diastolic: <80	Heart attack, heart disease, stroke, kidney disease, poor cognitive function, dementia
Heart rate / Pulse rate How many times a person's heart beats per minute	60-100 bpm	Stroke, heart failure
Heart Rate Variability (HRV) The variance in time between heart beats represented by SDNN	SDNN: > 50ms	Stress, risk of cardiac events, oncoming sickness, nutrition and sleep patterns
Oxygen saturation The amount of oxygen-carrying hemoglobin in the blood relative to the amount of hemoglobin not carrying oxygen	95% - 100%	Heart disease, interstitial lung disease, COPD, anemia, ARDS, pneumonia, sleep apnea
Breathing rate The number of breaths a person takes per minute*	12-20 bpm	Anxiety, fever, heart problems, respiratory conditions, including COPD, asthma, and pneumonia
Pulse-Respiration Quotient (PRQ) Heart rate divided by respiration rate, captures the complex state of cardio-respiratory interactions	4-5	Hyperventilation, cardiorespiratory issues

Sources

https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/symptoms-causes/syc-20373410

https://www.ahajournals.org/doi/full/10.1161/01.cir.94.11.2850

https://www.hopkinsmedicine.org/health/conditions-and-diseases/vital-signs-body-temperature-pulse-rate-respiration-rate-blood-pressure

https://pubmed.ncbi.nlm.nih.gov/31647303/#:~:text=Abstract,complex%20state%20of%20cardiorespiratory%20interactions

Enable Seamless Health and Wellness Checks

Underwriting / Onboarding

Health Assessment

Send clients a link to take a 1-minute health scan without downloading an app

Health Scan

1 minute

Enhance questionnaires and assessments with objective, real-time health data

Analysis

Advanced algorithms create individual insights

Decision Making

Make smarter decisions for each policy

Wellness Programs

Initial Health Screening

1 minute

Send clients a link to take a 1-minute health scan without an app or have clients scan themselves using the insurer's app

Help Set Personal Health Goals

Help clients set measurable goals to improve general health status
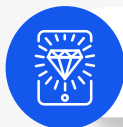
Boost Engagement

Help clients stay engaged with personalized recommendations based on health data and progress

Goal Achievement, Maintenance and Rewards

Reward goal achievement and health improvements, and empower clients to maintain a healthy lifestyle

Remote, Real-Time Health and Wellness Monitoring Provides Immense Benefits

More Engaging Wellness Programs: Boost gamification and personalization using a real-time wellness score.

Make Wellness Rewarding: Enable clients to share real-time wellness data to boost dynamic underwriting and rewards programs.

Enhanced Risk Assessment: Use real-time and historical health data and trends to make more informed risk assessments.

Reduced costs: Save money and time on manual health assessments, expensive logistics, equipment, wearables and outdated legacy datasets.

Increased revenues: Expand outreach to under-served populations and remote locations.

Fraud reduction and claims validation: Validate claims and reduce fraud using real-time and historical health data.

Digital transformation: Easily access and log real-time health data from a wide range of devices and operating systems to accelerate digital transformation and connected insurance.

Short time-to-market: Binah.ai's simple, powerful software development kit (SDK) makes it easy for insurance providers to integrate Binah.ai's Health Data Platform into their existing branding, apps or web applications for seamless functionality. It can be integrated within days for immediate savings.

Customer convenience: For end-users, extracting health data is easier than taking a selfie. Customers can easily navigate insurance processes from the comfort of their own home with less paperwork and fewer calls.

Support ageing in place: Connect to the trend towards smart homes and technology for the elderly and enable older citizens to obtain the best possible protection and prevention from the comfort of their homes.

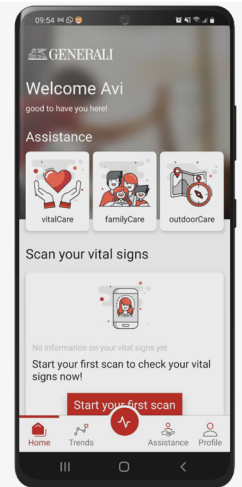## Customer Stories

GENERALI — Generali Deutschland, the German business unit of Europe's largest insurance Group

In today's challenging landscape, Generali has a clear vision – future-focused and looking for continuous innovation, while always putting the customer first. Recognizing that health awareness is at an all-time high due to the pandemic, and with a drive to support its own customers in monitoring health status, Generali wanted to create a wellness application from scratch. The insurance giant wanted to align this solution with the nationwide push from the German government for an increasingly digitalized healthcare system.

''With this new digital solution, we put advanced analytics and Artificial Intelligence to the service of our customers, in a way that is affordable, fast, and easy. A new tool to promote prevention, which, as we learnt during the current Covid emergency, is of paramount importance, and to protect our customer's life and health.''

Giovanni Liverani, CEO of Generali Deutschland
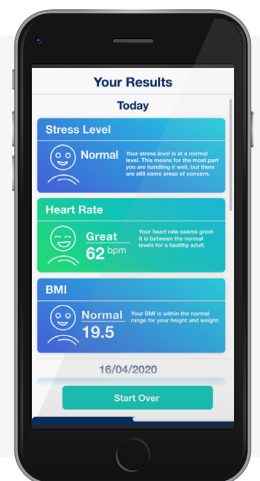
momentum — Momentum, one of South Africa's largest insurance companies

As a leading insurance company, Momentum has a broad vision to digitalize its value chain, and provide clients with intelligent, streamlined tools to monitor health vitals, improve insurance services, and early identify health flags, while getting better, real-insights into their clients' healthcare status. Momentum immediately recognized the potential of remote, video-based vital signs monitoring for their clients. This would provide a valuable stream of health data to them as a company, as well as offer customers and partners the tools to stay on top of their own health vitals and attain peace of mind.

"Binah.ai's technology provides our clients with a tool to measure key vitals and offers us alternative sources of health data to assist with early intervention and referral to our digital doctors if needed."

Margot Brews, Head of Health Risk Management at Momentum, South Africa

SOMPO ホールディングス — Sompo Japan Nipponkoa Himawari Life Insurance, one of Japan's largest insurance companies

"In particular, we aim to develop new healthcare services which enable customers to understand their own health status (such as stress) and get advice, by utilizing Binah's technology: data format-agnostic / signal processing / machine learning, and proprietary algorithms with existing medical / and health data. Binah.ai provides practical answers to critical information challenges, accelerating the path from data to insights. Binah's combination of signal processing, machine learning, and a proprietary, comprehensive back-end AI framework delivers best-in-class models in terms of accuracy, performance and stability."

Sompo Japan Nipponkoa Himawari Life Insurance

https://www.sompo- hd.com/~/media/hd/en/files/news/2020/e_20201009_2.pdf

Health. Care. Anywhere.

Binah.ai's software-only, video-based Health Data platform is the next stage in the evolution of health and wellness monitoring. By eliminating the need for wearables and dedicated hardware devices and transforming smartphones, tablets and laptops into health and wellness monitoring tools, Binah.ai is enabling healthcare, insurance and wellness industries worldwide to measure an extensive range of physiological parameters just by having users look into their device's camera. Delivering on its vision and mission to support Health.Care. Anywhere, Binah.ai is making access to user-provided health data fast, simple and affordable and empowering organizations to provide quality, personalized care and services at lower costs.

For more information on Binah.ai, please visit: www.binah.ai or write to us at info@binah.ai

Industries We Empower

Insurance

Digital Healthcare

Wellness

Automotive

Consumer Electronics

Mobile

Selected Customers

SOMPO ホールディングス

GENERALI

momentum

ICICI Lombard
GENERAL INSURANCE

Certifications

DEKRA Certified ISO 13485:2016

HIPAA COMPLIANT

GDPR Representation
CERTIFIED 2021-04-13

Recent Market Recognition

BINAH.AI won the #DIAAMS 2022 DIAmond Award
DIGITAL INSURANCE AGENDA

CES INNOVATION AWARDS 2022 HONOREE

CES INNOVATION AWARDS 2020 HONOREE

NTT DaTa OPEN INNOVATION 2020 GRAND CHAMPION

DIA
DIAmond Award
2022

CES
Innovation Awards
2022

CES
Innovation Awards
2020

GRAND CHAMPION
NTT Data
10th Open Innovation
International Contest 2020

Why Binah.ai?

Always Available
May run locally on the device, without internet connection.

Seamless Integration
Delivered as an easy-to-integrate SDK or ready-to-use app.

Easy to Use
Fast, easy, contactless. Health measurements extracted in under a minute.

For All
Agnostic to age, gender and skin color.

Web Application Support
Compatible with Safari and Google Chrome. No app needed.

Proven
In use with tens of millions of end-users in the insurance, healthcare and wellness industries.

Accessible
No wearables needed. Available on smartphones, tablets and laptops.

No Privacy Concerns
Binah.ai does not save images or video streams. Final measurement results are secured and encrypted.