Harnessing the Power of Wearables:

A Strategic Opportunity for National Healthcare Systems

Executive Summary

Wearable health technology offers a transformative opportunity for national healthcare systems by (1) shifting individual care from reactive treatment to proactive health management or preventative care, (2) supporting the healthcare workforce, and (3) enhancing population health monitoring.

With 40+ validated health metrics—including sleep, activity, heart rate metrics, and temperature trends—Oura Ring enables continuous, non-invasive health monitoring through a discrete, validated, research-grade wearable device.

The key strengths for national-scale healthcare transformation at Oura include:

- **Early Illness Detection & Real-Time Monitoring:** The Symptom Radar feature at Oura flags subtle biomarker changes before symptoms appear, supporting faster interventions and reduced treatment costs.

- **Chronic Disease Management at Home:** Objective physiological tracking, behavior insights, and provider-sharing capabilities make Oura Ring a powerful self-management and care coordination tool.

- **Empowering Women's Health & Healthy Aging:** From fertility tracking to menopause insights and cardiovascular age, Oura Ring supports women across life stages with personalized data.

- **Population Health at Scale:** Proven to drive sustained behavior change (e.g., increased daily activity), Oura Ring is ideal for government-led preventive health campaigns and national health data analysis.

- **Support for Clinicians:** Oura Ring is proven as an acceptable wearable among clinicians and the data can be used to reduce burnout and improve shift recovery.

- **Seamless Integration & Scalability:** With robust APIs, strong consumer adoption, and compatibility with an ecosystem of over 800 partners (note: not all partners available outside the US), Oura is part of an innovative healthcare ecosystem and is ready to be embedded into national EHR systems and care models.

Oura Ring is more than a wellness tracker—it is a strategic asset for national health transformation. It empowers individuals, enhances provider insight, and supports data-driven monitoring at scale. For healthcare systems seeking a future-ready platform to scale prevention, personalize care, and relieve clinical burden, Oura Ring offers a proven, impactful, and cost-effective path forward.

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Addressing Modern Healthcare Challenges with Oura Ring

Despite advancements in modern medicine, today's healthcare systems face mounting challenges: low levels of physical activity, poor health literacy, limited access to personalized preventive care, and a global shortage of healthcare workers. One in four adults, over 1.4 billion worldwide, do not meet the World Health Organization's recommended levels of physical activity, increasing their risk for chronic diseases like diabetes and cardiovascular conditions. At the same time, only 12% of U.S. adults have proficient health literacy, making it difficult for the majority to navigate and act on health information effectively. Traditional healthcare models often deliver one-size-fits-all interventions that miss early signs of illness or lifestyle risks. Meanwhile, the World Health Organization estimates a projected global shortfall of 11 million healthcare workers by 2030.

Wearable technologies, especially Oura Ring, are uniquely positioned to address these challenges—helping bridge the gap between clinical care and everyday health behavior. Wearables have already reached a high level of consumer acceptability: the 2024 Rock Health Consumer Adoption Survey found that ownership of wearable health devices in the United States ranges from 32% in the geriatric population to 66% of millennials. Beyond ownership and personal usage of these devices for fitness tracking at home, wearable owners are also ready and willing to share this data with their healthcare providers. The combination of current market proliferation with the opportunity to expand access to devices through universal health plan coverage and willingness of users to share data with healthcare providers supports the feasibility of a national-scale wearable strategy.

With its advanced, research-grade sensors, Oura Ring packs state-of-the-art heart rate, heart rate variability (HRV), personalized temperature trends, activity, and sleep monitoring technology into a convenient, non-invasive smart ring. Oura Ring provides a more convenient, comfortable, and accurate way to track data than wrist-worn options. Compatible with both iOS and Android devices, Oura Ring fits into an individual's life without disrupting it through its unique battery life powering up to 8 days, 24x7 wearability, durability, and discrete design with multiple color options to satisfy individual preferences. The user engagement statistics at Oura speak for themselves: on average, Oura Members open the app more than three times daily, with approximately three out of four members accessing the Oura App at least five times weekly.
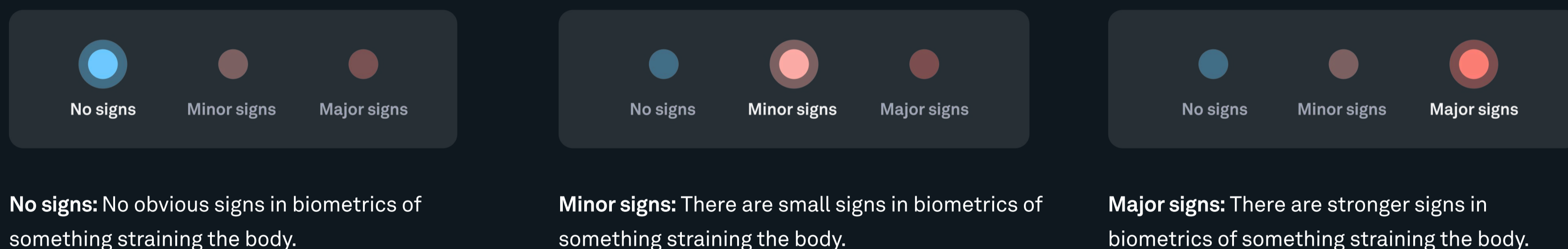
Oura is also dedicated to continuously developing the most scientifically validated wearable. Oura Ring is validated against medical gold standards and driven by continuous monitoring of 40+ individual health and wellness biometrics and insights. Thousands of teams, research organizations, and concierge medical practices manage the health of their populations with Oura, and its ecosystem includes 800+ partners across women's health, metabolic health, fitness, behavioral health, and more. With the ability to integrate into health systems, Oura offers a scalable solution to support individualized care, promote prevention, and reduce the burden on overstretched healthcare infrastructures.

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Rethinking Care Delivery at Scale

Oura Ring can be incorporated into healthcare delivery in multiple ways, from real-time health monitoring and early detection of illness symptoms, to chronic disease management, to women's health, to healthy aging and prevention.

Real-Time Health Monitoring and Early Detection

Oura detects changes in resting heart rate, HRV, and temperature that often precede symptoms of illness. During the COVID-19 pandemic, the TemPredict study demonstrated that Oura Ring could be used to detect COVID-19 an average of 2.75 days before participants sought diagnostic testing. Based on this research, Oura's Symptom Radar feature incorporates all of these data points into an easy-to-understand and personalizable user alert. Symptom Radar displays signs of strain in a three-level estimate:

No signs | Minor signs | Major signs

No signs | Minor signs | Major signs

No signs | Minor signs | Major signs

No signs: No obvious signs in biometrics of something straining the body.

Minor signs: There are small signs in biometrics of something straining the body.

Major signs: There are stronger signs in biometrics of something straining the body.

While Oura Ring is currently a wellness device, there have been numerous reports of Symptom Radar shining a light on something that resulted in better care, faster. For example:

- **Kim R.**, an active 53-year-old woman from Massachusetts who walked six to eight miles daily, noticed that her RHR spiked from 55 bpm to 85 bpm. Her Daytime Stress also increased from two to 10 hours a day. After experiencing shortness of breath and exhaustion, she went to the ER, where she was diagnosed with stress-induced cardiomyopathy—a condition that mimics a heart attack and requires urgent medical care.

- **Marcia E**., a 67-year-old woman from New York, has been struggling with systemic lupus erythematosus (SLE) for over 30 years. Two years ago, Marcia started using Oura to help track her daily vitals and stay ahead of flare-ups. Symptom Radar began alerting her several days in a row that her body was under strain. Trusting her Oura data, she visited her rheumatologist. The doctor immediately recognized that something was seriously off and referred her to her endocrinologist right away. Her TSH (thyroid-stimulating hormone) and free T4 were significantly out of range. This imbalance can exacerbate fatigue, increase heart rate, and lead to inflammation and autoimmune activity.
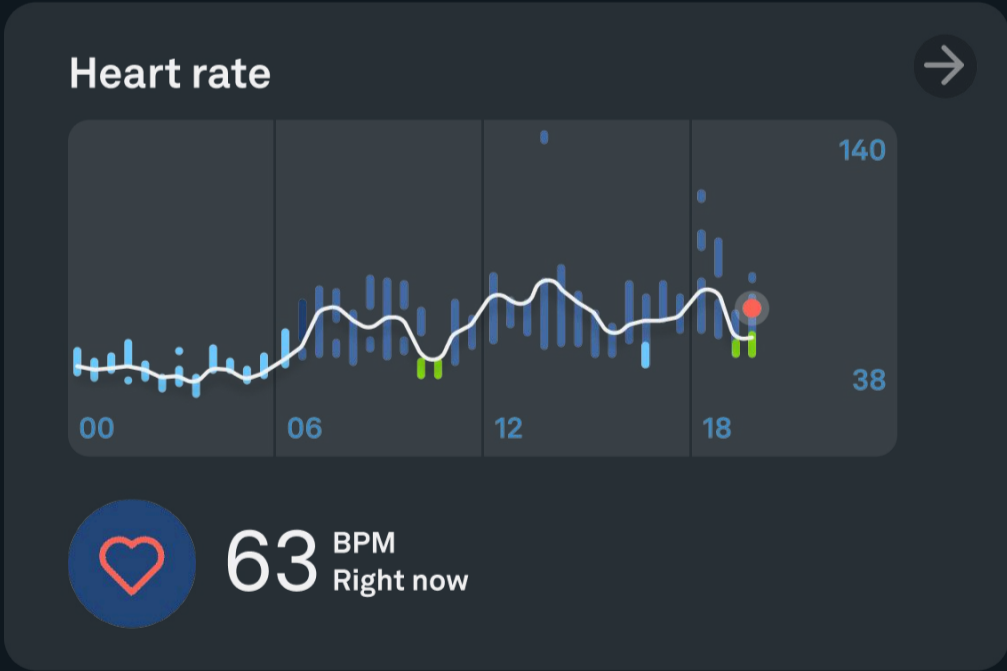
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Using Oura Ring over time establishes individual baselines of health. Deviations outside of these baselines could alert individual users to pursue care before a condition becomes serious. These alerts could also be expanded to population health monitoring of specific patient cohorts and enable healthcare providers to intervene sooner in non-emergency situations.

Chronic Disease Management

Chronic disease management represents a large part of disease burden and healthcare costs. An estimated 1.28 billion adults worldwide have hypertension, and only 42% are diagnosed and treated. In 2022, 830 million people were living with diabetes. On average, people with diabetes incur close to $20,000 in medical costs annually from direct treatment and comorbidities. A study of 29 countries conducted by Harvard Medical School indicated that over half of the world's population will be diagnosed with a mental health disorder.

Oura Ring supports chronic disease management by empowering users and their care teams with objective physiological monitoring combined with behavioral insight, enabling proactive care that is scalable, cost-effective, and patient-centered. Fifty-one percent of Oura members report at least one chronic condition, and 75% of those members would recommend Oura to others with chronic conditions to help them self-manage at home. Seventy-eight percent of surveyed members who have chronic conditions agree that Oura provides data to inform medical care of those chronic conditions.

Chronic diseases include conditions such as diabetes, hypertension, obesity, and cardiovascular disease that often develop silently over time, but also includes conditions such as postural orthostatic tachycardia syndrome (POTS), inflammatory bowel disease, long COVID-19, and Lupus that can be debilitating from the start. Oura Ring tracks:

Heart rate

140

38

00   06   12   18

♥ 63 BPM
       Right now

Body temperature

-0.5°F
From baseline

ACTIVITY GOAL

7,402

0   Steps progress   10,000

Heart Rate (HR) and Heart Rate Variability (HRV): These are indicators of autonomic nervous system balance and can signal cardiovascular risk or autonomic dysfunction, common in diabetes and hypertension.
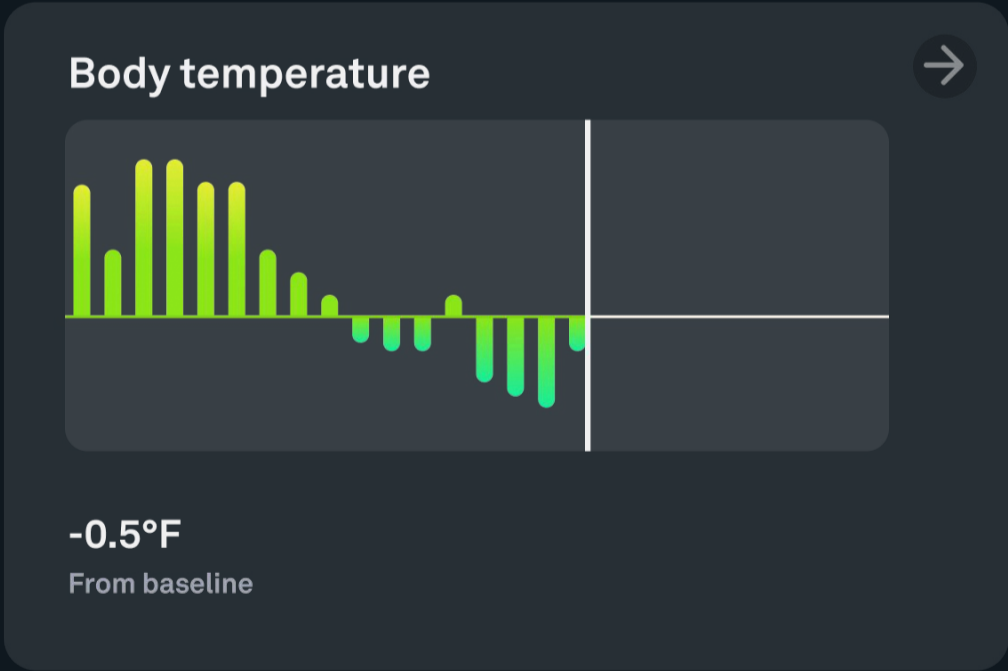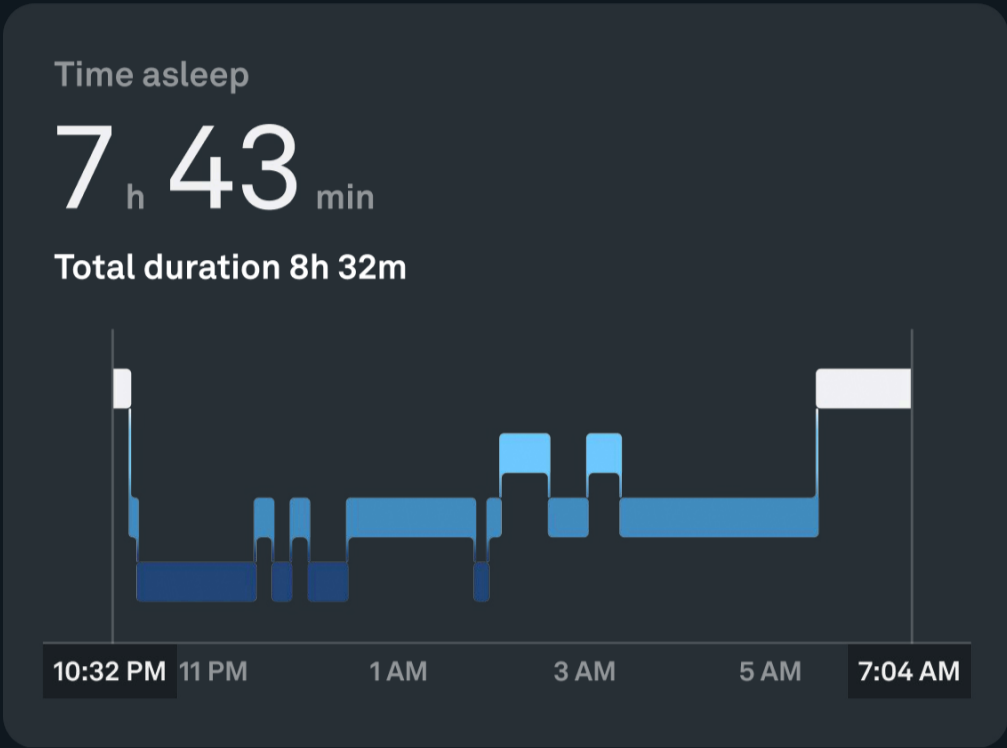
Respiratory Rate & Skin Temperature Trends: Both are useful for detecting physiological changes before symptoms appear, including signs of infection or inflammation that could worsen chronic conditions.

Activity Levels: Step count and activity intensity data help assess physical activity levels, which are critical in managing weight, blood pressure, and glucose levels.
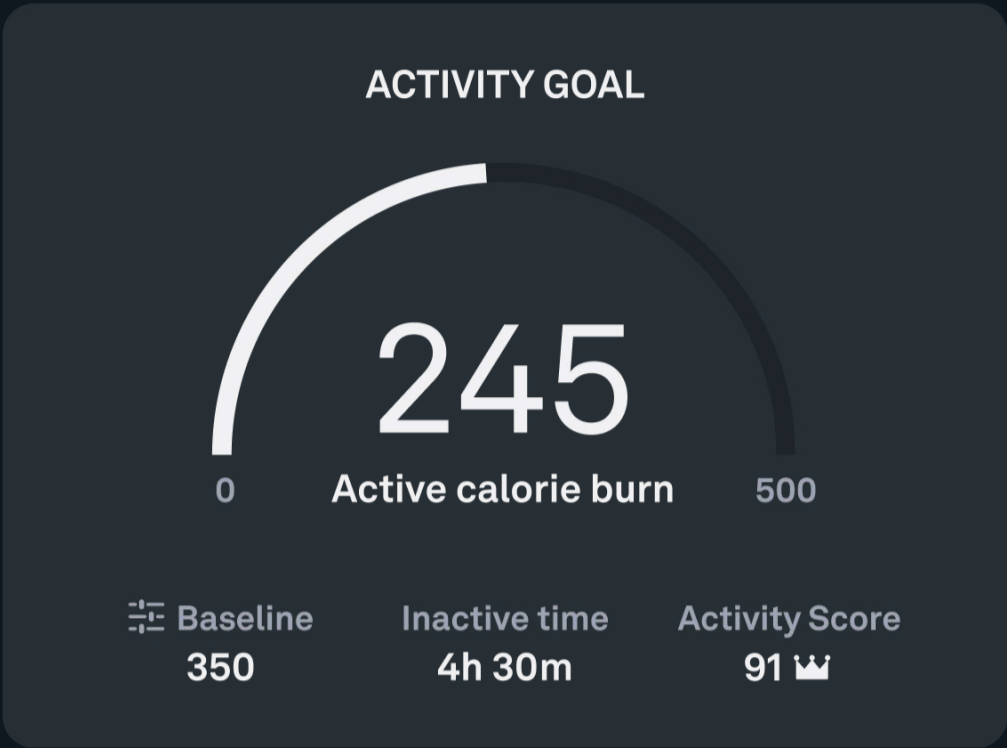
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Many chronic conditions are rooted in behavioral patterns—poor sleep, sedentary behavior, and stress. Oura provides personalized, real-time feedback on:

Time asleep

7 h **43** min

Total duration 8h 32m

10:32 PM 11 PM   1 AM   3 AM   5 AM   7:04 AM

READINESS

87

Optimal

Bring it on

ACTIVITY GOAL

245

Active calorie burn

0   500

Baseline   Inactive time   Activity Score
350   **4h 30m**   **91**

Sleep Quality & Patterns: Oura detects changes in deep sleep, REM sleep, and sleep efficiency, all of which are associated with metabolic and cardiovascular health.

Readiness Score: Helps users self-regulate their activity and recovery, reducing the risk of overexertion.

Daily Activity Goals: Encourages sustained physical activity, an essential aspect of lifestyle modification in diabetes and hypertension.

While Oura Members with chronic diseases are able to self monitor at home, they also bring their Oura data into care conversations. Forty-eight percent of members with chronic diseases have shared or discussed their data with their healthcare provider, and 80% are open to sharing. Managing a chronic disease is a team effort, and Oura makes this easier than ever.

Continuous engagement by patients and providers with Oura, as well as partners such as Dexcom, Noom, and Talkspace, can help reverse underlying healthcare issues by encouraging sustained behavior change, ultimately reducing burden on health systems.

GluCare Integrative Health in Dubai has developed a hybrid-care model integrating Oura Ring devices into diabetes care to provide real-time data on sleep, activity, and recovery. Their hybrid clinic model uses Oura Ring data to tailor interventions and increase patient accountability (GluCare.Health).

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Empowering Patient Engagement

Women's Health

Oura is uniquely dedicated to women's health, including reproductive health, family planning, and menopause. The menstrual cycle is often referred to as a fifth vital sign, along with blood pressure, temperature trends, respiratory rate, and heart rate. Each individual's cycle is as unique as their fingerprint, and providing individualized understanding of menstrual cycles helps women recognize when they fall outside of the normal range and may need support from a medical provider. Additionally, women have individual preferences when it comes to birth control, with many preferring a non-hormonal option. Oura integrates with Natural Cycles—the only FDA-cleared digital birth control app—to prevent and plan for pregnancy. In a recent study, the research team found Oura Ring metrics, specifically skin temperature trends, metabolic activity, physical activity levels, and sleep patterns, were useful in predicting labor onset with 71% accuracy. Further research could utilize these findings to help women and their providers take action to avoid preterm birth.

Perimenopause can range from four to eight years. In October 2024, Oura published its first-ever Perimenopause Report, which analyzed data from 100,000+ female members to examine perimenopause's daily impacts. Findings confirm perimenopause causes physical and mental changes that can affect women's daily lives such as:

- Lack of restorative sleep impairs daily functioning

- Perimenopause affects both physical and mental health in premenopausal women

- Cardiovascular risk factors increase

As a result of this research, Oura added 17 new tags to its app to help members make connections between their biometric data and symptoms of perimenopause.

Oura Ring can serve as a constant companion across decades of a woman's life to understand personal norms as well as provide insights for healthcare providers during times of acute need—such as pregnancy and the postpartum period—and help women make sense of their symptoms during transitional periods like menopause—both in their homes and during clinic visits. Additionally, women's health data can be used for population health metrics and research to advance knowledge of each country's health in a way that hasn't been feasible before.

> Oura and key academic partners are continually conducting research to enhance our understanding of holistic women's health, inclusive of reproductive health, cardiovascular health, metabolic health, and healthy aging.

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Maximizing Healthspan through Personalized Insights

Extending healthspan—the number of years lived in good health—requires daily habits that support physical, metabolic, and cardiovascular wellbeing. Oura helps members build these habits through continuous, personalized feedback rooted in core pillars of preventive health: sleep, activity, and recovery. With features like Sleep and Readiness scores, dynamic activity goals, and daily trend insights, Oura nudges users toward routines that support long-term vitality.

Oura's metabolic health capabilities further deepen this impact. Through an integration with Dexcom's Stelo Glucose Biosensors and in-app meal tracking, users gain real-time visibility into how food, sleep, stress, and movement affect glucose levels. These insights empower members with the information they need to improve their behaviors in ways that could prevent metabolic conditions like insulin resistance or Type 2 diabetes—key factors in age-related decline.

Complementing behavioral and metabolic insights is Oura's Cardiovascular Age, which provides an estimate of how your heart and large arteries are aging compared to your chronological age, as well as guidance on how you can improve your heart health in the long run. This gives users a meaningful lens into their cardiovascular resilience, empowering them to take action before clinical symptoms arise.

By combining the convenient form factor of a ring with powerful, data-driven feedback, Oura helps members take control of their health trajectory—turning everyday decisions into long-term investments in aging well.

Oura Advisor:
Supportive & Personalized AI

Oura Advisor, the AI-powered personal health companion at Oura, helps translate data into meaningful action by delivering real-time, personalized health guidance. Drawing on each member's unique biometric patterns, behavioral trends, and contextual signals, Oura Advisor surfaces timely nudges, explanations, and next steps— whether it's encouraging extra rest after poor sleep, flagging signs of potential overtraining, or suggesting optimal times for activity.

Unlike generic health tips, Oura Advisor adapts to the individual. It learns from patterns over time, helping members build self-awareness and autonomy around their own physiology. As a result, users gain not just insights, but guidance—developing a deeper understanding of what their body needs and when. This proactive, user-centered approach puts members in control of their health journey, enabling them to make small, consistent choices that compound toward better long-term outcomes.

Over time, as Oura Advisor learns even more about an individual's health journey and has deeper access to Oura Ring insights, new opportunities in algorithmic care, prevention, and proactive coaching will be possible, further reducing burden on the health system and giving patients immediate answers to their most pressing questions. Anecdotal evidence already points to higher patient satisfaction with the ability to ask AI agents almost anything about their health journey.
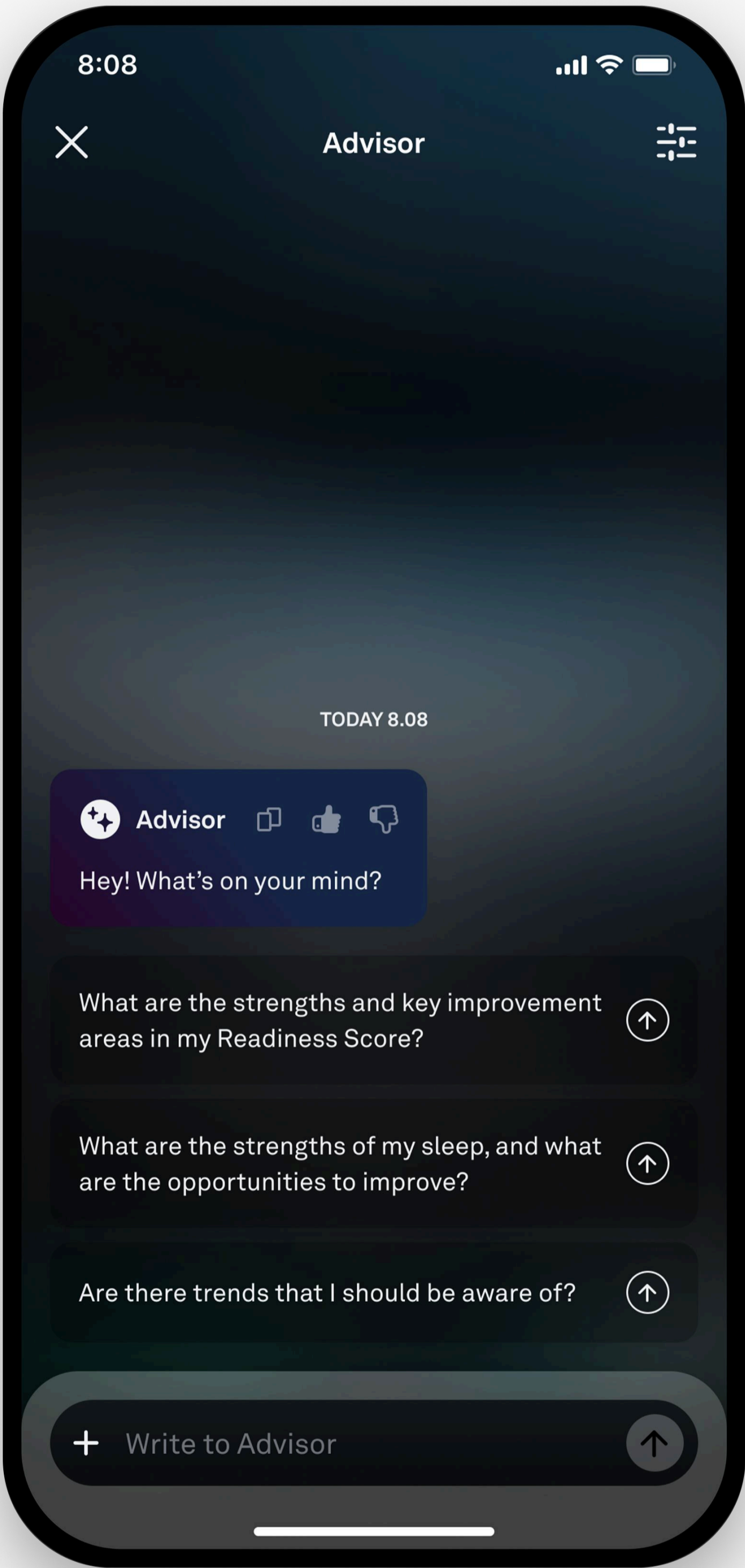
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Supporting the Healthcare Workforce

Oura Ring has emerged as a valuable tool in supporting the healthcare workforce, particularly in monitoring and mitigating issues related to burnout and the health impacts of night shifts. By providing continuous, non-invasive tracking of sleep patterns, heart rate variability (HRV), and other physiological metrics, Oura offers insights that can help healthcare professionals manage stress and maintain well-being.

Monitoring Burnout and Stress in Healthcare Workers

A study conducted during the early stages of the COVID-19 pandemic evaluated the use of Oura Ring among healthcare professionals, including attending physicians and trainees to assess adherence to daily symptom surveys and wearable device usage. Findings indicated that participants wore Oura Ring for an average of 87.8% of study nights, indicating a high level of acceptability among healthcare professionals.

Impact of Night Shifts on Health

The demanding schedules of healthcare professionals, especially those involving night shifts, can significantly disrupt sleep patterns and overall health. A study published in JAMA Network Open examined the effects of different work schedules on first-year physicians. Using Oura Ring to monitor sleep, the study found that 24-hour on-call shifts were associated with poorer sleep quality, reduced well-being, and diminished cognitive performance compared to float schedules.

Another group of one hundred anesthesiologists recognized the role of quality sleep in providing safe patient care, and gamified the use of Oura Ring among the team to monitor and improve Sleep Score during the COVID-19 pandemic, when the group was under particular stress.

These findings underscore the potential of wearable technology like Oura Ring in identifying and addressing the adverse effects associated with the stress of healthcare delivery. By providing real-time data on sleep and recovery, healthcare institutions can make informed decisions to optimize work schedules and support staff health.

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Population Health

Wearable technology offers real-time, population-level insight into health trends, enabling national systems to move from episodic care to continuous, proactive health management.

Population Health Intervention

In 2016, the Singapore National Steps Challenge was sponsored by the Health Promotion Board (HPB) as a result of findings that indicated almost 40% of Singaporeans do not participate in sufficient physical activity. To encourage more Singaporeans to be physically active and reap the benefits of regular exercise, the world's first population-level pedometer-based physical activity initiative, the National Steps Challenge™ was launched.

Leveraging behavioral insights and technology to encourage participants to take more steps daily, the first season of the National Steps Challenge™ proved successful in mobilizing 156,000 people to move more. Data showed that about four in five participants who were sedentary became active after joining the Challenge. On average, participants clocked about 1,500 more steps a day than adults who participated in a controlled group study conducted by HPB, and one in three participants recorded a high step count of 10,000 or more steps per day.

Numerous studies demonstrate that even modest increases in physical activity can yield significant health benefits. For sedentary adults, achieving the recommended 7,500 to 10,000 steps per day is associated with reductions in blood pressure and cholesterol levels, as well as improved glucose regulation—factors that collectively lower the risk of developing diabetes and other chronic diseases. State-sponsored coverage of wearable devices like Oura Ring can increase access to proven motivational tracking and health insights.

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Conclusion

As national healthcare systems grapple with rising chronic disease rates, workforce shortages, and the mounting costs of reactive care, Oura Ring stands out as a transformative solution for the future of proactive, personalized healthcare. By equipping individuals and providers with continuous, non-invasive biometric insights—from sleep quality and heart rate variability to early signs of illness—Oura helps close the gap between clinical intervention and daily health behaviors. These capabilities not only empower individuals to manage their own health but also enable health systems to detect problems earlier, tailor interventions, and reduce unnecessary costs associated with late-stage treatment and hospitalization. With proven effectiveness in chronic disease management, women's health, preventive care, and workforce well-being, Oura supports the shift toward data-driven, scalable health delivery.

More than just a consumer device, Oura Ring is a strategic partner in population health management. Through validated, research-grade sensors and available API integrations into electronic health records, Oura bridges the home-clinic divide and brings continuous health monitoring into mainstream care. With high levels of consumer adoption, demonstrated improvements in sleep and well-being, and growing clinical applications, Oura is positioned to be a foundational tool in modernizing healthcare infrastructure. For national healthcare systems seeking to improve outcomes, reduce strain on clinicians, and scale preventive care, Oura Ring offers a practical, proven, and future-ready solution.

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