From Lab to Market

How Radicle Science Enables MDbio[™] to Prove the Power of Plant-Based Supplements



Radicle Science empowered MDbio – The Doctors BrandTM to substantiate their sleep supplement's **effectiveness and credibility**. The clinical trial demonstrated MDsleep's statistically significant improvement in sleep quality, and the secondary outcomes of anxiety, stress, and well-being in those reporting sleep disturbances.

Leveraging Radicle Science's Proof-as-a-Service paradigm, MDbio™ improved the speed and effectiveness of their product development process, launched a product with "clinically proven" claims, and **bolstered sales by increasing consumer trust**.

Purpose

MDbio sought to validate the effectiveness of their product, MDsleep[™], and secure scientifically backed claims to **differentiate their brand in the supplement market**.

Additionally, MDbio wanted to improve their product development cycle by rigorously testing multiple candidates head-to-head to ensure the selection and launch of the most effective and **evidence-based formulations**.





"Our commitment to medical-grade botanical formulations is reflected in the results of this study, which shows how precision dosing of multiple ingredients (polypharmacology) makes a significant difference in clinical effectiveness. We are thrilled that the medical community can now proudly recommend a clinically proven sleep aid that is backed by the scientific rigor we expect as practitioners."

Gold Standard Methodology

The **randomized**, **double-blind**, **placebo controlled**, **trial** consisted of 3 arms - 2 were products that MDbio had formulated but not yet launched and 1 was a matching placebo so a comparison could be made to determine the true effects of the formulations beyond the placebo effect. The trial quickly enrolled 620 diverse participants from across the USA with a desire for better sleep.

Radicle Science conducted the clinical trial in collaboration with faculty from UCLA, University of Maryland School of Medicine, and Harvard T.H. Chan School of Public Health and **delivered trial results within 6 months of the trial start to MDBio**[™].

Scientific Findings

MDsleep[™] significantly improved sleep, stress, anxiety, and wellbeing when compared to placebo.

Dr. Babak Larian, MD, FACS; Co-Founder of MDbio[™]

Moreover, a majority of participants experienced **clinically meaningful change in their sleep (57%) and anxiety (60%)**, an improvement that could warrant change in their treatment of these health issues.













1 Fast Relief

Within the first week, participants' sleep disturbance score decreased by 18% demonstrating the quick onset and improvement in sleep quality when taking MDsleep.™

2 Lasting Effect

After the first week, those taking MDSleep[™] still had improved sleep compared to before they start taking MDSleep, and compared to those taking the placebo, demonstrating sustained and meaningful improvement in sleep.





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Business Outcomes

MDbio[™] strategically utilized the trial results to launch MDsleep[™], a winning product that leverages "clinically proven" claims to **bolster sales and consumer trust**. The trial established new marketing channels that highlight scientifically validated product benefits, resulting in **increased revenue streams**. Brand differentiation helped in customer retention, **attracting new customers** seeking evidence-based supplements.





Efficacy Claims Supported by Clinical Proof



Compelling social media ads effectively communicate the scientific underpinnings and use evidence-based efficacy to engage, educate, and persuade audiences.



The product landing page strategically leverages the clinically proven claims and showcases empirical evidence of the product's effects beyond placebo in order to foster consumer trust and credibility.

3 **Peer-Reviewed Journal Article Validates Authority**



Maximizes Earned Media

Editorial processes at most major media outlets only allow for the discussion of scientific results if they've been published in a peer-reviewed journal, creating a multitude of earned media opportunities for MDbio as they are **one of the** few supplement brands to ever have positive clinical trial results published in a peer-reviewed journal.

Media Outlet Exposure for MDbio Included:

Mahrports 2058; 33, 3768. https:/ contraining a low concentration of THC improved sheep disturbance, arount, stress, and well-being in 44.mp/10.0007au/073766 healthy individuals that reported better sleep as a primary health concern Academa Talker Unt C. Harley

Keywords: deep; botanical synergy; cannabinoids; health mixtud quality of kite; PBOM25

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1. Introduction

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Inadequate sloep became a global public health concern, leading to greater awarenew of the negative impact from a lack of sloep. Inadequate sloep is related to increased obesity and inflammation, impairs immune and antioxidant delenses, and negatively impacts asses stort, tost, notastast mode [1,7]. Inadequate sleep is associated with heightened emotional reactivity, reduced The attack is an upon sense while thereined understood machine of the sense of the minimum (C. 11) lower blocs/ minimum mg/lower/m/ 40) may drive increases in systemic inflammation associated with metabolic syndrome and many other lifestyle-related conditions [9].

of the study, while the p-axis represents the outcome scale. The losss represent the trajectories of slorg disturbance for such treatment arm over time. The plot highlights the nature of treatment effects on storp quality, as captured by the lawar mixed effects model, allowing for the incorporation of random effects and accounting for within-advject correlations.

J.L. Assivy

The analysis revealed several significant associations with anxiety. First, there was a significant negative interaction between study work and Sinop A (Arm I) ($\beta = -0.28$, p = 0.042), inducting that as the study progressed, participants using Sirop A were more p=0.041, industing that as the study progressed, participants using Steep A were more table table to the second study to respective a social study to respective or a decorate in analysic compared to participants using placebo (Figure 3, Table 1). Additionally, education showed a significant positive association with anoiety ($\beta=0.744, p=0.000$, suggesting that individuals with a higher level of education experiment bigher levels of association with a with astronomic with ass

Bloomberg Nutrition Insight • BioSpace

A peer-reviewed research article published in a prestigious journal communicates product efficacy within the scientific and medical communities as a superior product.

Further Details \square

Click to visit the MDsleep[™] landing page, view the peer-reviewed publication, and explore the press release.

