ISSN 2475-529X

Research Article

Journal of Nursing & Healthcare

Line Zero: Redefining the Start of Healthcare

Roch L. Maurice*

Centre de Recherche Charles-Le Moyne, Centre Intégré de Santé et des Services Sociaux de la Montérégie-Centre (Québec), Canada

***Corresponding Author**
Roch L. Maurice, Centre de Recherche Charles-Le Moyne, Centre Integre de Santéeet des Services Sociaux de la Monteregie-Centre (Québec), Canada.

Submitted: 2026, May 05; **Accepted:** 2026, May 30; **Published:** 2026, Jun 11

Citation: Maurice, R. L. (2026). Line Zero: Redefining the Start of Healthcare. *J Nur Healthcare, 11*(3), 01-07.

Abstract

Background

Healthcare systems are organized around traditional levels of care (primary, secondary, tertiary), activated only when a patient enters the formal system. Translational medicine typically moves from bench to bedside. Here we propose a reverse translational step: patient-led self-management as a pre-clinical level of care – LINE ZERO.

Objective

To introduce and test LINE ZERO – self-management, prevention, and self-care – as an extension of the traditional care model.

Methods

An 11-month longitudinal self-experiment (n=1) in a 55-65 year old man with adjustment disorder. Interventions included breathing exercises, light therapy, music therapy, gentle stretching, moderate dietary changes, and self-monitoring of blood pressure, deep sleep, and blood glucose.

Results

Deep sleep increased 3-fold (p < 0.001). Blood pressure stabilized. Glycemic variability decreased after an acute stress-related peak. A subsequent work-stress episode caused a 30% drop in deep sleep, followed by rapid recovery within 48 hours.

Conclusion

LINE ZERO extends the traditional care model by adding a pre-clinical self-management space. It aligns with Future Medicine (predictive, preventive, personalized, participatory) and represents a reverse translational contribution – from patient observation to a conceptual framework applicable to health systems.

Keywords: Line Zero, Self-Care, Prevention, Future Medicine, Connected Health, Blood Pressure, Sleep, Blood Glucose, Self-Management

1. Introduction

1.1. Background

Healthcare systems are traditionally organized around a hierarchical model consisting of four levels of care (primary, secondary, tertiary, and quaternary), all of which are activated once an individual enters the formal healthcare system. While this framework is essential, it overlooks a critical space: the actions undertaken by individuals themselves, before any professional contact.

In parallel, an emerging vision of future medicine emphasizes the ability to predict and prevent rather than merely diagnose and cure, as illustrated by recent work in vascular mechanical mapping [1]. It is within this perspective that we introduce the concept of LINE ZERO, defined as the set of self-care practices, lifestyle habits, and self-management interventions that precede and potentiate primary care.

1.2. Hypotheses

1. There exists a preclinical space, not yet formalized in the

literature, where simple and accessible interventions – such as controlled breathing, light therapy, music therapy, dietary modifications, and self-monitoring – can significantly influence objective physiological parameters.

2. These interventions, which fall under the concept of LINE ZERO, align with the paradigm of future medicine by enabling early detection of dysregulation and preventive action before the onset of symptoms that would warrant contact with the healthcare system.
3. The cumulative effect of these micro-interventions is measurable and correlates with improvements in cardiovascular, metabolic, and neurological health markers.

1.3. Objectives

This article tests these hypotheses through an 11-month longitudinal self-experiment, documenting the impact of simple interventions – including breathing exercises, light therapy, music therapy, gentle stretching, moderate dietary modifications, and self- monitoring – on key physiological parameters: blood pressure, deep sleep, and blood glucose – in a man aged 55-65 years experiencing an adjustment disorder with anxious and depressed mood.

2. Definitions and Concepts

2.1. Levels of Care – An Established Conceptual Framework

Healthcare organization is traditionally based on a hierarchical model. Primary care (first line) serves as the entry point to the system, offering direct access and comprehensive services (American Academy of Pediatrics, 1979a, 1979b; Sarmiento & Reid, 2023) [2-4]. Secondary care encompasses specialized services accessible by referral, while tertiary care involves highly specialized care provided in university hospital centers (Martins et al., 2021; International Committee of the Red Cross, 1996) [5,6]. Finally, quaternary care refers to experimental or cutting-edge medical interventions (Vogel et al., 2017) [7]. Although this framework is fundamental, it is only activated once an individual enters the formal healthcare system.

2.2. Future Medicine – The Concept

In parallel, an emerging vision of future medicine is taking shape – one that is not centered on technology for its own sake, but rather on the ability to predict and prevent, as opposed to merely diagnosing and treating. Recent work in vascular mechanical mapping (Maurice & Dahdah, 2024) exemplifies this approach: establishing reference charts for arterial stiffness by age, enabling early detection of abnormalities long before symptoms appear.

2.3. Line Zero – The Concept

Between these two realities – the formal healthcare system and predictive medicine – lies a space that remains, as yet, unnamed: the realm of actions taken by individuals themselves, before any professional contact. We propose to designate this space by the concept of LINE ZERO.

3. Methodology

Design: Retrospective longitudinal observational study based on personal data.

Period: April 2025 to March 2026 (11 months).

Participant: Male, aged 55 to 65 years, diagnosed in December 2025 with an adjustment disorder with anxious and depressed mood.

3.1. Line Zero Interventions

Beginning January 13, 2026, several interventions were initiated:

- Morning ritual (15–20 minutes), combining:
  - o Light Light therapy (10 minutes)
  - o Music therapy (listening to relaxing music)
  - o Gentle stretching (5–10 minutes)

Breathing exercises (5/5 and 4/2/6 techniques) practiced 2 to 3 times daily:

- Systematically upon waking (integrated into the morning ritual)
- Systematically before bedtime
- An additional session, as needed, depending on the day's circumstances
- Music therapy was further complemented by ambient music throughout the day
- Moderate dietary modifications (smoothies, moderately increased vegetable intake)
- Regular self-monitoring of physiological parameters.

The physiological parameters monitored fall into three main functional categories:

- Cardiovascular: blood pressure (systolic, diastolic, pulse pressure (PP)) and heart rate (HR)
- Metabolic: blood glucose (mean, variability)
- Neurovegetative: deep sleep

This distinction is essential for interpreting results according to domain-specific reference frameworks (WHO glycemic thresholds, polysomnographic norms, blood pressure standards) and for understanding the observed dissociation of responses.

3.2. Scientific Foundations of Line Zero Interventions

The selected interventions are supported by recent scientific evidence:

- Breathing exercises (5/5 and 4/2/6 techniques) are documented for their effects on autonomic nervous system regulation, stress reduction, and sleep improvement (Siebieszuk et al., 2025; Vierra, Boonla, and Prasertsri, 2022; Mütze et al., 2025) [8,9].
- Morning light therapy (10 minutes) is recognized for its effects on circadian rhythm regulation and mood enhancement.
- Music therapy (listening to relaxing music) is associated with stress reduction and improved sleep quality, particularly deep sleep (Saskovets et al., 2025; Li et al., 2025; Shum et al., 2014) [10-12].
- Moderate dietary modifications (smoothies, increased vegetable intake) are supported by recent studies showing that smoothies made from whole fruits do not cause adverse glycemic spikes and may improve glycemic response.

3.3. Measurements

The following parameters were measured:

- Blood pressure (systolic, diastolic, pulse pressure (PP)) using an automatic blood pressure monitor (BSX525)
- Deep sleep (estimated duration) using a connected watch (Garmin)
- Capillary blood glucose (measured with Contour Next One)

3.4. Data Processing for Visualization

To enhance the readability of temporal trends, the data were smoothed using moving averages for graphical representations (Figures 2 and 3). A two-point moving average was applied to deep sleep data, and a three-point moving average to blood glucose data. However, all statistical analyses (Welch's t-tests) were performed on the raw individual data, without any prior smoothing or aggregation.

3. 5. Statistical Analysis

Data analysis was primarily based on descriptive statistics (means, standard deviations, temporal trends) and pre/post-intervention comparisons (threshold: before/after January 12, 2026).

To compare physiological parameters between the pre- (n=40) and post-intervention (n=14) periods, Welch's t-tests (two-tailed independent samples t-test assuming unequal variances – Welch, 1947) were used. This approach, which corresponds to the type=3 option in Excel's T.TEST function, is recommended when variances differ between groups and sample sizes are unequal (Derrick, White & Toher, 2016; Ruxton, 2006) [13-15].

4. Results

Physiological parameters were measured daily upon waking, before any movement, physical activity, or breakfast during the pre-intervention period, and after breathing exercises during the post-intervention period. This difference in context should be taken into account when interpreting the results.

4.1. Cardiovascular Parameters

As presented in Table-1, Welch's t-tests (two-tailed, unequal variances) were used to compare cardiovascular parameters between the pre- (n=40) and post-intervention (n=14) periods. A significant difference was observed for diastolic blood pressure (86 ± 3.3 vs. 83 ± 3.1 mmHg; $p = 0.024$), suggesting a modest effect of the interventions on this parameter. No significant differences were noted for systolic blood pressure ($p = 0.32$), pulse pressure ($p = 0.27$), or heart rate ($p = 0.26$). These results confirm overall blood pressure stability, with a slightly lower diastolic pressure in the post-intervention phase.

Cardiovascular Parameters				
Parameter	**Pre- (n=40)**	**Post- (n=14)**	**p-value**	**Significance**
Systole	123 ± 3,83	121 ± 4,04	0,3167	NS
Diastole	86 ± 3,29	83 ± 3,10	0,0238	0,0238
PP	37 ± 3,53	38 ± 2,91	0,2652	NS
HR	72 ± 4,48	71 ± 2,22	0,2585	NS

Table 1: Summary of Measured Cardiovascular Parameters. Only Diastolic Blood Pressure Showed a Statistically Significant Difference between the Pre- and Post-Intervention Periods (86 ± 3.29 vs. 83 ± 3.10 mmHg; p = 0.0238).

Although not significant at the mean level, heart rate (HR) showed a marked reduction in variability during the post-intervention phase (standard deviation: 4.48 → 2.22), possibly reflecting improved autonomic nervous system regulation.

As illustrated in Figure-1, linear regression analysis (54 measurements) confirms the absence of significant trends for all cardiovascular parameters over the 11-month study period (systole: $R^2 = 0.005$; diastole: $R^2 = 0.035$; pulse pressure [PP]: $R^2 = 0.072$; heart rate [HR]: $R^2 = 0.034$). All coefficients of determination (R^2) were below 0.08, indicating that less than 8% of the variance is explained by time. Cardiovascular parameters thus remained stable throughout the follow-up, despite the context of an adjustment disorder with anxious and depressed mood.

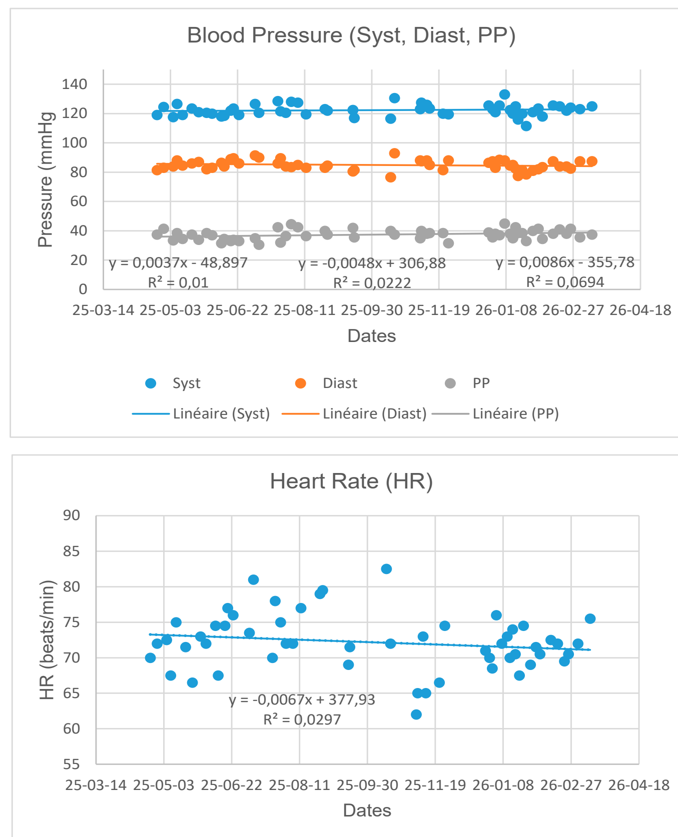

Figure 1: Evolution of Cardiovascular Parameters. Linear Regression Analysis Shows that they Remained Stable Throughout the 11-Month Follow-up, Despite the Context of an Adjustment Disorder with Anxious and Depressed Mood

4.2. Neurovegetative Measures

Deep sleep was measured daily using a connected watch (Garmin). To limit the impact of extreme values, analysis focused on median values pre- (n=17) and post-intervention (n=51): 1h05 ± 1h36 (median 0h42) vs. 2h11 ± 1h25 (median 2h08).

Results show a dramatic improvement following intervention initiation (mid-January 2026). Median deep sleep duration increased from 42 minutes pre-intervention to 2h08 post-intervention – a 3.05-fold increase.

This represents a complete normalization: in adults, deep sleep typically accounts for 15– 25% of total sleep time, i.e., approximately 1–2 hours per 7–8 hour night (Healthline, 2023; Sleep Doctor, 2025) [16,17]. Post-intervention values (median 2h08) thus fall within the optimal physiological range.

Linear regression analysis (Figure-2) confirms the robustness of this finding: $y = 0.012x – 550.81$, with a coefficient of determination $R^2 = 0.4721$, indicating that nearly 50% of the variance in deep sleep is explained by time (and thus by intervention initiation). This R^2, high for a self-experiment, strengthens the credibility of the association.

Deep sleep was measured daily using a connected watch (Garmin) throughout the study period. To limit the impact of a few extreme values, our analysis is primarily based on median values pre- (n = 17) and post-intervention (n = 51). The data are as follows: 1h05 ± 1h36 (median 0h42) during the pre-intervention period, compared with 2h11 ± 1h25 (median 2h08) during the post-intervention period.

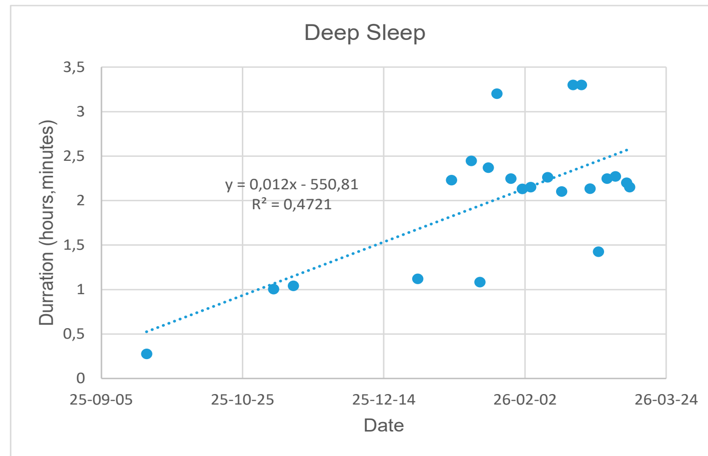

Figure 2: Evolution of Deep Sleep (hours,minutes) from September 2025 to March 2026. The Scatter Plot Represents a Two-point Moving Average Applied to Enhance Visual Readability. Statistical Analyses were Performed on Raw Data. Note the Regime Shift Following Intervention Onset

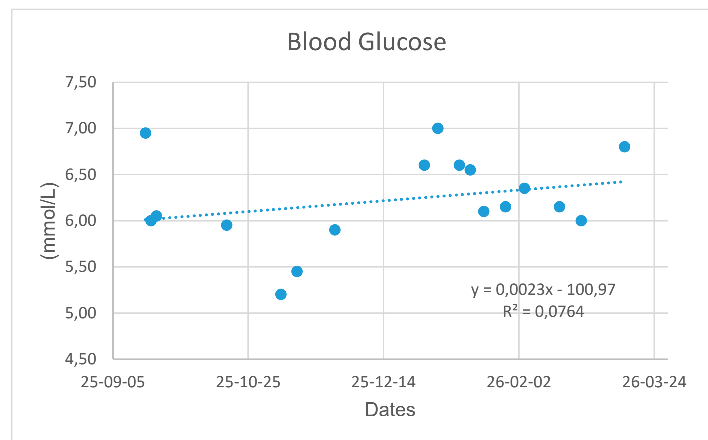

Figure 3: Evolution of Blood Glucose (mmol/L) from September 2025 to March 2026. The Smoothed Curve Represents a Three-point Moving Average; Statistical Analyses were Performed on Raw Individual Data. Note the Marked Transient Elevation During the Late 2025 Holiday Period, with Values Reaching 7.00 mmol/L.

4.4. Summary of Measurements (Cardiovascular–Neurovegetative– Metabolic)

The three physiological systems monitored responded differently to both the adjustment disorder context and the Line Zero interventions. Blood pressure remained stable throughout the period, suggesting preserved cardiovascular homeostasis despite stress. Deep sleep, in contrast, collapsed during the pre-intervention phase (median: 42 minutes) and normalized dramatically following intervention initiation (median: 2h08; $R^2 = 0.4721$).

Blood glucose exhibited a transient peak during the acute phase (7.00 mmol/L in December), coinciding with diagnosis and the holiday season, before stabilizing post- intervention (6.30 mmol/L; $R^2 = 0.0764$, reflecting the absence of a linear trend). This dissociation illustrates the specificity of physiological responses to stress and the potentially targeted impact of interventions on more labile parameters.

4.5. Acute Stress Episode

Between February 26 and March 1, 2026, the subject experienced intense work-related stress. Deep sleep data show a sharp and significant decline: average duration dropped from 2h25 (pre-stress period, under Line Zero) to 1h42 during the 4 days of stress – a 30% decrease. Immediately following the stress episode, deep sleep quickly returned to its usual post- intervention levels (2h46 on average over the following 4 days), illustrating both the sensitivity of sleep to stress and the recovery capacity enabled by the interventions.

For indicative purposes, blood glucose measured three days after the stress episode (6.8 mmol/L) was higher than pre-stress values (5.6–5.8 mmol/L). Although not continuously documented, this difference is consistent with a metabolic effect of stress, but does not allow for any formal conclusion.

5. Discussion

5.1. Summary of Main Findings

This longitudinal self-experiment highlights differential responses of physiological parameters to Line Zero interventions.

The most robust finding concerns deep sleep, which more than doubled between the pre- and post-intervention periods (0h42 vs. 2h08; $p < 0.001$). This dramatic improvement, confirmed by linear regression explaining nearly 50% of the variance ($R^2 = 0.4721$), suggests a particular sensitivity of this parameter to interventions targeting the autonomic nervous system (breathing exercises, light therapy, music therapy).

Blood glucose presents a more nuanced profile. Although overall stable across the study period (6.17 vs. 6.30 mmol/L; $p = 0.58$), it exhibited a significant transient peak in December 2025 (values reaching 7.00 mmol/L), coinciding with the acute phase of the depressive disorder and the holiday season. Following intervention initiation, glucose stabilized around 6.30 mmol/L, suggesting a regulatory effect on the glycemic response to stress. This dynamic, masked by the global mean, underscores the importance of fine-grained temporal analysis. Blood pressure remained broadly stable, with a modest but significant decrease in diastolic pressure (86 vs. 83 mmHg; $p = 0.024$), consistent with a vascular relaxation effect. Other parameters (systolic, pulse pressure, heart rate) showed no significant variation, and linear regressions confirmed the absence of temporal trends ($R^2 < 0.08$ for all).

5.2. The Stress Episode as a Natural Test

The work-related stress episode that occurred between February 26 and March 1, 2026, serves as a natural validation of the Line Zero dynamic. During these four days of intense preparation, deep sleep dropped by 30% (from 2h25 to 1h42), confirming its vulnerability to acute stressors. Immediately following the episode, deep sleep recovered within less than 48 hours (averaging 2h46), illustrating the resilience enabled by sustained self- management practices.
This observation, although based on a single subject, strengthens the hypothesis of a protective and stabilizing role of Line Zero in the face of everyday challenges.

5.3. Dissociation of Physiological Responses

The observed dissociation between parameters is particularly instructive. Deep sleep proved to be extremely sensitive – both to the acute phase of the disorder (collapse) and to the interventions (dramatic restoration). Blood glucose showed intermediate sensitivity, with a transient peak during the acute phase followed by stabilization. Blood

pressure, finally, remained remarkably stable, suggesting preserved cardiovascular homeostasis despite stress.

This hierarchy of vulnerability and reversibility may have implications for the personalized targeting of Line Zero interventions.

5.4. Limitations

This study has several limitations inherent to a single-subject self-experiment ($n = 1$) : lack of a control group, measurements obtained with consumer-grade non-clinical devices (connected watch, automatic blood pressure monitor), potential placebo effect, and single- subject sample size. The distinct effects of the various interventions (breathing exercises, light therapy, music therapy, dietary modifications) cannot be disentangled, and their respective contributions cannot be isolated. Finally, the generalizability of these findings remains to be established through controlled studies.

6. Conclusion

This 11-month longitudinal self-experiment provides strong preliminary evidence for the effectiveness of simple self-management interventions – grouped under the concept of LINE ZERO – on key physiological parameters. The improvement in deep sleep (3.05-fold increase; $p < 0.001$) stands as the most striking finding, demonstrating the sensitivity of this parameter to interventions targeting the autonomic nervous system. The stabilization of blood glucose following a peak during the acute phase of the disorder, although not significant at the mean level, suggests a regulatory effect in response to emotional stress. Finally, the resilience observed during an acute work-related stress episode (30% drop in deep sleep, recovery within 48 hours) illustrates the potentially protective role of sustained self-management practices.

Line Zero is not a substitute for professional care, but rather a prerequisite and indispensable complement to a sustainable healthcare system. Its explicit integration into public health policies could represent a major lever for prevention and patient empowerment, aligned with the emerging paradigm of future medicine – predictive, preventive, personalized, and participatory. These findings, although based on a single subject, warrant controlled studies and open a broader reflection on the place of self-management within the healthcare continuum.

Line Zero now deserves conceptual and practical recognition commensurate with its potential.

In summary, the Line Zero concept proposes an extension of the traditional levels-of-care model by incorporating the dimensions of self-management and active primary prevention. This longitudinal self-experiment provides a concrete illustration, in which simple and accessible interventions produced objective improvements in cardiovascular, metabolic, and neurological health. Its explicit integration into public health policies could represent a major lever for prevention and for reducing pressure on healthcare services.

Funding: This research received no external funding.

Informed Consent Statement: Not applicable.

Data Availability Statement: The authors declare data availability.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Maurice, R. L., & Dahdah, N. (2024). Mechanical Mapping of the Common Carotid Artery in Healthy Individuals Aged 2 to 40 Years. *Journal of Clinical Medicine, 13*(20), 6220.
2. Sarmiento, C., & Reid, G. J. (2023). Levels of care: A scoping review of conceptualizations in child and adolescent mental health services. *Journal of Emotional and Behavioral Disorders, 31*(1), 54-65.
3. American Academy of Pediatrics. (1979a). American Academy of Pediatrics statement on primary care in pediatrics (as modified) October 1975. Pediatrics, 63(4), 661-662.
4. American Academy of Pediatrics, Division of Health Services Research and Development. (1979b). Pediatrics as a primary, secondary, and tertiary care specialty, cost and reimbursement implications. Pediatrics, 63(4), 659-662.
5. Martins, J. M., Pathmarajah, P., & Zainal Abidin, N. H. (2021). Secondary and Tertiary Care.
6. International Committee of the Red Cross. (1996). Levels of Health Care. In ICRC Public Health Guide in Emergencies. ICRC, Geneva. 14
7. Vogel, M. E., Kanzler, K. E., Aikens, J. E., & Goodie, J. L. (2017). Integration of behavioral health and primary care: Current knowledge and future directions. *Journal of behavioral medicine, 40*(1), 69-84.
8. Vierra, J., Boonla, O., & Prasertsri, P. (2022). Effects of sleep deprivation and 4-7-8 breathing control on heart rate variability, blood pressure, blood glucose, and endothelial function in healthy young adults. *Physiological reports, 10*(13), e15389.
9. Mütze, C., et al. (2025). Effectiveness of pranayama for mental disorders: A systematic review and meta-analysis of randomized controlled trials. Frontiers in Psychiatry, 16, 1616996.
10. Saskovets, M., Saponkova, I., & Liang, Z. (2025). Effects of sound interventions on the mental stress response in adults: scoping review. *JMIR Mental Health*, 12(1), e69120.
11. Li, C., Kumar, A. P., Wankhar, D., Kuppusamy, M., & Govindasamy, K. (2025). Effect of music therapy on sleep quality in elderly: A systematic review and meta-analysis. *Plos one, 20*(11), e0334356.
12. Shum, A., Taylor, B. J., Thayala, J., & Chan, M. F. (2014). The effects of sedative music on sleep quality of older community-dwelling adults in Singapore. *Complementary therapies in medicine, 22*(1), 49-56.
13. Welch, B. L. (1947). The generalization of 'STUDENT'S'problem when several different population varlances are involved. *Biometrika, 34*(1-2), 28-35.
14. Derrick, B., Toher, D., & White, P. (2016). Why Welch's test is Type I error robust. *The Quantitative Methods in Psychology, 12*(1).
15. Ruxton, G. D. (2006). The unequal variance t-test is an underused alternative to Student's t-test and the Mann–Whitney U test. *Behavioral ecology, 17*(4), 688-690.
16. Healthline. (2023). How Much Deep, Light, and REM Sleep Do You Need? Healthline Media. Consulté le 19 mars 2026. https://www.healthline.com/health/how-much-deep-sleep-do-you-need.
17. Sleep Doctor. (2025). How Much Deep Sleep Do You Need? Sleep Doctor. Consulté le 19 mars 2026.
18. OMS. (2006). Définition et diagnostic du diabète sucré et du diabète intermédiaire : Rapport d'une consultation OMS/IDF. Genève : Organisation mondiale de la santé.
19. Redfern, K. M., Walter, T. H., Rees, G. A., & Clark, N. J. (2025). Not just a health kick: time to re-evaluate the role of smoothies in glycaemic response and healthy eating. *European Journal of Clinical Nutrition, 79*(9), 805-808.
20. Siebieszuk, A., Płoński, A. F., & Baranowski, M. (2025). Breathwork for Chronic Stress and Mental Health: Does Choosing a Specific Technique Matter?. *Medical Sciences, 13*(3), 127.
21. Wan, Y., Ding, J., Fan, M., & Huang, H. (2025). Effectiveness of visible light for seasonal affective disorder: a systematic review and network meta-analysis. *Medicine, 10*4(27), e43107.
22. Alkutbe, R., Redfern, K., Jarvis, M., & Rees, G. (2020). Nutrient extraction lowers postprandial glucose response of fruit in adults with obesity as well as healthy weight adults. *Nutrients, 12*(3), 766.
23. Crummett, L. T., & Grosso, R. J. (2022). Postprandial glycemic response to whole fruit versus blended fruit in healthy, young adults. *Nutrients, 14*(21), 4565.
24. Geoffroy, P. A., Palagini, L., Henriksen, T. E., Bourgin, P., Garbazza, C., Gronfier, C., ... & Sit, D. K. (2025). Light therapy for bipolar disorders: Clinical recommendations from the international society for bipolar disorders (ISBD) Chronobiology and Chronotherapy Task Force. *Dialogues in clinical neuroscience,* 27(1), 249-264.

Copyright: *©2026 Roch L. Maurice. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.*