Asia-Pacific Chiropractic Journal

ASRF
CASE REPORT PROJECT

Improved Mental Health and Quality of Life in a 51-Year-Old Male under Chiropractic Care: A Case Report

Ryan Seaman, Ruth Postlethwaite, and Clare McIvor

Abstract: A 51-year-old male presented with a primary complaint of low back pain. Further investigation revealed poor mental health and reduced quality of life following a diagnosis of and treatment for prostate cancer.

Following a course of Chiropractic care, his range of motion and low back pain improved and there was a marked improvement in his Quality of Life and Mental Health. Quality of Life improvement was measured by the RAND-36 instrument and improved Mental Health was consistently self-reported by the patient with no prompting.

This case report illustrates the need for more research into Mental Health outcomes improving concomitant with Chiropractic care.

Indexing Terms: Chiropractic; Mental Health; Quality of Life; Prostate cancer; subluxation ASRF.

Introduction

It is well established in literature that chronic pain including low back pain often appears comorbidly with poor mental health outcomes and that this may have far reaching implications for *Quality of Life*. Research indicates that *Major Depressive Disorder* (MDD) is the most common mental illness co-occurring with chronic pain, and the prevalence of MDD is thought to be as high as 40% in patients with chronic pain requiring treatment. (1, 2) Recent and emerging research also indicates that there are complex and changing interactions between physical, psychological, and social processes involved with pain. Thus, challenges for patient and health practitioner alike include differentiating between the physical and other aspects of pain.

... Quality of Life and Mental Health are closely related and Chiropractors should never underestimate the power of subluxation correction to enhance both even in a patient diagnosed with terminal prostatic cancer'

This becomes increasingly challenging given we now know that pain habituation, pain sensitisation, and other processes interact with a person's experience with and

expression of pain. '*Repeated exposure to noxious stimuli changes their painfulness, due to multiple adaptive processes in the peripheral and central nervous system. Somewhat paradoxically, repeated stimulation can produce an increase (sensitisation) or a decrease (habituation) in pain*,' according to Jepma, Jones, and Wager. (3) Medical literature has recently begun to reflect this complexity with primary care physicians advised to combine physical and psychological treatments when dealing with chronic pain presentations. (4)

Chiropractic research into chronic pain has indicated that Chiropractic care may impact central processing of pain, with a randomised controlled trial indicating lower pain habituation in an intervention group as compared with the control group. There was no habituation at all in the Chiropractic group, indicating that no neuroplastic changes had occurred in the brain. This was significantly different to the first group. (5) While further research is required to understand the strength of this effect over time, it may mean that Chiropractic care may play a role in preventing maladaptive brain changes occurring as a result of repeated painful stimuli.

Another notable study indicated that Chiropractic may decrease neurologic pain signatures, thus decreasing the intensity of pain. (6) Further research is required to establish effect sizes and time-benefit factors, however preliminary evidence for decreased pain signatures post HVLA manipulation was significant.

The picture of pain, mental illness and general adaptability becomes increasingly complex when cancer is introduced to the clinical scenario. Research has indicated that while aggressive treatments have increased the survival rate in many cancer variants, there are significant challenges that can arise during and after treatment. One such complication is chronic musculoskeletal pain.(7) Another complication is reduced nervous system adaptability, as evidenced by reduced heart rate variability (HRV) in breast cancer survivors. While HRV is a valuable tool in assessing nervous system adaptability, it has also been seen to be a prognostic factor in cancer survival. (8, 9)

While no significant controlled studies have been undertaken into HRV and cancer under Chiropractic care, case series' data and case report data does indicate sustained HRV improvements in patients undergoing Chiropractic care. (10) Other Chiropractic research has indicated benefits for quality of life, nervous system coherence, and adaptability for individuals under Chiropractic care. (11, 12)

Intrinsically linked to pain and chronic or serious illness is the issue of *Quality of Life*. Referring not only to pain, but to many other aspects of material, physical, social, and recreational wellbeing (among other measures), *Quality of Life* may be of particular concern when a cure is not possible for a primary condition. Certainly, empathetic and supportive health care plays into this important measure of wellbeing, however it is also notable that improved quality of life concomitant with Chiropractic care has not only been reported in a plethora of case reports, but also larger studies. (13)

While traditional medical research continues to progress our understanding of the mechanisms behind pain, adaptability, and quality of life, it is vital that Chiropractors recognises their unique care approach and makes concurrent inroads into such research. This is in service of offering better, more supportive care to our patients and being able to advocate with certainty for the best available care in diverse areas of health and quality of life.

This case report examines a patient presenting with complex health needs, including chronic pain, cancer, and poor self-reported mental health and coping.

Case details

A 51y male presented for Chiropractic care with a primary complaint of low back pain. He was a truck driver by vocation who reported a light physical activity level and was under regular Chiropractic care. Recent escalations in his primary health condition, *terminal prostate cancer*, led him to specifically seek Chiropractic care to improve and maintain his quality of life for as long as possible.

He had been diagnosed with *terminal prostate cancer* four months prior to this presentation for Chiropractic care (August 26th). This had followed an abnormal prostate exam, with accompanying depression some 24 days prior. Three months post diagnosis, it was found that the cancer had metastasised to the lymph nodes. He commenced chemotherapy on December 7th.

This was his second bout with cancer, as he had a long history of *Leukaemia* (CLL) with a date of diagnosis a long time prior to care.

His secondary complaint was that of poor *Mental Health* given the high level of stress in his life. He also remarked that his wife and son were also struggling with mental health conditions.

The patient commenced a course of care concomitant with chemotherapy and with the aim of supporting his wellbeing and coping over the course of his cancer treatment and ongoing. Being that his diagnosis was terminal, this course of care undertook particular meaning in terms of length and Quality of Life, and ensuring the safety and specificity of any adjustment was paramount.

A thorough examination, including regular functional exams was used to establish a baseline and subluxation findings. At commencement of care, he returned 17 abnormal findings on the functional examination. He was found to have two subluxations at the cervical spine, 1 or 2 thoracic subluxations and 1 to 3 lumbopelvic subluxations. These were checked at the beginning of every care appointment and adjusted as needed. The need to adjust become more frequent concurrent with his chemotherapy treatments, which may indicate the impact of chemotherapy on his state of adaptability (which cannot be established within the scope of this case report).

He was adjusted using *Diversified Technique*, including pelvic drop and drop assisted adjustments when his muscle tonicity was too great to provide a comfortable adjustment. *Charrette's adjustment protocol* for extremity adjustments was deployed when necessary. To ensure gentle care, only the significant subluxations were adjusted at each visit.

Additional care recommendations included light cardio only when he was capable of doing so, completing *Spinal Floss* exercises to maintain range of motion, a high water intake (40 mls per kilogram of body mass) and a clean, healthy diet. It was also recommended that he continue with Chiropractic care at a rate of once per fortnight when he was functioning well, and more often if required.

Review appointments were set for every 15 visits, with X-Rays as required to check on bone density. *Insight Station* scans were provided every 30 visits. Copies are appended. The patient's persobn Neural Efficiency Index improved from a score of 59 at commencement, to 76 during care.

Progress and outcomes

At commencement of care

In January 2022 at the commencement of the present course of care and four months post diagnosis, the patient reported that he recovered fast after the first round of chemotherapy, but had not recovered so quickly after the second which occurred over the Christmas Holidays. He was now suffering with lethargy, back pain and generalised joint pain (all of which are common following chemotherapy). On January 24th he reported that the third round of chemotherapy had hit him hard. He now had a sore back, '*no energy*' and was adjusted on the day.

Three months from commencement of care

Returning for a follow up examination and adjustment on the 7th of February of the same year, the patient reported that he '*bounced back so much better after his adjustment than he did when he couldn't be adjusted immediately following round two*'. He then commenced four weekly oncology appointments to follow along with a round of chemotherapy. The patient asked to be adjusted the day following his chemotherapy treatment. Weekly adjustments continued until the 7th of March. He recommenced another round of chemotherapy on April 4th and was adjusted on the day following at his request. Three days after chemotherapy, he reported that he was recovering '*very well.*'

Mentally the patient client appeared to be coping better. There no hard outcome measures here as his mental health was being monitored by his other healthcare providers. At this point he was not on medication or under another therapy.

At the conclusion of the present care plan, he returned only 9 of the original 17 abnormal functional examination findings. This significant improvement was despite his chemotherapy over the course of care and is thus notable. He also returned an increased range of motion in almost every direction.

He self-reported a significant increase in mental health and coping, although this was entirely self-reported without prompting and thus subjective. That being the case, his notable improvement and affect despite the terminal nature of his diagnosis bears great significance for his quality of life.

Over the course of care he maintained better mental health and his functional exams continued to improve.

Discussion

While the stated goals of care were focused on health-related outcomes, the true benefit of this course of care for a terminal patient was the maintenance of meaningful *Quality of Life* and the ability to be a better father to his young children as his disease progressed. His goal is to form as many great memories for his family for as long as possible. At the time of writing, this goal was being achieved.

While physical resilience may be seen in his ability to bounce back after chemotherapy sessions, his mental resilience is the more meaningful outcome in terms of his lived experience.

This case report is consistent with above-cited research indicating that Chiropractic care may be beneficial both for mental health and for adaptability post-cancer treatments.

Limitations

Case report data are traditionally limited in that such reports are of an individual case and, while it may contribute to larger trend awareness, no generalisations can be made. Another limitation of this report is that the improved coping and mental health findings are solely anecdotal and not measured by more reliable outcome measures such as the DASS (Depression, Anxiety and Stress Scale).

Future research opportunities include larger studies into Chiropractic care and depression, anxiety, and more research into autonomic nervous system measures of adaptability under Chiropractic care.

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About the chiropractor

Ryan Seaman grew up in Saskatchewan Canada, before relocating to Perth, Australia in 2001. He trained first as a civil engineer before enrolling in Chiropractic at Murdoch University in WA in 2004. Ryan is the Principal practitioner at Seaman Chiropractic in South Australia, and is the current serving President of the Australian Spinal Research Foundation, having served on the board as the communications portfolio lead for several years prior to his appointment in 2021.

He and his wife Lynley live in Loxton, SA and are proud parents to three daughters.

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Appendix 1

From CORESCORE analysis August 2020

95-100
EXCELLENT

90-94
VERY GOOD

80-89
GOOD

70-79
TRANSITION

60-69
CHALLENGED

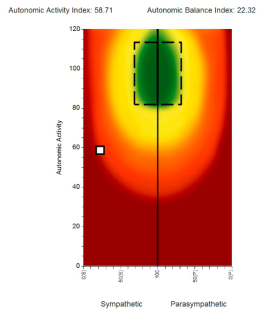
0-59
VERY CHALLENGED

EXAM SCORE SUMMARY

Below are your scores from each of the three exams performed. The following page details the exam protocols and results.

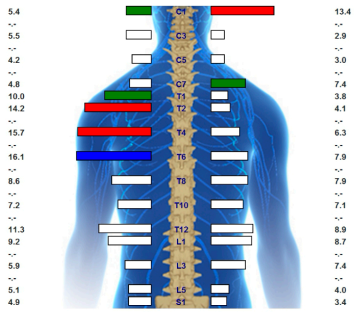
46	**Heart Rate Variability (PWP)**
67	**Muscle Tone and Balance (EMG)**
68	**Organ and Gland Control (Thermal)**

What Your CORESCORE Tells Us



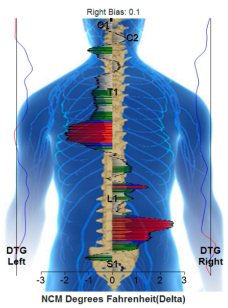
Heart Rate Variability: 46

The **Pulse Wave Profiler** helps the doctor to determine your overall ability to adapt to the environment. It does this by looking at the timing of your pulse, and determining the balance and tension within your nervous system. This exam is known as heart rate variability. Stressful lifestyles habits including poor dietary choices, limited exercise and constant emotional aggravation can cause the body to be caught in the "fight-flight" response. This can lead to exhaustion and a draining of a person's reserves. A score within the green box on the graph is associated with better adaptability and relates to a healthy lifestyle. Low heart rate variability is associated with accelerated aging and poor heart health. Published research has shown that chiropractic adjustments have a beneficial effect on heart rate variability.



Muscle Tone and Balance: 67

The **Surface EMG** exam evaluates the function of the muscles that support and move your spine. These muscles are controlled by the nerves running within it. This test measures how much energy is needed to maintain your posture and how it is distributed throughout the muscles. If too much energy is used when a spine is out of balance, this test score will be lower than normal. Over time, daily stress can continue to overwork these muscles, causing them to lose their support and mobility. This will also lower the score. Muscle fatigue and poor energy distribution are signs of a person's entire health being under stress. By precisely measuring muscle activity, your progress can be followed as your spine releases tension and you regain more control.

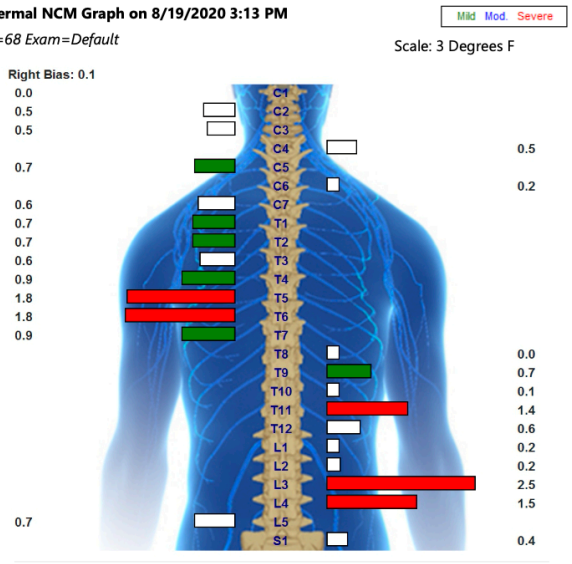


Organ and Gland Control: 68

The **Thermal Scan** is used to assess the part of your nervous system that helps to control your organs, glands, and blood vessels. The autonomic nervous system works alongside the spinal nerves to regulate your immunity while managing your internal organ functions. The instrument does this by precisely measuring differences in temperature along the spine.Temperature is an accurate indicator as to where stress is building up and how deeply it affects bodily functions. Each organ system relies on clear and balanced nerve signals to work efficiently. Nerve interference that is detected by this sensor is valuable in understanding and planning health and wellness strategies.

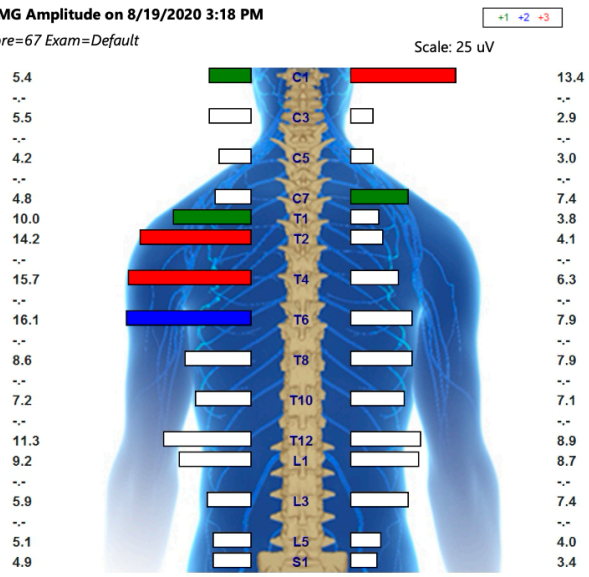
Rolling Thermal NCM Graph on 8/19/2020 3:13 PM

Scan Score=68 Exam=Default



Static EMG Amplitude on 8/19/2020 3:18 PM

Scan Score=67 Exam=Default



Static EMG Scan Pattern Graph on 8/19/2020 3:18 PM

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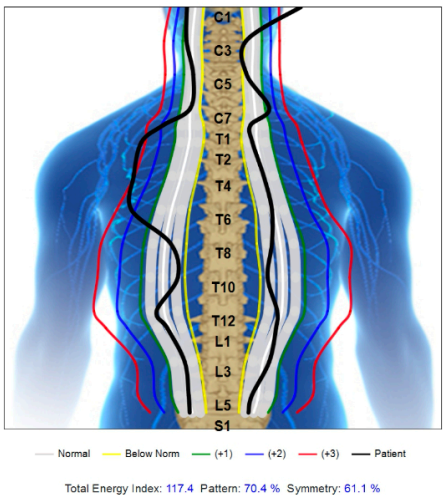
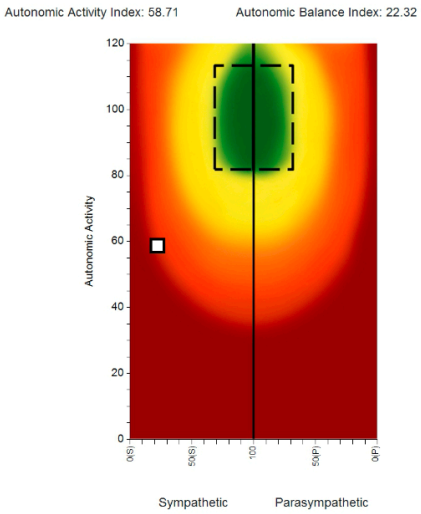


HRV on 9/2/2020 2:27 PM

Scan Score=46 Exam=Default



HRV Scan Statistics on 9/2/2020 2:27 PM

Scan Score=46 Exam=Default

Statistic	Value
Scan Score	45.98
Mean IBI (ms)	1,076.45
Mean Beats Per Minute	55.74
Std Deviation of IBI (ms)	43.54
RMS Std Deviation IBI (ms)	216.93
Total Power Spectrum	945.33
Low Frequency (LF)	243.82
High Frequency (HF)	32.60
Normalized LF (%)	88.21 %
Normalized HF (%)	11.79 %
Low/High Ratio	7.48
Sympathetic Activity	Sympathetic Response BELOW Normal Range
Parasympathetic Activity	Parasympathetic Response BELOW Normal Range

Note the return to WNL in the second scan

Appendix 1

From CORESCORE analysis January 2023

95-100
EXCELLENT

90-94
VERY GOOD

80-89
GOOD

70-79
TRANSITION

60-69
CHALLENGED

0-59
VERY CHALLENGED

EXAM SCORE SUMMARY

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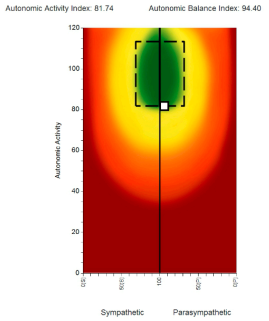
56	**Muscle Tone and Balance (EMG)**
86	**Organ and Gland Control (Thermal)**

What Your CORESCORE Tells Us



Heart Rate Variability: 86

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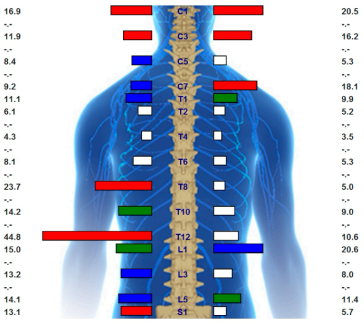
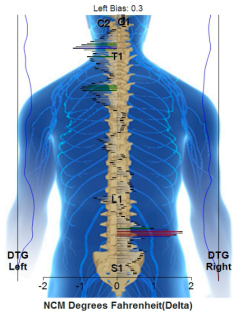


Muscle Tone and Balance: 56

The **Surface EMG** exam evaluates the function of the muscles that support and move your spine. These muscles are controlled by the nerves running within it. This test measures how much energy is needed to maintain your posture and how it is distributed throughout the muscles. If too much energy is used when a spine is out of balance, this test score will be lower than normal. Over time, daily stress can continue to overwork these muscles, causing them to lose their support and mobility. This will also lower the score. Muscle fatigue and poor energy distribution are signs of a person's entire health being under stress. By precisely measuring muscle activity, your progress can be followed as your spine releases tension and you regain more control.

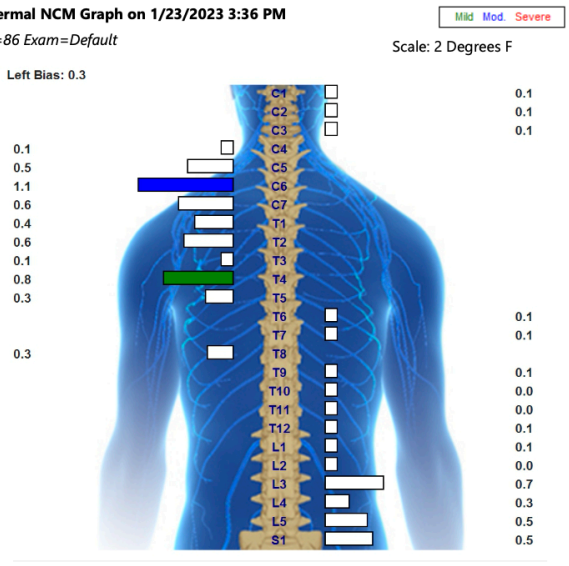


Organ and Gland Control: 86

The **Thermal Scan** is used to assess the part of your nervous system that helps to control your organs, glands, and blood vessels. The autonomic nervous system works alongside the spinal nerves to regulate your immunity while managing your internal organ functions. The instrument does this by precisely measuring differences in temperature along the spine.Temperature is an accurate indicator as to where stress is building up and how deeply it affects bodily functions. Each organ system relies on clear and balanced nerve signals to work efficiently. Nerve interference that is detected by this sensor is valuable in understanding and planning health and wellness strategies.

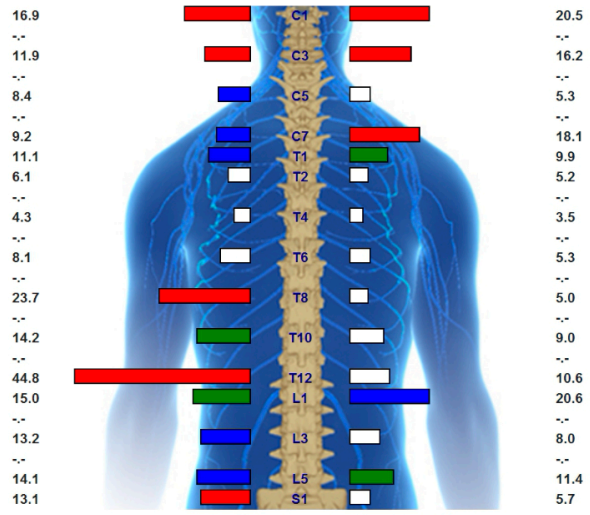
Rolling Thermal NCM Graph on 1/23/2023 3:36 PM

Scan Score=86 Exam=Default



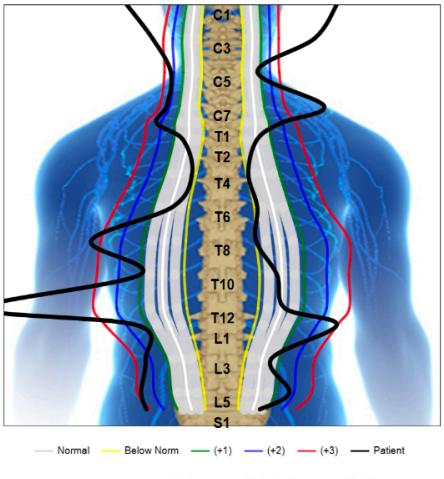
Static EMG Amplitude on 1/23/2023 3:41 PM

Scan Score=56 Exam=Default



Static EMG Scan Pattern Graph on 1/23/2023 3:41 PM

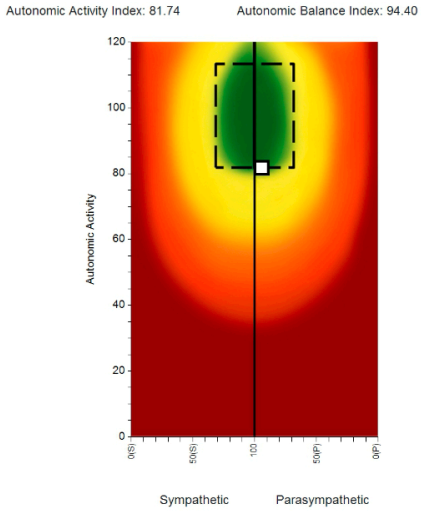
Scan Score=56 Exam=Default



Total Energy Index: 192.7 Pattern: 64.3 % Symmetry: 58.9 %

HRV on 1/23/2023 3:45 PM

Scan Score=86 Exam=Default



HRV Scan Statistics on 1/23/2023 3:45 PM

Scan Score=86 Exam=Default

Statistic	Value
Scan Score	86.17
Mean IBI (ms)	930.66
Mean Beats Per Minute	64.47
Std Deviation of IBI (ms)	97.96
RMS Std Deviation IBI (ms)	1,913.19
Total Power Spectrum	3,555.44
Low Frequency (LF)	913.60
High Frequency (HF)	2,162.85
Normalized LF (%)	29.70 %
Normalized HF (%)	70.30 %
Low/High Ratio	0.42
Sympathetic Activity	Sympathetic Response in Normal Range
Parasympathetic Activity	Parasympathetic Response in Normal Range