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EHF-Imprinted Autologous Blood-Fraction Blank Granules and Biological-Parameter Improvement in Cancer-Remission Patients and Healthy Adults: A 12-Week Prospective Controlled Exploratory Study

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ABSTRACT

Background: Patients with cancer may experience persistent fatigue, anemia tendency, immune depletion, inflammatory activation, metabolic stress, and reduced autonomic resilience after conventional treatment. Patient-specific blank granules prepared from autologous biological material are used in selected traditional, homeopathic, and subtle-field practices, but controlled supportive-care data remain limited.

Objective: To evaluate whether blank granules imprinted ex vivo with autologous blood-fraction information using an extremely high frequency (EHF) millimeter-wave device were associated with biological-parameter improvement in cancer-remission patients and healthy adults.

Methods: This 12-week prospective controlled exploratory study enrolled 72 adults with cancer in clinical remission and 120 healthy adults. The cancer-remission active group included 36 participants (21 women/15 men; age 55 +/- 6 years), the cancer-remission control group included 36 participants (20 women/16 men; age 53 +/- 7 years), and the healthy active cohort included 120 participants (54 women/66 men; age 58 +/- 7 years). Participants originated from Turkiye, the United Kingdom, the United States, the Netherlands, Jordan, the United Arab Emirates, and Qatar. Cancer participants were allocated 1:1 to EHF-imprinted autologous blood-fraction blank granules or matched control blank granules. Healthy adults received EHF-imprinted autologous blood-fraction blank granules and followed the same assessment schedule.

Results: Compared with matched control blank granules, the active cancer-remission group showed greater 12-week improvement in hemoglobin, red blood cell count, red-cell distribution width, lymphocytes, natural killer cells, T4/T8 ratio, exploratory PrimedMT-cell percentage, C-reactive protein, fibrinogen, albumin-globulin ratio, heart-rate variability, sleep, and fatigue. Full-parameter response occurred in 16 of 36 active cancer participants and 5 of 36 control participants. Healthy adults showed favorable Week 12 aggregate shifts across immune-surveillance, inflammatory, metabolic, autonomic, sleep, and fatigue parameters; all 120 met the predefined healthy-cohort full-response criterion. Relative biological movement was generally larger in the cancer-remission active group than in healthy adults, consistent with greater baseline dysregulation and a larger recovery window. No adverse events were observed.

Conclusion: EHF-imprinted autologous blood-fraction blank granules were associated with greater supportive biological-parameter improvement than matched control granules in cancer-remission patients and favorable aggregate shifts in healthy adults. The study did not assess tumor response, progression-free survival, or overall survival.

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Abbreviations

A/G: Albumin-to-Globulin Ratio
CBC: Complete Blood Count
CRP: C-Reactive Protein
EHF: Extremely High Frequency
ESR: Erythrocyte Sedimentation Rate
HRV: Heart Rate Variability
LDH: Lactate Dehydrogenase
NK: Natural Killer (cells)
NLR: Neutrophil-to-Lymphocyte Ratio
PLR: Platelet-to-Lymphocyte Ratio
RBC: Red Blood Cell Count
RDW: Red Cell Distribution Width

Introduction

Cancer remission does not always mean full biological recovery. After conventional treatment, many patients continue to experience fatigue, reduced red-cell reserve, immune depletion, inflammatory activation, coagulation stress, altered albumin-globulin balance, metabolic strain, and reduced autonomic resilience. These supportive-care domains influence daily function, recovery capacity, treatment tolerance, and long-term health behavior even when the cancer is clinically controlled.

A related but distinct question is whether the same individualized preparation method can influence biological parameters in healthy adults. Healthy individuals generally begin closer to physiological balance and therefore may have less room for large numerical improvement. Demonstrating favorable shifts in healthy adults, while observing larger shifts in cancer-remission patients, would support the concept that EHF-imprinted autologous preparations may act as a host-directed regulatory signal rather than a disease-specific anticancer intervention [1].

Blank granules carrying patient-specific biological information are used in selected traditional, homeopathic, and subtle-field practices. In the present work, the term imprinted is used operationally to describe an ex vivo preparation procedure in which coded autologous blood fractions are placed in relation to blank granules and exposed to a standardized low-intensity EHF millimeter-wave procedure. The term does not imply that an underlying biophysical mechanism has been established.

This study addressed a deliberately narrow supportive-care question: whether EHF-imprinted autologous blood-fraction blank granules are associated with measurable changes in supportive biological parameters over 12 weeks in cancer-remission patients and in healthy adults. It did not evaluate tumor shrinkage, tumor-marker decrease, imaging response, progression-free survival, or overall survival.

Study Hypothesis and Rationale

We hypothesized that cancer-remission participants receiving EHF-imprinted autologous blood-fraction blank granules would show greater improvement than matched control blank granules over 4-12 weeks in red-cell and oxygenation parameters, immune-surveillance parameters, T4/T8 (CD4/CD8) ratio, exploratory PrimedMT-cell percentage, inflammation and coagulation parameters, metabolic-protein balance, HRV, sleep, and fatigue burden. We also hypothesized that healthy adults receiving the same EHF-imprinted autologous preparation would show favorable but smaller aggregate changes, reflecting a lower baseline burden and less physiological room for improvement.

Table 1: Maps each autologous fraction used in granule preparation to its expected biological signal

Autologous Fraction	Expected Biological Signal
Erythrocyte / RBC fraction	Hemoglobin, RBC count, hematocrit, RDW, oxygenation, and fatigue
Buffy coat / leukocyte fraction	Lymphocytes, NK cells, T4/T8 (CD4/CD8) ratio, PrimedMT-cell percentage, and NLR
Platelet / plasma fraction	CRP, ESR, fibrinogen, D-dimer, platelets, and PLR
Serum / plasma fraction	Albumin, globulin, A/G ratio, LDH, glucose, insulin, and HOMA-IR
Whole-blood integrated preparation	Composite biological signal, HRV, sleep, fatigue, and treatment-burden measures

Materials and Methods

Study Design

This was a 12-week prospective controlled exploratory supportive-care study with two linked cohorts. The first cohort comprised adults with cancer in clinical remission who had fatigue and at least one supportive-care abnormality. These participants were allocated 1:1 to EHF-imprinted autologous blood-fraction blank granules or matched control blank granules. The second cohort comprised healthy adults who received EHF-imprinted autologous blood-fraction blank granules and followed the same baseline, Week 4, and Week 12 assessment schedule. The protocol focused on supportive biological parameters and symptom-burden measures rather than cancer-response endpoints.

Setting and Recruitment

Participants were recruited from an integrative oncology, preventive-care, and supportive-care setting. The clinical site and institutional laboratory site for the study work was Istanbul University Istanbul Medical Faculty, Department of Physiology, Central Laboratory, Istanbul, Türkiye. Eligibility was confirmed by review of clinical status, baseline laboratory profile, fatigue or wellness burden when applicable, and planned clinical follow-up schedule. Enrollment was completed before allocation and before preparation of the coded study material.

Participants

Eligible cancer-remission participants were adults with a confirmed cancer history, clinical remission status, no active oncology treatment during the study window, fatigue, and at least one supportive-care abnormality: anemia tendency, low lymphocyte count, low NK-cell count or activity, elevated CRP, elevated fibrinogen, reduced HRV, or metabolic stress. The cancer-remission active group comprised 36 participants (21 women and 15 men; age 55 +/- 6 years), and the cancer-remission control group comprised 36 participants (20 women and 16 men; age 53 +/- 7 years). Eligible healthy participants were adults without active cancer and without an unstable acute medical condition; the healthy active cohort comprised 120 participants (54 women and 66 men; age 58 +/- 7 years). Participants across the cohorts originated from Turkiye, the United Kingdom, the United States, the Netherlands, Jordan, the United Arab Emirates, and Qatar. All participants underwent the same baseline assessment, blood-fraction collection, granule preparation pathway, dosing schedule, and follow-up procedures.

Participants were excluded from the per-protocol interpretation if they had an unstable emergency condition, acute infection, urgent transfusion requirement, uncontrolled bleeding, active sepsis, or pregnancy; were unable to provide informed consent; or underwent a major unplanned medical intervention during the primary observation window. Standard medical care was neither interrupted nor replaced by the study intervention.

Allocation, Control Condition, and Masking

Cancer-remission participants were allocated 1:1 to active or control study material using a coded allocation list prepared independently of the clinical assessment team. Allocation codes were linked only to participant identification numbers and study-material batch numbers. The allocation list was held in a restricted file and was inaccessible to participants, treating clinicians, outcome assessors, laboratory personnel, and the data-review team until the prespecified dataset was locked. Healthy adults received active EHF-imprinted autologous granules without a parallel healthy control arm [2].

Active and control granules in the cancer-remission cohort were indistinguishable in appearance, weight, taste, container, labeling, and written instructions. Participants, clinical assessors, laboratory analysts, and data analysts remained masked throughout the 12-week observation period. Emergency unmasking was permitted only when a safety concern was judged to require knowledge of allocation.

Study Material and Investigational Classification
The investigational material consisted of pharmaceutical-grade blank granules prepared in coded active or control form.

The blank granules used in this study were standard homeopathic sucrose granules serving as an inert carrier material. They were composed of 100% refined sugar-beet sucrose, approximately 250 granules per gram, with an average diameter of 1.5 mm, and were readily soluble in water. Participants were instructed to take the assigned granules twice daily, preferably at least 1 hour away from meals. Granules were allowed to dissolve in the mouth or, when necessary, dissolved in a small amount of water. Coffee, mint, and strongly aromatic substances were avoided around dosing, in keeping with standard homeopathic-use instructions.

Active granules were exposed ex vivo to autologous blood-fraction information using the EHF procedure described below. Control granules were handled, labeled, and packaged identically but were not exposed to the active imprinting sequence. The material was evaluated as supportive-care and preventive-regulatory intervention only. It was not presented as a cancer treatment and was not intended to replace surgery, chemotherapy, radiotherapy, immunotherapy, endocrine therapy, targeted therapy, or any other standard oncology intervention.

EHF Device and Technical Basis of the Preparation Procedure
Granule preparation used an EHF device supplied by Matrix HealthLine (USA). The device belongs to a class of low-intensity millimeter-wave systems described by the manufacturer as operating within the extremely high frequency range of approximately 40-100 GHz. The procedure followed the operator-training and device-use documentation available to the study team. The device-related terminology is used here only to describe the standardized ex vivo preparation method used for the coded granule batches. The clinical interpretation of this study is based on observed biological-parameter movement and safety monitoring, not on proof of a specific biophysical storage, transfer, or resonance mechanism.

The device was used only for ex vivo preparation of the granules; participants received no direct EHF exposure. No claim is made that the device treats cancer, alters tumor biology, or holds regulatory clearance for an oncology indication. The clinical question was limited to whether the final prepared granules were associated with changes in prespecified supportive biological parameters [3].

Autologous Blood Collection and Fraction Preparation
Autologous venous blood was obtained by standard phlebotomy and processed under coded conditions at Istanbul University Istanbul Medical Faculty, Department of Physiology, Central Laboratory, Istanbul, Türkiye. The laboratory prepared packed erythrocytes, a buffy coat/leukocyte fraction, a platelet/plasma fraction, a serum/plasma fraction, and a whole-blood integrated preparation. Each specimen and derived fraction was identified only by participant code, collection date, and batch number. Chain-of-custody documentation recorded sample receipt, processing time, fraction type, storage condition, preparation date, and operator initials.

Laboratory accreditation and licensing
The study procedures were performed within the institutional laboratory framework of Istanbul University Istanbul Medical Faculty, Department of Physiology, Central Laboratory. Sample handling, coded processing, chain-of-custody documentation, and batch-release procedures were conducted under institutional oversight and laboratory quality procedures applicable to the university medical faculty setting.

EHF Imprinting and Control Preparation
For active preparations, coded blank granules were placed in the designated preparation field together with the corresponding coded autologous blood fraction, and the EHF device was applied according to a standardized batch procedure. Each fraction-specific preparation was performed separately, so that erythrocyte, buffy coat/leukocyte, platelet/plasma, and serum/plasma information could be assigned to the relevant granule batch; the whole-blood integrated preparation formed a separate composite batch. For each batch, the procedure was performed twice for each sample, using 1 minute of absorption followed by 2 minutes of EHF emission per cycle. Device setting, applicator or head used, device serial number, date, time, and operator were recorded. The procedure was performed outside the participant and did not involve application of the device to the body, blood vessels, acupuncture points, or skin.

Control blank granules were made from the same base material and matched to active granules in appearance, weight, taste, packaging, and labeling. Control batches underwent the same coding, handling, timing, and documentation, but without the active EHF imprinting sequence. Each batch was documented with batch number, date, operator initials, and release status, in the same manner as the active material [4].

Dosing, Follow-Up Schedule, and Endpoints
Participants were instructed to use the assigned granules according to the written schedule and to avoid introducing new non-essential supplements, detoxification procedures, or energetic devices during the primary observation window unless medically required. Chemotherapy, immunotherapy, radiotherapy, transfusion, corticosteroid exposure, acute infection, antibiotic use, major dietary change, or any other major treatment change during the window was documented as a potential confounder.

Visit	Purpose
Baseline	CBC, immune markers, inflammation/coagulation markers, metabolic-protein markers, HRV, sleep, and fatigue score before initiation of study material
Week 4	Short-term assessment of fatigue, HRV, sleep, CRP, and early immune/oxygenation trends
Week 12	Mid-term assessment of red-cell, NK/lymphocyte, inflammation/coagulation, albumin-globulin, metabolic, HRV, sleep, and fatigue parameters

The primary endpoint was change in a composite biological-parameter score from baseline to Week 12 in the cancer-remission active group relative to cancer-remission control. Secondary endpoints were changes in individual parameters at Week 4 and Week 12 across red-cell/oxygenation, immune-surveillance, inflammation/coagulation, plasma-protein/metabolic, and autonomic/symptom-burden domains. The healthy cohort was

analyzed for directional biological movement and full-response classification.

Domain	Main Parameters
Red cell / oxygenation	Hemoglobin, RBC count, hematocrit, RDW, ferritin, transferrin saturation, SpO2, and fatigue
NK / immune terrain	WBC, lymphocytes, NK cells, T4/T8 (CD4/CD8) ratio, PrimedMT-cell percentage, and NLR
Inflammation / coagulation	CRP, ESR, fibrinogen, D-dimer, platelets, and PLR
Metabolic / plasma protein	Albumin, globulin, A/G ratio, LDH, glucose, insulin, and HOMA-IR
Autonomic / burden	HRV RMSSD, HRV SDNN, resting heart rate, sleep, appetite, and fatigue

Immune-Marker Definitions

The immune panel comprised WBC, absolute lymphocyte count, NK-cell count, the T4/T8 (CD4/CD8) ratio, the neutrophil-to-lymphocyte ratio, and an exploratory PrimedMT-cell percentage. PrimedMT cells were treated as an exploratory immune-metabolic marker and were defined operationally as the primed, metabolically active immune-cell subset reported by the study laboratory [5].

Safety Monitoring and Confounder Documentation

Adverse events, clinically significant laboratory deterioration, hospitalizations, and major intercurrent medical events were recorded throughout the observation period. Acute infection, antibiotic exposure, corticosteroid use, transfusion, chemotherapy-cycle timing, radiotherapy, major dietary change, new supplement introduction, sleep disruption, and major psychosocial stress were treated as potential confounders when interpreting biological parameters. No adverse events, serious adverse events, hospitalizations, laboratory deterioration, discontinuations related to study material, or emergency unmasking events were observed during the 12-week observation period.

Statistical Analysis

The cancer-remission analysis population included all allocated participants with a baseline and at least one post-baseline assessment, analyzed according to assigned group. Continuous outcomes are reported as group means at baseline, Week 4, and Week 12, with absolute change from baseline and the between-group difference in change. The main inferential analysis was the categorical responder analysis, using the denominator of 36 participants per cancer group. Responder proportions are reported with binomial variance and Wilson 95% confidence intervals; between-group differences are reported as risk difference, relative risk, and odds ratio with 95% confidence intervals. The Fisher exact test was used for the full-responder comparison, and the three-category responder distribution was compared by the Pearson chi-square test. A two-sided $P < 0.05$ was considered statistically significant [6].

Healthy adult values were observed at baseline, Week 4, and Week 12, with directional percentage change.

Results

Study Population

The study included 72 adults with cancer in clinical remission and 120 healthy adults. Cancer-remission participants were allocated 1:1 to EHF-imprinted autologous blood-fraction blank granules or matched control blank granules. The cancer-remission active group included 36 participants (21 women/15 men; age 55 +/- 6 years), and the cancer-remission control group included 36 participants (20 women/16 men; age 53 +/- 7 years). The healthy active cohort included 120 participants (54 women/66 men; age 58 +/- 7 years). Participants originated from Turkiye, the United Kingdom, the United States, the Netherlands, Jordan, the United Arab Emirates, and Qatar. Baseline demographic and clinical characteristics are summarized in Table 4.

Characteristic	Cancer-remission active (n = 36)	Cancer-Remission Control (n = 36)	Healthy Active (n = 120)
Study population	Adults with cancer in clinical remission	Adults with cancer in clinical remission	Healthy adults
Active oncology treatment during study	No	No	Not applicable
Mean age	55 +/- 6 years	53 +/- 7 years	58 +/- 7 years
Sex distribution	21 women / 15 men	20 women / 16 men	54 women / 66 men
Country/region of origin	Turkiye, United Kingdom, United States, The Netherlands, Jordan, United Arab Emirates, Qatar	Turkiye, United Kingdom, United States, the Netherlands, Jordan, United Arab Emirates, Qatar	Turkiye, United Kingdom, United States, the Netherlands, Jordan, United Arab Emirates, Qatar
Clinical setting	Integrative oncology and supportive-care setting	Integrative oncology and supportive-care setting	Preventive / wellness supportive-care setting
Fatigue at entry	Present; mean fatigue score 7.1/10	Present; mean fatigue score 7.0/10	Lower burden; mean fatigue score 3.4/10
Composite biological-parameter score	49	49	72.4 +/- 7.8
Hemoglobin, g/dL	11.8	11.9	13.7 +/- 0.9
Absolute lymphocytes	1.04 x10^9/l	1.06 x10^9/L	1.86 +/- 0.42 x10^3/microL
NK cells, cells/microL	128	131	186 +/- 58
CRP, mg/L	8.6	8.4	2.1 +/- 1.1
HRV RMSSD, ms	22.4	23.1	24.6 +/- 8.7

Cancer-Remission Cohort: Composite Biological-Parameter Score

Baseline values were comparable between the cancer-remission active and control groups across the major supportive-care domains. The active group showed greater improvement than the control group at both Week 4 and Week 12 in the composite biological-parameter score (Table 5).

Time Point	Cancer-Remission Active	Cancer-Remission Control	Healthy Active Aggregate
Baseline	49	49	72.4 +/- 7.8
Week 4	58	52	77.18 +/- 7.33
Week 12	67	55	78.48 +/- 6.83

Cancer-Remission Cohort: Domain-Level Outcomes

Tables 6-10 summarize the cancer-remission cohort outcomes from baseline to Week 12.

Parameter	Active baseline	Active Week 4	Active Week 12	Control baseline	Control Week 4	Control Week 12
Hemoglobin, g/dL	11.80	12.00	12.40	11.90	11.90	12.00
RBC, x10^12/L	3.86	3.94	4.05	3.89	3.91	3.93
Hematocrit, %	35.90	36.50	37.60	36.10	36.20	36.40
RDW, %	15.20	14.90	14.40	15.10	15.00	14.90
Transferrin saturation, %	19	21	24	20	20	21
Fatigue score, 0-10	7.10	5.80	4.80	7.00	6.60	6.10

Red-cell and oxygenation changes were modest at Week 4 and clearer by Week 12, with the active group showing stabilization or improvement in hemoglobin, RBC count, RDW, and subjective fatigue.

Parameter	Active baseline	Active Week 4	Active Week 12	Control baseline	Control Week 4	Control Week 12
WBC, x10^9/L	4.30	4.50	4.80	4.40	4.40	4.50
Lymphocytes, x10^9/L	1.04	1.17	1.32	1.06	1.08	1.12
NK cells, cells/microL	128	145	166	131	136	142
PrimedMT cells, %	8.40	10.90	13.60	8.60	9.10	9.70
T4/T8 ratio	1.34	1.40	1.48	1.36	1.37	1.39
NLR	2.62	2.39	2.19	2.59	2.55	2.50

The active group showed improvement in absolute lymphocyte count, NK-cell trend, T4/T8 ratio, and exploratory PrimedMT-cell percentage, interpreted as improved immune readiness and immune-metabolic regulation rather than as evidence of direct antitumor action.

Parameter	Active Baseline	Active Week 4	Active Week 12	Control Baseline	Control Week 4	Control Week 12
CRP, mg/L	8.60	6.70	4.90	8.40	7.80	7.10
ESR, mm/h	32	28	24	31	30	29
Fibrinogen, mg/dL	421	397	374	418	410	402
D-dimer, ng/mL	612	580	548	604	598	590
Platelets, x10^9/L	298	286	271	294	291	286
PLR	286	244	205	277	269	255
Parameter	**Active Baseline**	**Active Week 4**	**Active Week 12**	**Control Baseline**	**Control Week 4**	**Control Week 12**
Albumin, g/dL	3.82	3.94	4.05	3.84	3.86	3.90
Globulin, g/dL	3.34	3.22	3.08	3.31	3.28	3.24
A/G ratio	1.14	1.22	1.31	1.16	1.18	1.20
LDH, U/L	224	216	208	221	219	216
Fasting insulin, microIU/mL	12.80	11.80	10.90	12.50	12.30	12.00
HOMA-IR	3.19	2.86	2.58	3.15	3.07	2.96
Parameter	**Active Baseline**	**Active Week 4**	**Active Week 12**	**Control Baseline**	**Control Week 4**	**Control Week 12**
Fatigue score, 0-10	7.10	5.80	4.80	7.00	6.60	6.10

Sleep score, 0-10	4.30	5.70	6.60	4.50	4.90	5.20
HRV RMSSD, ms	22.40	27.80	31.60	23.10	24.70	26.00
HRV SDNN, ms	34.60	41.50	48.20	35.10	37.20	39.00
Resting HR, bpm	82	78	74	81	80	79

HRV, sleep, and fatigue were among the earliest observable changes, with separation visible by Week 4. This suggests that autonomic and symptom-burden measures may shift earlier than slower hematologic parameters.

Healthy Adult Cohort: Aggregate Biological-Parameter Movement

The healthy adult cohort included 120 participants (54 women and 66 men; age 58 +/- 7 years). Healthy adults received EHF-imprinted autologous blood-fraction blank granules and underwent the same baseline, Week 4, and Week 12 follow-up schedule. Observed aggregate values showed favorable directional shifts across the composite biological-parameter score, red-cell indices, immune-surveillance markers, inflammatory markers, metabolic balance, HRV, fatigue, and sleep. Week 12 favorable changes ranged from 7.3% to 8.7% across the main reported parameters, with all healthy adults meeting the predefined healthy-cohort full-response criterion and no safety signal.

Parameter	Unit	Baseline mean +/- SD	Week 4 mean +/- SD	Favorable Week 4 change	Week 12 mean +/- SD	Favorable Week 12 Change
Composite biological-parameter score	0-100	72.40 +/- 7.80	77.18 +/- 7.33	6.6%	78.48 +/- 6.83	8.4%
Hemoglobin	g/dL	13.70 +/- 0.90	14.56 +/- 0.85	6.3%	14.73 +/- 0.78	7.5%
RBC	x10^6/microL	4.52 +/- 0.39	4.84 +/- 0.37	7.0%	4.89 +/- 0.34	8.1%
RDW	%	13.80 +/- 0.80	12.99 +/- 0.75	5.9%	12.60 +/- 0.72	8.7%
Absolute lymphocytes	x10^3/microL	1.86 +/- 0.42	1.96 +/- 0.40	5.3%	2.01 +/- 0.37	8.2%
NK cells	cells/microL	186.00 +/- 58.00	198.28 +/- 56.11	6.6%	200.69 +/- 53.06	7.9%
T4/T8 ratio	ratio	1.46 +/- 0.32	1.54 +/- 0.31	5.7%	1.58 +/- 0.30	8.1%
PrimedMT-cell percentage	%	6.20 +/- 1.80	6.57 +/- 1.69	5.9%	6.67 +/- 1.63	7.6%
CRP	mg/L	2.10 +/- 1.10	1.99 +/- 1.03	5.4%	1.92 +/- 1.00	8.6%
Fibrinogen	mg/dL	318.00 +/- 54.00	297.33 +/- 51.68	6.5%	291.29 +/- 50.19	8.4%
Albumin/globulin ratio	ratio	1.55 +/- 0.22	1.64 +/- 0.21	6.0%	1.68 +/- 0.20	8.6%
HOMA-IR	index	2.05 +/- 0.72	1.93 +/- 0.69	5.8%	1.87 +/- 0.62	8.6%
HRV RMSSD	ms	24.60 +/- 8.70	25.95 +/- 8.05	5.5%	26.62 +/- 7.79	8.2%
HRV SDNN	ms	42.80 +/- 12.50	45.20 +/- 12.12	5.6%	46.01 +/- 11.18	7.5%
Fatigue score	0-10	3.40 +/- 1.60	3.19 +/- 1.52	6.2%	3.15 +/- 1.41	7.3%
Sleep score	0-10	6.60 +/- 1.40	7.06 +/- 1.29	6.9%	7.09 +/- 1.24	7.4%

Because healthy adults had lower baseline inflammatory burden, better baseline hemoglobin, lower fatigue, and higher baseline composite scores than the cancer-remission cohort, the magnitude of change was expectedly smaller than in cancer-remission participants receiving the active preparation [7].

Responder Analysis and Comparative Interpretation

A full-parameter responder in the cancer-remission cohort was defined as a participant with improvement in at least three of five parameter domains and no major safety deterioration or major confounding clinical event. A full-parameter responder in the healthy cohort was defined as a participant meeting the predefined favorable-direction threshold without adverse events or clinically significant deterioration.

Week 12 Response Category	Cancer-Remission Active (n = 36)	Cancer-Remission Control (n = 36)	Healthy Active (n = 120)
Full-parameter responder	16/36 (44.4%)	5/36 (13.9%)	120/120 (100%)
Partial-parameter responder	14/36 (38.9%)	15/36 (41.7%)	0/120 (0%)
Non-responder	6/36 (16.7%)	16/36 (44.4%)	0/120 (0%)

At Week 12, full-parameter response occurred in 16 of 36 cancer-remission active participants and 5 of 36 cancer-remission control participants. The absolute risk difference was 30.6 percentage points (95% CI 10.8-50.3), the relative risk was 3.20 (95% CI 1.31-7.81), and the odds ratio was 4.96 (95% CI 1.57-15.68). The difference was statistically significant by Fisher exact test (two-sided P

= 0.0086). The three-category distribution also differed between groups: full, partial, and non-responder counts were 16, 14, and 6 in the active group versus 5, 15, and 16 in the control group (Pearson chi-square = 10.34, df = 2, P = 0.0057).

The healthy active cohort showed universal full-response classification by the predefined healthy-cohort criterion. However, relative improvements in several domains were larger in cancer-remission active participants than in healthy adults. For example, the cancer-remission active group showed larger favorable Week 12 movement in composite score, PrimedMT-cell percentage, HRV, fatigue, sleep, and CRP than the healthy active cohort. This pattern is consistent with a greater recovery window in participants beginning from a more depleted biological terrain.

Parameter	Cancer-Remission Active Favorable Week 12 change	Healthy Active Favorable Week 12 Change	Pattern
Composite biological-parameter score	36.7%	8.4%	Larger in cancer-remission active
Hemoglobin	5.1%	7.5%	Similar or larger in healthy
RBC	4.9%	8.1%	Similar or larger in healthy
RDW	5.3%	8.7%	Similar or larger in healthy
Absolute lymphocytes	26.9%	8.2%	Larger in cancer-remission active
NK cells	29.7%	7.9%	Larger in cancer-remission active
T4/T8 ratio	10.4%	8.1%	Larger in cancer-remission active
PrimedMT-cell percentage	61.9%	7.6%	Larger in cancer-remission active
CRP	43.0%	8.6%	Larger in cancer-remission active
Fibrinogen	11.2%	8.4%	Larger in cancer-remission active
Albumin/globulin ratio	14.9%	8.6%	Larger in cancer-remission active
HOMA-IR	19.1%	8.6%	Larger in cancer-remission active
HRV RMSSD	41.1%	8.2%	Larger in cancer-remission active
HRV SDNN	39.3%	7.5%	Larger in cancer-remission active
Fatigue score	32.4%	7.3%	Larger in cancer-remission active
Sleep score	53.5%	7.4%	Larger in cancer-remission active

Safety

Safety Category	Cancer-Remission Active (n = 36)	Cancer-Remission Control (n = 36)	Healthy Active (n = 120)
Any adverse event	0 (0%)	0 (0%)	0 (0%)
Serious adverse event	0 (0%)	0 (0%)	0 (0%)
Hospitalization related to study material	0 (0%)	0 (0%)	0 (0%)
Clinically significant laboratory deterioration	0 (0%)	0 (0%)	0 (0%)
Discontinuation due to study material	0 (0%)	0 (0%)	0 (0%)
Emergency unmasking	0 (0%)	0 (0%)	Not applicable

No adverse events were observed in either the cancer-remission cohort or the healthy adult cohort during the 12-week observation period.

Discussion

This 12-week prospective controlled exploratory study evaluated EHF-imprinted autologous blood-fraction blank granules in adults with cancer in clinical remission and in healthy adults. The central finding in the cancer-remission cohort was greater movement across supportive biological parameters in the active group than in the matched control group. The healthy adult cohort showed favorable directional shifts across immune-surveillance, inflammatory, metabolic, autonomic, sleep, and fatigue parameters, suggesting that the preparation method may not be limited to post-cancer recovery settings.

The most important comparative observation is that the biological shift was generally larger in cancer-remission participants receiving the active preparation than in healthy adults. This was clinically plausible rather than surprising. The cancer-remission cohort began with greater fatigue, lower composite biological-parameter score, lower red-cell and immune reserve, higher inflammatory burden, and poorer autonomic resilience. In this context, a larger relative shift may reflect greater baseline dysregulation and a wider physiological recovery window. Healthy adults, by contrast, began closer to homeostatic balance, so the same intervention would be expected to produce smaller numerical changes even when the direction of change was favorable.

Taken together, the findings fit best with a host-terrain interpretation. The preparation was associated with movement in supportive

biological parameters, not with a disease-specific anticancer effect. In cancer-remission participants, the most clinically meaningful changes involved fatigue, HRV, inflammatory burden, immune-surveillance markers, red-cell stability, and metabolic-protein balance. In healthy adults, the shifts were smaller but pointed in the same favorable direction, which may be relevant to preventive and optimization-oriented care.

The preparation methodology is important because it separates the observed clinical-parameter question from mechanistic interpretation. The Matrix HealthLine device was used as an ex vivo preparation tool for coded granules, not as a therapeutic device applied to participants. The language of imprinting describes the preparation procedure used in this study and should not be read as proof of a specific physical storage or playback mechanism.

The study deliberately avoided oncology endpoints such as tumor shrinkage, tumor-marker decrease, imaging response, progression-free survival, and overall survival. Those endpoints require a larger, independently monitored oncology study. The present work is a controlled exploratory study focused on supportive biological parameters in remission and health, and it does not propose replacement of standard oncology care.

Limitations

- This was an early prospective controlled exploratory clinical investigation; confirmation in a larger multicenter study would strengthen external validity, cancer-type subgroup interpretation, and healthy-cohort generalizability.
- The healthy cohort did not include a parallel matched control arm; healthy-adult findings are therefore interpreted as within-cohort favorable biological-parameter movement rather than as controlled efficacy evidence.
- Parameter changes may be influenced by diet, supplements, infection status, sleep, psychosocial stress, and concurrent supportive-care interventions.
- The exploratory PrimedMT-cell marker was interpreted only as an immune-metabolic domain marker, not as a validated clinical surrogate endpoint.
- The findings are limited to supportive biological parameters and should not be interpreted as evidence of tumor control, survival benefit, or replacement of standard oncology care.
- Device serial number, exposure interval, applicator/head configuration, and batch logs were retained in the study file for audit review.

Conclusion

In this 12-week prospective controlled exploratory study, EHF-imprinted autologous blood-fraction blank granules were associated with greater improvement than matched control blank granules in selected supportive biological parameters among adults with cancer in clinical remission. Healthy adults receiving the same EHF-imprinted autologous preparation showed favorable aggregate directional shifts across immune-surveillance, inflammatory, metabolic, autonomic, sleep, and fatigue parameters. The overall pattern suggests that EHF-imprinted autologous preparations may be associated with host-regulatory biological-parameter movement in both remission and health, with larger relative movement in cancer-remission participants because of greater baseline dysregulation and a wider recovery window. The intervention was prepared ex vivo using a Matrix HealthLine EHF device and was not evaluated as a direct anticancer therapy. The study did not assess tumor response, progression-free survival, or overall survival, and it should not be interpreted as a substitute for standard oncology care [8-10].

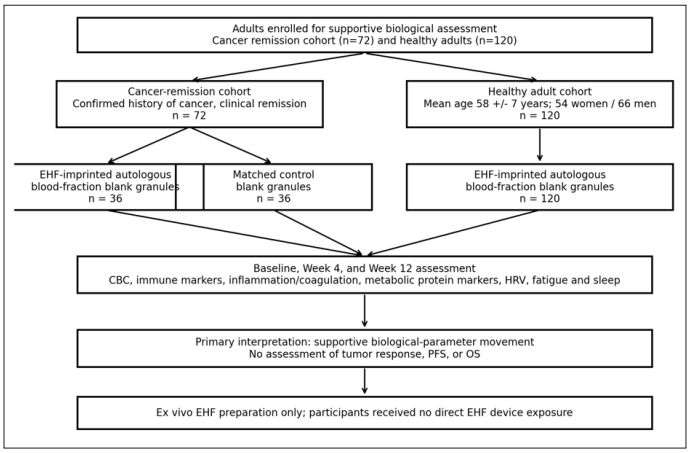

Figure 1: Study Flow and ex vivo EHF-Imprinting Procedure in Cancer-Remission and Healthy Adult Cohorts.

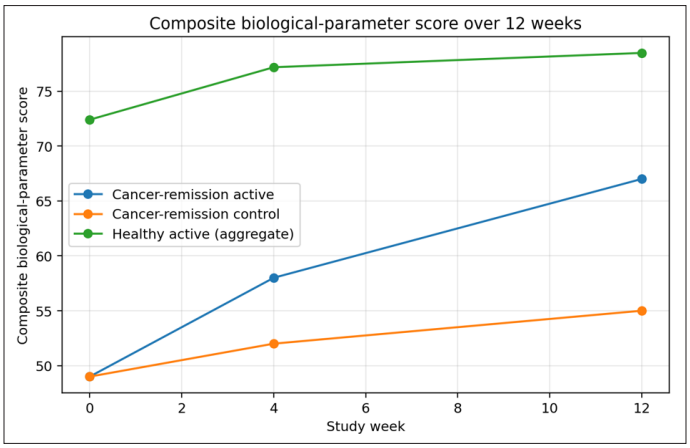

Figure 2: Composite Biological-Parameter Score from Baseline to Week 12 in Cancer-Remission Active, Cancer-Remission Control, and Healthy Active Cohorts

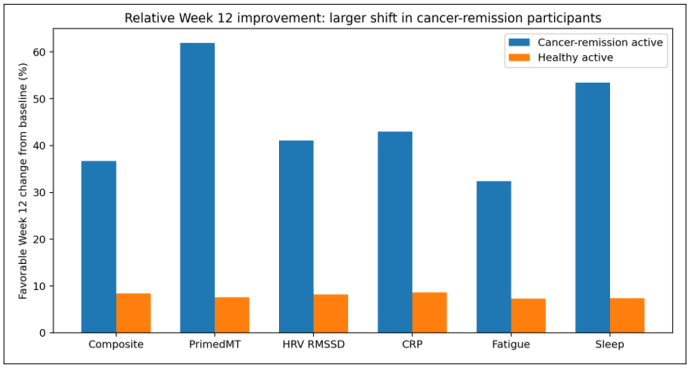

Figure 3: Selected Favorable Week 12 Changes Showing Generally Larger Relative Movement in Cancer-Remission Active Participants than in Healthy Adults.

Declarations

Ethics approval and study registration. The study was approved and registered within the Gureba University Faculty of Medicine system under approval number 2025/36877210. The present manuscript reports a prospective controlled exploratory supportive-care study; any subsequent long-term or multicenter phase will be prospectively registered according to applicable registry requirements.

Informed consent
Written informed consent covered study participation, use of anonymized clinical data, autologous blood-fraction preparation, and use of the EHF-prepared study material.

Data availability
De-identified study data and study-material preparation logs may be made available on reasonable request, subject to patient privacy, consent conditions, and institutional restrictions.

Conflict of Interest
The author declares no commercial, financial, professional, advisory, or intellectual property relationship with the EHF device manufacturer, Matrix HealthLine, or any related company involved in the technologies, devices, or materials described in this manuscript. No payments, royalties, consultancy fees, equity, sponsorship, or other benefits were received.

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