

Effects and Safety of the 7th Diet of Original Macrobiotics

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Abstract

In original macrobiotics of Jeorge Osawa includes the seven stages of dietary therapy with genmai (brown rice). Genmai is a multifactorial, complex system, with starch as an energy source, plus about 8% protein, several percent fat, abundant vitamins and minerals, dietary fiber to stabilize intestinal bacteria, and g-oryzanol to lose weight and even control addiction. We tried to clarify the effects and benefits of the Osawa's highest stage, No. 7 diet for one week by 65 participants. They daily ate 551g genmai rice and 13.3g salt with sesame.

At the end of the diet, 43 (78%) felt better, including handling lighter, sharper, and more efficient, 9 (16%) still felt weak, and 3 (5%) felt no effect. All except one experienced weight loss of 2-3 kg. Pro- and post comparison of laboratory data showed lowered white blood cell count, decreased triglycerides, total cholesterol, HDL cholesterol, and serum amylase. Decreased eGFR ($p < 0.01$) was also present.

While improved bowel movement was a good effects of genmai, reduced eGFR by high salt intake needed caution.

Keywords: Genmai (Brown Rice); no. 7 Diet; Macrobiotic; Bowel Movement; Dietary Therapy; Intervention; Pro and Post-Study

Introduction

In Japan, during the Meiji era, Ishizuka Sagen founded the Yo-jokai to promote health and wellness and genmai (brown rice) diet. He advocated eating plant-based side dishes, local produce, and fish, including the head and entrails [1]. Jeorge Osawa cured his severe systemic tuberculosis with a brown rice diet, which became known worldwide as macrobiotics [2]. This Japanese dietetic movement has existed apart from Western nutritional science but is in line with the recent trend towards health, such as plant-based diets.

The 7th diet, or "Number Seven" as it is called, was presented as the most excellent diet among the "healthful ways of eating" proposed by the founder of macrobiotics, Jeorge Osawa. Osawa started with a minus-three diet in which animal products made up

30% of the diet, gradually increasing the percentage of grains in stages, and finally reduced the diet to grains (brown rice), which is the number seven diet (Table 1).

We have studied the health benefits of genmai for many years [3-8]. It is a multifactorial, complex system, with starch as an energy source, plus about 8% protein, several percent fat, abundant vitamins and minerals, dietary fiber to stabilize intestinal bacteria, and g-oryzanol to lose weight and even control addiction [9,10].

In addition to the positive effects of the genmai diet, such as "I feel more alert," "I feel less tired," and "My physical condition has improved," some people who have experienced the diet have also reported that their physical condition has temporarily worsened, a turnaround reaction known as "meditational glare" in Oriental

	Crop	Vegetable	Soup	Animal food	Fruit	Desert	Bevarage
7 th meal	100						Small
6 th meal	90	10					Small
5 th meal	80	20					Small
4 th meal	70	20	10				Small
3 rd meal	60	30	10				Small
2 nd meal	50	30	10	10			Small
first meal	40	30	10	20			Small
-1 meal	30	30	10	20	10		Small
-2 meal	20	30	10	25	15	5	Small

Table 1: Composition of foodstuffs by the stage of macrobiotics.

medicine. However, until now, there has been little research on the effects and benefits of the No. 7 diet, with no solid data on its effects.

Therefore, the Macrobiotic Association decided to conduct an objective and scientific study to determine the effects of the No. 7 diet on the body and mind over one week by examining changes in various values from blood tests and recording changes in physical and mental conditions; the purpose of this project is to clarify the effects of the No. 7 diet.

Methods

65 people who were instructors, students of the Macrobiotic Cooking School, and family members participated in the challenge over seven consecutive days from July to December 2019. Each participant received 4 kg of brown rice, 150 grams of salt (Umi no Sei's "Arashio"), 50 grams of salt with organic sesame, and 180 grams of *Musoubanacha* (tea). We asked them to eat only these foods for seven days. We did not limit the amount of food they consumed but asked them to keep a record of any food they ate during the seven days other than what was provided, and if they became ill, they could retire from the program. We also told them to chew their food well (30 to 100 bites).

The questionnaire included columns for the daily intake of food items and their amounts, physical and mental conditions, and changes, as well as the number and condition of large and small stools.

The data and reports of blood tests before and immediately after the practice were collected and compiled into a database. SPSS Ver 28 and R was used for statistical analysis.

Results

There were 65 participants, but we analyzed 55 cases because they had all three blood test data and reports before and immediately after the practice.

More than 80% of the participants were women, and most of them were in their 40s and 50s. (Table 2) More than 80% people were middle aged workers.

Age category	Males	Females	Total
20	1	4	5
30	1	8	9
40	3	8	11
50	4	16	20
60	0	7	7
70	1	2	3
	10	45	55
	18%	82%	

Table 2: Distribution of participants by sex and age category.

All were able to finish the genmai diet for seven days. Average intake of genmai meal was 551 +/- 160 g, and salt 13.3 +/- 6.6 g. Calculated energy intake was 900-1000 kcal/day.

Many experienced weight loss of 2-3 kg except one. Figure 1 shows a graph of weight change before and after the practice, with all but one person losing weight, with a peak of approximately 2 to 3 kg.

As the common subjective symptoms, 12 (6.6%) felt headache or drowsiness on the second or third day after starting the genmai

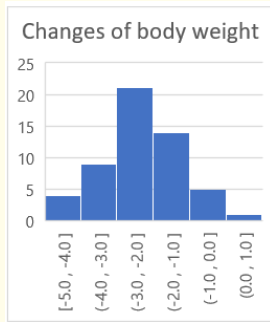


Figure 1: Changes of body weight.

diet. The main complaints during the period were drowsiness (3), headache (3), heaviness of the head, heaviness, tiredness, weakness, stiff shoulders, irritability, constipation, diarrhea, tummy ache, and anemia (1 each), which subsided on the sixth and seventh days, and the results were as follows

- Skin condition improved.
- Concentration improved.
- Yoga practitioners reported that their “body became softer.”
- They felt grateful for food.

At the end of the diet, 43 (78%) felt better, including handling lighter, sharper, and more efficient, 9 (16%) still felt weak, and 3 (5%) felt no effect, including swelling and weakness. The yoga practitioners felt “soft in the body” and more grateful for food and refreshed, and various other symptoms of improvement appeared.

Only one person had a “headache and stiff shoulders” on the first day, “foggy” on the second day, and one person recorded “feeling floaty without energy” on the seventh day (but ate “seafood porridge and kimchi (spicy Korean pickles)” on the third day).

Some people’s jaws hurt from trying to chew the food so often, and others stimulated their appetites by making brown rice gruel, brown rice soup, or roasted brown rice or by adding dried plums, takuwan (pickled radish), or lotus root hot water.

Regarding the changes in their physical condition, those who said they had a bowel movement daily generally had good results.

Those who had bowel movements every day had good results, who had bowel movements more than twice a day, and that person lost 3.1 kg of weight.

n	Defecation	Bowel movement/week									Effects		
		>9	8	7	6	5	4	3	2	1	○	▽	X
16	Every day	6	4	5	1						15	1	
9	6 days	2		1	5	1					7	2	
11	5 days		1	2	2	6					10	1	
6	4 days				1		5				6		
5	3 days					1	1	3			2	3	
4	2 days							1	3		1	1	2
4	1 day								1*	3	2	1	1
											43	9	3

Table 3: Number of bowel movement and heathy feeling.

The relationship between the number of bowel movements and effectiveness (rated in three levels: ○, ▽, and ×) is shown (Table 3). Overall speaking, ○ (improved tone and other effects) accounted for 78% of the 43 participants, × (worsened tone) accounted for 5% of the 3 participants, and ▽ (undecided) accounted for 16% of the 9 participants.

The nine people in the “no bowel movement for one day” group also experienced headaches, stiff shoulders, itching, and drowsi-

ness during the program. Still, the symptoms eventually subsided, and most headed toward improvement.

However, one person with a good appetite complained of headache from the first day, and acne appeared on the sixth day. Blood tests showed that creatinine rose, and eGFR dropped.

The same trend was for the eleven in the “two days without a bowel movement” group. Still, as the number of days without a

bowel movement increased, the number of people complaining of discomfort increased.

For example, one of the five who had four days with zero bowel movements started feeling “well” but had “general tiredness” on the last day. Another one had “bloating,” “diarrhea,” and “difficulty getting up in the morning.” Constipation was also noticeable. However, even among those who said they had only one bowel movement, some said they felt “lighter and more accomplished” and “less tired.”

Table 4 shows the changes of blood and laboratory data.

Only the data that showed significant differences in the values before (Pre) and immediately after (Post) the start of the No. 7 diet were compared.

Laboratory results showed lowered white blood cell count ($p < 0.0001$), triglycerides markedly reduced by about 25 mg, from 84.36 mg/dl to 59.4 mg/dl ($p < 0.01$), total cholesterol ($p < 0.001$), and HDL cholesterol ($p < 0.01$). MCV, serum amylase and HbA1c also decreased from 5.17% to 4.94% ($p < 0.01$). Serum total protein has increased from 7.25 to 7.43g/dl.

While high salt intake shows anti-inflammatory effects shown by WBC decrease, attention should be paid to decreased renal function needed caution. The eGFR decreased from 81.76 ml/min/1.73 m² to 75.29 ml/min/1.73 m². Maintenance of total protein, decreased lipids, amylase and lowered HbA1c may represent an increased state of metabolic status.

	Pre	Post	Pre-Post	t-value	ndf	p-value
WBC	51.16	44.36	6.80	4.33	43	0.0001
MCV	91.11	89.95	1.16	2.59	36	0.0139
MCHC	32.71	33.13	-0.42	-1.84	37	0.0731
Total protein	7.25	7.43	-0.18	-1.99	27	0.0572
Total cholesterol	193.41	178.55	14.86	3.90	28	0.0006
HDL cholesterol	66.69	61.38	5.31	2.97	25	0.0065
Triglyceride	84.36	59.43	24.93	2.86	27	0.0081
Serum amylase	90.22	74.22	16.0	2.88	8	0.0205
HbA1c	5.17	4.94	0.22	2.2	17	0.0572

Table 4: Changes of laboratory data before and after the intervention.

Discussion

The patient competed only genmai (brown rice) and salt for one week, which was a very low-protein low calory diet. Even so, the liver function to be normalized by protein, fat, and glucose metabolism. The No. 7 genmai diet contained 900-1000 kcal energy source, 23g protein, 5.5g fat, in which 63% were unsaturated fatty acids, dietary fiber was 7.9 g, in which 86% was insoluble fiber, and 55 mg g-oryzanol [11].

As for the kidneys, too much salt intake may cause some damage, although the blood pressure was not measured [12].

Jeorge Osawa cured his tuberculosis with high salt macrobiotics, so he tolerated salt intake [3]. On the other hand, the other side of the food culture is that of Sagen Ishizuka and Kenzo Futaki, who found the Society of Integrated Medicine, who had kidney insufficiency and took in as little salt as possible [3]. It is essential to follow a diet suited to the individual and in compliance with medical standards.

In addition to the above, the decrease in white blood cell count may be due to the anti-inflammatory effect of high salt intake, and the decrease in MCV may be related to erythropoietin, a hormone produced in the kidney that promotes the production of red blood cells. The blood test data, including the decrease in serum amylase, indicated that the metabolic state of the whole body was being affected in some way.

Furthermore, suppose changes in intestinal bacteria are added to the examination as an issue for future research on the No. 7 diet [13-15]. In that case, the effects of the diet on hormones may also become apparent.

The significance of the No. 7 diet should be considered “more like shock or impact therapy than diet therapy,” since the No. 7 diet is a very high-salt diet, it would be appropriate for about one week when it is practiced.

With the rising cost of medical care, dietary therapy is being neglected, and there occurs a “food is medicine” movement, which means that “the way of dietary therapy should be revitalized [16,17].

To this end, it is essential to accumulate evidence (scientific basis) such as the one obtained in the No. 7 diet project, obtain the

consent of many people, and then disseminate it to the rest of the world [18-20].

Acknowledgement

Since 2021, a conference for research presentations on Jeorge Osawa has been held around his birthday (October 18) to commemorate his birth. Previously, the conference had been hosted by the Japan CI Society, but for the first time, the Macrobiotic Association joined the conference as an organizer. The day opened with an address by Hatsue Katsumata, wife of the late President Yasuhiko Katsumata. This presentation was given at the Jeorge Osawa Reference Room.

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