

Dewaxed Brown Rice as a Food Staple in the Maintenance and Improvement of Nutrition and Health status in the Elderly

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Background and Objectives:

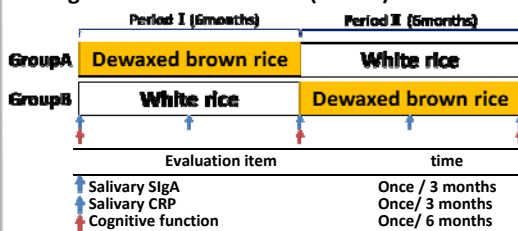
Dewaxed brown rice is a new type of brown rice that was developed in recent years and made by a new purification technology.

We focused on the health maintenance function of dewaxed brown rice and investigated its effects on immune function, cognitive function and other factors in residents of Tokuyo Home (special nursing homes for the elderly) who continuously ingested dewaxed brown rice.



Brown rice	Dewaxed Brown rice
<ul style="list-style-type: none"> The wax layer inhibits rice supply Decline in taste by fiber layer Declines digestibility 	<ul style="list-style-type: none"> The same degree of nutritional value as brown rice. Water absorption, taste and digestibility are better than brown rice. Easy to cook Lipopolysaccharide (LPS) is abundant.

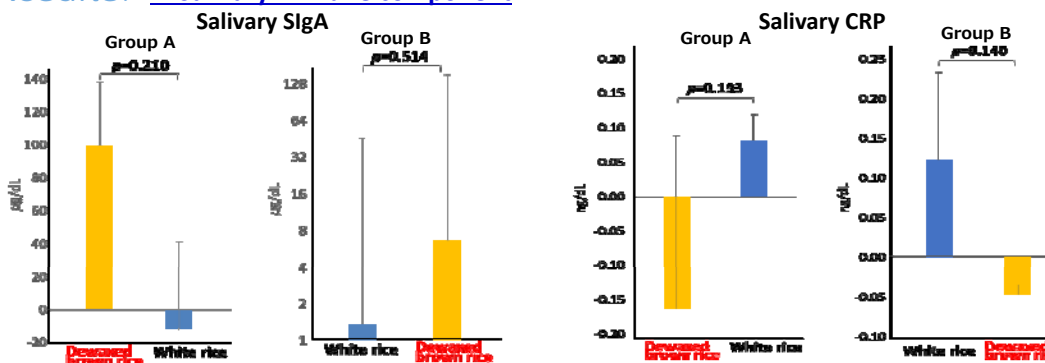
Methods: A crossover comparison trial in which dewaxed brown rice and polished rice were ingested for elderly people entering a special nursing home for 6 months respectively. For the evaluation of immune function, saliva SIgA and CRP were measured. For evaluation of cognitive function, Revised Hasegawa's Dementia Scale (HDS-R) was used.



Status of the subject

	GroupA	GroupB
Number of test subjects	18	13
Age	Male4, Female14	Male3, Female10
Body weight (kg)	85.9±10.4	83.7±9.0
Body mass index; BMI (kg/m ²)	44.2±8.9	47.7±8.7
Body mass index; BMI (kg/m ²)	20.1±4.3	21.7±4.7
Stage of long-term care need	3.5±1.0	3.8±0.7

Results: 1. Salivary immune component



Measurement of Salivary SIgA level after 3 and 6 months ingestion of Dewaxed brown rice and White rice. The amount of Salivary SIgA was measured from salivary sample using the ELISA method. Columns and bars show the mean value and standard deviation of the change from the start of the trial (Group A; n=15, Group B; n=11), respectively. P values indicates significant difference between means. (Paired t-test).

Measurement of Salivary CRP level after 3 and 6 months ingestion of Dewaxed brown rice and White rice. The amount of Salivary CRP was measured from salivary sample using the ELISA method. Columns and bars show the mean value and standard deviation of the change from the difference between 6 and 3 months after the start of the trial (Group A; n=12, Group B; n=10), respectively. P values indicates significant difference between means. (Paired t-test).

2. Cognitive function

There was a statistically significant association between ingestion of dewaxed brown rice and white rice in total HDS - R score.

Cross table with less than 10 points (low cognitive function) total score at the start of the test.

	Rise (↑)	Decline (↓) or No change (→)	Total	p value
White rice	3	10	13	0.0024
Dewaxed Brown rice	11	2	13	
Total	14	12	26	

A p value less than 0.01 was considered statistically significant.

Fisher's exact test

Conclusions:

- There were no dropouts of the trial and all subjects ingested dewaxed brown rice for 6 months. → Continuous ingestion of dewaxed brown rice is possible in elderly people whose swallowing and chewing functions have declined.
- Continued intake of dewaxed brown rice tends to increase salivary SIgA and lower CRP. → Dewaxed brown rice is effective for prevention of immune function and inflammation of elderly people.
- In elderly people with low cognitive ability, meals staple of dewaxed brown rice increased the total score of HDS-R compared to meal of polished rice. → Dewaxed brown rice is effective for prevention of declining cognitive function of elderly people.
- Dewaxed brown rice is useful as a staple food for maintaining and improving the health of elderly people.

Keywords: Dewaxed brown rice. Nutritional status. Constipation. Immune system. Elderly.

Conflict of Interest: Nagoya University of Economics. Scholarship donation: Toyo Rice Corp.. Wakayama Japan

裏面の翻訳・解り易く解説

2017年10月17日～20日、名古屋経済大学の研究チーム
ブエノスアイレス「国際栄養学会議」で発表

○背景と目的

ロウカット玄米が高齢者の「認知機能」、及び「免疫機能」に及ぼす効果を検証した。

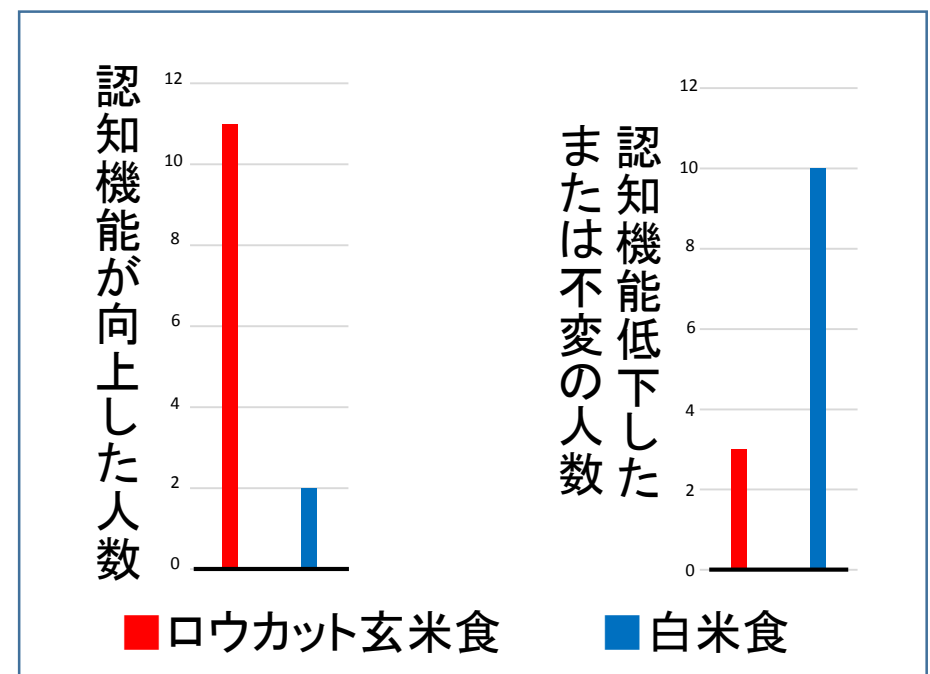
○試験方法

老人ホーム入居者31人(75歳～95歳)の半数(グループA)にロウカット玄米食、残りの半数(グループB)に白米食を半年行い、次の半年は食べるコメを入れ替えるクロスオーバー方式で試験した。

なお認知機能の評価はHDS-Rを用いた。
また免疫機能は唾液中のSIgAとCRP濃度を測定した。

○試験結果

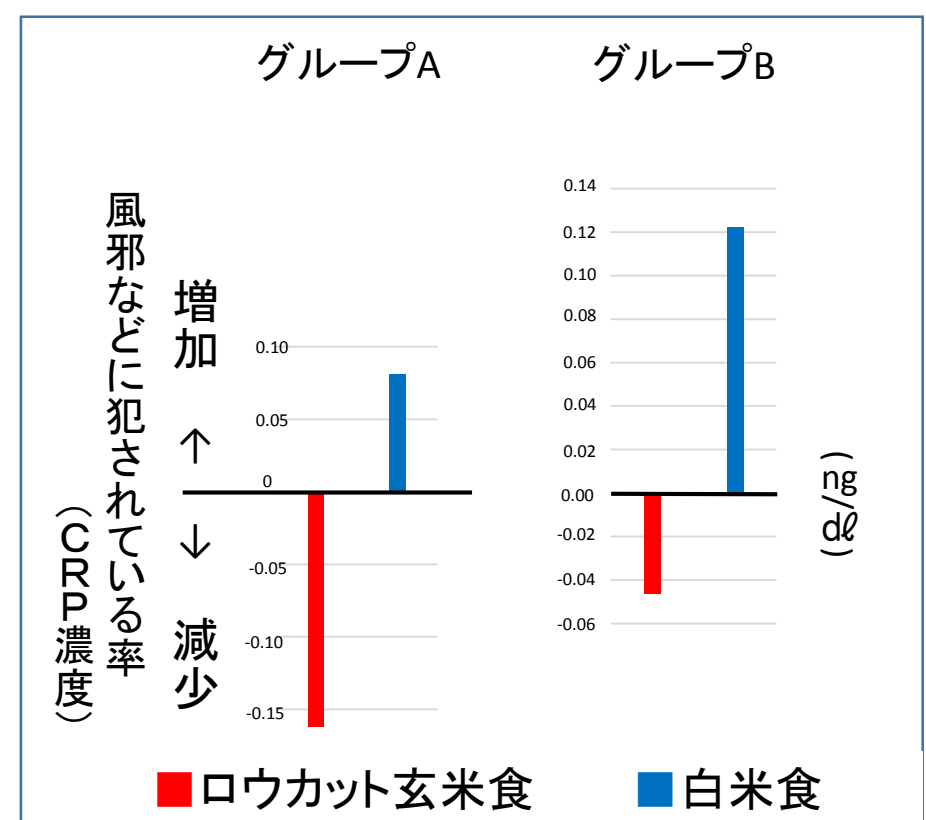
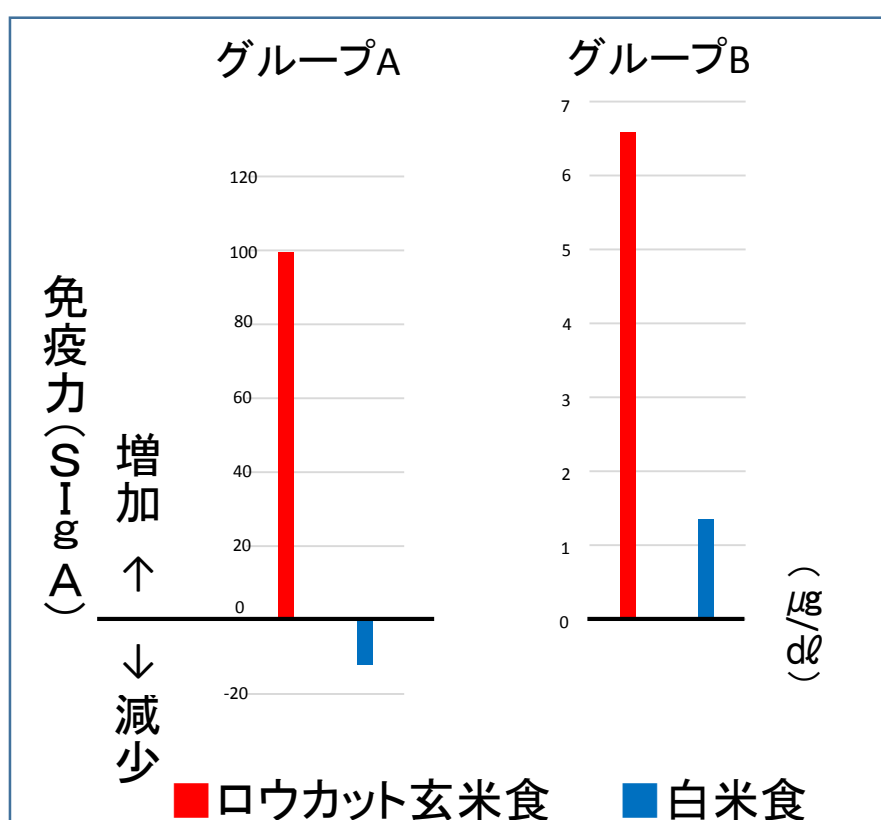
1. ロウカット玄米食は認知機能が向上した人数が多く、白米食は逆に認知機能が低下または不変の人が多かった(右グラフ参照)



2. ロウカット玄米食は白米食よりも免疫機能に素晴らしい効果があった。

(1) 免疫力(SIgA)は年齢と共に減少するが、ロウカット玄米食では免疫力が増加する。しかし白米食ではそれが少ないだけでなく、免疫力が減る場合もあった。(下グラフ参照)

(2) ロウカット玄米食は風邪などに犯されている率(CRP濃度)が減り、白米食はそれが増えた。(下グラフ参照)



3. ロウカット玄米は高齢者でも食べやすかった。

高齢の31人は試験期間を過ぎても継続供給を求めるほどの好評のため、1人の脱落者もなく、試験が行われた。

○結論

ロウカット玄米は高齢者の認知症の改善、及び健康増進に有効である。