

(2) Ratio of hospitalized patients

Before winter group $4,8 \pm 0,05\%$ (for all persons who repatriated in 1947)

After winter group $2,9 \pm 0,04\%$ (for all persons who repatriated in 1948)

(3) Nutritional Condition

The girth of the upper arm was taken as the standard, and classified according to its length as follows:

over 26,5 cm=A, under 23,0 cm=C, between A & C=B (standard)

Before winter group: A= $18,3 \pm 0,7\%$, B= $51,4 \pm 0,9\%$,
C= $30,3 \pm 0,8\%$

Average girth length of upper arm= $23,7 \pm 0,06$ cm

After winter group: A= $16,5 \pm 0,5\%$, B= $71,5 \pm 0,6\%$,
C= $12,0 \pm 0,4\%$

Average girth length of upper arm= $24,7 \pm 0,02$ cm but $51,8 \pm 4,9\%$ were in a condition of the hydronaemia.

(4) Strength of back muscles

Average of before winter group= $112,4 \pm 0,5$ kg

This muscular strength corresponds to that of the Japanese student at the age of 15 or 16.

Average of after winter group= $120,5 \pm 0,6$ kg

(5) Exhaustion

a. Physical exhaustion

Examinations were made with simple function examination of heart, Zambrini-Watanabe reaction,

Donaggio reaction, Takeya reaction, Urobilinogen reaction,
red blood cell sedimentation rate and hemogram of the
leucocyte.

Both of the two groups showed severe exhaustion.
For example, Donaggio reaction

Average of before winter group= $19,7 \pm 0,36$

Average of after winter group= $20,8 \pm 0,08$

In the red blood-cell sedimentation rate
persons who had a sed. rate of over 10 mm(mean value)
formed $74,5 \pm 3,5\%$ of after winter group.

b. Mental exhaustion

In more than 90% of before winter group con-
scious exhaustion, decrease of attention power, and
calculating ability were recognized.

The same condition was noticed in after
winter group.

(6) Replacement of vitamins

a. Vitamin A

According to the examination of light-sensitive
nerve inspection method, $96,1 \pm 1,7\%$ of after winter group
was below the normal value.

b. Vitamin B₁

Examinations by Sawata's method showed that
an average of $57,0 \pm 4,0\%$ of after winter group was in the
condition of vitamin B₁ deficiency.

c. Vitamin C

Examinations were made with Rotter's intracutaneous reaction and with the amount of vitamin C in urine after 3 hours of intravenous injection of 100 mg vitamin C.

On the average, $48,9 \pm 1,4\%$ of before winter group and $92,2 \pm 0,7\%$ of after winter group were in the condition of vitamin C deficiency.

Furthermore, $20,7 - 63,8\%$ alveolar bleeding and $75,9 \pm 3,5\%$ pyorrhea in after winter group were noticed.

(7) Generating conditions of vitamin deficiency diseases

There were, on the average more than, $5,7 \pm 0,5\%$ sufferers of scurvy, $7,1 \pm 0,4\%$ sufferers of beriberi and $7,2 \pm 0,4\%$ sufferers of night-blindness. The annual ebb and flow was the highest between September and November and the lowest between May and July.

Summary of the above:

The after winter group had improved more than the before winter group in nutritive conditions and muscular strength from the numerical point of view. The recovery of moisture in blood was insufficient, exhaustion was still remarkable, diseases due to vitamin C deficiency had become rather worse, and deficiency in vitamins A and B₁ was conspicuous. They were in a condition of the so-called

partial malnutritional disorder.

2. Physical Strength Increasing Measures for Repatriated Persons

I recognized more rapid functional recovery on physical strength compared with contrast, by giving a large quantity of vitamins A, B₁, and C and protein to repatriated persons.

Example 1.

By giving the following vitamin C to persons repatriated after winter, their normal value was recovered at the ratio as shown below after respective days.

100 mg	daily	25,3±8,2%	after 25 days
150 mg	daily	29,1±17,6%	after 12 days
300 mg	daily	33,4±13,6%	after 12 days

Example 2.

Some recovered to normal conditions after 7 - 10 days by taking vitamin A 39,000 I.U. daily.

The qualitative recovery of health conditions of repatriated persons was difficult in short period of time. In addition to the nutrition shortage, this attributable to the latency of substance breaking physical factors in repatriated persons owing to their high degree of accumulated exhaustion, remarkable consumption of physical strength and mental exhaustion for

many years. For this reason, it is recognized necessary for health recovery of repatriated persons to give sufficient nutrition and rest.

3. Conclusion

From the above facts, it must be concluded that the special life environment as prisoners in the interned land has become the principal cause of physical exhaustion for the internees.

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