

世界に向けた情報発信

本研究所は、本学園を代表してアジア・太平洋地区公衆衛生学術連合体 (Asia Pacific Academic Consortium for Public Health:APACPH) のメンバーである海外の教育・研究機関との連携を取り、国際学術会議での講演や発表を積極的に行っています。国際交流で重要な点は、本研究所の成果が世界的に寄与していることです。一例として、栄養クリニックの血清リポ蛋白質を対象とする国際共同研究が国際医学誌で最高の被引用数を誇る The New England Journal of Medicine に発表された後、多数の国際論文で引用され、大きな貢献をしています。最近では、本研究所所長が「日米の栄養摂取量の新型コロナウイルス感染への影響」と題した論文を栄養系の医学雑誌として有名な Nutrients 誌に発表しました。また、2021年には本研究所が行ってきた研究活動および社会貢献の内容をまとめた論文が、国際学術誌 Asia Pacific Journal of Public Health (APJPH) に掲載され、海外でも広く認知される機会となりました。さらに、本研究所副所長はアジア・太平洋地域の大学の客員または兼任教員を務めており、本学園における国際的な学術および国際交流が研究所を窓口として行われています。

これまで本研究所は、前述の「さかど葉酸プロジェクト」や、文部科学省から選定された「ハイテク・リサーチ・センター整備事業」によるモンゴル、タイ、中国、パラオなどのアジア・太平洋地域の国を対象とした多国間比較調査などの大規模プロジェクトの成果から「遺伝子栄養学」「時間栄養学」「精神栄養学」など革新的な視点から栄養学の発展に国際誌を通して貢献してきました。これらの活動から蓄積した科学的根拠に基づいた知見を基に、実践的かつ最先端の情報をホームページや講演会を通して社会に発信しています。

本学初の国際会議：APACPH：アジア・太平洋地区公衆衛生学術連合体会議(2007)



2007年に坂戸校舎で開催されたAPACPH国際会議には世界25の国と地域からおよそ500人の研究者が集まりました

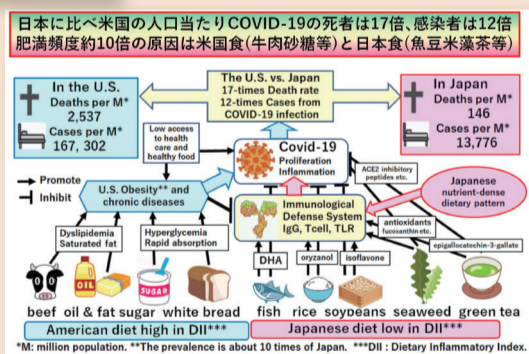
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Influence of Nutritional Intakes in Japan and the United States on COVID-19 Infection
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Abstract: The U.S. and Japan are both democratic industrialized societies, but the numbers of COVID-19 cases and deaths per million people in the U.S. (including Japanese Americans) are 12.5 times and 17.4 times higher, respectively, than those in Japan. The aim of this study was to investigate the effects of diet on preventing COVID-19 infection. An analysis of dietary intake and the prevalence of obesity in the population of both countries was performed, and their effects on COVID-19 infection were examined. Approximately 1.5 times more saturated fat and less dietary protein and polyunsaturated fatty acids are consumed in the U.S. than in Japan. Compared with food intake in Japan (30%), those in the U.S. were as follows: beef 26%, sugar and sweeteners 100%, fish 44.2%, rice 11.5%, soybeans 40%, and tea 54.7%. The fat load of these foods contains functional substances that prevent COVID-19. The prevalence of obesity in U.S. and 10 times greater in the U.S. than in Japan for males and females, respectively. Metabolic syndrome established a causal relationship between obesity and COVID-19 infection. Large differences in nutrient intakes and the prevalence of obesity, but not racial differences, may be partly responsible for differences in the incidence and mortality of COVID-19 between the U.S. and Japan.

Nutrients 誌に投稿した論文要旨



Nutrients 誌に投稿した論文解説

Short Communication

The Roles Played by the Institute of Nutrition Sciences, Kagawa Nutrition University on National Nutritional Crises in Japan

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Introduction
 Japan has experienced a number of health crises in its long history, including infectious diseases, energy and nutritional deficiencies, and noncommunicable diseases. Also, due to the greatest aging society in the world and an approximately 10-year gap between life expectancy and healthy life expectancy, healthy aging has been a key component to maintain health in Japan in recent years. Understanding of nutritional status through research activities, together with health promotion and clinical practices on healthy lifestyle, is crucial in the improvement of health status of the population. The Institute of Nutrition Sciences (IoNS) of Kagawa Nutrition University (KNU) is a research institute that was established in 1990 to take over Kagawa Research Institute, the original research institute founded in 1936. In the past 85 years (Table 1), research institutes of KNU have been contributing to the public from research activities and clinical practices based on a cutting-edge knowledge at the KNU Nutrition Clinic. This article briefly introduces 4 major nutrition crises in Japan and contribution of the IoNS.

Prevention of Beriberi by Human Experiment and Public Teaching
 Japan's reliance on rice as a staple made beriberi inevitable. Polished white rice was more desirable than rice still in husks. In the 1880s, the Japanese navy doctor Takaki hypothesized the cause of beriberi to be diet-related and succeeded in virtually eliminating beriberi among navy sailors by increasing the consumption of vegetables and meats and by substituting barley for rice. However, Japan suffered from beriberi even after the discovery of vitamin B₁ by Eijkman, and more than 10,000 Japanese died annually at its peak. Drs Shono and Aya Kagawa, founders of KNU, quantified vitamin B₁ and other important nutrients in foods after the treatment of beriberi patients with vitamin B₁ at the University of Tokyo Hospital. They discovered the effectiveness of "rice with the embryo (Haigama)" in the prevention and cure of beriberi and promoted its consumption. While 1936 was the time when the Dietitians Act was not yet enacted and no legal training school for dietitians was available, Dr Kagawa founded an educational institute that later became KNU and commenced publication of a monthly journal *Eyo no Ryouri (Nutrition and Cooking)* for the purpose of public education. With this health promotion activity by KNU, the number of beriberi patients was dramatically reduced (Figure 1). The journal *Eyo no Ryouri* is still published today and well acknowledged by the public.

Dealing With Food Shortages and Infectious Disease Risks During and After the War
 World War II destroyed the economy and productivity of Japan, and the population was faced with famine due to food shortage. During the famine when Japanese people were forced to eat food that normally was not considered edible, the Kagawa Research Institute provided information on wild plants and other food sources through the *Eyo no Ryouri* journal. Famine and resultant undernutrition have increased infection and mortality from tuberculosis and acute infectious diseases. To secure emergency food aid from abroad, the General Headquarters of the Allied Forces requested Japanese government to conduct National Health and Nutrition Survey to investigate the nutritional status of Japanese under food shortages. The Kagawa Research Institute supported Japan's first National Health and Nutrition Survey.

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