
Miyeok-guk: A Millennium-Old Korean Traditional Seaweed Dietary Validated Through 20-Year Cohort Studies on Postpartum Recovery and Lactation Efficacy

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Abstract

The World Health Organization (WHO) recommends exclusive breastfeeding for at least six months to enhance maternal and infant health. However, many mothers experience difficulties due to insufficient breast milk production, which is closely associated with maternal nutrition. In Korea, miyeok-guk (a soup contained *Undaria pinnatifida*, a seaweed) has been traditionally consumed for over a thousand years as a postpartum recovery food believed to improve lactation. Despite its cultural significance and widespread use, scientific evidence regarding the relationship between miyeok-guk consumption and breastfeeding outcomes remains limited. Additionally, concerns have been raised about potential adverse effects such as thyroid dysfunction due to excessive iodine intake from seaweed.

This study aims to scientifically evaluate the relationship between miyeok-guk consumption and breastfeeding by analyzing dietary intake data and breastfeeding rates among reproductive-aged women (19–40 years). Utilizing data from the Korea National Health and Nutrition Examination Survey (KHNANES, 1998–2022), we will examine correlations between miyeok-guk intake frequency and breastfeeding duration, considering demographic variables such as age, parity, and pregnancy history. Furthermore, preclinical studies using animal models will investigate the underlying mechanisms by which miyeok-guk affects milk production and infant gut health. Clinical trials involving postpartum women will validate these findings by analyzing infant fecal microbiota in relation to maternal seaweed consumption. Ultimately, this research will provide evidence-based guidelines for optimal seaweed intake tailored to individual characteristics, contributing to improved breastfeeding rates and maternal-infant health outcomes. Acknowledgement: This research was supported by Ottogi Ham Taiho foundation (2025).

Keywords: Miyeok, guk, Seaweed, *Undaria pinnatifida*, Breastfeeding, Maternal and infant health, Microbiome

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