Seaweeds, or ‘kelps’ as the wild brown algae are sometimes called, are known to assist the acid-alkaline balance (1), have a prebiotic effect on the gut flora (2), help protect the gut lining (3), stimulate the secretion of digestive enzymes (4) assist nutrient absorption and metabolism, and thus strengthen immunity.

This verbal mouthful may nonetheless help explain why seaweed is recommended for natural digestive healing by among others, Dr Natasha Campbell-McBride in her GAPS diet Foods to Choose (5) and Dr Robert Gray in the venerable Colon Health Handbook (6).

Clinical nutritionist Jonathan Tommey adds these ‘brown’ seaweed’s ability to bind and remove toxic metals (7), regulate fatty acid metabolism and electrolyte balance, restore dry skin and listless hair and improve circulation (8), as further specific benefits in autistic spectrum disorders where colon inflammation and dysfunction are especially common (9).

That certain varieties of these brown seaweeds provide in themselves a virtually complete balance of all the nutrients (10) also helps explain these claims for such a remarkably broad efficacy. In a conventional diet, a wide variety of foods is required on a daily basis for homeostasis and to perform thousands of complex functions - starting with digestion.

**Balance of micronutrients**

A really comprehensive nutrient spectrum is difficult to obtain from land-grown and manufactured foods (11) where the effect of soil deficiencies and nutrient imbalances is well documented (12). Still more so in special diets, where certain foods are restricted due to illness and therapy, allergy and intolerance, pregnancy, metabolic disorders and weight regulation (13), and in poor colon health.

The nature of land foods is that each species has a distinct but partial profile, high in some nutrients, low in others, all with some nutrients missing. Hence the need to ‘graze’ in the wild, or produce a wide variety of land foods. Even then, the mineral content will depend on the growing medium - from soil-less growing under 24/7 lighting to rich composted soil on a biodynamic farm.

Very different from the land, the ocean is a rich and consistent growing medium where abundant seaweeds feed a multitude of species. Brown seaweed is a complete, primordial food which, having no roots, absorbs and converts nutrients directly from this great ‘soup’ which covers 70% of the planet - the final repository of all the Earth’s minerals which Nature has few ways of returning to the soil.

The seaweed, which is also rich in protein, is able to transform these into a unique whole food with not only all the trace elements like selenium and zinc, but the entire B group and other rare vitamins including absorbable B12 (14), D, H and K. In addition to chlorophyll, there are other rare pigments like astaxanthin and violaxanthin.

A range of indigestible polysaccharides (15) have been shown to protect the gut wall against cancer-causing bacteria and bind for elimination through the bowel, pollutants and toxic metals like lead and mercury - of special importance in the treatment of obesity since fat stores toxins which are released into the system in the process of fat reduction.

Like green tea, there are valuable tannins and polyphenols. Against the most nutrient dense species of land fruits and vegetables, half a teaspoon of Seagreens dried wrack seaweed has the same amount of vitamin B2 as 100g of blackberries or broccoli! (16).

All of this is vital for the endocrine system (so often implicated in colon disorders) which depends on the dietary balance of macro- and micro-nutrients to trigger digestive acids, hormones and enzymes.

Of all the brown seaweeds, the wild wrack species, of which Seagreens currently uses three (Ascophyllum, Fucus, and Pelvetia), have the broadest balance of nutrients and are the most suitable human food ingredients.
Seagreens has pioneered the means of harvesting and producing these seaweeds to consistent food quality standards. It is the leading seaweed supplier in Britain (17) and its Certified organic production in the remote islands of the Scottish Outer Hebrides won a Crown Estate Business Award in 2010.

Easy to use, everyday ingredients
In The Colon Health Handbook Dr Gray describes an alkaliising diet of vegetables, fruits, sprouts, honey, milklet and other non-mucoid forming foods as a sound foundation for colon health and nutrition “with seaweed and zinc as supplements”. In the scientifically proven macrobiotic approach to a balanced diet - rooted in oriental culinary traditions - “a small volume of sea vegetables, about 2%, is taken daily, eaten as a condiment, in soup, cooked with grains, beans and vegetables as a seasoning to supply minerals, (and) as a small side dish about twice a week” (18).

According to the last available statistics (1969), this 2% equates to 4.6 grams, a heaped teaspoon of Seagreens dried ground wild wrack seaweed. Coincidentally, Seagreens’ scientific research over the past five years at the Centre for Food Innovation in Sheffield, England, has shown that Seagreens can replace at least half of the salt (sodium chloride) in manufactured foods. Since the average person in Britain consumes at least 9 grams of salt per day, this would equate rather precisely to the 4.5 grams in the traditional Japanese diet. It is also the daily amount so many practitioners have found effective in therapeutic protocols!

Seagreens has purposefully developed a product range for use in the everyday Western diet as well as in macrobiotics. It is easy and safe (and non-allergenic) to include a gram or many grams each day in food or drink for children and adults of all ages, as ingredients, salad, condiment, encapsulated food, or by inclusion in juices and smoothies, or as a tonic or tea. A high antioxidant (19) tonic, easy to make and delicious in summer or winter using Seagreens Salad & Condiment product, is available at: www.seagreens.co.uk/tonic

In summary
• protects and heals the gut endothelial lining
• macro- and micro-nutrient profile balances and fills gaps in the diet
• binds and excretes through bowel pollutants and toxins including heavy metals
• has a natural prebiotic effect from special seaweed polysaccharides (approx. 25% of seaweed)
• has natural antibacterial properties (eg anti-candida, prevents adhesion of pylori bacteria)
• improves metabolism and circulation to the epidermis

References
(1) H. Aihara, Acid and Alkaline, Ohsawa Macrobiotic Foundation, 1986 - and 7x times more alkalinizing than apples!
(3) J. Pearson et al., University of Newcastle upon Tyne, Institute for Cell and Molecular Biosciences, in Critical Reviews in Food Science and Nutrition, November 2006
(5) M. Campbell-McBride, MSc, MMedSci (nutrition), Gut and Psychology Syndrome, Medinform, 2007 Food to Choose also available at: www.gps.me
(7) Tandon et al. Studies on Inhibition of Radioactive Strontium, Canadian Medical Association Journal 99:169-75, 1988; M.T. Arora et al., Alginates bind heavy metals, Journal of Haematology, 2004 (in addition to the metal binding properties of their polysaccharides, Seagreens® also provide a balance of all the amino acids necessary for the production of the metal transporting metallothioneins, including cysteine. In the case of the ubiquitous MT hæmoglobin, cysteine accounts for as much as 30% of its structure)
(8) Research on wild wrack (fucus) in un-controlled trials at the University of Perugia, Italy, 1998-99 claimed increased blood flow to the epididymis in over 80% of female trial subjects.
(12) Mineral and trace element changes in Britain 1940 to 2002 including fruit and vegetables, meat and most products, cheeses and dairy products, research by D. E. Thomas, DC, M.D., BPharm (1997) head of McCance & Widdowson, The Composition of Foods, 6 Editions, pub Royal Society of Chemistry and the Ministry of Agriculture, Fisheries and Food (MAFF), M. Crawford, Institute of Brain Chemistry and Human Nutrition, London Metropolitan University
(17) Organic & Natural Business, October issue, 2009
(19) Studies at the Centre for Food Innovation, Sheffield, England and the University of Åhus, Denmark, the University of Reading and at SCRI, Scotland: [Seaweed Health Foundation library: (19) Studies at the Centre for Food Innovation, Sheffield, England and the University of Åhus, Denmark, the University of Reading and at SCRI, Scotland: [Seaweed Health Foundation library:

Seagreens Healthcare Summary: www.seagreens.co.uk/healthcaresummary

Consumers will find Seagreens products in good health and natural food stores. Healthcare practitioners and clinics can obtain Seagreens products from:

www.seaweedhealthfoundation.org.uk