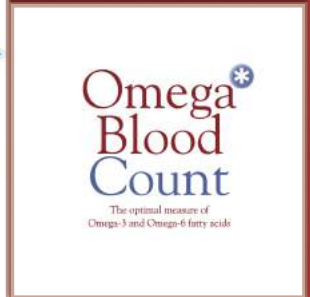
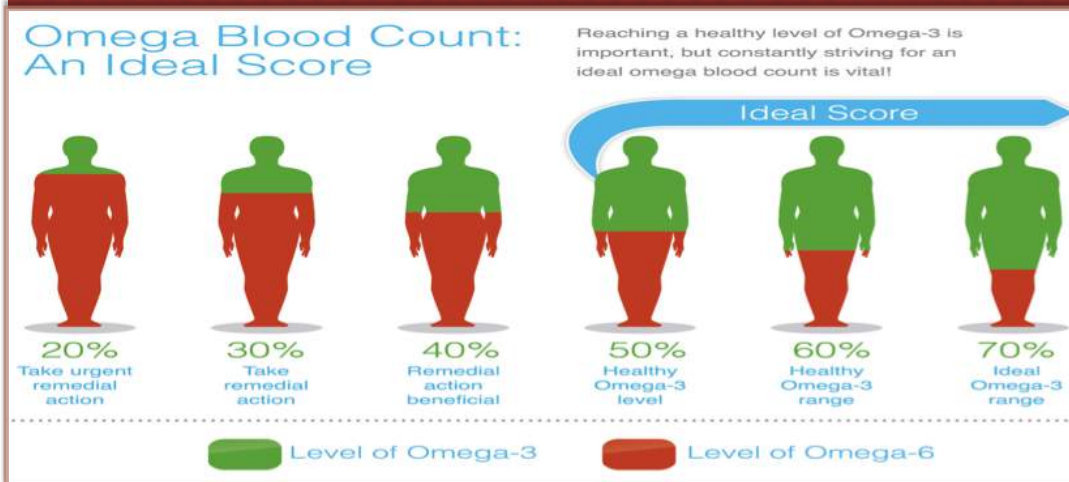


# The development of Omega 3 blood testing technology at the Institute of Aquaculture (Prof Gordon Bell & James Dick)



It is now widely accepted that Omega 3 fatty acids, especially but not exclusively, focussed on the essential long-chain fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are vital for human health and well being. While Omega 3 has widely acclaimed benefits in terms of cardiovascular disease and rheumatoid arthritis, which can be attenuated by both DHA and more especially EPA, due to its anti-inflammatory activity there are numerous other disorders that also respond to Omega 3 supplements. These would include people with neural disorders including autism and ADHD as well as having positive effects on immune function, largely related to DHA, as well as reduced inflammation due to reductions in the inflammatory cytokine PGE<sub>2</sub>.

Omega 3 fatty acids are concentrated in oily fish which includes salmon, trout and sardines among others. In a recent study, it was shown that the average person in the UK has about 26% of their blood fatty acids as Omega 3 but the recommended values for good human health would suggest values of 40-50% as being ideal. In 2006 there were no laboratories in the UK conducting rapid blood testing using blood spot samples for Omega 3 testing and the method used at that time was collected from a vein which required to be carried out by medical professionals.

With finance provided by Glasgow Health Solutions Ltd the Nutrition Group IoA developed and validated the Omega Blood Count™ test and now tests blood samples from across the globe. The Institute's James Dick who developed the technology, indicated that the blood spot method, compared with venous blood is a non-invasive procedure which is simple and is important for vulnerable patients in particular children, patients with neurological problems and the elderly.

The methodology was demonstrated at the Institute stand at the World fisheries congress in Edinburgh where Alyn

Smith MEP declared that "The health benefits of Omega 3 can counteract a number of conditions which blight Scottish society, such as heart disease".

Stirling's Institute of Aquaculture in the largest aquaculture centre in the UK and one of the oldest in the world. The Institute conducts research on aquaculture activities throughout the world, including the benefits to humans in eating fish products.

The Institute of Aquaculture's Nutrition Analytical Service received a high commendation award at the recent S-Lab Awards. S-Lab (Safe, Successful, Sustainable Laboratories) Awards recognise laboratory excellence and the University of Stirling laboratory was commended for its Laboratory Effectiveness in relation to the fingerprick test to measure Omega-3 and Omega-6 levels in blood.



James Dick of the Institute said: "We are delighted to have been highly commended for this award on behalf of the University and it is recognition of the effort put in by staff during the development of the Omega 3 Test." The S-Lab Conference and Awards are a unique initiative to create better linkages between, and highlight best practice amongst, all the key players involved in laboratory design, operation and management.

They originated in higher education, but now have growing involvement with public sector and commercial laboratories and suppliers.

Prof. Bell concluded that "Fish are a complete nutrient package: we grow fish and it is important that we demonstrate the positive benefits for human health arising from consuming fish".