



You can get your own DNA report by contacting Sarah Anderson at her London, Harley Street Clinic www.theaviationnutritionist.com & www.sarahandersonnutrition.co.uk

Competitive Edge May Lie in Her DNA

Ahead of the Aberdeen Asset Management Ladies Scottish Open, we met with sports and travel hydration recovery drink 1Above ambassador Lydia Ko.

WORDS BY SARAH ANDERSON, THE AVIATION NUTRITIONIST

Lydia regularly travels on private jets to reduce fatigue and meet her busy schedules. Sports professional on top of their game have to look after what they eat and drink to effectively recover from their unique challenging lifestyle and to keep them on the top of their game.

The Aviation Nutritionist understands the many factors that need to be considered to improve an athlete's competitive edge, working with in-flight caterers who supply food to the world's top sports professionals to minimise travel associated fatigue.

Dietary intervention is effective if achieved with a personalised, individualised approach, giving athletes tailored dietary and other performance-related information based on their genetic makeup is part of a growing new field. Genetics play a critical role in determining how athletes respond to foods, nutrients and supplements, as demonstrated by recent research in the emerging field of "nutrigenomics" – the science that seeks to explain how genetic variation alters our response to diet, which impacts on general health and athletic performance.

Lydia has agreed to share her results and we explain how she can optimise her performance by personalising her foods and supplements based on her unique DNA.

Lydia's extensive report has 5 key areas explained below which if not considered may impact her performance, recovery and keep her as an elite sports professional.

NUTRIENT METABOLISM

Vitamin D: Having enough vitamin D is really important especially when exercising. It increases bone mineral density, reduces the risk of stress fractures, and could also play an important role in heart

health, immune function, muscle recovery and muscle building during intense training.

Although Lydia gets enough vitamin D on the US circuit her DNA results show she is susceptible to having low levels, as we know in Scotland the sun doesn't always shine so she needs to be mindful of this when recovering. Optimal levels of vitamin D are difficult to obtain from the diet alone, so Lydia should take a supplement that incorporates an appropriate fish oil to support her performance and recovery.

Iron: Iron is a mineral which we need to help our bodies form red blood cells to transport oxygen in the body. Low iron stores can lead to anaemia which is associated with fatigue, weakness, shortness of breath, dizziness and reduced aerobic capacity, therefore leading to poor performance.

Lydia's genetic predisposition shows she needs to focus particularly on getting enough iron so we'd suggest she consumes good amounts of dark green leafy vegetables, beans, red meat or seafood, plus enough vitamin C which helps support the absorption of iron. Tannins found in tea can prevent effective absorption of iron so should be consumed separately.

CARDIOMETABOLIC HEALTH

Caffeine: Globally, caffeine is the most widely consumed stimulant with many athletes having it to enhance training and performance. Research on the impact of caffeine on cardiovascular health and athletic performance gives varied results. For example, Nanci Guest's research showed that fast metabolisers of caffeine saw significant improvements in endurance after having caffeine compared to taking a placebo. Slow metabolisers however experienced no benefit, often performing worse compared to their placebo



Lydia Ko plays a tee shot on the 13th hole during the LPGA LOTTE Championship Presented By Hershey at Ko Olina Golf Club on April 13, 2017 in Kapolei, Hawaii.

endurance test. They are also at higher risk of heart attacks and high blood pressure when consuming more than 200 mg of caffeine (2 small cups of coffee or 3-4 cups of tea) per day.

Lydia's results show she is particularly sensitive to caffeine, as is 50% of the general population, so she should limit her intake and monitor her performance after drinking it to note if it impacts her endurance or focus on the course.

FOOD INTOLERANCES

Lactose: Lactose is a naturally occurring sugar found in dairy products which must be broken down by the enzyme lactase to be properly digested. Some people don't produce enough, or any, lactase, so the lactose passes through the intestines undigested, leading to unpleasant side effects including bloating, cramps and diarrhoea.

Individuals who consume a lactose-free diet are at a greater risk of inadequate calcium and vitamin D, both of which are important for building and maintaining strong bones and teeth, and reducing the risk of low bone density and stress fractures which often occur in athletes.

Lydia's ancestry could explain why she has a limited ability to tolerate lactose: 9/10 people of Asian descent are lactose intolerant compared to 3/10 of people of European descent.

Optimal levels of calcium and vitamin D can still be achieved through fortified milk alternatives such as soy, almond, and rice beverages but she should check the label to confirm that she's choosing products that include them.

PHYSICAL ACTIVITY PERFORMANCE

The report also includes tailored information on fitness and physical activity, allowing us to make some insights about the risk of injury and other indicators of physical performance.

Lydia had one genetic marker which will give her a huge advantage on the course: a high pain tolerance. Pain is triggered by the nervous system and there are substantial differences in the degree to which people feel pain. Lydia's tolerance to pain gives her an advantage to train hard and push herself which could be why she's been the world number 1. 🏌️