

Salivary hormone testing – the blood of the 21st century?

Blood testing is ideal for a wide range of analytes, but it has limitations for hormone analysis. In Canada, FLUIDS iQ has turned to saliva as an alternative test matrix, which is proving an excellent choice for measuring the bioavailability of a range of hormones in the wellness arena.

Blood has long been considered the 'go to' medium for a range of diagnostic tests, with saliva testing downplayed because of issues with sensitivity, specificity and reproducibility. However, saliva testing has advanced significantly over the years, and today's assays are an excellent choice for various analytes – particularly hormones. Hormones play a key role in an individual's overall health and wellness, directly affecting many aspects of wellbeing, including stress, mood, memory, energy, menstrual cycles, weight loss/gain, sleep and libido, and it is important that they remain well balanced.

FLUIDS iQ in Toronto specializes in the wellness arena, using the latest saliva diagnostic assays to deliver a more personalized approach to health and

wellness. President and CEO Dr Aron Gonsior explained: "Saliva is a wonderful choice for hormone analysis, where the issue is not necessarily how much is being produced – which can be established by blood testing – but how much is available for the body to use. Typically, hormones such as estrogen, progesterone, testosterone and cortisol are bound to carrier proteins in the bloodstream, with just a small proportion unbound and available to exert its effect. Saliva contains only the free, bioactive hormones – the fraction that is of interest to clinicians and wellness practitioners because it clearly shows any imbalance – and is increasingly being used for adrenal checks – cortisol and the testosterone precursor dehydroepiandrosterone (DHEA) – as well as for monitoring the

sex hormones estrogen, progesterone and testosterone."

Aron continued: "Saliva testing has a number of advantages over blood in terms of accuracy and convenience. For example, the traditional way of monitoring hormones is a 24-hour urine collection, which is inconvenient for the patient and will only determine the total amount of a hormone produced, not the hour-by-hour profile throughout the day. Similarly, morning, noon, afternoon and night-time samples are taken to look at diurnal variations in cortisol, requiring a compliant patient and a trained individual to take bloods, making this repeated sampling unviable. Additionally, many people have a needle phobia, potentially causing a stress response that could skew cortisol results. This is where saliva testing comes into its own, as samples can be quickly, easily and conveniently taken as often as necessary in the patient's own home, with no risk to the individual."

"Sample stability is another issue. Depending on the analyte, blood collection tubes are often only designed and validated for short-term storage and transport of a few hours, rather than days. Samples collected at locations a long distance from the laboratory can take several days to arrive, increasing the likelihood of sample degradation and the integrity of the result being called into question. Saliva is easy to collect and transport, with various sample collection tubes available for added flexibility."

Saliva-based diagnostic testing has historically been hindered by a lack of commercially available kits, leaving laboratories to develop and validate



FLUIDS iQ is a Canadian wellness laboratory specializing in salivary hormone and intestinal blood spot analysis

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their own assays in house. However, as its value has become increasingly recognized, manufacturers have launched a variety of assays and it is important to choose carefully. “It is crucial to select an assay with demonstrated sensitivity, accuracy, precision, reliability and reproducibility, to help ensure reliable diagnoses. We chose Tecan for its high quality assays, but the company does more than just supply saliva testing kits. It also offers an independent proficiency testing program to help laboratories safeguard the accuracy and reliability of analytical results. Two or three times a year, we are sent samples to analyze with a specified assay, and we report the results directly to the program coordinator. These are collated and shared anonymously with all the participants, allowing us to check that our results are comparable to those of other facilities and giving us confidence that we are performing the assay correctly.”

“People often turn to healthcare professionals in the wellness space – wellness practitioners, naturopaths, nutritionists, chiropractors, physicians in the functional or integrative medicine space – when conventional medicine has been unable to provide answers to their health issue,” said Aron. “Saliva testing with Tecan’s kits gives us a straightforward way to obtain baseline hormone levels, which are a starting point for further investigations. Some of our most commonly requested tests are for the stress hormone cortisol, and the sex hormones – estradiol, progesterone, DHEA and testosterone. The diurnal cortisol test is a convenient means of monitoring the body’s stress level over the course of the day and, along with DHEA, helps to provide an indication of any imbalance in adrenal function. Similarly, determining the levels of the sex hormones will help individuals seeking an optimal hormone balance.”

“Saliva testing is one of the best ways of looking at many analytes and has a wonderful future, offering a non-invasive method of measuring the bioactive levels of hormones and other compounds. Today, almost any of the proteins that can be tested for in blood – for example, enzymes, cytokines and antibodies – can also be screened in saliva, at sensitivities that could only be dreamt of just a few years ago. Saliva-based detection levels are now into the low picogram range, with new assays offering novel analytes and lower detection limits continually under development. Saliva testing has truly come of age,” Aron concluded.

To find out more about Tecan’s range of saliva diagnostic kits, visit www.tecan.com/ibl

To learn more about FLUIDS iQ, go to fluidsiq.com