Traditionally, at dental school we are taught to take basic primary impressions and then have special trays made on a patient’s first visit, and a secondary impression on a second visit. However, with patients having to come back a second time for more impressions, this method can be time consuming for both dentist and patient. And if the bite registration is taken on the second visit, the bite rims will be made on the primary impressions and will tend to be less stable.

To generalise, dentists tend not to take as much care and attention over primary impressions which can result in suboptimal special trays leading to a less than perfect secondary impression.

No more problems

A new technique has come to my attention, which is achieving excellent results and is overcoming the above disadvantages. This system involves choosing a tray that can be heat moulded. There are a number of sizes of trays, for example, five for full uppers, and five for full lowers, which can then be easily adapted so the extensions of the trays end in the mid-vestibule of the sulci. Once the tray has been selected, and heat modified where necessary, impressions are taken using several viscosities of polyvinylsiloxane materials. In essence, the impression is taken several times, building it up in layers.

To give an example of the benefit of this technique, we can examine the common example of an upper ridge, where the gingivae of the pre-maxilla is loose and flabby but the posterior ridge is fibrous and firmly attached. While doing the impression, the anterior portion of the tray can have a very light/light body viscosity wash placed whereas the posterior section of the tray may have a medium body wash.

More flexibility

For the above scenario, I remember being told at dental school to leave a window in the upper tray and take a plaster impression of the pre-maxilla. In reality, it was a very rare dentist who would use that technique, partly because it was so time consuming. This new technique does not require a lot of time, but gives the dentist much more flexibility, as one simply loads the tray with a viscosity to match the underlying gingivae character and mobility and ridge height.

You can also change the viscosity in relation to a patient’s muscular function. During final impressions, we need to activate all of the facial musculature to capture an accurate peripheral border thereby obtaining the optimal retention of the final prosthesis. For patients with a strong muscular action, we can choose a heavier body material. This overcomes a disadvantage with using alginate, where strong muscular action can create an overly thin impression flange.

I would strongly recommend that dentists try using the Massad tray system with different viscosities polyvinylsiloxanes, and compare the results of this system to the one you are using now.