

Dentistry Clinical

Edited by Julian English (01923 851750)
julian.english@fmc.co.uk

How to record an impression of an implant

Harry Shiers guides you through the different ways of carrying out this particular procedure

If you are a dentist who wishes to get involved in implant dentistry, and refers out the surgical part, there remains a lot to do in order to complete a case after surgery. An impression must be made of the implant, an abutment selected, and the usual deliberations of shade taking and the material of choice for crown construction must be made.

One of the significant differences between an implant and a tooth root is the mode of attachment to bone. An implant is held by a direct structural connection with bone whilst a tooth root is held via a periodontal ligament (PDL). A PDL can move up to 75 microns in the vertical plane (some sources quote a higher figure than this), while an implant is effectively rigid. There is, therefore, no tolerance when recording the impression of an implant and the technique must be extremely accurate.

To this end, the implant companies provide a unit which can be screwed into the head of the implant or pressed onto an abutment (the abutment itself is screwed into the head of the implant). The unit is called an impression coping and, when screwed into the implant or abutment, it is held rigidly and there is no movement.



Figure 1: An Astratech impression coping screwed into the head of the implant



Figure 2: The impression coping held rigidly in the impression



Figure 3: A stock tray with a prominent impression coping



Figure 4: A reseating impression coping that screws into the abutment

If we start by considering a single implant, there are four common methods for recording an impression:

1. Pick up impression

This technique involves picking up the impression coping in the impression once it has been screwed into the implant head or press fitted onto the abutment.

A rigid impression material such as polyether should be used to capture the impression coping firmly. The procedure is performed in a plastic or special tray, and the impression coping should protrude above the height of the adjacent teeth. This requires a hole to be made in the impression tray which is created with an acrylic bur and a straight hand piece.

Figure 1 demonstrates an Astratech impression coping screwed into the head of the implant. Figure 2 shows the impression coping held rigidly in the impression, while Figure 3 demonstrates a stock tray with the impression coping standing proud.

2. Re-seating impression

This technique involves screwing an impression coping into the head of the implant or seating the impression onto an

abutment, but when the impression tray is removed, the impression coping remains attached to the implant. It is then re-seated into the impression.

The re-seating impression copings have a distinctive external shape and geometry, which ensures they can be re-seated in one direction only. This technique is useful at the back of the mouth where lack of space does not allow manipulation of instruments to secure and release a pick up impression coping.

Figure 4 demonstrates a reseating impression coping for Nobel Biocare which screws into the abutment.

3. Head of implant impression

With this technique, the impression is recorded at the head of the implant. It is considered the most accurate technique, and is probably the simplest. The impression coping is fixed directly into or onto the implant.

4. Abutment impression

This technique involves taking an impression of the abutment. The implant manufacturer normally provides copings for their non-adjustable abutments, which press onto or can alternatively be screwed into the abutment.

Harry RBP Shiers BDS, MSc (implant dentistry), MGDS, MFDS, took his initial training in implants in 1989 with the Institut Straumann. He spent a year teaching undergraduates at The London Dental Hospital and since then he has spent a year at the Eastman Dental Institute studying implants prior to completing the two-year part time Master of Science in implant dentistry at Guy's Hospital, London. He currently runs the Harcourt House Implant Referral Centre in the west end of London where he places implants for referring GDPs.