

Bone Grafting for Implant Surgery

As discussed during the consultation, there may be inadequate bone for implant placement which would become evident at the time of surgery. This can be in a majority of situations, dealt with by grafting bone around the implant/s at the time of surgery.

This leaflet provides you with information on the types of bone grafting materials that are recommended for such a procedure. Not all the materials have a similar success in regenerating bone and therefore you should carefully consider these before making your choice.

The most successful technique to address these defects involves grafting with a combination of your own bone (collected as bone chips during the surgery) which is then overlaid with bovine bone substitute (bone substitute from cows). The bone will also need to be covered with a special collagen membrane which is derived from pigs (porcine). Both these materials are used very successfully in implant dentistry. These materials are thoroughly tested for infectivity and are CE approved.

Another technique involves using bone grafting material that has been harvested from human cadavers under very strict and controlled harvesting procedures. The material is thoroughly treated during manufacturing process to eliminate any potential of infection and is being used successfully by various clinicians in Europe and America. However, please note that in the United Kingdom you will not be able to donate blood after having human derived biomaterials.

There are also synthetic bone grafting materials and membranes available.

The success rate with bovine bone and porcine collagen membrane has been demonstrated to be the highest in such procedures and therefore, I would personally recommend this combination in order to achieve the best possible outcome.

However, please understand that the bone regeneration procedure is not always successful and implant outcome in such a situation would be compromised.

The alternative would be to carry out bone grafting as a separate surgery. This would involve grafting surgery as a preparatory procedure to increase the available bone for subsequent implant placement. In such a case, bone block can be harvested from the chin or an area in the back of your mouth. This block should ideally be covered by bovine bone and porcine membrane (mentioned above) and left to heal for 4-6 months before implants can be placed. This approach provides the best bone bed for implant placement. However, as it necessitates extra surgeries, increased morbidity at both the donor and recipient sites it inevitably extends treatment time. Therefore, in the majority of cases I recommend a simultaneous bone grafting procedure as previously described, however, there are situations when a staged approach cannot be completely avoided.