

Easy insertion of bone substitute materials

Biomaterials and components used on or in the human body are called biocompatible and they should not provoke any adverse response. For dental implants, bone substitute materials made of synthetic, human or animal raw materials are used. Medmix now offers a special syringe solution made of biocompatible plastic that allows bone replacement material to be inserted intuitively, safely and hygienically into a bone defect.

Medmix Systems AG, based in Rotkreuz, Switzerland, is a leading provider of mixing and application systems for the global healthcare industry, developing and marketing unique, efficient and easy-to-use application solutions for biomaterials. Many renowned companies in the fields of orthopedics, oral surgery and tissue treatment have been working with Medmix for decades, and appreciate the state-of-the-art development process. Through the acquisition of Medmix, Sulzer's Applicator Systems division has expanded its portfolio of dispensing and mixing solutions. Medmix's products are mainly used in the medical and clinical fields.



Handling of the dental syringe for a granular bone substitute material.

Significant increase in dental implants

A dental implant is a component made of foreign material that is inserted into the jawbone. After a defective tooth is removed, these implants take over the function of an artificial tooth root, to which various tooth prostheses can be fixed. Dental prostheses include single teeth, bridges or crowns.

“ We are very pleased to add Medmix products and technology to our current portfolio. This will strengthen our position in the healthcare market as a provider of state-of-the-art mixing and dispensing solutions.

Amaury de Menthiere, Division President Applicator Systems, Winterthur, Switzerland

The implants are usually inserted into the jawbone with a screw thread. Before the implant is inserted into the jaw, a bone substitute material is inserted into the cavity intended for the implant. Over a period of 3 to 6 months, the implant grows together with the surrounding bone. Due to the incorporation of the implant into the bone (osseointegration), the implant is connected to the bone in an extremely load-bearing manner.

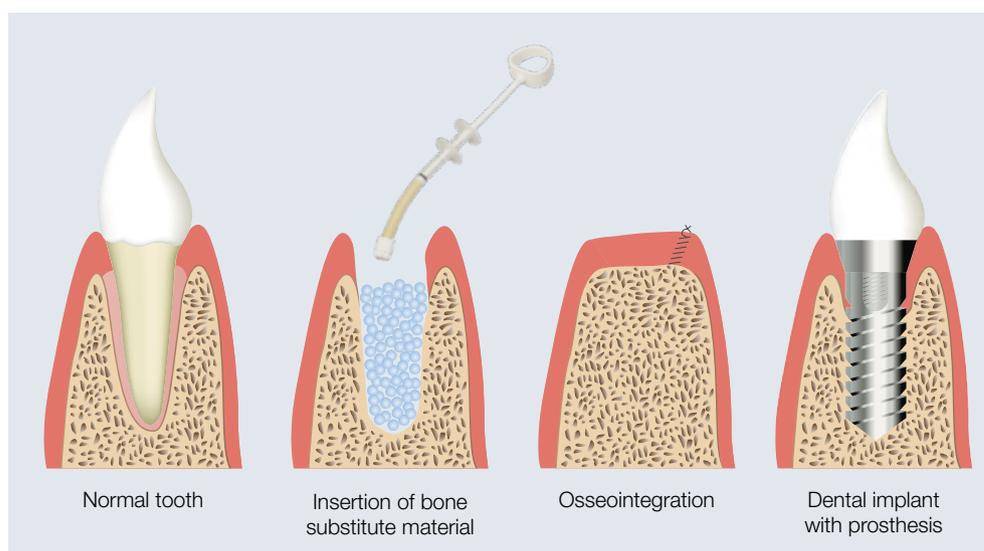


Fig. 1 Process for inserting dental implants.

Dental syringe with bone substitute material

In June 2018, Medmix launched its dental syringe, which is designed to make it easier for dentists to handle bone substitute materials. With the syringe, the bone replacement material can be stored in a sterile manner until it is used, hydrogenated if needed, and later inserted into the jawbone. Dentists appreciate the simple handling of the syringe. Whether the bone replacement material is in the form of granulate or paste, both can be inserted precisely and reliably.

Ergonomic handling

The unique design of the syringe allows one-handed operation. The curved shape in the front part of the syringe gives the dentist a much better view of the bone defect to be treated. This ensures accurate placement of the bone substitute material.

The dental syringe is available in two configurations. One with a filter tip for the hydrogenation of granular bone replacement materials and the other with a simple sealing cap for bone substitute materials in paste form (Figs. 2 and 3).



Fig. 2 Dental syringe with filter tip for granular bone substitute materials.



Fig. 3 Dental syringe with simple sealing cap for bone substitute materials in paste form.

Package and shell in one

Dentists are not the only ones who appreciate efficient processes. It is also better for the patient if the procedure is completed as quickly as possible. Thanks to the analysis, observation skills and creativity of our development engineers, Medmix's new products can be used with fewer hand movements and make the dentists' processes faster. Upon request, the Medmix dental syringe can be delivered with a blister shell, which can also be used by the dentist as a handling kit for the hydrogenation of granular bone substitute materials (Fig. 4).



Fig. 4 Easy handling thanks to the integrated reservoir for blood, for example, for moistening the granular bone substitute material.



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Biocompatibility and sterility

The syringes are manufactured and packaged in an environment that is low in particles and germs (clean room ISO 8). The selected plastics meet the requirements of the USP VI regulation (approval for pharmaceutical use) and are suitable for use on and in humans. Furthermore, the selected plastics allow sterilization using gamma rays without limiting the performance of the syringe.

Dispensing systems for biomaterials

Bone substitute materials and biomaterials and their appropriate handling are becoming increasingly important in the health sector. Absolute reliability and quality in production must be guaranteed to ensure the safety of both the dentist and the patient. Medmix is an ISO 13485:2016 certified company and an experienced partner in this field. Medmix's customers receive support in the legal admission of products by providing the required product documentation.