

# Individual replacements of the skeletal defects

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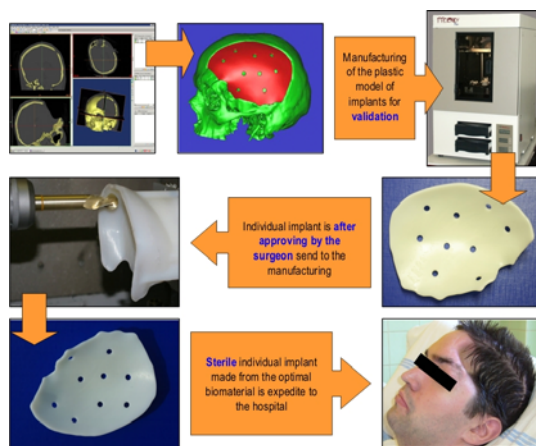
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## Introduction

Main aim of this project is to create fast, accurate and effective method for designing and production of custom made skeletal bone defects replacements. Implants are made from the biomaterials commonly used in clinical practice.

## Methods

Individual implants were produced on the basis of 3D geometric models designed from available diagnostic imaging methods (CT and MRI), and their following computer processing (Figure 1). For production of implants by conventional CNC machining were used biomaterials commonly used in clinical practice (titanium, PEEK, UHMWPE), which can be machined and are suitable for long time implantation [1,2,3,4].



**Figure 1:** Schema of the designing and manufacturing the individual replacement for patient with large skull defect

## Results

In this work, several clinical cases of individual bone defect replacements production will be presented. The implants were produced for a particular patient individually with high accuracy in order to achieve not only fully functional, but also aesthetic defect replacements.

## Conclusion

Individual implants compensate the loosed function and repair patient's esthetic visage, reduce time necessary for surgery and are comfortable for surgeons during the surgery.

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## References

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