

# 3D representation for simulation of the feeding situation and feeding of “scalpels and other instruments that approach the body” into the body.

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In recent years, radiotherapy using diagnostic imaging devices has been used in the medical field. In the treatment of scalpels and other instruments that approach the body, it is now possible to compare CT images for treatment planning and immediately prior to treatment to pinpoint the scalpel insertion. This enables more accurate alignment than the previously possible adjustments made by eye.

However, there are some problems. The human body is highly likely to deviate from the CT image taken immediately prior to treatment, and fine adjustments must be made while the scalpel is being inserted. Detailed adjustments are often based on long years of experience and knowledge, and it takes time to transfer the technique, resulting in a decrease in the number of treatment providers. In order to increase the number of therapists, there is a need for a system to assist therapists that does not depend on knowledge or experience. The objective of this research is to represent the X-ray CT layer in a 3D representation using MR, and to clearly show in real time where an instrument, such as a scalpel, is located inside a person's body when it is inserted into the body. In this paper, we represent a material such as a sphere created in a Unity 3D project on a spatial reproduction display, and color only the area where a hand or a stick is in contact with it and its surroundings using Unity's shader function, so that the contact area could be determined.

## Type of presence

Presence online

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