Medical 3D Printing Solution

ANATDEL

MEDICAL IP

MEDICAL IP

AI-Powered Digital Twin

At the intersection of technology and the clinical expertise,
we have been leading the paradigm change of medical imaging solution
with reliable AI imaging analytic and Digital Twin technology.
Experience unprecedented imaging solution and Transform your Medicine!

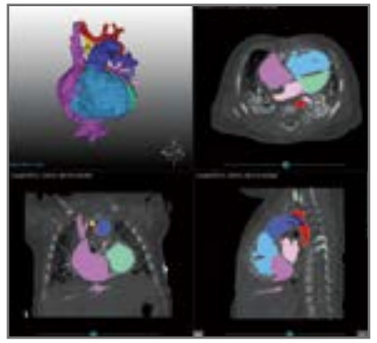
Our Spirit & Endeavour

MEDICAL IP strives to develop technologies and products with the philosophy that technological innovation is directly connected to the development of medical care and saving lives. We support UN Sustainable Development Goals (SDGs) to achieve our mission and responsibilities.

Product Information

3D PRINTING
SOLUTION WORKFLOW

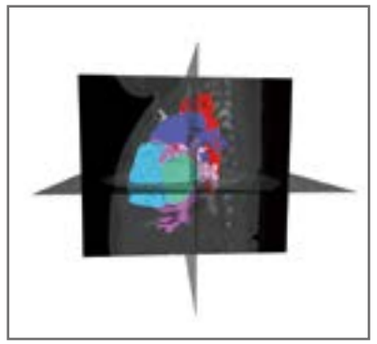
MEDICAL IP delivers patient specific
3D printing model within a week



STEP 1

MEDIP PRO FDA 510(K)·CE MHRA·MFDS

MEDICAL IP's own segmentation and analysis software



STEP 2

VisualPrinting

Medical Communication

STEP 3

ANATDEL MFDS

Medical 3D Printing

ANATDEL is a *"life-saving"* technology

Gartner® 5 consecutive years. sample vendor

3D Printed Presurgery Anatomical Models

Hospitals

SNUH SEOUL NATIONAL UNIVERSITY HOSPITAL
SAMSUNG MEDICAL CENTER
SEVERANCE HOSPITAL
THE CATHOLIC UNIVERSITY OF KOREA CATHOLIC MEDICAL CENTER
HALLYM UNIVERSITY MEDICAL CENTER Hallym University Sacred Heart Hospital
나누리병원
PNU
CAU CHUNG-ANG UNIVERSITY HOSPITAL
THE CATHOLIC UNIVERSITY OF KOREA ST. VINCENT'S HOSPITAL
충남대학교병원 CHUNGNAM NATIONAL UNIVERSITY HOSPITAL
충북대학교병원 CHUNGBUK NATIONAL UNIVERSITY HOSPITAL
에스포항병원
SEJONG HOSPITAL

Corporate

Medtronic
Johnson & Johnson
BD
BARD
OLYMPUS
KALOS MEDICAL
PNU MEDICAL
WSI
endovision
COOK MEDICAL
SAMSUNG DISPLAY
woorien
IntelliKorea

ANATDEL Applications

01 **Surgical Planning**
Patient-specific model for surgical planning

02 **Surgical Simulation**
Cadaver substitution

03 **Research**
Models for research projects

04 **Medical Device Testing**
Models to test the quality and performance of medical devices

05 **Patient Consultation**
Models for explanation of patient disease and medical procedure with the information of medical device

01

Surgical Planning

Pediatric Congenital heart defects

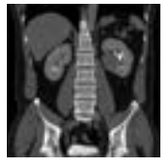
Medical Device Info. refer to 26p

Age	5
Sex	Female
Disease	Major aortopulmonary collateral artery
Source	CT 0.6 ㎜

Application	Pediatric cardiac surgery
Material	Resin
Size	93×64×115 ㎜
Printed area	heart, aorta, pulmonary vessels
Model No.	AN-HTMPP-19002
Item No.	PCHS-BH-001

Renal cell carcinoma

Age	36
Sex	Male
Disease	Renal cell carcinoma
Source	CT 2 ㎜



Application	Urology
Material	ABS, Silicone
Size	169 × 80 × 103 ㎜
Printed area	kidney, vein, artery, tumor, calyx
Model No.	AN-KDTPC-19096
Item No.	RCCPNS-001

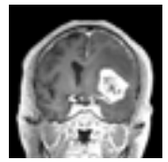
Arteriovenous malformation

Age	24
Sex	Male
Disease	AVM
Source	CT 0.5mm

Application	Plastic surgery
Material	Resin
Size	130 × 113 × 201 ㎜
Printed area	vein, artery, bone
Model No.	AN-FCMPP-19001

NeuroPhantom™

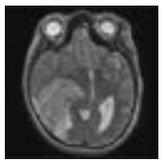
Age	71
Sex	Male
Disease	Brain tumor
Source	MR 1㎜



Application	Neurosurgery
Material	Resin, ABS, Silicone
Size	165 × 152 × 174 ㎜
Printed area	cerebrum, cerebellum, lateral ventricle, tumor
Model No.	AN-BRTRC-19001
Item No.	BCS-001

NeuroPhantom™

Age	63
Sex	Female
Disease	Brain tumor
Source	MR 2 ㎜



Application	Neurosurgery
Material	Resin, ABS, Silicone
Size	165 × 152 × 174 ㎜
Printed area	cerebrum, cerebellum, lateral ventricle, tumor
Model No.	AN-BRTRC-19005
Item No.	BCS-001

02

Surgical simulation

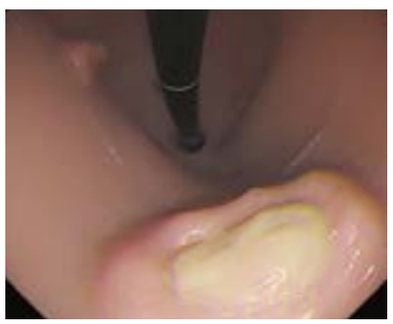
Percutaneous nephrolithotomy simulator

Disease	Kidney stones
	
Application	Training for defining puncture direction, dilation and stone
Size	250 × 150 × 150 ㎜
Printed area	kidney, renal pelvis, renal calyx, ureter
Model No.	AN-KDCTC-20001

Toxin & filler injection simulator

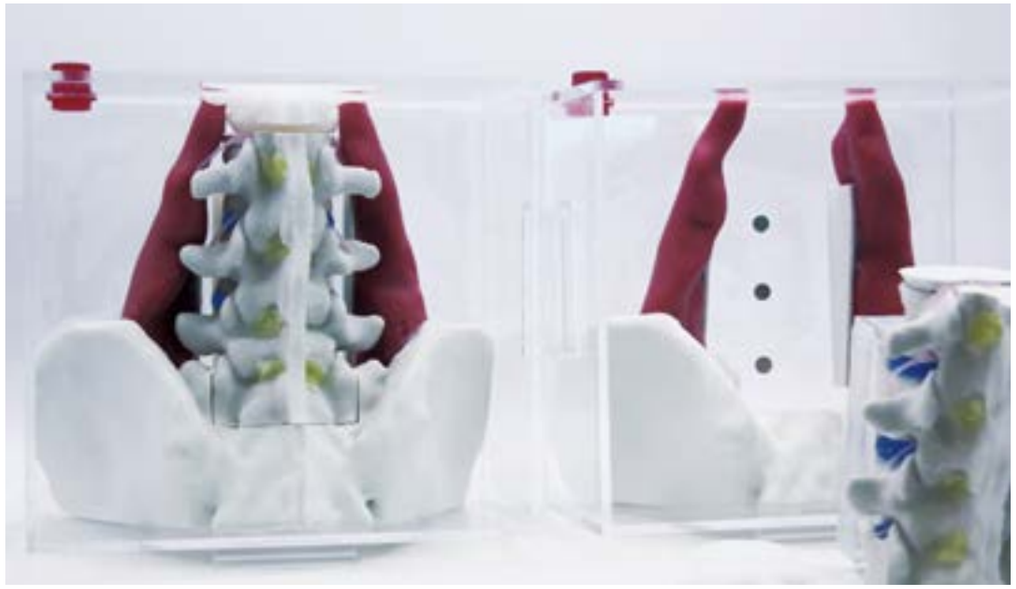
Application	Training for Facial toxin and filler injection skill
Size	170x250x110 ㎜
Printed area	skin, subcutaneous fat, muscle, artery, vein, nerve
Model No.	AN-PSNTC-21001

Upper Gastrointestinal Endoscopy simulator



Application	Training for navigation of endoscope from mouth insertion to duodenum
Size	584 × 255 × 250 ㎜
Printed area	face, tongue, pharynx, larynx, epiglottis, pyriform sinus, esophagus, trachea, stomach, duodenum
Model No.	AN-GINTC-20003

Lumbar spinal surgery training simulator



Disease	Herniated disc

Application	Surgical training for discectomy at Lumbar
Size	350 × 300 × 200 ㎜
Printed area	vertebra, sacrum, ilium, disc (anulus fibrosus / nucleus pulposus), spinal cord(dura master / spinal nerve), psoas, iliacus, inter spinous ligament, supraspinous ligament, ligamenta flava, anterior longitudinal ligament, articular capsule of lumbar spinal cord
Model No.	AN-SPMTC-19002

EndoVascular Simulation Station

Disease Cerebral aneurysm

Application Surgical training for cerebral aneurysm

Size 1500 X 600 X 300 ㎜

Printed area regular version: ACA, MCA, PCA, ICA, basilar artery, vertebral artery, Aorta, femoral artery
Ver. 2: Hepatic artery

Model No. AN-LVNTC-22001

Skull base surgery simulator

Disease Skull base tumor

Application Training for skull base surgery

Size 150 × 100 × 90 ㎜

Printed area skull, cerebrum, cerebellum, pituitary gland, stalk, pons, medulla oblongata, CN1, CN2, CN3, CN5, CN6, CN4, CN7,CN8, tumor, muscle, basilar plexus, vein, artery eyeball, ica, eca, dura mater, soft tissue, skin

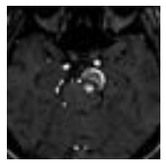
Model No. AN-HDTTC-20001

03

Research

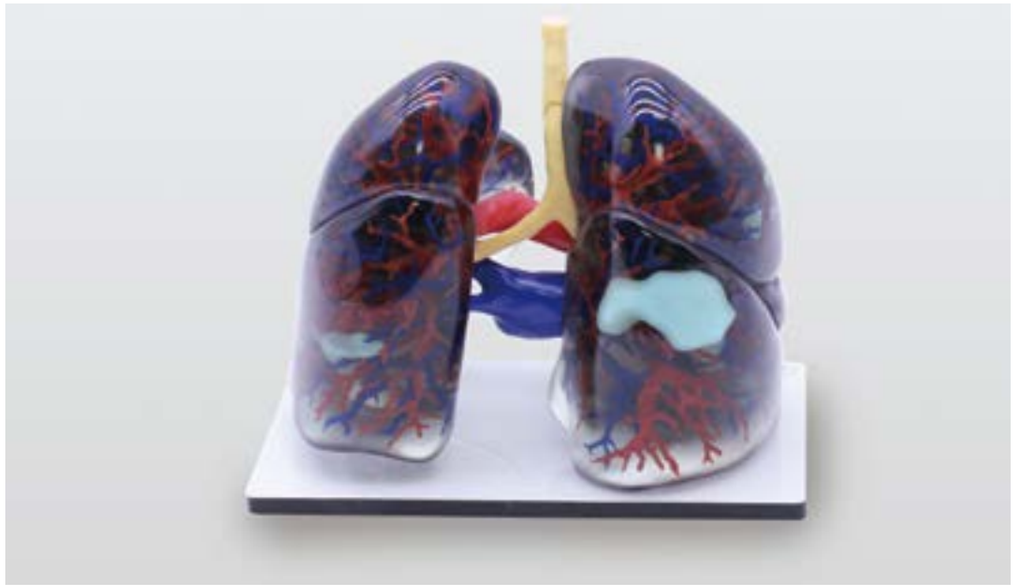
Neuro aneurysm

Age	59
Sex	Female
Disease	Thrombosed SCAA
Source	MR 0.6 ㎜



Application	Neurosurgery
Material	Resin, Plaster
Size	120 × 120 × 70 ㎜
Printed area	skull, brainstem, artery(thrombosed), vein, tentorium
Model No.	AN-BRXRP-20005

COVID-19 lung



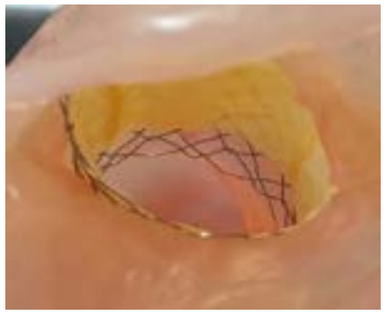
Age	42
Sex	Female
Disease	COVID-19
Source	CT 1 ㎜

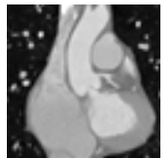
Application	Respiratory Medicine, infectious diseases
Material	Resin
Size	280 × 200 × 230 ㎜
Printed area	lung, trachea, bronchus
Model No.	AN-LUPDP-20001

04

Device testing

Stent placement for the heart





Application	Model for Test model of Stent Placement for the Heart
Size	91 × 106 × 107 ㎜
Printed area	pulmonary trunk, right ventricle
Model No.	AN-HTMVP-19001

Tympanostomy in adhesive otitis media simulator

Application	Myringotomy tube insertion training simulator
Size	70 × 70 × 70 mm
Printed area	skin, external auricle, mastoid part of temporal bone, auditory ossicles, tympanic membrane
Model No.	AN-EAOVC-20001

05

Patient consultation

Post-operation model for neurovascular devices

Medtronic

Application	Patient consulting for explaining brain aneurysm surgery
Size	115 × 90 × 90 ㎜
Printed area	circle of willis, neurovascular aneurysm, Solitaire, Pipeline, Axium, Onyx
Model No.	AN-HTGP-20001

Post-operation model of endovascular aortic aneurysm repair devices

Application	Patient consulting for explaining brain aneurysm surgery
Size	① 110x110x150 ㎜ ② 100x100x100 ㎜
Printed area	abdominal aorta, applier, Heli_FX(fixation), graft
Model No.	① AN-AVANEC-20001 ② AN-AVANEC-21001

Medtronic

Post-op model of trans-catheter aortic heart valve


Medtronic

Application	Patient consultation for trans-catheter aortic heart valve surgery
Size	110 X 125 X 125 ㎜
Printed area	Aorta, Atrium, Tricuspid Valve, Mitral Valve, Interventricular Septum, Chordae Tendineae, Ventricle, Papillary Muscles, Inferior Vena Cava, Pulmonary Veins
Model No.	AN-HTADP-22001

Licenses and Certifications

(last updated on Oct. 7th 2022)

Licensure

Product name	ANATDEL
Country	S. Korea
Item code and level **Name of product** **Product permit number**	**- Item code and level: A64050.01, level 1** **- Name of product:** **(Kor)** 의료용가이드 **(Eng) Guide for medical use** **- Product permit number: 20-1461**
Effective date	Sept 24th 2020

Certification

	Certification number	Effective date
Medica device manufacturer certification	5529	Nov. 14th 2016
Certificate of GMP standards and regulations for Medical Device Manufacturing	KTL-ABBA-7444 * Certificate no.	Feb 1st 2020 – Jan. 31st 2023
EN ISO 13485:2016	SX 60145134 0001	Dec. 27th 2019 – Oct. 31st 2022
EC Certificate	HD 60145133 0001	Dec. 27th 2019 – May 26th 2024 * Surveillance audit completed on Jun 13th 2022

Clinical Validation | Publication

1. Clinical application of 3D virtual and printed models for cerebrovascular diseases

The virtual and printed models of IAs, a CM and AVM were satisfactorily implemented in this study. The physicians easily saw how helpful the human skull model was for the craniotomy and surgical approach. 3D modeling goes beyond a simple skull model and helps to intuitively observe various intracranial structures, such as the brain, vessels and pathologic lesions. In the near future, substantial progress is expected to be made in the neurosurgical field in terms of education, training, explanation and treatment, although there are still some limitations in the imaging data, materials and 3D modeling techniques.

2. Clinical application of patient specifc 3D printing brain tumor model production system for neurosurgery

We established a 3D-printed brain tumor model production system that is ready to use in daily clinical practice for neurosurgery. The effectiveness of this system was tested in clinical field and could be confirmed by simulated clinical validation. We hope that this system will be widely introduced to the neurosurgery clinic as a new gear for the development of the next step for the future surgery.

3. Personalised three-dimensional printed transparent kidney model for robot-assisted partial nephrectomy in patients with complex renal tumours (R.E.N.A.L. nephrometry score ⩾7): a prospective case-matched study

The application of a personalised 3D-printed transparent kidney model during RPN reduced the console time by ~20% even in complex renal tumours. In particular, we found a substantial reduction in the tumour detection and dissection time step. In more complex tumour subgroups, we also found significant benefits in specific step times. In conclusion, the 3D-printed kidney model is useful as a surgical navigator for RPN and is expected to broaden the indications for PN.

4. Utility of three-dimensional printed heart models for education on complex congenital heart diseases

The utilisation of three-dimensional printed heart models for education on complex congenital heart disease was feasible and improved medical personnel's understanding of complex congenital heart disease. This education tool may be an effective alternative to conventional education tools for complex congenital heart disease.

Reference

1) Clinical application of 3D virtual and printed models for cerebrovascular diseases, Volume 206, July 2021, Clinical Neurology and Neurosurgery

2) Clinical application of patient-specific 3D printing brain tumor model production system for neurosurgery, 26 March 2021, Scientific Reports

3) Personalised three-dimensional printed transparent kidney model for robot-assisted partial nephrectomy in patients with complex renal tumours (R.E.N.A.L. nephrometry score ⩾7): a prospective case-matched study,2021 May;127(5):567-574, BJU international

4) Utility of three-dimensional printed heart models for education on complex congenital heart diseases,Nov 2020, Cardiol Young

Medical Device Labeling

01_ **ANATDEL**

02_ **Product Name**
Clinical Guide

03_ **Model Number**
BCS-001 and 14 other types

04_ **Manufactured by**
MEDICAL IP, Inc.
Headquaters: 1204-ho, Bodeum Building, 1, Kangwondaehak-gil,
Chuncheon-si, Gangwon-do
Office: 801-6-ho, Yeongeon 32-dong, 101, Daehak-ro, Jongno-gu, Seoul

05_ **Manufacture Number, Date of Manufacture**
Confirming Notes after Product Manufacture

06_ **Product License Number**
Jeshin No. 17- 4141

07_ **Purpose of Use**
An instrument to guide the path, location, and indication of the surgical site of an implant or a device. However, invasive-type disposables and dental uses are excluded

08_ **How to Use, Use Precautions**
See the User Manual

09_ **Package Unit**
1set

10_ **This device is a single-use, patient-customized medical device**

11_ **Other characteristics of the device related to technical information**
See the User Manual

12_ **How to Store**

* Store at room temperature
* Where to attach: attach additional information at the bottom of the back of device

Medical Device Class 1 Approved by KFDA | Item List

Product Code : A64050.01 Class 1 **Purpose** : Clinical guide **Product Name** : Anatdel

01_ **BCS-001**
Brain cancer surgery guide

02_ **ICVD-001**
Interventional coronary vascular disease therapy guide

03_ **NDS-001**
Nerovascular disease surgery guide

04_ **IND-001**
Interventional Neurovascular disease therapy guide

05_ **IAA-001**
Interventional aortic aneurysm therapy guide

06_ **LS-001**
Laparoscopic surgery guide

07_ **PCSS-001**
Pediatric congenital skull surgery guide

08_ **PCHS-BH-001**
Pediatric congenital heart surgery guide

09_ **PCHS-HL-001**
Pediatric congenital heart surgery guide

10_ **PACS-001**
Pediatric abdominal cancer surgery guide

11_ **IMR-001**
Interventional Mitral Regurgitation (MR) disease therapy guide

12_ **KSPN-001**
Kidney stone Percutaneous Nephrolithotomy guide

13_ **KSRIS-001**
Kidney stone Retrograde IntraRenal surgery guide

14_ **RCCPNS-001**
Renal Cell Carcinoma partial nephrectomy surgery guide

15_ **LCLS-001**
Lung cancer Lobectomy surgery guide

References

Lists of Published Journal Papers

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Medicine (Baltimore)
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Empowering Medicine, Saving Lives

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