Table S1 A summary of discussed articles

Title	DOI	Topic/issue	Paragraph in the manuscript
3D Printing in Radiation Oncology: A Systematic Review of the Literature	10.1002/acm2.12907	A systematic review of applications of 3D printing in radiation oncology	Radiation Oncology
3D printing methods for radiological anthropomorphic phantoms	10.1088/1361-6560/ac80e7	3D-printed anthropomorphic phantoms	Radiation Oncology
Design and fabrication of a personalized anthropomorphic phantom using 3D printing and tissue equivalent materials	10.21037/qims.2018.08.01	3D-printed anthropomorphic phantoms	Radiation Oncology
Three-Dimensional Printing for Construction of Tissue-Equivalent Anthropomorphic Phantoms and Determination of Conceptus Dose	10.2214/AJR.17.1948	3D-printed anthropomorphic phantoms	Radiation Oncology
Fabrication of a pediatric torso phantom with multiple tissues represented using a dual nozzle thermoplastic 3D printer	10.1002/acm2.13064	3D-printed pediatric anthropomorphic phantoms	Radiation Oncology
Validation of a personalized pediatric 3D-printed phantom for out-of-field photon and proton dosimetry	10.6083/hh63sw61n	3D-printed pediatric anthropomorphic phantoms	Radiation Oncology
Evaluation of PC-ISO for customized, 3D printed, gynecologic HDR brachytherapy applicators	10.1120/jacmp.v16i1.5168	3D-printed gynecologic HDR brachytherapy applicators	Radiation Oncology
3D printing of individual skin brachytherapy applicator: design, manufacturing, and early clinical results	10.5114/jcb.2022.114353	3D-printed skin brachytherapy applicators	Radiation Oncology
Application of 3D printing in cervical cancer brachytherapy	10.1016/j.jrras.2022.04.004	3D-printed gynecologic brachytherapy applicators	Radiation Oncology
A 3D-Printable, Low-Cost Obturator for Less Invasive Gynecologic Brachytherapy	10.7759/cureus.41162	3D-printed gynecologic brachytherapy applicators	Radiation Oncology
MRI-driven design of customised 3D printed gynaecological brachytherapy applicators with curved needle channels	10.1186/s41205-019-0047-x	3D-printed gynecologic brachytherapy applicators	Radiation Oncology
Development of 3D Printed Applicator in Brachytherapy for Gynecologic Cancer	10.1016/j.ijrobp.2017.06.2238	3D-printed gynecologic brachytherapy applicators	Radiation Oncology
Clinical applications of 3-dimensional printing in radiation therapy	10.1016/j.meddos.2017.03.001	3D-printed customized boluses and immobilizations	Radiation Oncology
The use of bolus in postmastectomy radiation therapy for breast cancer: A systematic review	10.1016/j.critrevonc.2021.103391	The significance of bolus in radiotherapy	Radiation Oncology
Intrapatient study comparing 3D printed bolus versus standard vinyl gel sheet bolus for postmastectomy chest wall radiation therapy	10.1016/j.prro.2017.12.008	Comparison of 3D-printed bolus to conventional gel bolus	Radiation Oncology
Low-density 3D-printed boluses with honeycomb infill in radiotherapy	10.1016/j.ejmp.2023.102600	An innovative method of 3D printing of boluses	Radiation Oncology
A Customized Bolus Produced Using a 3-Dimensional Printer for Radiotherapy	10.1371/journal.pone.0110746	3D-printed customized bolus	Radiation Oncology
A clinical trial to compare a 3D-printed bolus with a conventional bolus with the aim of reducing cardiopulmonary exposure in postmastectomy patients with volumetric modulated arc therapy	10.1002/cam4.4496	Clinical trial results, 3D-printed bolus to reduce cardiopulmonary exposure in postmastectomy patients	Radiation Oncology
3D-Printed masks as a new approach for immobilization in radiotherapy – a study of positioning accuracy	10.18632/oncotarget.24032	3D-printed masks	Radiation Oncology
Shaping success: clinical implementation of a 3D-printed electron cutout program in external beam radiation therapy	10.3389/fonc.2023.1237037	3D-printed electron field-shaping blocks	Radiation Oncology
The role of 3D printed models in the teaching of human anatomy: a systematic review and meta-analysis	10.1186/s12909-020-02242-x	3D-printed models to teach anatomy and plan surgery	Surgical oncology
Application of anatomically accurate, patient-specific 3D printed models from MRI data in urological oncology	10.1016/j.crad.2016.02.012	3D-printed models to plan surgery	Surgical oncology
Effect of the Surgical Margins on the Outcome of Patients with Head and Neck Squamous Cell Carcinoma: Single Institution Experience	10.3969/j.issn.2095-3941.2012.01.005	The significance of margins in head and neck cancer surgery	Surgical oncology
Frozen Section Analysis and Real-Time Magnetic Resonance Imaging of Surgical Specimen Oriented on 3D Printed Tongue Model to Assess Surgical Margins in Oral Tongue Carcinoma: Preliminary Results	10.3389/fonc.2021.735002	3D-printed models to plan surgery and better predict margins	Surgical oncology
3D Printed Surgical Instruments – The Design and Fabrication Process	10.1007/s00268-016-3814-5	3D-printed surgical instruments	Surgical oncology
Personalized Surgical Instruments	10.1115/1.4024487	3D-printed surgical instruments	Surgical oncology
MRI-based 3D-printed surgical guides for breast cancer patients who received neoadjuvant chemotherapy	10.1038/s41598-019-46798-1	3D-printed surgical guides	Surgical oncology
Application of 3-dimensional printing implants for bone tumors	10.3345/cep.2021.01326	3D-printed implants	Surgical oncology
Individualized Techniques of Implant Coating with an Antibiotic-Loaded, Hydroxyapatite/Calcium Sulphate Bone Graft Substitute	10.2147/TCRM.S242088	Antibiotic-coated implants	Surgical oncology
Toward Antibacterial Coatings for Personalized Implants	10.1021/acsbiomaterials.0c00683	Antibiotic-coated implants	Surgical oncology
Clinical efficacy of customized modular prosthesis in the treatment of femoral shaft metastases	10.3389/fonc.2023.1115898	3D-printed prosthesis	Surgical oncology
Comparative evaluation of 3D-printed and conventional implants in vivo: a quantitative microcomputed tomographic and histomorphometric analysis	10.1038/s41598-023-48315-x	3D-printed vs conventional implants in-vivo	Surgical oncology
Contribution of 3D printing to mandibular reconstruction after cancer	10.1016/j.anorl.2017.09.007	3D-printed mandibular implants	Surgical oncology
Custom-made prosthesis in thoracic surgery	10.21037/pcm.2019.04.02	3D printing in thoracic surgery	Surgical oncology
Three-Dimension-Printed Custom-Made Prosthetic Reconstructions in Bone Tumors: A Single Center Experience	10.3390/curroncol29070361	3D-printed bone protheses	Orthopedic oncology
Reconstruction with a Custom made Prosthetic Wrist Arthrodesis after Bone Tumor Resections of the Distal Radius. Single Centre Experience	10.1055/s-0040-1721366	3D-printed custom-made bone prothesis	Orthopedic oncology
New comprehensive procedure for custom-made total ankle replacements: Medical imaging, joint modeling, prosthesis design, and 3D printing	10.1002/jor.24198	3D-printed custom-made bone prothesis	Orthopedic oncology
Clinical study of 3D printed personalized prosthesis in the treatment of bone defect after pelvic tumor resection	10.1016/j.jot.2021.05.007	3D-printed custom-made bone prothesis	Orthopedic oncology
Case Report: 3D-Printed Prosthesis for Limb Salvage and Joint Preservation After Tibial Sarcoma Resection	doi.org/10.3389/fsurg.2022.873272	3D-printed custom-made bone prothesis (conservative surgery)	Orthopedic oncology
3D Printed Absorber for Capturing Chemotherapy Drugs before They Spread through the Body	10.1021/acscentsci.8b00700	Novel 3D-printed absorber for reduction of chemotherapy toxicity	Medical oncology
Programmable shape transformation of 3D printed magnetic hydrogel composite for hyperthermia cancer therapy	10.1016/j.eml.2021.101305	3D-printed hydrogel combined with hyperthermia	Hyperthermia
3D printed magnetic polymer composite hydrogels for hyperthermia and magnetic field driven structural manipulation	10.1016/j.progpolymsci.2022.101574	3D-printed hydrogel combined with hyperthermia	Hyperthermia
Multimaterial Hydrogel 3D Printing. Macromolecular Materials and Engineering	10.1002/mame.202300272	3D-printed hydrogel combined with hyperthermia	Hyperthermia
3D-printed bioceramic scaffolds with a Fe3O4/graphene oxide nanocomposite interface for hyperthermia therapy of bone tumor cells	10.1039/C6TB00390G	3D-printed bioceramic composites combined with hyperthermia	Hyperthermia
Composite magnetic 3D-printing filament fabrication protocol opens new perspectives in magnetic hyperthermia	10.1088/1361-6463/accd01	3D printing in magnetic hyperthermia	Hyperthermia
3D-printed thermoplastic polyurethane for wearable breast hyperthermia	doi.org/10.1186/s40691-021-00248-7	3D-printed thermoplastic mesh for breast cancer hyperthermia	Hyperthermia
Patient-Specific 3D-Printed Low-Cost Models in Medical Education and Clinical Practice	10.3390/mi14020464	3D-printed educational models for patients	Patients' education
Exploring the Impact of Using Patient-Specific 3D Prints during Consent for Skull Base Neurosurgery	10.1055/a-1885-1111	3D-printed educational models for patients (obtaining consent)	Patients' education

Table S1 (*continued*)

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Table S1 (*continued*)

Title	DOI	Topic/issue	Paragraph in the manuscript
The use of 3D-printed models in patient communication: a scoping review	10.2217/3dp-2021-0021	3D-printed educational models for patients	Patients' education
Personalized 3D-Printed Model for Informed Consent for Stage I Lung Cancer: A Randomized Pilot Trial	10.1053/j.semtcvs.2018.10.017	3D-printed educational models for patients (obtaining consent), clinical trial	Patients' education
Patient-specific 3D printed and augmented reality kidney and prostate cancer models: impact on patient education. 3D Printing in Medicine	10.1186/s41205-019-0041-3	3D-printed educational models for patients	Patients' education
Fabrication of low cost soft tissue prostheses with the desktop 3D printer	10.1038/srep06973	Cost reduction by 3D-printing: protheses	Cost
Novel Anthropomorphic Phantom Composed of Tissue-Equivalent Materials for Use in Experimental Radiotherapy: Design, Dosimetry and Biological Pilot Study	10.3390/biomimetics8020230	Cost reduction by 3D-printing: phantoms	Cost
Development of a novel and low-cost anthropomorphic pelvis phantom for 3D dosimetry in radiotherapy	10.5114/jcb.2020.100380	Cost reduction by 3D-printing: phantoms	Cost
Utility and Costs During the Initial Year of 3D Printing in an Academic Hospital. Journal of the American College of Radiology	10.1016/j.jacr.2022.07.001	Cost reduction by 3D-printing: surgery	Cost
Pushing boundaries in 3D printing: Economic pressure filament extruder for producing polymeric and polymer-ceramic filaments for 3D printers HardwareX	10.1016/j.ohx.2023.e00486	Higher cost of medical filaments	Cost
Design for scalability and strength Optimisation for components created through FDM process	Not available Qureshi, A. J., Mahmood, S., Wong, W. L. E., & Talamona, D. (2015). Design for scalability and strength optimisation for components created through fdm process. Proceedings of the International Conference on Engineering Design, ICED, 6(DS 80-06), 255-266.	General rules of scalability	Scalability
From Lab to Fab — High-Precision 3D Printing. Laser Technik Journal	10.1002/latj.201700009	High precision printing	Scalability
Medical 3D printing, intellectual property, and regulation	10.1016/B978-0-323-89831-7.00014-6	Comprehensive textbook on legal issues related to 3D printing	Regulatory issues
3D Printing Trends - Discussing Societal, Environmental and Ethical Implications	Not available Maric J, Rodhain F, Barlette Y. 3D Printing Trends - Discussing Societal, Environmental and Ethical Implications. Management des technologies organisationnelles. 2017;6(1):127–38.	Ethical issues	Regulatory issues
The Challenges of 3D Printing to the Repair-Reconstruction Doctrine in Patent Law	10.2139/ssrn.2236580	Legal issues	Regulatory issues
Medical Applications of 3D Printing and Standardization Issues	10.14791/btrt.2023.0001	Standardization in 3D printing	Standardization
A guideline for 3D printing terminology in biomedical research utilizing ISO/ASTM standards	10.1186/s41205-021-00098-5	Uniform definitions, protocols and materials in 3D printing	Standardization
Medical 3D printing: methods to standardize terminology and report trends	10.1186/s41205-017-0012-5	Uniform definitions, protocols and materials in 3D printing	Standardization
Balancing the customization and standardization: exploration and layout surrounding the regulation of the growing field of 3D-printed medical devices in China	10.1007/s42242-022-00187-2	Law and regulations in standardization of medical 3D printing	Standardization
Accuracy of 3-dimensional printing of dental casts: A proposal for quality standardization	10.1016/j.prosdent.2020.09.045	Quality control	Standardization
Compilation of International Standards and Regulatory Guidance Documents for Evaluation of Biomaterials, Medical Devices, and 3-D Printed and Regenerative Medicine Products	10.1177/0192623318804121	Clinical validation of 3D-printed medical products	Standardization
Challenges in the design and regulatory approval of 3D-printed surgical implants: a two-case series	10.1016/S2589-7500(19)30067-6	Patient consent and data privacy issues	Standardization

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