



Curriculum Vitae

Univ. Prof. Dr. med. Stephanie E. Combs

Professor and Chair, Department of Radiation Oncology

Klinikum rechts der Isar
Technische Universität München (TUM)
Ismaninger Straße 22
D-81675 München

Director, Institute of Innovative Radiotherapy (iRT)

Helmholtz Zentrum München
Ingolstädter Landstraße 1
D-85764 Oberschleißheim

Tel.: 089-4140-4500, -4501; -4502
E-Mail: Stephanie.Combs@tum.de
Web: <http://www.radonk.med.tum.de>

School

1996 Abitur (University Entrance Diploma), Kurfürst-Friedrich-Gymnasium Heidelberg (Honors Student)

Education

10/1996 – 04/2003 Medical School
Ruprecht-Karls-Universität in Heidelberg
Eastern Virginia Medical School, Norfolk, VA, USA
University of Texas (UTHSCSA), San Antonio, TX, USA

04/2003 3. State Examination

04/2003 MD, Ruprecht-Karls-Universität Heidelberg, Institute of Neuroanatomy (Prof. Dr. K. Unsicker), entitled: TGF- β s, PACAP and the Development of the Sympathoadrenal Cell Lineage (magna cum Laude)

Professional Experience

06/2003 – 03/2014 Postdoc and Residency, Department of Radiation Oncology, University Hospital of Heidelberg, Germany, Medical Director: Prof. Dr. Dr. M. Wannemacher / Prof. Dr. Dr. J. Debus

06/2003 – 06/2005 Clinical Cooperation Unit Radiation Oncology, Deutsches Krebsforschungszentrum (DKFZ), Director: PD Dr. Dr. J. Debus

2007 – 2014 Head of the Neuro-Radiation Oncology Research Group, Department of Radiation Oncology, University Hospital of Heidelberg, Germany

02/2009 Board Certification Radiation Protection

07/2009 Board Certification for Radiation Oncology

10/2009 Consultant, Department of Radiation Oncology, University Hospital of Heidelberg, Germany,

12/2009 Postdoctoral Lecturer Qualification (Habilitation) in Radiation Oncology

2011 – 2014 Vice Chairman, Department of Radiation Oncology, University Hospital of Heidelberg, Germany,

11/2011 Diploma in Palliative Care

since 04/2014 Professor and Chair, Department of Radiation Oncology, Klinikum rechts der Isar, Technische Universität München (TUM), Germany

since 04/2014 Director, Institute of Innovative Radiotherapy (iRT), Helmholtz Zentrum München, Germany

Clinical Specialties

- Highly conformal radiation therapy (Stereotactic Treatment, IMRT, IGRT, ART)
- Neurooncology
- Treatment Optimization for Skull Base Tumors
- Pediatric Oncology
- Gastrointestinal Oncology
- Gynecological Oncology
- Uro-Oncology
- Radiochemotherapy / Radioimmunotherapy
- Multimodal Imaging for Treatment Planning (CT, MRT, PET, SPECT)
- Particle Therapy (Proton Therapy, High-LET Particle therapy such as Carbon Ions)

Additional Clinical Qualification, Degrees

- Diploma in „Palliative Care “
- Traditional Chinese Medicine / Acupuncture, DGTCM, Heidelberg

Membership in Scientific Organizations

- Deutsche Gesellschaft für Traditionelle Chinesische Medizin (DGTCM)
- Particle Therapy Cooperative Group (PTCOG)
- German Cancer Society (Deutsche Krebsgesellschaft, DKG)
- Working Group Gynecological Oncology (Arbeitsgemeinschaft RadioOnkologie (ARO) der Deutschen Krebsgesellschaft, DKG)
- European Society for Radiation Oncology (ESTRO)
- German Society for Radiation Oncology (Deutsche Gesellschaft für RadioOnkologie und Strahlentherapie, DEGRO)
- Berufsverband der Deutschen Strahlentherapeuten (BVDST)
- EORTC, Radiation Oncology und Neurooncology Group
- RTOG

Membership in Scientific Committies

- Board of Directors, Working Group Neurooncology, German Cancer Society (Deutsche Krebsgesellschaft; DKG)
- Member of the Certification Committee of the Germany Cancer Society (Deutsche Krebsgesellschaft, DKG): Centers for Neurooncology and Radiation Oncology
- Working Group Pediatric Oncology (Arbeitsgemeinschaft Pädiatrische Onkologie, APRO) German Society for Radiation Oncology (Deutsche Gesellschaft für RadioOnkologie und Strahlentherapie, DEGRO)
- Particle Therapy Cooperative Group (PTCOG)

Awards

- **1. Robert Janker Award for Palliative Care** for the study „Generation and Validation of a Prognostic Score to Predict Outcome after Re-Irradiation of Recurrent Glioma” –11. Petersberger Gesundheitssymposium, June 28th, 2012, Königswinter/Bonn.
- **Award of the Behnken-Berger-Foundation (Berlin) for „Scientific Research on Carbon Ion Radiotherapy“**, October 26th, 2010, Potsdam, Germany.
- **Herrmann Holthusen Award of the German Society for Radiation Oncology (DEGRO, 2010)** for the work on „Preclinical and clinical research for the optimization of radiotherapeutic treatment of patients with malignant gliomas —. June 2nd, 2010, Magdeburg, Germany.
- **Olympia Morata Research Funding of the Medical Faculty of the Ruprecht-Karls-University Heidelberg** on the topic: Treatment optimization of malignant gliomas with carbon ion radiotherapy (2007-2009)
- **Sigrid and Karl-Georg Hengstberger Award** of the University of Heidelberg, for the International Meeting: Interdisciplinary Concepts for Protons and Carbon Ions in Multimodal Treatment Approaches. October 2006
- **Young Investigator Award of the Medical Faculty, University of Heidelberg**, for the research project: Development of a new technique for non-invasive visualization of molecular target structures for therapy planning and follow-up in patients with malignant gliomas (2004-2006)
- **Particle Therapy Co-Operative Group (PTCOG) Travel Fellowship** for PTCOG 43 in Munich, December 2005.

Clinical Trials

Principal Investigator (PI) for Germany - Multicenter Trials	1
Principal Investigator (PI)	15
Study Physician	9
Coordination Quality Assurance Radiotherapy	1

Indication	Study title	Function within the trial	Unicentric/ Multicentric	Status
Meningeosis carcinomatosa	Phase I randomized multicentric trial evaluating the safety of whole brain radiotherapy with concomitant intrathecal chemotherapy with liposomal cytarabine versus whole brain radiotherapy alone in patients with neoplastic meningitis from solid tumors with and without brain metastases	PI for Germany	Multicentric	study closed
Glioblastoma	Phase I/II study for combined radiochemotherapy with temozolomide and cetuximab for primary glioblastoma.	PI for Heidelberg	Unicentric	study closed; publication in preparation
Glioblastoma, Anaplastic Astrocytoma	NOA-08 Study: Temozolomide vs. Radiotherapy in elderly patients with malignant glioma (Methusalem)	PI for Heidelberg	Multicentric	study closed
Recurrent Glioblastoma	Enzastaurin vs. Lomustine in patients with recurrent glioblastoma (Steering-Study)	PI for Heidelberg	Multicentric	study closed
Medulloblastoma	Multizentric Pilot Study to Evaluation treatment of Medulloblastoma in the adult population: NOA-07	PI for Heidelberg	Multicentric	recruiting
Glioblastoma	Enzastaurin before and concomitant with radiation therapy, followed by enzastaurin maintenance therapy in patients with newly diagnosed glioblastoma without hypermethylation of the O6-methylguanyl DNA-methyltransferase (MGMT) promoter – a multicenter, open-label, uncontrolled phase 2 study	Study physician	Multicentric	study closed
Recurrent Glioblastoma	Randomized Phase I/II Study to Evaluate Carbon Ion Radiotherapy versus Fractionated Stereotactic Radiotherapy in Patients with Recurrent or Progressive Gliomas (CINDERELLA)	PI for Heidelberg	Unicentric	recruiting
WHO Grad III Glioma	Phase II Study Evaluating a Carbon Ion Boost in Combination with Photon Radiotherapy in Patients with WHO Grade III Gliomas after Chemotherapy – CASPAR-Trial	PI for Heidelberg	Unicentric	Recruitment starts quarter III 2012
Atypical Meningeoma	Treatment of Patients with Atypical Meningiomas Simpson Grade 4 and 5 with a Carbon Ion Boost in combination with Postoperative Photon Radiotherapy: A Phase II Trial (MARCIE)	PI for Heidelberg	Unicentric	recruiting
Low-Grad Meningioma	Randomized Comparison of Proton and Carbon Ion Radiotherapy with Advanced Photon Radiotherapy in Skull Base Meningiomas (PINOCCHIO)	PI for Heidelberg	Unicentric	Recruitment starts quarter III 2014
Cerebral Metastases from	<u>E</u> valuation of whole brain <u>r</u> adiotherapy versus best supportive <u>c</u> are for multiple brain metastases – a randomized <u>t</u> rial (ERASER)	PI for Heidelberg	Unicentric	Recruitment starts quarter III 2014

Mal. Melanoma		PI for Heidelberg	Unicentric	recruiting
Hepatocellular Carcinoma	Phase I study evaluating the treatment of patients with hepatocellular carcinoma (HCC) with Carbon Ion Radiotherapy: PROMETHEUS-01 Study	PI for Heidelberg	Unicentric	recruiting
Recurrent rectal cancer	Phase I/II Trial Evaluating Carbon ion Radiotherapy for the Treatment of Recurrent Rectal Cancer: PANDORA-Trial	PI for Heidelberg	Unicentric	recruiting
Pancreatic cancer	Phase I study evaluating the treatment of patients with locally advanced pancreatic cancer with carbon ion radiotherapy: PHOENIX-01	PI for Heidelberg	Unicentric	Recruitment starts quarter III 2013
Pancreatic cancer	Phase I study evaluating the treatment of patients with operable pancreatic cancer with neoadjuvant carbon ion radiotherapy: PHOENIX-02	PI for Heidelberg	Unicentric	Recruitment starts quarter IV 2014
Glioblastoma	Randomized Phase II study Evaluating a Carbon Ion Boost applied after Combined Radiochemotherapy with Temozolomide versus a Proton Boost after Radiochemotherapy with Temozolomide in Patients with Primary Glioblastoma	PI for Heidelberg	Unicentric	recruiting
Recurrent Glioblastoma	Randomized, open, multicentric Phase II Trial with APG101 (weekly) plus Re-Irradiation versus Re-Irradiation alone for patients with recurrent glioblastoma	Study Physician	Multicentric	study closed; publication in preparation
Glioblastoma	Protocol H9H-MC-JBAI. Phase 1b/2a Study Combining LY2157299 with Standard Temozolomide-based Chemo-radiation in Patients with Newly Diagnosed Malignant Glioma.	Study physician	Multicentric	study closed
Glioblastoma	CENTRIC: Multicentre, phase III study in Cilengitide in neSwtulydydiPahgynsoicsiaend GBM multicentric with methylated MGMT gene promoter	Study physician	Multicentric	study closed
Glioblastoma	A Study of Avastin (Bevacizumab) in combination with temozolomide and Radiotherapy in patients with newly diagnosed glioblastoma (AvaGlio)	Study physician	Multicentric	study closed
Glioblastoma	Radiation Therapy and Temozolomide or Temozolomide in Treating Patients With Newly Diagnosed Glioblastoma: EORTC 26082	Study physician	Multicentric	recruiting
Anaplastic Astrocytoma	EORTC 26053: Intergroup phase III trial on concurrent and adjuvant temozolomide in non-1p/19q deleted anaplastic glioma: 2 x 2 design	Study physician	Multicentric	recruiting
Glioblastoma	Radiation Therapy With or Without Temozolomide in Treating Older Patients With Newly Diagnosed Glioblastoma Multiforme: EORTC 26062	Study physician	Multicentric	recruiting
WHO Grad II Glioma	EORTC 22033: Primary chemotherapy with Temozolomide vs. radiotherapy in patients with low grade gliomas after stratification for genetic 1p loss	Study physician	Multicentric	study closed; patients in follow-up

MD and PhD Students

Student	Topic	Status
Dr. med.		
Constantin Dreher	Treatment planning optimization with particle therapy for locally advanced pancreatic cancer	ongoing
Verena Pfister	Therapieevaluation von Strahlentherapie bei Ependymomen	ongoing
Julian Becker	Dosisvergleichsberechnungen Collapsed-Cone- Pencil-beam bei Leber und Lungeneinzeiten	ongoing
Julia Böhmer	Gepoolte Analyse Meningeom-RT mit Freiburg und München	ongoing
Ingo Brecht	Retrospektive Analyse Outcome Bestrahlung Pankreaskarzinom	ongoing; published
Sarah Dehne	Strahlenbiologische Evaluierung HCC-Zelllinien und Systemtherapie	ongoing
Jonathan Eberlein	Korrelation Fettverteilung bzw. Abnahme BMI mit Outcome bei Neoadj. Strahlentherapie Pankreas-CA	ongoing
Rami El Shafi	RBE Berechnungen Pankreas, in vitro	ongoing; published
Clarissa Fritz	Strahlenbiologische Evaluierung HCC-Zelllinien und Systemtherapie	ongoing
Jakob Liermann	Strahlenbiologische Evaluierung Chinesische Heilkräuter und Bestrahlung, Pankreaskarzinomzellen	ongoing
Adriana Kalbe	Retrospektive Analyse C12-Bestrahlungen GSI	ongoing; published
Nicolas Schall	Treatment outcome in patients with rhabdomyosarcoma using different radiation techniques	ongoing
Meike Scharp	Retrospektive Auswertung Re-Bestrahlung Hirnmetastasen	ongoing; published
Falk Stade	Bestrahlungsplanung Schädelbasismeningeome mit Step-and-Shoot IMRT, VMAT sowie Protonen	ongoing
Beate Steinmeier	Korrelation Cochleadosis-Hörvermögen nach Stereotaxie bei Akustikusneurinome, Lang-zeit Follow-UP AKN	ongoing
Alina Stenke	Evaluation of treatment outcome after radiotherapy for patients with brain metastases from malignant melanoma	ongoing
Sati Kuzören	Extrakranial Metastases from Malignant Melanoma: Outcome after palliative radiotherapy	ongoing
Kristina Haase	Radiation therapy for primary and metastatic tumors of the hepatobiliary system	completed; published; rite
Monika Nagy	Radiochemotherapy with temozolomide vs. standard of care radiation alone in patients with WHO grade III gliomas	completed; cum laude
Johanna Welzel	Combination Treatment of Radiation, Temozolomide and Cetuximab for the Treatment of Primary Glioblastoma	completed; cum laude
Melanie Schäfer	Molecular response of EGFR-inhibition with cetuximab	completed; magna cum laude
Johanna Wagner	Treatment of patients with glioblastomas using different dosing schemes of temozolomide during chemoradiation	completed; cum laude
Verena Widmer	Re-Irradiation with radiosurgery for recurrent glioblastomas	completed; cum laude

Dr. med. dent.		
Maja Czech	Evaluation der Partikeltherapie bei Meningeomen	ongoing
Bahar Salehi	Precision radiotherapy with FSRT and IMRT for paragangliomas.	completed; published; rite
Stefanie Burg	Risk of second malignancies after irradiation of children with lymphoproliferative diseases	completed; rite
Verena Kelter	Treatment outcome in patients with localized ependymomas – influence of RT technique and planning target volumes	completed; magna cum laude
Iris Steck	Outcome of irradiation in patients with brain stem gliomas	completed; magna cum laude
Sigrid Volk	Long-term outcome of FSRT for the treatment of acoustic neuromas.	completed; magna cum laude
Dr. sc. hum		
Kerstin Kessel	Development of an integrated electronic data collection and analysis system in radiation oncology: workflow characterization, system design, implementation and verification using the clinical example of pancreatic cancer	completed; published; magna cum laude

Publications

Original research manuscripts (peer reviewed, PubMed listed)

1. Adeberg S, Baris D, Habermehl D, Rieken S, Brons S, Weber KJ, Roth W, Debus J, **Combs SE**. Evaluation of chemoradiotherapy with carbon ions and the influence of p53 mutational status in the colorectal carcinoma cell line HCT 116. *Tumori*. 2014 Nov-Dec;100(6):675-84.
2. **Combs SE**, Engelhard C, Kopp C, Wiedenmann N, Schramm O, Prokic V, Debus J, Molls M, Grosu AL. Long-term outcome after highly advanced single-dose or fractionated radiotherapy in patients with vestibular schwannomas - Pooled results from 3 large German centers. *Radiother Oncol*. 2015 Feb 19. pii: S0167-8140(15)00049-3. doi: 10.1016/j.radonc.2015.01.011. [Epub ahead of print]
3. Rieken S, Rieber J, Brons S, Habermehl D, Rief H, Orschielt L, Lindel K, Weber KJ, Debus J, **Combs SE**. Radiation-induced motility alterations in medulloblastoma cells. *J Radiat Res*. 2015 Mar 2. pii: rru120. [Epub ahead of print] PubMed PMID: 5736470.
4. Kup PG, Nieder C, Geinitz H, Henkenberens C, Besserer A, Oechsner M, Schill S, Mücke R, Scherer V, **Combs SE**, Adamietz IA, Fakhrian K. The prognostic value of irradiated lung volumes on the prediction of intra-/ post-operative mortality in patients after neoadjuvant radiochemotherapy for esophageal cancer. A retrospective multicenter study. *J Cancer*. 2015 Jan 20;6(3):254-60.
5. Rieber JG, Kessel KA, Witt O, Behnisch W, Kulozik AE, Debus J, **Combs SE**. Treatment tolerance of particle therapy in pediatric patients. *Acta Oncol*. 2015 Jan 23:1-7. [Epub ahead of print]
6. Ordu AD, Nieder C, Geinitz H, Scherer V, Kup PG, Schuster T, **Combs SE**, Fakhrian K. Association between radiation dose and pathological complete response after preoperative radiochemotherapy in esophageal squamous cell cancer. *Anticancer Res*. 2014 Dec;34(12):7255-61.
7. Lohaus F, Linge A, Tinhofer I, Budach V, Gkika E, Stuschke M, Balermipas P, Rödel C, Avlar M, Grosu AL, Abdollahi A, Debus J, Bayer C, Belka C, Pigorsch S, **Combs SE**, Mönnich D, Zips D, von Neubeck C, Baretton GB, Löck S, Thames HD, Krause M, Baumann M; DTKK-ROG. HPV16 DNA status is a strong prognosticator of loco-regional control after postoperative radiochemotherapy of locally advanced oropharyngeal carcinoma: results from a multicentre explorative study of the German Cancer Consortium Radiation Oncology Group (DTKK-ROG). *Radiother Oncol*. 2014 Dec;113(3):317-23.
8. Richter D, Graeff C, Jäkel O, **Combs SE**, Durante M, Bert C. Residual motion mitigation in scanned carbon ion beam therapy of liver tumors using enlarged pencil beam overlap. *Radiother Oncol*. 2014 Nov;113(2):290-5.
9. Habermehl D, Ilicic K, Dehne S, Rieken S, Orschielt L, Brons S, Haberer T, Weber KJ, Debus J, **Combs SE**. The relative biological effectiveness for carbon and oxygen ion beams using the raster-scanning technique in hepatocellular carcinoma cell lines. *PLoS One*. 2014 Dec 2;9(12):e113591.
10. Simon F, Dittmar JO, Brons S, Orschielt L, Urbschat S, Weber KJ, Debus J, **Combs SE**, Rieken S. Integrin-based meningioma cell migration is promoted by photon but not by carbon-ion irradiation. *Strahlenther Onkol*. 2014 Dec 2. [Epub ahead of print]
11. Ordu AD, Nieder C, Geinitz H, Kup PG, Deymann LF, Scherer V, **Combs SE**, Fakhrian K. Radio(chemo)therapy for locally advanced squamous cell carcinoma of the esophagus : Long-term outcome. *Strahlenther Onkol*. 2015 Feb;191(2):153-160. Epub 2014 Nov 18.
12. Habermehl D, Wagner M, Ellerbrock M, Büchler MW, Jäkel O, Debus J, **Combs SE**. Reirradiation Using Carbon Ions in Patients with Locally Recurrent Rectal Cancer at HIT: First Results. *Ann Surg Oncol*. 2014 Nov 11. [Epub ahead of print]
13. **Combs SE**, Debus J, Feick G, Hadaschik B, Hohenfellner M, Schüle R, Zacharias JP, Schwardt M. Current state of the art, multimodality research and future visions for the treatment of patients with prostate cancer: consensus results from ¿Challenges and Chances in Prostate Cancer Research Meeting 2014¿. *Radiat Oncol*. 2014 Nov 4;9(1):224. [Epub ahead of print]
14. Wick W, Fricke H, Junge K, Kobayakov G, Martens T, Heese O, Wiestler B, Schliesser MG, von Deimling A, Pichler J, Vetlova E, Harting I, Debus J, Hartmann C, Kunz C, Platten M, Bendszus M, **Combs SE**. A phase II, randomized, study of weekly APG101+reirradiation versus reirradiation in progressive glioblastoma. *Clin Cancer Res*. 2014 Dec 15;20(24):6304-13.
15. Schwardt M, Debus J, Feick G, Hadaschik B, Hohenfellner M, Schüle R, Zacharias JP, **Combs SE**. [Interdisciplinary and individualized therapy of prostate cancer : International prostate cancer symposium Bonn 2013 - challenges and targets.]. *Urologe A*. 2014 Oct 10. [Epub ahead of print]

16. **Combs SE**, Hancock JG, Boffa DJ, Decker RH, Detterbeck FC, Kim AW. Bolstering the Case for Lobectomy in Stages I, II, and IIIA Small-Cell Lung Cancer Using the National Cancer Data Base. *J Thorac Oncol*. 2015 Feb;10(2):316-23.
17. Harrabi SB, Adeberg S, Welzel T, Rieken S, Habermehl D, Debus J, **Combs SE**. Long term results after fractionated stereotactic radiotherapy (FSRT) in patients with craniopharyngioma: maximal tumor control with minimal side effects. *Radiat Oncol*. 2014 Sep 16;9:203.
18. Adeberg S, König L, Bostel T, Harrabi S, Welzel T, Debus J, **Combs SE**. Glioblastoma recurrence patterns after radiation therapy with regard to the subventricular zone. *Int J Radiat Oncol Biol Phys*. 2014 Nov 15;90(4):886-93.
19. Afshar-Oromieh A, Wolf MB, Kratochwil C, Giesel FL, **Combs SE**, Dimitrakopoulou-Strauss A, Gnirs R, Roethke MC, Schlemmer HP, Haberkorn U. Comparison of 68Ga-DOTATOC-PET/CT and PET/MRI hybrid systems in patients with cranial meningioma: Initial results. *Neuro Oncol*. 2014 Jul 9. pii: nou131.
20. Lemke D, Weiler M, Blaes J, Wiestler B, Jestaedt L, Klein AC, Löw S, Eisele G, Radlwimmer B, Capper D, Schmieder K, Mittelbronn M, **Combs SE**, Bendszus M, Weller M, Platten M, Wick W. Primary glioblastoma cultures: can profiling of stem cell markers predict radiotherapy sensitivity? *J Neurochem*. 2014 Jun 26.
21. **Combs SE**, Habermehl D, Kessel KA, Bergmann F, Werner J, Naumann P, Jäger D, Büchler MW, Debus J. Prognostic impact of CA 19-9 on outcome after neoadjuvant chemoradiation in patients with locally advanced pancreatic cancer. *Ann Surg Oncol*. 2014 Aug;21(8):2801-7.
22. Niyazi M, Flieger M, Ganswindt U, **Combs SE**, Belka C. Validation of the prognostic Heidelberg re-irradiation score in an independent mono-institutional patient cohort. *Radiat Oncol*. 2014 Jun 3;9:128.
23. Habermehl D, Brecht IC, Debus J, **Combs SE**. Palliative radiation therapy in patients with metastasized pancreatic cancer - description of a rare patient group. *Eur J Med Res*. 2014 May 13;19:24.
24. Wagner J, Welzel T, Habermehl D, Debus J, **Combs SE**. Radiotherapy in patients with vestibular schwannoma and neurofibromatosis type 2: clinical results and review of the literature. *Tumori*. 2014 Mar-Apr;100(2):189-94.
25. Adeberg S, Bostel T, König L, Welzel T, Debus J, **Combs SE**. A comparison of long-term survivors and short-term survivors with glioblastoma, subventricular zone involvement: a predictive factor for survival? *Radiat Oncol*. 2014 Apr 23;9:95.
26. Richter D, Saito N, Chaudhri N, Härtig M, Ellerbrock M, Jäkel O, **Combs SE**, Habermehl D, Herfarth K, Durante M, Bert C. Four-dimensional patient dose reconstruction for scanned ion beam therapy of moving liver tumors. *Int J Radiat Oncol Biol Phys*. 2014 May 1;89(1):175-81.
27. Rieken S, Simon F, Habermehl D, Dittmar JO, **Combs SE**, Weber K, Debus J, Lindel K. Photon-induced cell migration and integrin expression promoted by DNA integration of HPV16 genome. *Strahlenther Onkol*. 2014 Oct;190(10):944-9.
28. Kessel KA, Bohn C, Engelmann U, Oetzel D, Bougaff N, Bendl R, Debus J, **Combs SE**. Five-year experience with setup and implementation of an integrated database system for clinical documentation and research. *Comput Methods Programs Biomed*. 2014 Apr;114(2):206-17.
29. Harrabi SB, Büchler MW, Werner J, **Combs SE**. [Gemcitabine-based or capecitabine-based chemoradiotherapy for locally advanced pancreatic cancer (SCALOP)]. *Strahlenther Onkol*. 2014 Mar;190(3):319-20.
30. Kessel KA, Habermehl D, Jäger A, Floca RO, Zhang L, Bendl R, Debus J, **Combs SE**. Development and validation of automatic tools for interactive recurrence analysis in radiation therapy: optimization of treatment algorithms for locally advanced pancreatic cancer. *Radiat Oncol*. 2013 Jun 7;8:138.
31. Wiestler B, Radbruch A, Osswald M, **Combs SE**, Jungk C, Winkler F, Bendszus M, Unterberg A, Platten M, Wick W, Wick A. Towards optimizing the sequence of bevacizumab and nitrosureas in recurrent malignant glioma. *J Neurooncol*. 2014 Mar;117(1):85-92.
32. Rief H, Habermehl D, Schuber K, Debus J, **Combs SE**. Time evaluation of image-guided radiotherapy in patients with spinal bone metastases. A single-center study. *Strahlenther Onkol*. 2014 Mar;190(3):287-92.
33. Scharp M, Hauswald H, Bischof M, Debus J, **Combs SE**. Re-irradiation in the treatment of patients with cerebral metastases of solid tumors: retrospective analysis. *Radiat Oncol*. 2014 Jan 3;9:4.
34. Kratochwil C, **Combs SE**, Leotta K, Afshar-Oromieh A, Rieken S, Debus J, Haberkorn U, Giesel FL. Intra-individual comparison of ¹⁸F-FET and ¹⁸F-DOPA in PET imaging of recurrent brain tumors. *Neuro Oncol*. 2014 Mar;16(3):434-40.

35. Schlaich F, Brons S, Haberer T, Debus J, **Combs SE**, Weber KJ. Comparison of the effects of photon versus carbon ion irradiation when combined with chemotherapy in vitro. *Radiat Oncol.* 2013 Nov 6;8(1):260.
36. Hauswald H, Habl G, Krug D, Kehle D, **Combs SE**, Bermejo JL, Debus J, Sterzing F. Whole brain helical tomotherapy with integrated boost for brain metastases in patients with malignant melanoma – a randomized trial. *Radiat Oncol.* 2013 Oct 10;8(1):234.
37. Rief H, Muley T, Bruckner T, Welzel T, Rieken S, Bischof M, Lindel K, **Combs SE**, Debus J. Survival and prognostic factors in non-small cell lung cancer patients with spinal bone metastases: A retrospective analysis of 303 patients. *Strahlenther Onkol.* 2014 Jan;190(1):59-63.
38. **Combs SE**, Habermehl D, Kieser M, Dreher C, Werner J, Haselmann R, Jäkel O, Jäder D, Büchler MW, Debus J. Phase I study evaluating the treatment of patients with locally advanced pancreatic cancer with carbon ion radiotherapy: the PHOENIX-01 trial. *BMC Cancer.* 2013 Sep 14;13:419.
39. **Combs SE**, Kessel K, Habermehl D, Haberer T, Jäkel O, Debus J. Proton and carbon ion radiotherapy for primary brain tumors and tumors of the skull base. *Acta Oncol.* 2013 Oct;52(7):1504-9.
40. Rieken S, Habermehl D, Giesel FL, Hoffmann C, Burger U, Rief H, Welzel T, Haberkorn U, Debus J, **Combs SE**. Analysis of FET-PET imaging for target volume definition in patients with gliomas treated with conformal radiotherapy. *Radiother Oncol.* 2013 Dec;109(3):487-92.
41. Rief H, Bischof M, Bruckner T, Welzel T, Askoxylakis V, Rieken S, Lindel K, **Combs SE**, Debus J. The stability of osseous metastases of the spine in lung cancer – a retrospective analysis of 338 cases. *Radiat Oncol.* 2013 Aug 13;8(1):200.
42. **Combs SE**, Bruckner T, Mizoe JE, Kamada T, Tsujii H, Kieser M, Debus J. Comparison of carbon ion radiotherapy to photon radiation alone or in combination with temozolomide in patients with high-grade gliomas: explorative hypothesis-generating retrospective analysis. *Radiother Oncol.* 2013 Jul;108(1):132-5.
43. Wick W, Steinbach JP, Platten M, Hartmann C, Wenz F, von Deimling A, Shei P, Moreau-Donnet V, Stoffregen C, **Combs SE**. Enzastaurin before and concomitant with radiation therapy followed by enzastaurin maintenance therapy, in patients with newly diagnosed glioblastoma without MGMT promoter hypermethylation. *Neuro Oncol.* 2013 Oct;15(10):1405-12.
44. Naumann P, Habermehl D, Welzel T, Debus J, **Combs SE**. Outcome after neoadjuvant chemoradiation and correlation with nutritional status in patients with locally advanced pancreatic cancer. *Strahlenther Onkol.* 2013 Sep;189(9):745-52.
45. **Combs SE**, Habermehl D, Kessel KA, Bergmann F, Werner J, Brecht I, Schirmacher P, Jäger D, Büchler MW, Debus J. Intensity modulated radiotherapy as neoadjuvant chemoradiation for the treatment of patients with locally advanced pancreatic cancer. Outcome analysis and comparison with a 3D-treated patient cohort. *Strahlenther Onkol* 2013 Sep; 189(9):738-44.
46. Müller K, Gnekow A, Falkenstein F, Scheiderbauer J, Zwiener I, Pietsch T, Warmuth-Metz M, Voges J, Nikkhah G, Flentje M, **Combs SE**, Vordermark D, Kocher M, Kortmann RD. Radiotherapy in pediatric pilocystic astrocytomas: A subgroup analysis within the prospective multicenter study HIT-LGG 1996 by the German Society of Pediatric Oncology and Hematology (GPOH). *Strahlenther Onkol* 2013 Aug; 189(8):647-55.
47. Habermehl D, Herfarth KK, Bermejo JL, Hof H, Rieken S, Kuhn S, Welzel T, Debus J, **Combs SE**. Single dose radiosurgical treatment for hepatic metastases – therapeutic outcome of 138 treated lesions from a single institution. *Radiat Oncol* 2013 Jul 9;8(1):175.
48. Amelio D, Winter M, Habermehl D, Jäkel O, Debus J, **Combs SE**. Analysis of inter- and intrafraction accuracy of a commercial thermoplastic mask system used for image guided particle radiation therapy. *J Radiat Res* 2013 Jul ;54 Suppl 1 :i69-76.
49. Habermehl D, Henkner K, Ecker S, Jäkel O, Debus J, **Combs SE**. Evaluation of different fiducial markers for image-guided radiotherapy and particle therapy. *J Radiat Res* 2013 Jul ; 54 Suppl 1 :i61-8.
50. El Shafie RA, Habermehl D, Rieken S, Mairani A, Orschielt L, Brons S, Haberer T, Weber KJ, Debus J, **Combs SE**. In vitro evaluation of photon and raster scanned carbon ion radiotherapy in combination with gemcitabine in pancreatic cancer cell lines. *J Radiat Res* 2013 Jul ;54 Suppl 1:i113-9.
51. **Combs SE**, Salehi-Allameh B, Habermehl D, Kessel KA, Welzel T, Debus J. Clinical response and tumor control based on long-term follow-up and patient reported outcomes in patients with chemodectomas of the skull base and head-and-neck region treated with highly conformal radiation therapy. *Head Neck.* 2014 Jan;36(1):22-7.
52. Scholtyssek F, Zwiener I, Schlamann A, Seidel C, Meixensberger J, Bauer M, Hoffmann KT, **Combs SE**, von Bueren AO, Kortmann RD, Müller K. Reirradiation in progressive high-grade gliomas: outcome,

role of chemotherapy, prognostic factors and validation of a new prognostic score with an independent patient cohort. *Radiat Oncol* 2013 Jul 3;8(1):161.

53. Bauer J, Unholtz D, Sommerer F, Kurz C, Haberer T, Herfarth K, Welzel T, **Combs SE**, Debus J, Parodi K. Implementation and initial clinical experience of offline PET/CT-based verification of scanned carbon ion treatment. *Radiother Oncol*. 2013 May;107(2):218-26.
54. Harrabi S, **Combs SE**, Brons S, Haberer T, Debus J, Weber KJ. Temozolomide in combination with carbon ion or photon irradiation in glioblastoma multiforme cell lines – does scheduling matter? *Int J Radiat Biol* 2013 Sep; 89(9):692-7.
55. Habermehl D, Debus J, Gantern T, Ganten MK, Bauer J, Brecht IC, Brons S, Haberer T, Haertig M, Jäkel O, Parodi K, Welzel T, **Combs SE**. Hypofractionated carbon ion therapy delivered with scanned ion beams for patients with hepatocellular carcinoma – feasibility and clinical response. *Radiat Oncol* 2013 Mar 13, 8:59.
56. **Combs SE**, Welzel T, Habermehl D, Rieken S, Dittmar JO, Kessel K, Jäkel O, Haberkorn U and Debus J. Prospective Evaluation of Early Treatment Outcome in patients with Meningiomas treated with Particle Therapy based on target volume definition with MRI and 68-Ga-DOTATOC-PET. *Acta Oncol*. 2013 Apr;52(3):514-20.
57. Habermehl D, Brecht IC, Bergmann F, Welzel T, Rieken S, Werner J, Schirmacher P, Büchler MW, Debus J, **Combs SE**. Chemoradiation in patients with isolated recurrent pancreatic cancer - therapeutical efficacy and probability of re-resection. *Radiat Oncol*. 2013 Jan 31;8:27.
58. Rieken S, Habermehl D, Welzel T, Mohr A, Lindel K, Debus J, **Combs SE**. Long term toxicity and prognostic factors of radiation therapy for secreting and non-secreting pituitary adenomas. *Radiat Oncol*. 2013 Jan 23;8:18.
59. **Combs SE**, Welzel T, Kessel KA, Habermehl D, Rieken S, Schramm O and Debus J. Hearing preservation after radiotherapy for vestibular schwannomas is comparable to hearing deterioration in healthy adults and is accompanied by local tumor control and a highly preserved quality of life (QOL) as patients' self-reported outcome. *Radiother Oncol*. 2013 Feb;106(2):175-80.
60. Habermehl D, Blachutzik F, Ecker S, Dittmar JO, Rieken S, Debus J, Welzel T and **Combs SE**. Early treatment response of a rare papillary tumor of the pineal region after primary proton-beam therapy using the raster-scanning technique at HIT. *Tumori*. 2012 Sep-Oct;98(5):122e-125e.
61. **Combs SE**, Werner J. [Resection plus adjuvant chemotherapy improves survival in advanced pancreatic adenocarcinoma]. *Strahlenther Onkol*. 2013 Feb;189(2):163-5.
62. Carozzo S, Schardt D, Narici L, **Combs SE**, Debus J, Sannita WG. Electrophysiological Monitoring in Patients with Tumors of the Skull Base Treated By Carbon-12 Radiation Therapy. *Int J Radiat Oncol Biol Phys*. 2013 Mar 15;85(4):978-83.
63. Hauswald H, Rieken S, Ecker S, Kessel KA, Herfarth K, Debus J, **Combs SE**. First Experiences in treatment of low-malignant glioma grade I and II with proton therapy. *Radiat Oncol* 2012 Nov 9;7(1);189.
64. Kessel KA, Habermehl D, Bohn C, Jäger A, Floca RO, Zhang L, Bougatf N, Bendl R, Debus J, **Combs SE**. [Database supported electronic retrospective analyses in radiation oncology: Establishing a workflow using the example of pancreatic cancer]. *Strahlenther Onkol* 2012 Dec; 188(12):1119-24.
65. **Combs SE**, Kessel KA, Herfarth K, Jensen A, Oertel S, Blattmann C, Ecker S, Hoess A, Martin E, Witt O, Jäkel O, Kulozik AE, Debus J. Treatment of pediatric patients and young adults with particle therapy at the Heidelberg Ion Therapy Center (HIT): establishment of workflow and initial clinical data. *Radiat Oncol* 2012 Oct 17;7:170.
66. **Combs SE**, Adeberg S, Dittmar JO, Welzel T, Rieken S, Habermehl D, Huber PE, Debus J. Skull Base meningiomas: Long-term results and patient self-reported outcome in 507 patients treated with fractionated stereotactic radiotherapy (FSRT) or intensity modulated radiotherapy (IMRT). *Radiother Oncol*. 2013 Feb;106(2):186-91.
67. Hauswald H, Dittmar JO, Habermehl D, Rieken S, Sterzing F, Debus J, **Combs SE**. Efficacy and toxicity of whole brain radiotherapy in patients with multiple cerebral metastases from malignant melanoma. *Radiat Oncol* 2012 Aug 2;7:130.
68. Kessel KA, Bougatf N, Bohn C, Habermehl D, Oetzel D, Bendl R, Engelmann U, Orecchia R, Fossati P, Pötter R, Dosanjh M, Debus J, **Combs SE**. Connection of European particle therapy centers and generation of a common particle database system within the European ULICE-framework. *Radiat Oncol* 2012 Jul 24; 7:115.
69. **Combs SE**, Edler L, Rausch R, Welzel T, Wick W, Debus J. Generation and Validation of a Prognostic Score to Predict Outcome after Re-Irradiation of Recurrent Glioma. *Acta Oncol*. 2013 Jan;52(1):147-52.

70. Afshar-Oromieh A, Giesel FL, Linhart HG, Haberkorn U, Haufe S, **Combs SE**, Podlessek D, Eisenhut M and Kratochwil C. Detection of cranial meningiomas - comparison of 68Ga-DOTATOC-PET/CT and contrast enhanced MRI. *Eur J Nucl Med Mol Imaging*. 2012 Sep;39(9):1409-15.
71. Wick W, Platten M, Meisner C, Felsberg J, Tabatabai G, Simon M, Nikkah G, Papsdorf K, Steinbach JP, Sabel M, Combs SE, Vesper J, Braun C, Meixensberger J, Ketter R, Mayer-Steinacker R, Reifenberger G and Weller M. The NOA-08 randomized phase III trial of chemotherapy versus radiotherapy for malignant astrocytoma in the elderly. *Lancet Oncol*. 2012 Jul;13(7):707-15.
72. Weiler M, Pfenning PN, Thiebold AL, Blaes J, Jestaedt L, Gronych J, Dittmann LM, Berger B, Jugold M, Kosch M, **Combs SE**, von Deimling A, Weller M, Bendszus M, Platten M, Wick W. Suppression of proinvasive RGS4 by mTOR inhibition optimizes glioma treatment. *Oncogene*. 2013 Feb 28;32(9):1099-109.
73. Habermehl D, Lindel K, Rieken S, Haase K, Goepfert B, Büchler MW, Schirmacher P, Welzel T, Debus J and **Combs SE**. Chemoradiation in patients with unresectable extrahepatic and hilar cholangiocarcinoma or at high risk for disease recurrence after resection : Analysis of treatment efficacy and failure in patients receiving postoperative or primary chemoradiation. *Strahlenther Onkol*. 2012 Sep;188(9):795-801.
74. **Combs SE**, Kieser M, Habermehl D, Weitz J, Jäger D, Fossati P, Orrechia R, Engenhardt-Cabillic R, Pötter R, Dosanjh M, Jäkel O, Büchler MW, Debus J. Phase I/II trial evaluating carbon ion radiotherapy for the treatment of recurrent rectal cancer: the PANDORA-01 trial. *BMC Cancer* 2012 Apr 3;12:137.
75. **Combs SE**, Bauer J, Unholtz D, Kurz C, Welzel T, Habermehl D, Haberer T, Debus J and Combs SE. Monitoring of patients treated with particle therapy using Positron-Emission-Tomography (PET): The MIRANDA-Trial. *BMC Cancer* 2012 Apr 3;12(1):133.
76. Kosaki K, Ecker S, Habermehl D, Rieken S, Jäkel O, Herfarth K, Debus J, **Combs SE**. Comparison of intensity modulated radiotherapy (IMRT) with intensity modulated particle therapy (IMPT) using fixed beams or an ion gantry for the treatment of patients with skull base meningiomas. *Radiat Oncol*. 2012 Mar 22;7:44.
77. Rieken S, Habermehl D, Haberer T, Jaekel O, Debus J and **Combs SE**. Proton and carbon ion radiotherapy for primary brain tumors delivered by active raster scanning at the Heidelberg Ion Therapy Center (HIT): early treatment results and study concepts. *Radiat Oncol* 2012 Mar 21;7:41.
78. Habermehl D, Kessel K, Welzel T, Hof H, Rieken S, Bergmann F, Abdollahi A, Weitz J, Werner J, Schirmacher P, Büchler MW, Debus J and **Combs SE**. Neoadjuvant chemoradiation with Gemcitabine for locally advanced pancreatic cancer. *Radiat Oncol* 2012 Mar 2;7(1):28.
79. **Combs SE**, Zipp L, Rieken S, Habermehl D, Brons S, Winter M, Haberer T, Debus J and Weber KJ. *In vitro* evaluation of photon and carbon ion radiotherapy in combination with chemotherapy in glioblastoma cells. *Radiat Oncol* 2012 Mar 2;7:28.
80. Habermehl D, Haase K, Rieken S, Debus J and **Combs SE**. Defining the role of palliative radiotherapy in bone metastasis from primary liver tumors. *Tumori* 2011 Sep-Oct;97(5):609-13.
81. Adeberg S, Hartmann C, Welzel T, Rieken S, Habermehl D, von Deimling A, Debus J, **Combs SE**. Long-term outcome after radiotherapy in patients with atypical and malignant meningiomas – Clinical Results in 85 patients treated in a single institution leading to optimized guidelines for early radiation therapy. *Int J Radiat Oncol Biol Phys*. 2012 Jul 1;83(3):859-64.
82. Rieken S, Habermehl D, Wuerth L, Brons S, Mohr A, Lindel K, Weber KJ, Haberer T, Debus J, **Combs SE**. Carbon ion irradiation inhibits glioma cell migration through downregulation of integrin expression. *Int J Radiat Oncol Biol Phys* 2012 May 1;83(1):394-9.
83. Tagscherer KE, Fassl A, Sinkovic T, **Combs SE** and Roth W. p53 dependent regulation of Mcl-1 contributes to synergistic cell death by ionizing radiation and the Bcl-2/Bcl-XL inhibitor ABT-737. *Apoptosis* 2012 Feb; 17(2):187-99.
84. **Combs SE**, Sterzing F, Uhl M, Schubert K, Debus J, Herfarth K. Helical Tomotherapy for Meningiomas of the skull base and in paraspinal regions with complex anatomy and/or multiple lesions. *Tumori* 2011 Jul-Aug;97(4):484-91.
85. Rieken S, Habermehl D, Mohr A, Wuerth L, Lindel K, Weber K, Debus J, **Combs SE**. Targeting $\alpha\beta 3$ and $\alpha\beta 5$ inhibits photon-induced hypermigration of malignant glioma cells.. *Radiat Oncol* 2011 Oct 6;6:132.
86. Adeberg S, Welzel T, Rieken S, Debus J, **Combs SE**. Prior surgical intervention and tumor size impact clinical outcome after precision radiotherapy for the treatment of optic nerve sheath meningiomas (ONSM). *Radiat Oncol* 2011 Sep 18;6:117.

87. **Combs SE**, Rieken S, Wick W, Abdollahi A, von Deimling A, Debus J, Hartmann C. Prognostic significance of IDH-1 and MGMT in patients with glioblastoma: one step forward, and one step back? *Radiat Oncol* 2011 Sep 13;6:115.
88. Rieken S, Mohr A, Habermehl D, Welzel T, Lindel K, Witt O, Kulozik AE, Wick W, Debus J **Combs SE**. Outcome and prognostic factors of radiation therapy for medulloblastomas. *Int J Radiat Oncol Biol Phys* 2011 Nov 1;81(3):e7-e13.
89. **Combs SE**, Habermehl D, Ganten T, Schmidt J, Edler L, Burkholder I, Jäkel O, Haberer T, Debus J. Phase I study evaluating the treatment of patients with hepatocellular carcinoma (HCC) with carbon ion radiotherapy: the PROMETHEUS-01 trial. *BMC Cancer* Feb 12;11:67.
90. Rieken S, Habermehl D, Nikoghosyan A, Jensen A, Haberer T, Jäkel O, Mütter MW, Welzel T, Debus J and **Combs SE**. Assessment of early toxicity and response in patients treated with proton and carbon ion therapy at the Heidelberg Ion Therapy Center (HIT) using the rasterscanning technique. *Int J Radiat Oncol Biol Phys* 2011 Dec 1;81(5):e793-801.
91. **Combs SE**, Kalbe A, Nikoghosyan A, Ackermann B, Jäkel O, Haberer T, Debus J. Carbon ion radiotherapy performed as re-irradiation using active beam delivery in patients with tumors of the brain, skull base and sacral region. *Radiother Oncol* 2011 Jan;98(1):63-7.
92. **Combs SE**, Edler L, Burkholder I, Rieken S, Habermehl D, Jäkel O, Haberer T, Unterberg A, Wick W, Debus J, Haselmann R. Treatment of patients with atypical meningiomas Simpson grade 4 and 5 with a carbon ion boost in combination with postoperative photon radiotherapy: the MARCIE trial. *BMC Cancer* 2010 Nov 9; 10:615.
93. Nikoghosyan AV, Karapanagiotou-Schenkel I, Mütter MW, Jensen AD, **Combs SE**, Debus J. Randomised trial of proton vs. carbon ion radiation therapy in patients with chordomas of the skull base, clinical phase III study. HIT-1 Study. *BMC Cancer* 2010 Nov 5;10:607.
94. Nikoghosyan AV, Rauch G, Mütter MW, Jensen AD, **Combs SE**, Kieser M, Debus J. Randomized trial of proton vs. carbon ion radiation therapy in patients with low and intermediate grade chondrosarcoma of the skull base, clinical phase III study. *BMC Cancer* 2010 Nov 5; 10:606.
95. Oertel S, Blattman C, Rieken S, Jensen A, **Combs SE**, Huber PE, Bischof M, Kulozik A, Debus J, Schulz-Ertner D. Radiotherapy in the treatment of primary osteosarcoma—a single center experience. *Tumori* 2010 Jul-Aug, 96(4):582-8.
96. **Combs SE**, Schulz-Ertner D, Debus J, von Deimling A, Hartmann C. Improved Correlation of the Neuropathologic Classification According to Adapted World Health Organization Classification and Outcome after Radiotherapy in Patients with Atypical and Anaplastic Meningiomas. *Int J Radiat Oncol Biol Phys* 2011 Dec 1;81(5):1415-21.
97. **Combs SE**, Burkholder I, Edler L, Rieken S, Habermehl D, Jäkel O, Haberer T, Haselmann R, Unterberg A, Wick W, Debus J. Randomised phase I/II study to evaluate carbon ion radiotherapy versus fractionated stereotactic radiotherapy in patients with recurrent or progressive gliomas: the CINDERELLA trial. *BMC Cancer* 2010 Oct 6;10:533.
98. **Combs SE**, Ellerbrock M, Haberer T, Habermehl D, Hoess A, Jäkel O, Jensen A, Klemm S, Mütter M, Naumann J, Nikoghosyan A, Oertel S, Parodi K, Rieken S, Debus J. Heidelberg Ion Therapy Center (HIT): Initial Clinical Experience in the first 80 patients. *Acta Oncol* 2010 Oct 49(7):1132-40.
99. Weber MA, Henze M, Tüttenberg J, Stieltjes B, Meissner M, Zimmer FI, Burkholder I, Kroll A, **Combs SE**, Vogt-Schaden M, Giesel FL, Zoubaa S, Haberkorn U, Kauczor HU, Essig M. Biopsy Targeting Gliomas: Do Functional Imaging Techniques Identify Similar Target Areas? *Invest Radiol.* 2010 Dec;45(12):755-68.
100. **Combs SE**, Kieser M, Rieken S, Habermehl D, Jäkel O, Haberer T, Nikoghosyan A, Haselmann R, Unterberg A, Wick W, Debus J. Randomized phase II study evaluating a carbon ion boost applied after combined radiochemotherapy with temozolomide versus a proton boost after radiochemotherapy with temozolomide in patients with primary glioblastoma: the CLEOPATRA trial. *BMC Cancer* 2010 Sep 6;10:478.
101. Rieken S, Gaiser T, Mohr A, Welzel T, Witt O, Kulozik AE, Wick W, Debus J, **Combs SE**. Outcome and prognostic factors of desmoplastic medulloblastoma treated within a multidisciplinary treatment concept. *BMC Cancer* 2010 Aug 23; 10:450.
102. Campos B, Wan F, Farhadi M, Ernst A, Zeppernick F, Tagscherer KE, Ahmadi R, Lohr J, Dictus C, Gdynia G, **Combs SE**, Goidts V, Helmke BM, Eckstein V, Roth W, Beckhove P, Lichter P, Unterberg A, Radlwimmer B, Herold-Mende C. Differentiation therapy exerts antitumor effects on stem-like glioma cells. *Clin Cancer Res* 2010 May 15, 16(10):2715-28.

103. Blattmann C, Oertel S, Schulz-Ertner D, Rieken S, Haufe S, Ewerbeck V, Unterberg A, Karapanagiotou-Schenkel I, **Combs SE**, Nikoghosyan A, Bischof M, Jäkel O, Huber PE, Kulozik AE, Debus J. Therapy Trial to Determine the Safety and Efficacy of Heavy Ion Radiotherapy in Patients with Osteosarcoma. *BMC Cancer*. 2010 Mar 12;10:96.
104. **Combs SE**, Hartmann C, Nikoghosyan A, Jäkel O, Karger CP, von Deimling A, Mütter MW, Huber PE, Debus J, Schulz-Ertner D. Carbon ion radiation therapy for high-risk meningiomas. *Radiother Oncol* 2010 Apr;95(1):54-9.
105. Nagy M, Schulz-Ertner D, Bischof M, Welzel T, Hof H, Debus J, **Combs SE**. Long-term outcome of postoperative irradiation in patients with newly diagnosed WHO grade III anaplastic gliomas. *Tumori*. 2009 May-Jun;95(3):317-24.
106. **Combs SE**, Welzel T, Schulz-Ertner D, Huber PE, Debus J. Differences in Clinical Results after Linac-based Single-Dose Radiosurgery (SRS) vs. Fractionated Stereotactic Radiotherapy (FSRT) for patients with vestibular schwannomas. *Int J Radiat Oncol Biol Phys*. 2010 Jan 1;76(1):193-200.
107. Ahmadi R, Dictus C, Hartmann C, Zürn O, Edler L, Hartmann M, **Combs SE**, Herold-Mende C, Wirtz CT, Unterberg A. Long-term outcome and survival of surgically treated supratentorial low-grade glioma in adult patients. *Acta Neurochir (Wien)*. 2009 Nov;151(11):1359-65.
108. **Combs SE**, Steck I, Schulz-Ertner D, Welzel T, Kulozik AE, Behnisch W, Huber PE and Debus J: Long-term outcome of high-precision radiotherapy in patients with brain stem gliomas: Results from a difficult-to-treat patient population using fractionated stereotactic radiotherapy. *Radiother Oncol*. 2009 Apr;91(1):60-6.
109. **Combs SE**, Bohl J, Elsässer T, Weber K-J, Schulz-Ertner D, Debus J, Weyrather WK. Radiobiological evaluation and correlation with the local effect model (LEM) of carbon ion radiation therapy and temozolomide in glioblastoma cell lines. *Int J Radiat Biol*. 2009 Feb;85(2):126-37.
110. **Combs SE**, Nikoghosyan A, Jaekel O, Karger CP, Haberer T, Muentner M, Huber PE, Debus J, Schulz-Ertner D. Carbon ion radiation therapy for paediatric patients and young adults treated for tumors of the skull base. *Cancer*. 2009 Mar 15;115(6):1348-55.
111. **Combs SE**, Bischof M, Welzel T, Hof H, Oertel S, Debus J, Schulz-Ertner D. Radiochemotherapy with temozolomide as re-irradiation using high precision fractionated stereotactic radiotherapy (FSRT) in patients with recurrent gliomas. *J Neurooncol*. 2008 Sep;89(2):205-10.
112. **Combs SE**, Nagy M, Edler L, Rausch R, Bischof M, Welzel T, Debus J, Schulz-Ertner D. Comparative evaluation of radiochemotherapy with temozolomide versus standard-of-care postoperative radiation alone in patients with WHO grade III astrocytic tumors. *Radiother Oncol*. 2008 Aug;88(2):177-82.
113. **Combs SE**, Kelter V, Welzel T, Behnisch W, Kulozik AE, Bischof M, Hof H, Debus J, Schulz-Ertner D. Influence of Radiotherapy Treatment Concept on the Outcome of Patients with Localized Ependymomas. *Int J Radiat Oncol Biol Phys*. 2008 Jul 15;71(4):972-8.
114. **Combs SE**, Wagner J, Bischof M, Welzel T, Edler L, Rausch R, Wagner F, Zabel-du Bois A, Debus J, Schulz-Ertner D. Radio-chemotherapy with Temozolomide in patients with primary glioblastoma multiforme comparing two dose regimens. *Int J Radiat Oncol Biol Phys*. 2008 Jul 15;71(4):999-1005. Erratum in: *Int J Radiat Oncol Biol Phys*. 2008 Sep 1;72(1):307.
115. **Combs SE**, Wagner J, Bischof M, Welzel T, Wagner F, Debus J, Schulz-Ertner D. Postoperative Treatment of Primary Glioblastoma Multiforme with Radiation and Concomitant Temozolomide in Elderly Patients. *Int J Radiat Oncol Biol Phys*. 2008 Mar 15;70(4):987-92.
116. **Combs SE**, Behnisch W, Kulozik AE, Huber PE, Debus J, Schulz-Ertner D. Intensity Modulated Radiotherapy (IMRT) and Fractionated Stereotactic Radiotherapy (FSRT) for children with head-and-neck rhabdomyosarcoma. *BMC Cancer*. 2007 Sep 13;7(1):177.
117. **Combs SE**, Schulz-Ertner D, Roth W, Herold-Mende C, Debus J, Weber KJ. *In vitro* responsiveness of glioma cell lines to multimodality treatment with radiotherapy, temozolomide and epidermal growth factor receptor inhibition with cetuximab. *Int J Radiat Oncol Biol Phys*. 2007 Jul 1;68(3):873-82.
118. Jakel O, Land B, **Combs SE**, Schulz-Ertner D, Debus J. On the cost-effectiveness of Carbon ion radiation therapy for skull base chordoma. *Radiother Oncol*. 2007 May;83(2):133-8.
119. **Combs SE**, Thilmann C, Huber PE, Hoess A, Debus J, Schulz-Ertner D. Achievement of long-term local control in patients with craniopharyngiomas using high precision stereotactic radiotherapy. *Cancer*. 2007 Jun 1;109(11):2308-14.
120. Schulz-Ertner D, Karger CP, Feuerhake A, Nikoghosyan A, **Combs SE**, Jakel O, Edler L, Scholz M, Debus J. Effectiveness of carbon ion radiotherapy in the treatment of skull-base chordomas. *Int J Radiat Oncol Biol Phys*. 2007 Jun 1;68(2):449-57.

121. **Combs SE**, Konkel S, Thilmann C, Debus J, Schulz-Ertner D. Local High-Dose Radiotherapy and Sparing of Normal Tissue Using Intensity-Modulated Radiotherapy (IMRT) for Mucosal Melanoma of the Nasal Cavity and Paranasal Sinuses. *Strahlenther Onkol.* 2007 Feb;183(2):63-68.
122. Nielles-Vallespin S, Weber MA, Bock M, Bongers A, Speier P, **Combs SE**, Wohrle J, Lehmann-Horn F, Essig M, Schad LR. 3D radial projection technique with ultrashort echo times for sodium MRI: clinical applications in human brain and skeletal muscle. *Magn Reson Med.* 2007 Jan;57(1):74-81.
123. Schulz-Ertner D, Nikoghosyan A, Hof H, Didinger B, **Combs SE**, Jäkel O, Karger CP, Edler L, Debus J. Carbon ion radiotherapy of skull base chondrosarcomas. *Int J Radiat Oncol Biol Phys.* 2007 Jan 1;67(1):171-7.
124. Schulz-Ertner D, Karger C, Morath A, Hof H, Nikoghosyan A, **Combs SE**, Jaekel O and Debus J. Carbon Ion Radiotherapy for Chondrosarcomas of the Skull Base. *Int J Radiat Oncol Biol Phys.* 2007 Jan 1;67(1):171-7.
125. **Combs SE**, Thilmann C, Debus J and Schulz-Ertner D. Local radiotherapeutic management of ependymomas with fractionated stereotactic radiotherapy (FSRT). *BMC Cancer* 2006 Sep 7;6(1):222.
126. **Combs SE**, Konkel S, Schulz-Ertner D, Munter MW, Debus J, Huber PE, Thilmann C. Intensity modulated radiotherapy (IMRT) in patients with carcinomas of the paranasal sinuses: clinical benefit for complex shaped target volumes. *Radiat Oncol.* 2006 Jul 21;1:23.
127. **Combs SE**, Heeger S, Haselmann R, Edler L, Debus J, Schulz-Ertner D. Treatment of Primary Glioblastoma Multiforme with Cetuximab, Radiotherapy and Temozolomide (GERT) – Phase I/II Trial: Study Protocol. *BMC Cancer*, May 18;6(1):133.
128. **Combs SE**, Thilmann C, Debus J and Schulz-Ertner D. Long-term outcome of Stereotactic Radiosurgery (SRS) in Patients with Acoustic Neuromas. *Int J Radiat Oncol Biol Phys.* 2006 Apr 1;64(5):1341-7.
129. Pommier P, Zucca L , Näslund I, Auberger T, **Combs SE**, François G, Heeren G, Rochat J, Perrier L. Light ion facility projects in Europe: methodological aspects for the calculation of the treatment cost per protocol. *Radiother Oncol* 2005, Dec; 73 Suppl 2:S183-5.
130. **Combs SE**, Gutwein S, Thilmann C, Debus J and Schulz-Ertner D. Re-irradiation in recurrent Grade III Astrocytomas using Fractionated Stereotactic Radiotherapy (FSRT). *Strahlenther Onkol.* 2005 Dec;181(12):768-73.
131. **Combs SE**, Thilmann C, Edler L, Debus J, Schulz-Ertner D. Efficacy of fractionated stereotactic reirradiation in recurrent gliomas: long-term results in 172 patients treated in a single institution. *J Clin Oncol.* 2005 Dec 1;23(34):8863-9.
132. **Combs SE**, Thilmann C, Debus J and Schulz-Ertner D. Precision Radiotherapy in the Management of Hemangiopericytomas of the Central Nervous System (CNS). *Cancer.* 2005 Dec 1;104(11):2457-65.
133. **Combs SE**, Widmer V, Thilmann C, Hof H, Debus J and Schulz-Ertner D. Stereotactic Radiosurgery (SRS): Treatment Option for Recurrent Glioblastoma multiforme (GBM). *Cancer* 2005, Oct 11;104(10):2168-2173.
134. **Combs SE**, Gutwein S, Schulz-Ertner D, van Kampen M, Thilmann C, Wannemacher M and Debus J. Temozolomide combined with Radiation as postoperative treatment of primary glioblastoma multiforme: Phase I/II Study. *Strahlenther Onkol* 2005, 181(6):372-377.
135. **Combs SE**, Volk S, Schulz-Ertner D, Huber PE, Thilmann C and Debus J. Management of Acoustic Neuromas with Fractionated stereotactic radiotherapy (FSRT): Long-term results in 106 patients treated in a single institution. *Int J Radiat Oncol Biol Phys.* 2005, Sep 1;63(1):75-81.
136. **Combs SE**, Schulz-Ertner D, Moschos D, Thilmann C, Huber PE and Debus. Fractionated Stereotactic Radiotherapy (FSRT) of Optic Pathway Gliomas: Tolerance and long-term outcome. *Int J Radiat Oncol Biol Phys.* 2005, 62:3, 814-819.
137. **Combs SE**, Schulz-Ertner D, Thilmann C, Edler L, Debus J. Fractionated stereotactic radiation therapy in the management of primary oligodendroglioma and oligoastrocytoma. *Int J Radiat Oncol Biol Phys.* 2005 Jul 1;62(3):797-802.
138. **Combs SE**, Gutwein, S, Thilmann, C, Huber, P, Debus, J, and Schulz-Ertner, D. Stereotactically Guided Fractionated Re-Irradiation in Recurrent Glioblastoma Multiforme. *J. Neurooncol.* 2005 Sep;74(2):167-71.
139. **Combs SE**, Ahmadi, R, Schulz-Ertner, D, and Debus, J. Recurrent Low-Grade Gliomas: the Role of Fractionated Stereotactic Re-Irradiation. *J Neurooncol.* 2005; 71(3):319-23.

140. Rahhal B, Dunker N, **Combs S**, Krieglstein K. Isoform-specific role of transforming growth factor-beta2 in the regulation of proliferation and differentiation of murine adrenal chromaffin cells in vivo. *J.Neurosci.Res.* 2004;78:493-8.
141. **Combs SE**, Schulz-Ertner D, Thilmann C, Edler L, Debus J. Treatment of cerebral metastases from breast cancer with stereotactic radiosurgery. *Strahlenther.Onkol.* 2004; 180:590-6.
142. Schaefer M, Munter MW, Thilmann C, Sterzing F, Haering P, **Combs SE** et al. Influence of intra-fractional breathing movement in step-and-shoot IMRT. *Phys.Med.Biol.* 2004;49:N175-N179.
143. Huber K, **Combs S**, Ernsberger U, Kalcheim C, Unsicker K. Generation of neuroendocrine chromaffin cells from sympathoadrenal progenitors: beyond the glucocorticoid hypothesis. *Ann.N.Y.Acad.Sci.* 2002;971:554-9.
144. **Combs SE**, Ernsberger U, Krieglstein K, Unsicker K. Reduction of endogenous TGF-beta does not affect phenotypic development of sympathoadrenal progenitors into adrenal chromaffin cells. *Mech.Dev.* 2001;109:295-302.
145. **Combs SE**, Krieglstein K, Unsicker K. Reduction of endogenous TGF-beta increases proliferation of developing adrenal chromaffin cells in vivo. *J.Neurosci.Res.* 2000;59:379-83.

Review Articles (peer reviewed, PubMed listed)

1. Habermehl D, **Combs SE**. [Stereotactic body radiotherapy for the treatment of hepatocellular cancer. Pooled analysis of two phase I/II trials]. *Strahlenther Onkol.* 2013 Dec;189(12):1051-3.
2. **Combs SE**, Debus J. [Translational uro-radio-oncology]. *Urologe A.* 2013 Sep;52(9):1276-82.
3. **Combs SE**, Debus J. Treatment with heavy charged particles: systematic review of clinical data and current clinical (comparative) trials. *Acta Oncol.* 2013. Oct;52(7):1272-86.
4. **Combs SE**, Djosanji M, Pötter R, Orrechia R, Haberer T, Durante M, Fossati P, Parodi K, Balosso J, Amaldi U, Baumann M, Debus J. Towards clinical evidence in particle therapy: ENLIGHT, PARTNER, ULICE and beyond. *J Radiat Res.* 2013 Jul;54 Suppl 1:i6-12.
5. Werner J, **Combs SE**, Springfield C, Hartwig W, Hackert T, Büchler MW. Advanced-stage pancreatic cancer: therapy options. *Nat Rev Clin Oncol.* 2013 Jun;10(6):323-33.
6. Diener MK, **Combs SE**, Büchler MW. Chemoradiotherapy for locally advanced pancreatic cancer. *Lancet Oncol.* 2013 Apr;14(4):269-70.
7. **Combs SE**, Laperriere N, Brada M. Clinical controversies: proton radiation therapy for brain and skull base tumors. *Semin Radiat Oncol.* 2013 Apr;23(2):120-6.
8. Anzalone N, Essig M, Lee SK, Dörfler A, Ganslandt O, Combs SE, Picozzi P. Optimizing contrast-enhanced magnetic resonance imaging characterization of brain metastases: relevance to stereotactic radiosurgery. *Neurosurgery.* 2013 May;72(5):691-701.
9. **Combs SE**, Ganswindt U, Foote RL, Kondziolka D, Tonn JC. State-of-the-art treatment alternatives for base of skull meningiomas: complementing and controversial indications for neurosurgery, stereotactic and robotic based radiosurgery or modern fractionated radiation techniques. *Radiat Oncol.* 2012 Dec 29;7:226.
10. Essig M, Anzalone N, **Combs SE**, Dörfler A, Lee SK, Picozzi P, Rovira A, Weller M, Law M. MR Imaging of Neoplastic Central Nervous System Lesions: Review and Recommendations for Current Practice. *AJNR Am J Neuroradiol.* 2012 May;33(5):803-17.
11. **Combs SE**, Habermehl D, Werner J, Büchler MW, Debus J. [Strategies for preoperative downsizing in patients with local nonresectable pancreatic cancer]. *Chirurg* 2011 Nov;82(11):981-8.
12. **Combs SE**, Jäkel O, Haberer T, Debus J. Particle therapy at the Heidelberg Ion Therapy Center (HIT) – Integrated research-driven university-hospital based radiation oncology service in Heidelberg, Germany. *Radiother Oncol.* 2010 Apr;95(1):41-4.
13. **Combs SE**, Herfarth KK, Habermehl D, Debus J. [Radiotherapy of hepatic metastases]. *Chirurg* 2010 Jun; 81(6):526-32. Review. German.
14. **Combs SE**. Radiation therapy. *Recent Results Cancer Res.* 2009;171:125-40.
15. **Combs SE**, Debus J, Schulz-Ertner D. Radiotherapeutic alternatives for previously irradiated recurrent gliomas. *BMC Cancer.* 2007 Aug 30;7:167.

16. **Combs SE**, Schulz-Ertner D, Herfarth KK, Krempien R, Debus J. Fortschritte in der RadioOnkologie: Von der Präzisionsstrahlentherapie mit Photonen zur Ionentherapie mit Protonen und Kohlenstoffionen. Chirurg, 2006 Dec;77(12):1126-32.

Other Review Articles

1. **Combs SE**, Debus J. Besonderheiten bei der Strahlentherapie von Kindern. Forum Onkologische Pflege 2012, 1: 14–17.
2. **Combs SE**, Haberkorn U, Debus J, Parodi K. PET-Bildgebung für die Protonen- und Schwerionentherapie: Hintergrund, Entwicklungen und klinische Implementierung. Der Nuklearmediziner 2011; 34: 93-98
3. **Combs SE**, Röder F, Debus J. Titelthema: Pankreaskarzinom - Pro: Was spricht für eine Radiochemotherapie beim Pankreaskarzinom?. Journal Onkologie, Februar 2011
4. **Combs SE** und Debus J. RadioOnkologie: Neues aus Diagnostik, Therapie und Nachsorge: Partikeltherapie mit Protonen und Schwerionen – Indikationen und Studienkonzepte. Zeitschrift „FORUM“ der Deutschen Krebsgesellschaft (DKG). Februar 2011.
5. **Combs SE**, Debus J. Strahlentherapie mit Protonen und Kohlenstoffionen: Das Heidelberger Ionenstrahl Therapiezentrum (HIT) am Universitätsklinikum Heidelberg. Journal Onkologie, Mai 2010
6. **Combs SE**, Debus J, Schulz-Ertner D. Fokus: Neue Konzepte in der Radioonkologie: Strahlentherapie mit Protonen und Kohlenstoffionen. Zeitschrift „FORUM“ der Deutschen Krebsgesellschaft (DKG). Juni 2006.
7. **Combs SE**, Debus J. Re-Bestrahlung progredienter niedriggradiger Gliome mit fraktionierter stereotaktischer Radiotherapie. BrainStorm, Deutsche Hirntumorhilfe, Ausgabe 2 / 2005.
8. **Combs SE**, Schulz-Ertner D, Thilmann C, Debus J. Stereotaktische Bestrahlung von Hirnmetastasen. Journal Onkologie, 2005.
9. **Combs SE** und Debus J. Moderne Radioonkologie vor dem Hintergrund der neuen Strahlenschutzverordnung und der 12. AMG Novelle. DZKF Titelthema, 7/8-2004.

Books and book chapters

1. **Combs SE**. Hyperthermie. In: Wannemacher/Debus/Wenz: Strahlentherapie. Springer Verlag, 2006, Update 2012.
2. **Combs SE**. Low Grade Gliomas: Radiotherapy. In: Duffeau H (Editor): Diffuse Low-Grade Gliomas in Adults. Springer Verlag, 2012.
3. Chamberlain M, Shibui S, **Combs SE**. Metastatic tumors – Leptomeninges. In: Weller, Tarbell, Nishikawa, Batchelor, Oxford Textbook of Clinical Neurology. Oxford University Press, Oxford, UK. 2012.
4. **Combs SE**, Debus J. Lungentumore. In: Wannemacher/Debus/Wenz: Strahlentherapie. Springer Verlag, Update 2012.
5. **Combs SE**. Clinical Indications for Carbon ion Radiotherapy and other Heavier Ions. In: Linz U Ion Beam Therapy: Fundamentals - Technology - Clinical Applications. Springer, 2012.
6. Habermehl D, **Combs SE**, Debus J. Future Directions of Ion Beam Therapy. In: Linz U Ion Beam Therapy: Fundamentals - Technology - Clinical Applications. Springer, 2012.
7. **Combs SE**, Kamada T, Pommier P. Carbon Ions. In: Perez CA and Brady L (Editors): Principles and Practice of Radiation Oncology 6th Edition. Wolters Cluver/Lippincott William & Wilkins, 2011.
8. **Combs SE**. Radiation Therapy. In : Recent Results in Cancer Research: Gliomas. Editor: Andreas von Deimling, Springer 2009.
9. **Combs SE**, Debus J. Manual „Radioonkologische Therapiestrategien für die Behandlung von primären und sekundären Hirntumoren“. RadioOnkologie Heidelberg, Nino Druck, Neustadt, Weinstraße.
10. **Combs SE**, Debus J. Krebserkrankungen in Folge ionisierender Strahlung. In: Die Onkologie (Bartram, Hiddemann, Hrsg.), Springer Verlag, 2009.
11. **Combs SE**, Debus J. Physical, Biological & Clinical Basis for Particle Therapy. In: Mould: Choices in Advances Radiotherapy. 2007.
12. **Combs SE**, Debus J. Moderne RadioOnkologie. In : Heidelberger Jahrbücher, Gesellschaft der Freunde der Universität Heidelberg e.V. Hrsg: Christian Herfarth. 2006 (50).