**APPENDIX 1**

**Research framework and terminologies**

|  |
| --- |
| **Research Title:** FDG-PET/CT and MR imaging for target volume delineation in rectal cancer radiotherapy treatment planning: a systematic review  |
| **Research Question:** Are FDG-PET/CT and MRI more effective than CT for target volume delineation in radiotherapy treatment planning of colorectal cancer?  |
| **Framework for Systematic review question: PICO** |
| **Patient/Population/Problem** | **Index test(s)** | **Comparator/Control** | **Outcomes/Effects** |
| Rectal cancer | FDG-PET/CT | MRI | CT | Tumour volume |
| **Terminologies** used in the search strategy: Keywords and Alternative words |
| **Keywords / Key concepts** |
| Rectal cancer | MRI | FDG-PET/CT | CT | Radiotherapy planning |
| **Synonyms, alternative words/related terms, variant spellings and abbreviations** |
| Rectal neoplasms | Magnetic Resonance Imaging | 18F-FDG-PET/CT | Computed Tomography | Radiotherapy treatment planning |
| Rectal carcinoma | Planning MRI | FDG PET/CT | CT simulation | Radiotherapy simulation |
| Colorectal cancer | MRI planning | PET-CT | CT planning  | Radiation therapy planning |
| Colorectal neoplasm | MRI simulation | F-18-FDG-PET/CT | Planning CT |  |
|  | CT-MRI co-registration  | 2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography |  |  |
|  |  | FDG PET-CT |  |  |

**Additional information on the search strategy**

Search terms were classified using the PICO (patients or target condition, index tests, comparator and outcome) concept.1 Text words and Medical Subject Headings (MeSH) were used and combined where appropriate to describe each concept during the search. The search was conducted in humans only and limited to the English language. Searches were also supplemented by grey literature searches and handsearching of key journals and conference proceedings of the European Society of Radiation Oncology (ESTRO). Furthermore, reference lists of relevant studies retrieved were scanned to further identify any additional studies.

**References**

Higgins JPT, Deeks JJ. Chapter 7: Selecting studies and collecting data. In: Higgins JPT, Green S (editors), Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0.The Cochrane Collaboration, 2011. Available from: <http://www.handbook.cochrane.org> [updated March 2011]

 **Search Syntax: Demonstration Search Strategies**

**I: Databases used**

1. PubMed (MEDLINE)

Limits applied to the search: English language; studies in humans; and publication dates: 2005-2018

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Key concepts/Keywords** | **Search terms** | **Description** | **Results** |
| 1 | Rectal cancer | MeSH | Search "Rectal Neoplasms"[Mesh] | 43991 |
| Text words | Search (((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm" | 123245 |
| Combined | Search ("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm") | 127900 |
| 2 | Radiotherapy planning | MeSH | Search "Radiotherapy Planning, Computer-Assisted"[Mesh]  | 17893 |
| Text words | Search ((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning" | 19282 |
| Combined | Search ("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning") | 19282 |
|  | 1 AND 2 |  | Search ((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")) | 321 |
| 3 | FDG-PET/CT | MeSH | Search "Positron Emission Tomography Computed Tomography"[Mesh] | 4060 |
| Text words | Search (((((("FDG-PET/CT") OR "18F-FDG-PET/CT") OR "FDG PET/CT") OR "PET-CT") OR "F-18-FDG-PET/CT") OR 2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography") OR "FDG PET-CT" | 693 |
| Combined | Search ("Positron Emission Tomography Computed Tomography"[Mesh]) OR ((((((("FDG-PET/CT") OR "18F-FDG-PET/CT") OR "FDG PET/CT") OR "PET-CT") OR "F-18-FDG-PET/CT") OR 2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography") OR "FDG PET-CT") | 693 |
|  | 1 AND 2 AND 3 |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND (("Positron Emission Tomography Computed Tomography"[Mesh]) OR ((((((("FDG-PET/CT") OR "18F-FDG-PET/CT") OR "FDG PET/CT") OR "PET-CT") OR "F-18-FDG-PET/CT") OR 2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography") OR "FDG PET-CT")) | 697 |
|  |  |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND (("Positron Emission Tomography Computed Tomography"[Mesh]) OR ((((((("FDG-PET/CT") OR "18F-FDG-PET/CT") OR "FDG PET/CT") OR "PET-CT") OR "F-18-FDG-PET/CT") OR 2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography") OR "FDG PET-CT")) Filters: Humans; English | 604 |
|  |  |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND ("Positron Emission Tomography Computed Tomography"[Mesh]) OR (((((("FDG-PET/CT") OR "18F-FDG-PET/CT") OR "FDG PET/CT") OR "PET-CT") OR "F-18-FDG-PET/CT") OR 2-[All Fields] AND -fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography AND ") OR " AND FDG PET-CT) Filters: Publication date from 2005/01/01 to 2018/12/31; Humans; English | 346 |
| 4 | MRI | MeSH | Search "Magnetic Resonance Imaging"[Mesh] | 397246 |
| Text words | Search ((((("MRI") OR "Magnetic Resonance Imaging") OR "Planning MRI") OR "MRI planning") OR "MRI simulation") OR "MRI-CT co-registration"Search "CT-MRI co-registration" | 5048097 |
| Combined | Search (("Magnetic Resonance Imaging"[Mesh]) OR (((((((((("MRI") OR "Magnetic Resonance Imaging") OR "Planning MRI") OR "MRI planning") OR "MRI simulation")))))) OR "CT-MRI co-registration" | 518971 |
|  | 1 AND 2 AND 4 |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND ((("Magnetic Resonance Imaging"[Mesh]) OR (((((((((("MRI") OR "Magnetic Resonance Imaging") OR "Planning MRI") OR "MRI planning") OR "MRI simulation")))))) OR "CT-MRI co-registration") | 49 |
|  |  |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND (("Magnetic Resonance Imaging"[Mesh]) OR (((((((((("MRI") OR "Magnetic Resonance Imaging") OR "Planning MRI") OR "MRI planning") OR "MRI simulation")))))) OR "CT-MRI co-registration") AND (Humans[Mesh] AND English[lang]) Filters: Humans; English | 41 |
|  |  |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND (("Magnetic Resonance Imaging"[Mesh]) OR (((((((((("MRI") OR "Magnetic Resonance Imaging") OR "Planning MRI") OR "MRI planning") OR "MRI simulation")))))) OR "CT-MRI co-registration") AND (Humans[Mesh] AND English[lang]) Filters: Publication date from 2005/01/01 to 2018/12/31; Humans; English | 35 |
| 5 | CT | MeSH | Search "Tomography, X-Ray Computed"[Mesh] | 385742 |
| Text words | Search (((("CT") OR "Computed Tomography") OR "CT simulation") OR "CT planning") OR "Planning CT" | 495842 |
| Combined | Search ("Tomography, X-Ray Computed"[Mesh]) OR ((((("CT") OR "Computed Tomography") OR "CT simulation") OR "CT planning") OR "Planning CT") | 666972 |
|  | 1 AND 2 AND 5 |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND (("Tomography, X-Ray Computed"[Mesh]) OR ((((("CT") OR "Computed Tomography") OR "CT simulation") OR "CT planning") OR "Planning CT")) | 168 |
|  |  |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND (("Tomography, X-Ray Computed"[Mesh]) OR ((((("CT") OR "Computed Tomography") OR "CT simulation") OR "CT planning") OR "Planning CT")) Filters: Humans; English | 154 |
|  |  |  | Search ((((("Rectal Neoplasms"[Mesh]) OR ((((("Rectal cancer") OR "Rectal neoplasms") OR "Rectal carcinoma") OR "Colorectal cancer") OR "Colorectal neoplasm"))) AND (("Radiotherapy Planning, Computer-Assisted"[Mesh]) OR (((("Radiotherapy planning") OR "Radiotherapy treatment planning") OR "Radiotherapy simulation") OR "Radiation therapy planning")))) AND (("Tomography, X-Ray Computed"[Mesh]) OR ((((("CT") OR "Computed Tomography") OR "CT simulation") OR "CT planning") OR "Planning CT")) Filters: Publication date from 2005/01/01 to 2018/12/31; Humans; English | 132 |

1. EMBASE (MEDLINE)

Limits applied to the search: English language; studies in humans; and publication dates: 2005-2018

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Searches/Description** | **Results** | **Keywords/ concepts** |
| 1 | exp rectal cancer/ or exp large intestine cancer/ or exp rectum tumor/ or exp colorectal cancer/ or exp rectum carcinoma/ or rectum carcinoma | 309942 | Rectal cancer |
| 2 | (“Rectal cancer” or “Rectal neoplasms” or “Rectal carcinoma” or “Colorectal cancer” or “Colorectal neoplasm”).af. | 198946 |  |
| 3 | 1 or 2 | 325229 |  |
| 4 | exp radiotherapy planning system/ or exp radiotherapy simulator/ | 4221 | Radiotherapy planning |
| 5 | (“Radiotherapy planning” or “Radiotherapy treatment planning” or “Radiotherapy simulation” or Radiation therapy planning”).af. | 8695 |  |
| 6 | 4 or 5 | 8766 |  |
| 7 | 3 and 6  | 299 | Combined sets |
| 8 | (“FDG-PET CT” or “18F-FDG-PET CT” or “FDG PET CT” or “PET-CT” or “F-18-FDG-PET CT” or “2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography computed tomography” or “FDG PET-CT”).af. | 49479 | FDG-PET/CT |
| 9 | exp pet scanner/ or exp pet therapy/ or exp pet-ct scanner/ | 8420 |  |
| 10 | 8 or 9 | 52309 |  |
| 11 | 7 and 10 | 74 | Combined sets |
| 12 | exp nuclear magnetic resonance/ or exp nuclear magnetic resonance imaging/ or nuclear magnetic resonance/ or exp nuclear magnetic resonance scanner/ | 1179089 | MRI |
| 13 | (“MRI” or “Magnetic Resonance Imaging” or “Planning MRI” or “MRI planning” or “MRI simulation” or “CT-MRI co-registration”).af. | 839581 |  |
| 14 | 12 or 13 | 1226236 |  |
| 15 | 7 and 14 | 95 | Combined sets |
| 16 | exp computer assisted tomography/ or exp high resolution computer tomography/ or exp multidetector computed tomography/ or exp spiral computer assisted tomography/ or exp x-ray computed tomography/  | 925500 | CT |
| 17 | (“CT” or “Computed Tomography” or “CT simulation” or “CT planning” or “Planning CT”).af | 1511143 |  |
| 18 | 16 or 17 | 1938748 |  |
| 19 | 7 and 18 | 212 | Combined sets |
| 20 | limit 11 to (human and english language) | 64 |  |
| 21 | limit 11 to (human and english language and yr=“2005 - 2018”) | 63 |  |
| 22 | limit 15 to (human and english language) | 87 |  |
| 23 | limit 15 to (human and english language and yr=“2005 - 2018”) | 83 |  |
| 24 | limit 19 to (human and english language) | 187 |  |
| 25 | limit 19 to (human and english language and yr=“2005 - 2018”) | 181 |  |

1. Cochrane Library

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Searches** | **Results** | **Keywords/concepts** |
| #1 | MeSH descriptor: [Rectal Neoplasms] explode all trees | 1533 | Rectal cancer |
| #2 | (“Rectal cancer”):ti,ab,kw OR (“Rectal Neoplasms”):ti,ab,kw OR (“Rectal carcinoma”):ti,ab,kw OR (“Colorectal cancer”):ti,ab,kw OR (“Colorectal neoplasm”):ti,ab,kw | 10829 |  |
| #3 | #1 or #2 | 10909 |  |
| #4 | MeSH descriptor: [Radiotherapy Planning, Computer-Assisted] explode all trees | 288 | Radiotherapy planning |
| #5 | (“Radiotherapy planning”):ti,ab,kw OR (“Radiotherapy treatment planning”):ti,ab,kw OR (“Radiotherapy simulation”):ti,ab,kw OR (“Radiation therapy planning”):ti,ab,kw  | 486 |  |
| #6 | #4 or #5 | 486 |  |
| #7 | #3 and #6 | 9 | Combined sets |
| #8 | Any MeSH descriptor in all MeSH products | 0 | FDG-PET/CT |
| #9 | MeSH descriptor [Positron Emission Tomography Computed Tomography] explode all trees | 55 |  |
| #10 | (“FDG-PET-CT”):ti,ab,kw OR (“FDG PET-CT”):ti,ab,kw OR (“18F-FDG-PET-CT”):ti,ab,kw OR (“PET-CT”):ti,ab,kw OR (“F-18-FDG-PET-CT”):ti,ab,kw | 1296 |  |
| #11 | (“2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography-computed tomography”):ti,ab,kw | 1 |  |
| #12 | #9 or #10 or #11 | 1320 |  |
| #13 | #7 AND #12 | 1 |  |
| #14 | #7 and #12 | 1 |  |
| #15 | MeSH descriptor: [Magnetic Resonance Imaging] explode all trees | 7321 | MRI |
| #16 | (“MRI”):ti,ab,kw OR (“Magnetic Resonance Imaging”):ti,ab,kw OR (“Planning MRI”):ti,ab,kw OR (“MRI planning”):ti,ab,kw OR (“MRI simulation”):ti,ab,kw | 21992 |  |
| #17 | (“CT-MRI co-registration”) | 1 |  |
| #18 | #15 or #16 or #17 | 22276 |  |
| #19 | #7 and #18 | 0 | Combined sets |
| #20 | MeSH descriptor: [Tomography, X-Ray Computed] explode all trees | 4742 | CT |
| #21 | (“CT”):ti,ab,kw OR (“Computed Tomography”):ti,ab,kw OR (“CT simulation”):ti,ab,kw OR (“CT planning”):ti,ab,kw OR (“Planning CT”):ti,ab,kw | 93469 |  |
| #22 | #20 or #21 | 94458 |  |
| #23 | #7 and 22 | 3 | Combined sets |

1. CINAHL

Limits applied to the search: English language; studies in humans; and publication dates: 2005-2018

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Search Terms** | **Results** | **Keywords/concepts** |
| S1 |

|  |  |
| --- | --- |
|   | (MH "Rectal Neoplasms+")   |

 | 4674 |  |
| S2 | "Rectal cancer" OR "Rectal carcinoma" OR "Rectal neoplasms" OR "Colorectal cancer" OR "Colorectal neoplasm"  | 21125 | Rectal cancer |
| S3 | S1 OR S2  | 22006 |  |
| S4 | (MH "Radiotherapy+")  | 28364 | Radiotherapy planning |
| S5 | "Radiotherapy planning" OR "Radiotherapy treatment planning" OR "Radiotherapy simulation" OR "Radiation therapy planning"  | 520 |  |
| S6 | S4 OR S5 | 28555 |  |
| S7 | S3 AND S6 | 1087 | Combined sets |
| S8 | (MH "Tomography, Emission-Computed+")  | 17303 | FDG-PET/CT |
| S9 | "FDG-PET/CT" OR "18F-FDG-PET/CT" OR "FDG PET?CT" OR "PET-CT" OR "F-18-FDG-PET/CT" OR "2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography"  | 4588 |  |
| S10 | S8 OR S9 | 19482 |  |
| S11 | S7 AND S10 | 39 | Combined sets |
| S12 | (MH "Magnetic Resonance Imaging+") | 95874 | MRI |
| S13 | "MRI" OR "Magnetic Resonance Imaging" OR "Planning MRI" OR "MRI planning" OR "MRI simulation" OR "CT-MRI co-registration" | 112345 |  |
| S14 | S12 OR S13 | 115167 |  |
| S15 | S7 AND S14 | 116 | Combined sets |
| S16 | (MH "Tomography, X-Ray Computed+") | 80973 | CT |
| S17 | "CT" OR "Computed Tomography" OR "CT simulation" OR "CT planning" OR "Planning CT" | 72866 |  |
| S18 | S16 OR S17 | 113977 |  |
| S19 | S7 AND S18 | 93 | Combined sets |
| S20 | S11; Narrow by Language: - english search modes – Boolean/Phrase | 39 |  |
| S21 | S11; Limiters - Publication Year: 2005-2018; Narrow by Language: - english Search modes - Boolean/Phrase | 37 |  |
| S22 | S15; Narrow by Language: - english search modes – Boolean/Phrase | 116 |  |
| S23 | S15; Limiters - Publication Year: 2005-2018; Narrow by Language: - english Search modes - Boolean/Phrase | 115 |  |
| S24 | S19; Narrow by Language: - english search modes – Boolean/Phrase | 92 |  |
| S25 | S19; Limiters - Publication Year: 2005-2018; Narrow by Language: - english Search modes - Boolean/Phrase | 92 |  |

1. Web of Science

Limits applied to the search: English language; and publication dates: 2005-2018

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Results** | **Keywords/concepts** |
| #1 | TOPIC: (“Rectal cancer”) *OR* TOPIC: (“Rectal neoplasms”) *OR* TOPIC: (“Rectal carcinoma”) *OR* TOPIC: (“Colorectal cancer”) *OR* TOPIC: (“Colorectal neoplasm”)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 180629 | Rectal cancer |
| #2 | TOPIC: (“Radiotherapy planning”) *OR* TOPIC: (“Radiotherapy treatment planning”) *OR* TOPIC: (“Radiotherapy simulation”) *OR* TOPIC: (“Radiation therapy planning”)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 3690 | Radiotherapy planning |
| #3 | #2 AND #1*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 71 | Combined sets |
| #4 | TOPIC: (“FDG-PET/CT”) *OR* TOPIC: (“18F-FDG-PET/CT”) *OR* TOPIC: (“FDG PET/CT”) *OR* TOPIC: (“PET-CT”) *OR* TOPIC: (“F-18-FDG-PET/CT”) *OR* TOPIC: (“2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography”) *OR* TOPIC: (“FDG PET-CT”)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 32519 | FDG-PET/CT |
| #5 | #4 AND #3*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 25 | Combined sets |
| #6 | TOPIC: (“MRI”) *OR* TOPIC: (“Magnetic Resonance Imaging”) *OR* TOPIC: (“Planning MRI”) *OR* TOPIC: (“MRI planning”) *OR* TOPIC: (“MRI simulation”) *OR* TOPIC: (“CT-MRI co-registration”)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 387648 | MRI |
| #7 | #6 AND #3*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 26 | Combined sets |
| #8 | TOPIC: (“CT”) *OR* TOPIC: (“Computed Tomography”) *OR* TOPIC: (“CT simulation”) *OR* TOPIC: (“CT planning”) *OR* TOPIC: (“Planning CT”)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 500004 | CT |
| #9 | #8 AND #3*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 49 | Combined sets |
| #10 | #4 AND #3Refined by: LANGUAGES: (ENGLISH)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 23 |  |
| #11 | #4 AND #3Refined by: LANGUAGES: (ENGLISH) AND PUBLICATION YEARS: (2018 OR 2015 OR 2012 OR 2009 OR 2017 OR 2014 OR 2011 OR 2006 OR 2016 OR 2013 OR 2010 OR 2005)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 23 |  |
| #12 | #6 AND #3Refined by: LANGUAGES: (ENGLISH) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 25 |  |
| #13 | #6 AND #3Refined by: LANGUAGES: (ENGLISH) AND PUBLICATION YEARS: (2018 OR 2014 OR 2011 OR 2007 OR 2017 OR 2013 OR 2010 OR 2006 OR 2015 OR 2012 OR 2009)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 25 |  |
| #14 | #8 AND #3Refined by: LANGUAGES: (ENGLISH) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 46 |  |
| #15 | #8 AND #3Refined by: LANGUAGES: (ENGLISH) AND PUBLICATION YEARS: (2018 OR 2013 OR 2009 OR 2005 OR 2017 OR 2012 OR 2008 OR 2016 OR 2011 OR 2007 OR 2015 OR 2010 OR 2006 OR 2014)*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC**Timespan=All years* | 43 |  |

1. SCOPUS

Limits applied to the search: English language; studies in humans; and publication dates: 2005-2018

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Search history** | **Results** | **Keywords/concepts** |
| 1 | ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) )  | 188985 | Rectal cancer |
| 2 | ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) )  | 19092 | Radiotherapy planning |
| 3 | ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) )  | 333 | Combined sets |
| 4 |  TITLE-ABS-KEY ( "FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "18F-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "FDG PET/CT" )  OR  TITLE-ABS-KEY ( "PET-CT" )  OR  TITLE-ABS-KEY ( "F-18-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography" )  OR  TITLE-ABS-KEY ( "FDG PET-CT" ) )  | 26962 | FDG-PET/CT |
| 5 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "18F-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "FDG PET/CT" )  OR  TITLE-ABS-KEY ( "PET-CT" )  OR  TITLE-ABS-KEY ( "F-18-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography" )  OR  TITLE-ABS-KEY ( "FDG PET-CT" ) ) )  | 50 | Combined sets |
| 6 | ( TITLE-ABS-KEY ( "MRI" )  OR  TITLE-ABS-KEY ( "Magnetic Resonance Imaging" )  OR  TITLE-ABS-KEY ( "Planning MRI" )  OR  TITLE-ABS-KEY ( "MRI planning" )  OR  TITLE-ABS-KEY ( "MRI simulation" )  OR  TITLE-ABS-KEY ( "CT-MRI co-registration" ) )  | 766061 | MRI |
| 7 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "MRI" )  OR  TITLE-ABS-KEY ( "Magnetic Resonance Imaging" )  OR  TITLE-ABS-KEY ( "Planning MRI" )  OR  TITLE-ABS-KEY ( "MRI planning" )  OR  TITLE-ABS-KEY ( "MRI simulation" )  OR  TITLE-ABS-KEY ( "CT-MRI co-registration" ) ) )   | 75 | Combined sets |
| 8 |  TITLE-ABS-KEY ( "CT" )  OR  TITLE-ABS-KEY ( "Computed Tomography" )  OR  TITLE-ABS-KEY ( "CT simulation" )  OR  TITLE-ABS-KEY ( "CT planning" )  OR  TITLE-ABS-KEY ( "Planning CT" ) )  | 615601 | CT |
| 9 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "CT" )  OR  TITLE-ABS-KEY ( "Computed Tomography" )  OR  TITLE-ABS-KEY ( "CT simulation" )  OR  TITLE-ABS-KEY ( "CT planning" )  OR  TITLE-ABS-KEY ( "Planning CT" ) ) )  | 179 | Combined sets |
| 10 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "18F-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "FDG PET/CT" )  OR  TITLE-ABS-KEY ( "PET-CT" )  OR  TITLE-ABS-KEY ( "F-18-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography" )  OR  TITLE-ABS-KEY ( "FDG PET-CT" ) ) )  AND  ( LIMIT-TO ( LANGUAGE ,  "English" ) )   | 43 |  |
| 11 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "18F-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "FDG PET/CT" )  OR  TITLE-ABS-KEY ( "PET-CT" )  OR  TITLE-ABS-KEY ( "F-18-FDG-PET/CT" )  OR  TITLE-ABS-KEY ( "2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography" )  OR  TITLE-ABS-KEY ( "FDG PET-CT" ) ) )  AND  ( LIMIT-TO ( LANGUAGE ,  "English" ) )  AND  ( LIMIT-TO ( PUBYEAR ,  2018 )  OR  LIMIT-TO ( PUBYEAR ,  2017 )  OR  LIMIT-TO ( PUBYEAR ,  2016 )  OR  LIMIT-TO ( PUBYEAR ,  2015 )  OR  LIMIT-TO ( PUBYEAR ,  2014 )  OR  LIMIT-TO ( PUBYEAR ,  2013 )  OR  LIMIT-TO ( PUBYEAR ,  2012 )  OR  LIMIT-TO ( PUBYEAR ,  2011 )  OR  LIMIT-TO ( PUBYEAR ,  2010 )  OR  LIMIT-TO ( PUBYEAR ,  2009 )  OR  LIMIT-TO ( PUBYEAR ,  2008 )  OR  LIMIT-TO ( PUBYEAR ,  2007 )  OR  LIMIT-TO ( PUBYEAR ,  2006 )  OR  LIMIT-TO ( PUBYEAR ,  2005 ) )   | 43 |  |
| 12 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "MRI" )  OR  TITLE-ABS-KEY ( "Magnetic Resonance Imaging" )  OR  TITLE-ABS-KEY ( "Planning MRI" )  OR  TITLE-ABS-KEY ( "MRI planning" )  OR  TITLE-ABS-KEY ( "MRI simulation" )  OR  TITLE-ABS-KEY ( "CT-MRI co-registration" ) ) )  AND  ( LIMIT-TO ( LANGUAGE ,  "English" ) )  | 69 |  |
| 13 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "MRI" )  OR  TITLE-ABS-KEY ( "Magnetic Resonance Imaging" )  OR  TITLE-ABS-KEY ( "Planning MRI" )  OR  TITLE-ABS-KEY ( "MRI planning" )  OR  TITLE-ABS-KEY ( "MRI simulation" )  OR  TITLE-ABS-KEY ( "CT-MRI co-registration" ) ) )  AND  ( LIMIT-TO ( PUBYEAR ,  2018 )  OR  LIMIT-TO ( PUBYEAR ,  2017 )  OR  LIMIT-TO ( PUBYEAR ,  2016 )  OR  LIMIT-TO ( PUBYEAR ,  2015 )  OR  LIMIT-TO ( PUBYEAR ,  2014 )  OR  LIMIT-TO ( PUBYEAR ,  2013 )  OR  LIMIT-TO ( PUBYEAR ,  2012 )  OR  LIMIT-TO ( PUBYEAR ,  2011 )  OR  LIMIT-TO ( PUBYEAR ,  2010 )  OR  LIMIT-TO ( PUBYEAR ,  2009 )  OR  LIMIT-TO ( PUBYEAR ,  2008 )  OR  LIMIT-TO ( PUBYEAR ,  2007 )  OR  LIMIT-TO ( PUBYEAR ,  2006 )  OR  LIMIT-TO ( PUBYEAR ,  2005 ) )  AND  ( LIMIT-TO ( LANGUAGE ,  "English" ) )   | 64 |  |
| 14 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "CT" )  OR  TITLE-ABS-KEY ( "Computed Tomography" )  OR  TITLE-ABS-KEY ( "CT simulation" )  OR  TITLE-ABS-KEY ( "CT planning" )  OR  TITLE-ABS-KEY ( "Planning CT" ) ) )  AND  ( LIMIT-TO ( LANGUAGE ,  "English" ) )  | 162 |  |
| 15 | ( ( ( TITLE-ABS-KEY ( "Rectal cancer" )  OR  TITLE-ABS-KEY ( "Rectal neoplasms" )  OR  TITLE-ABS-KEY ( "Rectal carcinoma" )  OR  TITLE-ABS-KEY ( "Colorectal cancer" )  OR  TITLE-ABS-KEY ( "Colorectal neoplasm" ) ) )  AND  ( ( TITLE-ABS-KEY ( "Radiotherapy planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy treatment planning" )  OR  TITLE-ABS-KEY ( "Radiotherapy simulation" )  OR  TITLE-ABS-KEY ( "Radiation therapy planning" ) ) ) )  AND  ( ( TITLE-ABS-KEY ( "CT" )  OR  TITLE-ABS-KEY ( "Computed Tomography" )  OR  TITLE-ABS-KEY ( "CT simulation" )  OR  TITLE-ABS-KEY ( "CT planning" )  OR  TITLE-ABS-KEY ( "Planning CT" ) ) )  AND  ( LIMIT-TO ( PUBYEAR ,  2018 )  OR  LIMIT-TO ( PUBYEAR ,  2017 )  OR  LIMIT-TO ( PUBYEAR ,  2016 )  OR  LIMIT-TO ( PUBYEAR ,  2015 )  OR  LIMIT-TO ( PUBYEAR ,  2014 )  OR  LIMIT-TO ( PUBYEAR ,  2013 )  OR  LIMIT-TO ( PUBYEAR ,  2012 )  OR  LIMIT-TO ( PUBYEAR ,  2011 )  OR  LIMIT-TO ( PUBYEAR ,  2010 )  OR  LIMIT-TO ( PUBYEAR ,  2009 )  OR  LIMIT-TO ( PUBYEAR ,  2008 )  OR  LIMIT-TO ( PUBYEAR ,  2007 )  OR  LIMIT-TO ( PUBYEAR ,  2006 )  OR  LIMIT-TO ( PUBYEAR ,  2005 ) )  AND  ( LIMIT-TO ( LANGUAGE ,  "English" ) )   | 144 |  |

**II. OTHER SOURCES SEARCHED**

1. Grey literature

The National Institute for Health and Care Excellence (NICE) Evidence:

1. Search terms: (“rectal cancer” OR “rectal neoplasms” OR “rectal carcinoma” OR colorectal cancer” OR “colorectal neoplasm”) AND “radiotherapy”
2. Results: 19 results but none relevant to the review under investigation.
3. Handsearching of key journals and conference proceedings:
4. European Society of Radiation Oncology (ESTRO):
5. Advanced search terms: “Rectal cancer” “Radiotherapy planning” “FDG-PET/CT” “MRI” “CT”
6. Results: 975 (journals 459) (congress abstract 512) (guidelines 4)
7. Relevant journals: 10 (congress abstract 1) (Journals 9)
8. British Journal of Radiology

Advanced search:

1. Search terms: “Rectal cancer” “Radiotherapy planning” “FDG-PET/CT”

Results: 6 but only 4 relevant journals

1. Search terms: “Rectal cancer” “Radiotherapy planning” “MRI”

Results: 25 articles but none-relevant

1. Search terms: “Rectal cancer” “Radiotherapy planning” “CT”

Results: 30 articles but non-relevant

1. Journal of Radiotherapy in Practice:

Search process:

1. 666 results for ("rectal cancer" OR "rectal neoplasms" OR "Rectal carcinoma" OR Colorectal cancer" OR "Colorectal neoplasm") AND ("radiotherapy planning" OR "radiotherapy treatment planning" OR "radiotherapy simulation" OR "radiation therapy planning") AND ("FDG-PET/CT" OR "18F-FDG-PET/CT" OR "FDG PET/CT" OR "PET-CT" OR "F-18-FDG-PET/CT" OR "FDG PET-CT" OR "2-[18F]-fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography") in Journal of Radiotherapy in Practice
2. 650 results for ("rectal cancer" OR "rectal neoplasms" OR "Rectal carcinoma" OR Colorectal cancer" OR "Colorectal neoplasm") AND ("radiotherapy planning" OR "radiotherapy treatment planning" OR "radiotherapy simulation" OR "radiation therapy planning") AND ("MRI" OR "Magnetic Resonance Imaging" OR "Planning MRI" OR "MRI planning" OR "MRI simulation" OR "CT-MRI co-registration") in Journal of Radiotherapy in Practice
3. 643 results for ("rectal cancer" OR "rectal neoplasms" OR "Rectal carcinoma" OR Colorectal cancer" OR "Colorectal neoplasm") AND ("radiotherapy planning" OR "radiotherapy treatment planning" OR "radiotherapy simulation" OR "radiation therapy planning") AND ("CT" OR "Computed Tomography" OR "CT simulation" OR "CT Planning" OR "Planning CT" OR "Simulation CT") in Journal of Radiotherapy in Practice

Outcome of hand-search through the three results: showed no relevant publication.

1. Journal: Radiology (RSNA Journals)

Advanced search:

1. Search terms: “Rectal cancer” AND “Radiotherapy planning” AND “FDG-PET/CT”

Results: None

1. Search terms: “Rectal cancer” AND “Radiotherapy planning” AND “MRI”

Results: None

1. Search terms: “Rectal cancer” AND “Radiotherapy planning” AND “CT”

Results: 1 (Non-relevant article)

1. OpenGrey
2. Search terms:

i.Target volume delineation in rectal cancer

ii. "rectal cancer" "radiotherapy planning"

iii. "rectal cancer" "radiotherapy planning" "MRI" "FDG-PET/CT" "CT"

iv. "rectal cancer" "radiotherapy planning" "MRI"

v. CT, MRI, FDG PET-CT in radiotherapy planning of rectal cancer

vi. Computed Tomography in target volume delineation of rectal cancer

1. Results: I did not find any literature on the six different phrases used for the search
2. Google Scholar
3. Search terms: CT, MRI, FDG-PET/CT, target volume delineation, radiotherapy planning, rectal cancer
4. Results: Searching through several pages,
* Only four (4) out of the 23 literature retrieved were not found in any of the databases searched.
* 3/4 of the articles were already included in the previous systematic review; Only one (1) article is included in this review

Table: Summary of the number of citations found in each literature sources searched

|  |  |  |
| --- | --- | --- |
| **Sources** | **Before limit** | **After limit (English language, Human studies, 2005-2018)** |
| **FDG PET/CT** | **MRI** | **CT** | **TOTAL** | **FDG PET/CT** | **MRI** | **CT** | **TOTAL** |
| PubMed (Medline) | 697 | 49 | 168 | 914 | 346 | 35 | 132 | 513 |
| EMBASE | 74 | 95 | 212 | 381 | 63 | 83 | 181 | 327 |
| Cochrane library | 1 | 0 | 3 | 4 | No limit applicable | 4 |
| CINAHL | 39 | 116 | 93 | 247 | 37 | 115 | 92 | 244 |
| Web of Science | 25 | 26 | 49 | 100 | 23 | 25 | 43 | 91 |
| Scopus | 50 | 75 | 179 | 304 | 43 | 64 | 144 | 251 |
| ESTRO | - | - | - | 10 | - | - | - | 10 |
| British Journal of Radiology | - | - | - | 4 |  |  |  | 4 |
| Google Scholar |  |  |  | 4 |  |  |  | 4 |
| **TOTAL** | **1968** |  |  |  | **1448** |