Appendix 1. Femoroacetabular impingement syndrome diagnosis criteria([1](#_ENREF_1)) reported in included studies

|  |  |  |  |
| --- | --- | --- | --- |
| **Study** | **Symptoms** | **Clinical Signs** | **Diagnostic Imaging** |
| Espinosa, N. (2006)([2](#_ENREF_2)) | X | X | X |
| Philippon, M. (2007)([3](#_ENREF_3)) | X | X | X |
| Philippon, M. (2008)([4](#_ENREF_4)) | X | X | X |
| Ilizaliturri, V. (2008)([5](#_ENREF_5)) | X | X | X |
| Philippon, M. (2009)([6](#_ENREF_6)) | X | X | X |
| Laude, F. (2009)([7](#_ENREF_7)) | X | X | X |
| Graves, M. (2009)([8](#_ENREF_8)) | X | X | X |
| Brunner, A. (2009)([9](#_ENREF_9)) | X | X | X |
| Hartmann, A. (2009)([10](#_ENREF_10)) | X | X | X |
| Lincoln, M. (2009)([11](#_ENREF_11)) | X | X | X |
| Yun, H. (2009)([12](#_ENREF_12)) | X | X | X |
| Philippon, M (2010)([13](#_ENREF_13)) | X | X | X |
| Peters, C. (2010)([14](#_ENREF_14)) | X | X | X |
| Clohisy, J. (2010)([15](#_ENREF_15)) | X | X | X |
| Gédouin, J. (2010)([16](#_ENREF_16)) | X | X | X |
| Byrd, J. (2011)([17](#_ENREF_17)) | X | X | X |
| Schilders, E. (2011)([18](#_ENREF_18)) | X | X | X |
| Kappe, T. (2011)([19](#_ENREF_19)) | X | X | X |
| Rylander, J. (2011)([20](#_ENREF_20)) | X | X | X |
| Bedi, A. (2011)([21](#_ENREF_21)) | X | X | X |
| Nho, S. (2011)([22](#_ENREF_22)) | X | X | X |
| Byrd, J. (2011)([23](#_ENREF_23)) | X | X | X |
| Jäger, M. (2011)([24](#_ENREF_24)) | X | X | X |
| Lamontagne, M. (2011)([25](#_ENREF_25)) | X | X | X |
| Flecher, X. (2011)([26](#_ENREF_26)) | X | X | X |
| Javed, A. (2011)([27](#_ENREF_27)) | X | X | X |
| Peters, C. (2011)([28](#_ENREF_28)) | X | X | X |
| Fabricant, R. (2012)([29](#_ENREF_29)) | X | X | X |
| Chiron, P. (2012)([30](#_ENREF_30)) | X | X | X |
| Walker, J. (2012)([31](#_ENREF_31)) | X | X | X |
| Parvizi, J. (2012)([32](#_ENREF_32)) | X | X | X |
| Cohen, S. (2012)([33](#_ENREF_33)) | X | X | X |
| Philippon, M. (2012)([34](#_ENREF_34)) | X | X | X |
| Naal, F. (2012)([35](#_ENREF_35)) | X | X | X |
| Palmer, D. (2012)([36](#_ENREF_36)) | X | X | X |
| Wassilew, G. (2013)([37](#_ENREF_37)) | X | X | X |
| Cooper, A. (2013)([38](#_ENREF_38)) | X | X | X |
| Zingg, P. (2013)([39](#_ENREF_39)) | X | X | X |
| Tran, P. (2013)([40](#_ENREF_40)) | X | X | X |
| Trompeter, A. (2013)([41](#_ENREF_41)) | X | X | X |
| Sink, E. (2013)([42](#_ENREF_42)) | X | X | X |
| Rylander, J. (2013)([43](#_ENREF_43)) | X | X | X |
| Malviya, A. (2013)([44](#_ENREF_44)) | X | X | X |
| Klingenstein, G. (2013)([45](#_ENREF_45)) | X | X | X |
| Srinivasan, S. (2013)([46](#_ENREF_46)) | X | X | X |
| Nossa, J. (2014)([47](#_ENREF_47)) | X | X | X |
| Ayeni, O. (2014)([48](#_ENREF_48)) | X | X | X |
| Mei-Dan, O. (2014)([49](#_ENREF_49)) | X | X | X |
| Ellermann, J. (2014)([50](#_ENREF_50)) | X | X | X |
| Skendzel, J. (2014)([51](#_ENREF_51)) | X | X | X |
| Jayasekera, N. (2014)([52](#_ENREF_52)) | X | X | X |
| Gupta, A. (2014)([53](#_ENREF_53)) | X | X | X |
| Mladenovic, D. (2014)([54](#_ENREF_54)) | X | X | X |
| Nepple, J. (2014)([55](#_ENREF_55)) | X | X | X |
| Nielsen, T. (2014)([56](#_ENREF_56)) | X | X | X |
| Nepple, J. (2015)([57](#_ENREF_57)) | X | X | X |
| Ricciardi, B. (2015)([58](#_ENREF_58)) | X | X | X |
| Redmond, J. (2015)([59](#_ENREF_59)) | X | X | X |
| Impellizzeri, F. (2015)([60](#_ENREF_60)) | X | X | X |
| Yanke, A. (2015)([61](#_ENREF_61)) | X | X | X |
| Hingsammer, A. (2015)([62](#_ENREF_62)) | X |  | X |
| Rafols, C. (2015)([63](#_ENREF_63)) | X |  | X |
| Larson, C. (2008)([64](#_ENREF_64)) | X |  | X |
| Larson, C. (2011)([65](#_ENREF_65)) | X |  | X |
| Redmond et al. (2015)([66](#_ENREF_66)) | X |  | X |
| Philippon, M. (2007)([67](#_ENREF_67)) |  | X | X |
| Brunner, A. (2009)([68](#_ENREF_68)) |  | X | X |
| Horisberger, M. (2010)([69](#_ENREF_69)) | X |  | X |
| Haviv, B. (2010)([70](#_ENREF_70)) | X | X |  |
| Horisberger, M. (2010)([71](#_ENREF_71)) |  | X | X |
| Gédouin, J. (2010)([72](#_ENREF_72)) | X |  | X |
| Naal, F. 2011)([73](#_ENREF_73)) |  | X | X |
| Naal, F. (2011)([74](#_ENREF_74)) |  | X | X |
| Philippon, M. (2012)([75](#_ENREF_75)) |  | X | X |
| Rupp, R. (2012)([76](#_ENREF_76)) | X | X |  |
| Malviya, A. (2012)([77](#_ENREF_77)) | X |  | X |
| Krych, A. (2013)([78](#_ENREF_78)) |  | X | X |
| Aprato, A. (2013)([79](#_ENREF_79)) |  | X | X |
| Steppacher, S. (2013)([80](#_ENREF_80)) |  | X | X |
| Domb, B. (2013)([81](#_ENREF_81)) |  | X | X |
| Dippmann, C. (2014)([82](#_ENREF_82)) |  | X | X |
| Potter, M. (2014)([83](#_ENREF_83)) | X | X |  |
| Park, M. (2014)([84](#_ENREF_84)) | X |  | X |
| Frank, R. (2014)([85](#_ENREF_85)) | X |  | X |
| Khan, O. (2014)([86](#_ENREF_86)) | X |  | X |
| Gicquel, T. (2014)([87](#_ENREF_87)) | X |  | X |
| Peters, C. (2014)([88](#_ENREF_88)) | X | X |  |
| Steppacher, S. (2014)([89](#_ENREF_89)) |  | X | X |
| Naal, F. (2014)([90](#_ENREF_90)) |  | X | X |
| Kaya, M. (2014)([91](#_ENREF_91)) |  | X | X |
| Ross, J. (2015)([92](#_ENREF_92)) | X |  | X |
| Ferro, F. (2015)([93](#_ENREF_93)) |  | X | X |
| Chahal, J. (2015)([94](#_ENREF_94)) |  | X | X |
| Fabricant, P. (2015)([95](#_ENREF_95)) |  | X | X |
| Hingshammer, A. (2015)([96](#_ENREF_96)) |  | X | X |
| Ross et al. (2015)([97](#_ENREF_97)) | X |  | X |
| Bulat, E. (2016)([98](#_ENREF_98)) | X |  | X |
| Byrd, J. (2009)([99](#_ENREF_99)) | X |  |  |
| Polat, G. (2013)([100](#_ENREF_100)) |  |  | X |
| Murphy, S. (2004)([101](#_ENREF_101)) |  | X |  |
| Botser, I. (2014)([102](#_ENREF_102)) |  |  | X |
| Bardakos, N. (2008)([103](#_ENREF_103)) |  |  | X |
| Kempthorne, J. (2011)([104](#_ENREF_104)) |  | X |  |
| Büchler, L. (2013)([105](#_ENREF_105)) |  |  | X |
| Matsuda, D. (2014)([106](#_ENREF_106)) | X |  |  |
| Malagelada, F. (2015)([107](#_ENREF_107)) |  |  | X |
| Roos, B. (2015)([108](#_ENREF_108)) |  |  | X |

Appendix 2. Detail of Clinical Signs reported in included studies

|  |  |
| --- | --- |
| **Study** | **Clinical Signs** |
|  | **Range-of-motion (ROM)** | **Special Tests** |
| 25% of studies reporting both ROM and special tests clinical signs |
| Fabricant, R. (2012)([29](#_ENREF_29)) | X | X |
| Parvizi, J. (2012)([32](#_ENREF_32)) | X | X |
| Klingenstein, G. (2013)([45](#_ENREF_45)) | X | X |
| Yun, H. (2009)([12](#_ENREF_12)) | X | X |
| Javed, A. (2011)([27](#_ENREF_27)) | X | X |
| Naal, F. (2012)([35](#_ENREF_35)) | X | X |
| Sink, E. (2013)([42](#_ENREF_42)) | X | X |
| Mei-Dan, O. (2014)([49](#_ENREF_49)) | X | X |
| Gupta, A. (2014)([53](#_ENREF_53)) | X | X |
| Impellizzeri, F. (2015)([60](#_ENREF_60)) | X | X |
| Yanke, A. (2015)([61](#_ENREF_61)) | X | X |
| Philippon, M. (2007)([67](#_ENREF_67)) | X | X |
| Philippon, M. (2009)([6](#_ENREF_6)) | X | X |
| Horisberger, M. (2010)([71](#_ENREF_71)) | X | X |
| Clohisy, J. (2010)([15](#_ENREF_15)) | X | X |
| Naal, F. 2011)([73](#_ENREF_73)) | X | X |
| Naal, F. (2011)([74](#_ENREF_74)) | X | X |
| Jäger, M. (2011)([24](#_ENREF_24)) | X | X |
| Chiron, P. (2012)([30](#_ENREF_30)) | X | X |
| Wassilew, G. (2013)([37](#_ENREF_37)) | X | X |
| Zingg, P. (2013)([39](#_ENREF_39)) | X | X |
| Steppacher, S. (2013)([80](#_ENREF_80)) | X | X |
| Naal, F. (2014)([90](#_ENREF_90)) | X | X |
| Dippmann, C. (2014)([82](#_ENREF_82)) | X | X |
| Steppacher, S. (2014)([89](#_ENREF_89)) | X | X |
| Nielsen, T. (2014)([56](#_ENREF_56)) | X | X |
| Fabricant, P. (2015)([95](#_ENREF_95)) | X | X |
| 49% of studies reporting either ROM or special tests clinical signs |
| Skendzel, J. (2014)([51](#_ENREF_51)) |  | X |
| Srinivasan, S. (2013)([46](#_ENREF_46)) |  | X |
| Potter, M. (2014)([83](#_ENREF_83)) |  | X |
| Ricciardi, B. (2015)([58](#_ENREF_58)) | X |  |
| Philippon, M. (2007)([3](#_ENREF_3)) |  | X |
| Espinosa, N. (2006)([2](#_ENREF_2)) |  | X |
| Philippon, M. (2008)([4](#_ENREF_4)) |  | X |
| Graves, M. (2009)([8](#_ENREF_8)) |  | X |
| Hartmann, A. (2009)([10](#_ENREF_10)) |  | X |
| Philippon, M (2010)([13](#_ENREF_13)) |  | X |
| Peters, C. (2010)([14](#_ENREF_14)) |  | X |
| Flecher, X. (2011)([26](#_ENREF_26)) |  | X |
| Nho, S. (2011)([22](#_ENREF_22)) |  | X |
| Rylander, J. (2011)([20](#_ENREF_20)) |  | X |
| Cohen, S. (2012)([33](#_ENREF_33)) |  | X |
| Philippon, M. (2012)([34](#_ENREF_34)) |  | X |
| Cooper, A. (2013)([38](#_ENREF_38)) |  | X |
| Palmer, D. (2012)([36](#_ENREF_36)) |  | X |
| Tran, P. (2013)([40](#_ENREF_40)) |  | X |
| Rylander, J. (2013)([43](#_ENREF_43)) |  | X |
| Malviya, A. (2013)([44](#_ENREF_44)) |  | X |
| Trompeter, A. (2013)([41](#_ENREF_41)) | X |  |
| Ellermann, J. (2014)([50](#_ENREF_50)) |  | X |
| Ayeni, O. (2014)([48](#_ENREF_48)) |  | X |
| Jayasekera, N. (2014)([52](#_ENREF_52)) |  | X |
| Mladenovic, D. (2014)([54](#_ENREF_54)) |  | X |
| Nepple, J. (2014)([55](#_ENREF_55)) | X |  |
| Redmond, J. (2015)([59](#_ENREF_59)) |  | X |
| Chahal, J. (2015)([94](#_ENREF_94)) |  | X |
| Murphy, S. (2004)([101](#_ENREF_101)) |  | X |
| Ilizaliturri, V. (2008)([5](#_ENREF_5)) | X |  |
| Laude, F. (2009)([7](#_ENREF_7)) |  | X |
| Lincoln, M. (2009)([11](#_ENREF_11)) |  | X |
| Brunner, A. (2009)([68](#_ENREF_68)) |  | X |
| Brunner, A. (2009)([9](#_ENREF_9)) |  | X |
| Gédouin, J. (2010)([16](#_ENREF_16)) |  | X |
| Kempthorne, J. (2011)([104](#_ENREF_104)) |  | X |
| Peters, C. (2011)([28](#_ENREF_28)) |  | X |
| Lamontagne, M. (2011)([25](#_ENREF_25)) |  | X |
| Schilders, E. (2011)([18](#_ENREF_18)) |  | X |
| Kappe, T. (2011)([19](#_ENREF_19)) |  | X |
| Philippon, M. (2012)([75](#_ENREF_75)) |  | X |
| Rupp, R. (2012)([76](#_ENREF_76)) |  | X |
| Walker, J. (2012)([31](#_ENREF_31)) |  | X |
| Krych, A. (2013)([78](#_ENREF_78)) |  | X |
| Aprato, A. (2013)([79](#_ENREF_79)) |  | X |
| Domb, B. (2013)([81](#_ENREF_81)) |  | X |
| Nossa, J. (2014)([47](#_ENREF_47)) |  | X |
| Kaya, M. (2014)([91](#_ENREF_91)) |  | X |
| Peters, C. (2014)([88](#_ENREF_88)) |  | X |
| Hingshammer, A. (2015)([96](#_ENREF_96)) |  | X |
| Nepple, J. (2015)([57](#_ENREF_57)) |  | X |
| Ferro, F. (2015)([93](#_ENREF_93)) |  | X |
| 26% of studies reporting neither ROM or special tests clinical signs |
| Byrd, J. (2011)([23](#_ENREF_23)) |  |  |
| Bedi, A. (2011)([21](#_ENREF_21)) |  |  |
| Byrd, J. (2011)([17](#_ENREF_17)) |  |  |
| Byrd, J. (2009)([99](#_ENREF_99)) |  |  |
| Haviv, B. (2010)([70](#_ENREF_70)) |  |  |
| Polat, G. (2013)([100](#_ENREF_100)) |  |  |
| Botser, I. (2014)([102](#_ENREF_102)) |  |  |
| Hingsammer, A. (2015)([62](#_ENREF_62)) |  |  |
| Redmond et al. (2015)([66](#_ENREF_66)) |  |  |
| Rafols, C. (2015)([63](#_ENREF_63)) |  |  |
| Larson, C. (2011)([65](#_ENREF_65)) |  |  |
| Larson, C. (2008)([64](#_ENREF_64)) |  |  |
| Bardakos, N. (2008)([103](#_ENREF_103)) |  |  |
| Horisberger, M. (2010)([69](#_ENREF_69)) |  |  |
| Gédouin, J. (2010)([72](#_ENREF_72)) |  |  |
| Malviya, A. (2012)([77](#_ENREF_77)) |  |  |
| Büchler, L. (2013)([105](#_ENREF_105)) |  |  |
| Park, M. (2014)([84](#_ENREF_84)) |  |  |
| Matsuda, D. (2014)([106](#_ENREF_106)) |  |  |
| Frank, R. (2014)([85](#_ENREF_85)) |  |  |
| Khan, O. (2014)([86](#_ENREF_86)) |  |  |
| Gicquel, T. (2014)([87](#_ENREF_87)) |  |  |
| Ross, J. (2015)([92](#_ENREF_92)) |  |  |
| Malagelada, F. (2015)([107](#_ENREF_107)) |  |  |
| Ross et al. (2015)([97](#_ENREF_97)) |  |  |
| Roos, B. (2015)([108](#_ENREF_108)) |  |  |
| Bulat, E. (2016)([98](#_ENREF_98)) |  |  |
| Sansone, M. (2015)([109](#_ENREF_109)) |  |  |

Appendix 3. Detail of Diagnostic Imaging reported in included studies

|  |  |
| --- | --- |
| **Study** | **Diagnostic Imaging** |
| **FAI and/or labral tear pathology on MRI/MRA** | **Alpha angle on radiographs** | **CEA on radiographs** | **Crossover sign on radiographs** |
| 24% of studies reporting all four imaging criteria |
| Philippon, M. (2009)([6](#_ENREF_6)) | X | X | X | X |
| Yun, H. (2009)([12](#_ENREF_12)) | X | X | X | X |
| Horisberger, M. (2010)([71](#_ENREF_71)) | X | X | X | X |
| Philippon, M (2010)([13](#_ENREF_13)) | X | X | X | X |
| Naal, F. 2011)([73](#_ENREF_73)) | X | X | X | X |
| Philippon, M. (2012)([34](#_ENREF_34)) | X | X | X | X |
| Naal, F. (2012)([35](#_ENREF_35)) | X | X | X | X |
| Tran, P. (2013)([40](#_ENREF_40)) | X | X | X | X |
| Krych, A. (2013)([78](#_ENREF_78)) | X | X | X | X |
| Zingg, P. (2013)([39](#_ENREF_39)) | X | X | X | X |
| Aprato, A. (2013)([79](#_ENREF_79)) | X | X | X | X |
| Klingenstein, G. (2013)([45](#_ENREF_45)) | X | X | X | X |
| Rylander, J. (2013)([43](#_ENREF_43)) | X | X | X | X |
| Domb, B. (2013)([81](#_ENREF_81)) | X | X | X | X |
| Naal, F. (2014)([90](#_ENREF_90)) | X | X | X | X |
| Ayeni, O. (2014)([48](#_ENREF_48)) | X | X | X | X |
| Ellermann, J. (2014)([50](#_ENREF_50)) | X | X | X | X |
| Park, M. (2014)([84](#_ENREF_84)) | X | X | X | X |
| Gicquel, T. (2014)([87](#_ENREF_87)) | X | X | X | X |
| Gupta, A. (2014)([53](#_ENREF_53)) | X | X | X | X |
| Redmond et al. (2015)([66](#_ENREF_66)) | X | X | X | X |
| Ricciardi, B. (2015)([58](#_ENREF_58)) | X | X | X | X |
| Nepple, J. (2014)([55](#_ENREF_55)) | X | X | X | X |
| Ferro, F. (2015)([93](#_ENREF_93)) | X | X | X | X |
| Malagelada, F. (2015)([107](#_ENREF_107)) | X | X | X | X |
| Bulat, E. (2016)([98](#_ENREF_98)) | X | X | X | X |
| 25% of studies reporting three out of four imaging criteria |
| Philippon, M. (2008)([4](#_ENREF_4)) | X | X |  | X |
| Nho, S. (2011)([22](#_ENREF_22)) |  | X | X | X |
| Fabricant, R. (2012)([29](#_ENREF_29)) | X | X |  | X |
| Schilders, E. (2011)([18](#_ENREF_18)) |  | X | X | X |
| Kappe, T. (2011)([19](#_ENREF_19)) |  | X | X | X |
| Philippon, M. (2012)([75](#_ENREF_75)) |  | X | X | X |
| Chiron, P. (2012)([30](#_ENREF_30)) | X | X |  | X |
| Palmer, D. (2012)([36](#_ENREF_36)) | X | X |  | X |
| Wassilew, G. (2013)([37](#_ENREF_37)) |  | X | X | X |
| Srinivasan, S. (2013)([46](#_ENREF_46)) | X | X | X |  |
| Steppacher, S. (2013)([80](#_ENREF_80)) |  | X | X | X |
| Polat, G. (2013)([100](#_ENREF_100)) | X | X | X |  |
| Nossa, J. (2014)([47](#_ENREF_47)) |  | X | X | X |
| Skendzel, J. (2014)([51](#_ENREF_51)) |  | X | X | X |
| Jayasekera, N. (2014)([52](#_ENREF_52)) | X | X | X |  |
| Mladenovic, D. (2014)([54](#_ENREF_54)) |  | X | X | X |
| Steppacher, S. (2014)([89](#_ENREF_89)) |  | X | X | X |
| Nielsen, T. (2014)([56](#_ENREF_56)) |  | X | X | X |
| Botser, I. (2014)([102](#_ENREF_102)) | X | X |  | X |
| Rafols, C. (2015)([63](#_ENREF_63)) | X | X |  | X |
| Ross, J. (2015)([92](#_ENREF_92)) |  | X | X | X |
| Chahal, J. (2015)([94](#_ENREF_94)) | X | X | X |  |
| Fabricant, P. (2015)([95](#_ENREF_95)) |  | X | X | X |
| Roos, B. (2015)([108](#_ENREF_108)) | X | X | X |  |
| Ross et al. (2015)([97](#_ENREF_97)) |  | X | X | X |
| Hingshammer, A. (2015)([96](#_ENREF_96)) | X | X | X |  |
| Hingsammer, A. (2015)([62](#_ENREF_62)) |  | X | X | X |
| 21% of studies reporting two out of four imaging criteria |
| Dippmann, C. (2014)([82](#_ENREF_82)) |  | X |  | X |
| Sink, E. (2013)([42](#_ENREF_42)) |  | X | X |  |
| Ilizaliturri, V. (2008)([5](#_ENREF_5)) |  |  | X | X |
| Philippon, M. (2007)([67](#_ENREF_67)) |  |  | X | X |
| Philippon, M. (2007)([3](#_ENREF_3)) |  |  | X | X |
| Larson, C. (2008)([64](#_ENREF_64)) | X | X |  |  |
| Graves, M. (2009)([8](#_ENREF_8)) |  |  | X | X |
| Lincoln, M. (2009)([11](#_ENREF_11)) | X | X |  |  |
| Brunner, A. (2009)([68](#_ENREF_68)) | X | X |  |  |
| Brunner, A. (2009)([9](#_ENREF_9)) | X | X |  |  |
| Hartmann, A. (2009)([10](#_ENREF_10)) | X |  |  | X |
| Horisberger, M. (2010)([69](#_ENREF_69)) | X | X |  |  |
| Gédouin, J. (2010)([72](#_ENREF_72)) |  | X |  | X |
| Clohisy, J. (2010)([15](#_ENREF_15)) | X | X |  |  |
| Peters, C. (2011)([28](#_ENREF_28)) |  |  | X | X |
| Jäger, M. (2011)([24](#_ENREF_24)) | X | X |  |  |
| Rylander, J. (2011)([20](#_ENREF_20)) |  |  | X | X |
| Parvizi, J. (2012)([32](#_ENREF_32)) | X | X |  |  |
|  |  |  |  |  |
| Frank, R. (2014)([85](#_ENREF_85)) |  | X | X |  |
| Kaya, M. (2014)([91](#_ENREF_91)) |  | X |  | X |
| Nepple, J. (2015)([57](#_ENREF_57)) |  | X |  | X |
| Yanke, A. (2015)([61](#_ENREF_61)) | X | X |  |  |
| 22% of studies reporting one out of four imaging criteria |
| Trompeter, A. (2013)([41](#_ENREF_41)) |  |  |  | X |
| Espinosa, N. (2006)([2](#_ENREF_2)) | X |  |  |  |
| Bardakos, N. (2008)([103](#_ENREF_103)) |  |  |  | X |
| Laude, F. (2009)([7](#_ENREF_7)) | X |  |  |  |
| Peters, C. (2010)([14](#_ENREF_14)) | X |  |  |  |
| Gédouin, J. (2010)([16](#_ENREF_16)) | X |  |  |  |
| Naal, F. (2011)([74](#_ENREF_74)) | X |  |  |  |
| Larson, C. (2011)([65](#_ENREF_65)) |  | X |  |  |
| Lamontagne, M. (2011)([25](#_ENREF_25)) |  | X |  |  |
| Flecher, X. (2011)([26](#_ENREF_26)) | X |  |  |  |
| Javed, A. (2011)([27](#_ENREF_27)) | X |  |  |  |
| Byrd, J. (2011)([23](#_ENREF_23)) |  |  |  | X |
| Bedi, A. (2011)([21](#_ENREF_21)) |  | X |  |  |
| Byrd, J. (2011)([17](#_ENREF_17)) |  |  |  | X |
| Cohen, S. (2012)([33](#_ENREF_33)) | X |  |  |  |
| Malviya, A. (2012)([77](#_ENREF_77)) | X |  |  |  |
| Walker, J. (2012)([31](#_ENREF_31)) | X |  |  |  |
| Cooper, A. (2013)([38](#_ENREF_38)) | X |  |  |  |
| Büchler, L. (2013)([105](#_ENREF_105)) |  | X |  |  |
| Malviya, A. (2013)([44](#_ENREF_44)) | X |  |  |  |
| Mei-Dan, O. (2014)([49](#_ENREF_49)) | X |  |  |  |
| Khan, O. (2014)([86](#_ENREF_86)) |  | X |  |  |
| Redmond, J. (2015)([59](#_ENREF_59)) | X |  |  |  |
| Impellizzeri, F. (2015)([60](#_ENREF_60)) | X |  |  |  |
| 8% of studies not reporting any of four imaging criteria |
| Murphy, S. (2004)([101](#_ENREF_101)) |  |  |  |  |
| Byrd, J. (2009)([99](#_ENREF_99)) |  |  |  |  |
| Haviv, B. (2010)([70](#_ENREF_70)) |  |  |  |  |
| Kempthorne, J. (2011)([104](#_ENREF_104)) |  |  |  |  |
| Rupp, R. (2012)([76](#_ENREF_76)) |  |  |  |  |
| Potter, M. (2014)([83](#_ENREF_83)) |  |  |  |  |
| Matsuda, D. (2014)([106](#_ENREF_106)) |  |  |  |  |
| Peters, C. (2014)([88](#_ENREF_88)) |  |  |  |  |
| Sansone, M. (2015)([109](#_ENREF_109)) |  |  |  |  |

MRI, magnetic resonance imaging; MRA, magnetic resonance arthrogram; CEA, center edge angle

Appendix 4. Studies reporting use of any form of non-surgical treatment as a surgical criterion for FAIS surgery.

|  |  |
| --- | --- |
| **Study** | **Non-Surgical Treatment** |
| Fabricant, R. (2012)([29](#_ENREF_29)) | X |
| Parvizi, J. (2012)([32](#_ENREF_32)) | X |
| Klingenstein, G. (2013)([45](#_ENREF_45)) | X |
| Yun, H. (2009)([12](#_ENREF_12)) | X |
| Javed, A. (2011)([27](#_ENREF_27)) | X |
| Naal, F. (2012)([35](#_ENREF_35)) | X |
| Srinivasan, S. (2013)([46](#_ENREF_46)) | X |
| Sink, E. (2013)([42](#_ENREF_42)) | X |
| Mei-Dan, O. (2014)([49](#_ENREF_49)) | X |
| Potter, M. (2014)([83](#_ENREF_83)) | X |
| Gupta, A. (2014)([53](#_ENREF_53)) | X |
| Ricciardi, B. (2015)([58](#_ENREF_58)) | X |
| Impellizzeri, F. (2015)([60](#_ENREF_60)) | X |
| Yanke, A. (2015)([61](#_ENREF_61)) | X |
| Philippon, M. (2007)([3](#_ENREF_3)) | X |
| Espinosa, N. (2006)([2](#_ENREF_2)) | X |
| Graves, M. (2009)([8](#_ENREF_8)) | X |
| Hartmann, A. (2009)([10](#_ENREF_10)) | X |
| Philippon, M (2010)([13](#_ENREF_13)) | X |
| Larson, C. (2011)([65](#_ENREF_65)) | X |
| Flecher, X. (2011)([26](#_ENREF_26)) | X |
| Nho, S. (2011)([22](#_ENREF_22)) | X |
| Cohen, S. (2012)([33](#_ENREF_33)) | X |
| Philippon, M. (2012)([34](#_ENREF_34)) | X |
| Cooper, A. (2013)([38](#_ENREF_38)) | X |
| Palmer, D. (2012)([36](#_ENREF_36)) | X |
| Tran, P. (2013)([40](#_ENREF_40)) | X |
| Malviya, A. (2013)([44](#_ENREF_44)) | X |
| Trompeter, A. (2013)([41](#_ENREF_41)) | X |
| Ellermann, J. (2014)([50](#_ENREF_50)) | X |
| Jayasekera, N. (2014)([52](#_ENREF_52)) | X |
| Mladenovic, D. (2014)([54](#_ENREF_54)) | X |
| Nepple, J. (2014)([55](#_ENREF_55)) | X |
| Redmond, J. (2015)([59](#_ENREF_59)) | X |
| Chahal, J. (2015)([94](#_ENREF_94)) | X |
| Byrd, J. (2009)([99](#_ENREF_99)) | X |
| Haviv, B. (2010)([70](#_ENREF_70)) | X |
| Byrd, J. (2011)([23](#_ENREF_23)) | X |
| Bedi, A. (2011)([21](#_ENREF_21)) | X |
| Byrd, J. (2011)([17](#_ENREF_17)) | X |
| Polat, G. (2013)([100](#_ENREF_100)) | X |
| Botser, I. (2014)([102](#_ENREF_102)) | X |
| Hingsammer, A. (2015)([62](#_ENREF_62)) | X |
| Redmond et al. (2015)([66](#_ENREF_66)) | X |
| Rafols, C. (2015)([63](#_ENREF_63)) | X |
| Sansone, M. (2015)([109](#_ENREF_109)) | X |
| Ferro, F. (2015)([93](#_ENREF_93)) |  |
| Bardakos, N. (2008)([103](#_ENREF_103)) |  |
| Horisberger, M. (2010)([69](#_ENREF_69)) |  |
| Gédouin, J. (2010)([72](#_ENREF_72)) |  |
| Malviya, A. (2012)([77](#_ENREF_77)) |  |
| Büchler, L. (2013)([105](#_ENREF_105)) |  |
| Park, M. (2014)([84](#_ENREF_84)) |  |
| Matsuda, D. (2014)([106](#_ENREF_106)) |  |
| Frank, R. (2014)([85](#_ENREF_85)) |  |
| Khan, O. (2014)([86](#_ENREF_86)) |  |
| Gicquel, T. (2014)([87](#_ENREF_87)) |  |
| Ross, J. (2015)([92](#_ENREF_92)) |  |
| Malagelada, F. (2015)([107](#_ENREF_107)) |  |
| Ross et al. (2015)([97](#_ENREF_97)) |  |
| Roos, B. (2015)([108](#_ENREF_108)) |  |
| Bulat, E. (2016)([98](#_ENREF_98)) |  |
| Philippon, M. (2007)([67](#_ENREF_67)) |  |
| Philippon, M. (2008)([4](#_ENREF_4)) |  |
| Philippon, M. (2009)([6](#_ENREF_6)) |  |
| Horisberger, M. (2010)([71](#_ENREF_71)) |  |
| Wassilew, G. (2013)([37](#_ENREF_37)) |  |
| Zingg, P. (2013)([39](#_ENREF_39)) |  |
| Rylander, J. (2013)([43](#_ENREF_43)) |  |
| Steppacher, S. (2013)([80](#_ENREF_80)) |  |
| Naal, F. (2014)([90](#_ENREF_90)) |  |
| Hingshammer, A. (2015)([96](#_ENREF_96)) |  |
| Nepple, J. (2015)([57](#_ENREF_57)) |  |
| Nossa, J. (2014)([47](#_ENREF_47)) |  |
| Kaya, M. (2014)([91](#_ENREF_91)) |  |
| Peters, C. (2014)([88](#_ENREF_88)) |  |
| Rupp, R. (2012)([76](#_ENREF_76)) |  |
| Walker, J. (2012)([31](#_ENREF_31)) |  |
| Krych, A. (2013)([78](#_ENREF_78)) |  |
| Aprato, A. (2013)([79](#_ENREF_79)) |  |
| Domb, B. (2013)([81](#_ENREF_81)) |  |
| Schilders, E. (2011)([18](#_ENREF_18)) |  |
| Kappe, T. (2011)([19](#_ENREF_19)) |  |
| Philippon, M. (2012)([75](#_ENREF_75)) |  |
| Kempthorne, J. (2011)([104](#_ENREF_104)) |  |
| Peters, C. (2011)([28](#_ENREF_28)) |  |
| Lamontagne, M. (2011)([25](#_ENREF_25)) |  |
| Lincoln, M. (2009)([11](#_ENREF_11)) |  |
| Brunner, A. (2009)([68](#_ENREF_68)) |  |
| Brunner, A. (2009)([9](#_ENREF_9)) |  |
| Gédouin, J. (2010)([16](#_ENREF_16)) |  |
| Fabricant, P. (2015)([95](#_ENREF_95)) |  |
| Murphy, S. (2004)([101](#_ENREF_101)) |  |
| Larson, C. (2008)([64](#_ENREF_64)) |  |
| Ilizaliturri, V. (2008)([5](#_ENREF_5)) |  |
| Laude, F. (2009)([7](#_ENREF_7)) |  |
| Steppacher, S. (2014)([89](#_ENREF_89)) |  |
| Nielsen, T. (2014)([56](#_ENREF_56)) |  |
| Dippmann, C. (2014)([82](#_ENREF_82)) |  |
| Ayeni, O. (2014)([48](#_ENREF_48)) |  |
| Jäger, M. (2011)([24](#_ENREF_24)) |  |
| Rylander, J. (2011)([20](#_ENREF_20)) |  |
| Chiron, P. (2012)([30](#_ENREF_30)) |  |
| Peters, C. (2010)([14](#_ENREF_14)) |  |
| Clohisy, J. (2010)([15](#_ENREF_15)) |  |
| Naal, F. 2011)([73](#_ENREF_73)) |  |
| Naal, F. (2011)([74](#_ENREF_74)) |  |

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