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| **Author, year**  **Quality** | **Sub-category** | **Purpose** | **Study type** | **N** | **Country** | **Population and Setting** |
| **Current Review** |  |  |  |  |  |  |
| den Heijer et al., 2013193  Fair  Same population as Rijnsburger et al., 2004209 | Psychological | To explore long-term psychological distress in women adhering to breast cancer surveillance and compare this with short-term psychological distress. | Prospective cohort | Eligible: Not reported  Enrolled: 207  Analyzed: 197 | The Netherlands | Family Cancer Clinic of the Erasmus MC-Daniel den Hoed Cancer Center |
| Portnoy et al., 2015208  NA | Psychological | To examine: (a) the effect of false- positive breast and ovarian cancer screening test results on perceived cancer risk and cancer worry, and (b) the joint effects of false-positive screening results, risk perceptions, and worry on the choice of risk- reducing surgery among women who are *BRCA1/2* mutation carriers undergoing an intensive cancer screening protocol. | Before and after | Eligible: Not reported  Enrolled: 170  Analyzed: 170 | U.S. | NCI Clinical Genetics Branch Breast Imaging Study |

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| **Author, year**  **Quality** | **Demographics** | **Inclusion and exclusion criteria** | **Risk level definition** |
| **Current Review** |  |  |  |
| den Heijer et al., 2013193  Fair  Same population as Rijnsburger et al., 2004209 | Mean age, years: 40.9 (SD 8.4) | Inclusion: No history of breast cancer and having a cumulative lifetime risk of developing breast cancer ≥15%, on the basis of the risk tables by Claus et al., had participated in the MRISC-B study, had not developed breast and/or ovarian cancer during the surveillance program, had remaining breast tissue at risk, and had sufficient understanding of the Dutch language  Exclusion: Not reported | Cumulative lifetime risk ≥15% |
| Portnoy et al., 2015208  NA | Mean age, years: 39.79 (SD 8.63)  White: 95.3%  Prior breast cancer: 12.9% (22/170)  Prior ovarian cancer: 0.6% (1/170) | Inclusion: Women from the NCI Clinical Genetics Branch Breast Imaging Study, with a *BRCA 1/2* mutation  Exclusion: Women who had undergone RRSO prior to study entry | *BRCA 1/2* mutation carriers |

| **Author, year**  **Quality** | **Mutation status** | **Measures** | **Interventions** | **Duration of followup** |
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| **Current Review** |  |  |  |  |
| den Heijer et al., 2013193  Fair  Same population as Rijnsburger et al., 2004209 | 13% (25/197) *BRCA* *1/2* mutation carriers | Hospital Anxiety and Depression Scale (HADS, both anxiety and depression scales 0 to 21)  Impact of Events Scale (IES, intrusion scale 0 to 35 and avoidance scale 0 to 40) | Surveillance (CBE + MRI + mammography) | June 2007 to October 2009  5 to 8 years |
| Portnoy et al., 2015208  NA | 100% *BRCA 1/2* mutation carriers | Brief Symptom Inventory (BSI, scale 0 to 100) Perceived risk of breast and ovarian cancer (5-point Likert scale of 2 questions)  Worry about breast and ovarian cancer, adapted from Lerman et al., 1991 breast cancer worry scale (4-point Likert scale of 3 questions) | Clinical breast exam, mammogram, breast MRI, and investigational breast duct lavage to screen for breast cancer, plus serum CA-125 and a transvaginal ultrasound to screen for ovarian cancer | 2001 to 2007  1 year |

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| **Author, year**  **Quality** | ***Results*** | ***Conclusions*** | ***Funding source*** |
| **Current Review** |  |  |  |
| den Heijer et al., 2013193  Fair  Same population as Rijnsburger et al., 2004209 | **Women who lost a first-degree relative to breast cancer, baseline vs. long-term** **followup**  Mean IES-intrusion scale (SD): 6.46 (7.85) vs. 4.77 (6.46), p=0.001  Mean IES-avoidance scale (SD): 4.26 (6.99) vs. 3.47 (6.44), p=0.02  Mean HADS-anxiety scale (SD): 5.22 (3.88) vs. 5.07 (4.16)  Mean HADS-depression scale (SD): 2.79 (3.42) vs. 2.71 (3.55)  **Women who did not lose a first-degree relative to breast cancer, baseline vs.** **long-term followup**  Mean IES-intrusion scale (SD): 4.58 (6.12) vs. 2.75 (4.58), p=0.001 and p=0.02 vs. those who lost a first-degree relative to breast cancer  Mean IES-avoidance scale (SD): 4.07 (6.01) vs. 3.34 (6.41), p=0.02  Mean HADS-anxiety scale (SD): 4.87 (3.36) vs. 4.91 (3.95)  Mean HADS-depression scale (SD): 2.47 (3.60) vs. 2.64 (3.38) | Long-term distress does not exceed levels of clinically relevant psychological distress. | Dutch Cancer Society (KWF EMC 2006-3468) |
| Portnoy et al., 2015208  NA | **Screening FP (n=27) vs. No FP (n=143)**  Mean baseline breast cancer worry: 1.70 vs. 1.75  Mean 3 month breast cancer worry: 1.80 vs. 1.50  Mean 1 year breast cancer worry: 1.45 vs. 1.50 | False positive results on MRI were not associated with large increases in cancer worry. | Intramural Research Program of the NIH and the National Cancer Institute |

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| **Author, year**  **Quality** | **Sub-category** | **Purpose** | **Study type** | **N** | **Country** | **Population and Setting** |
| **2013 Review** |  |  |  |  |  |  |
| Rijnsburger et al., 2004209  Fair  Same population as den Heijer et al., 2013193 | QOL | To describe the short-term effects of screening for breast cancer in high- risk women on health-related quality of life. | Prospective cohort  Before and after | Eligible: 529  Enrolled: 329  Analyzed: 288 | The Netherlands | MRI Screening Study conducted at 6 family cancer centers. |

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| **Author, year**  **Quality** | **Demographics** | **Inclusion and exclusion criteria** | **Risk level definition** |
| **2013 Review** |  |  |  |
| Rijnsburger et al., 2004209  Fair  Same population as den Heijer et al., 2013193 | Mean age, years: 40.9 (SD 8.9) | Inclusion: Women already under intensive surveillance and women who came for the first time to the clinic  Exclusion: Women with evident symptoms suspicious for breast cancer or previous breast cancer | Risk category 1: *BRCA 1/2* mutation carriers (50% to 85% cumulative lifetime risk)  Risk category 2: 30% to 50% cumulative lifetime risk  Risk category 3: 15% to 30% cumulative lifetime risk |

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| **Author, year**  **Quality** | **Mutation status** | **Measures** | **Interventions** | **Duration of followup** |
| **2013 Review** |  |  |  |  |
| Rijnsburger et al., 2004209  Fair  Same population as den Heijer et al., 2013193 | 35 were *BRCA1/2*  mutation positive | EuroQoL-5 Dimensions (EQ-5D, scale 0 to 1)  Medical Outcomes Study 36-Item Short Form (SF-36, subscales 0 to 100)  Symptom Checklist-90 (SCL-90, scale 12 to 60)  Visual Analogue Scale (VAS, scale 0 to 100) | A) CBE (n=287)  B) CBE + mammography (n=134)  C) CBE + MRI (n=109) | 2000 to 2002  1 to 4 weeks after screening |

| **Author, year**  **Quality** | **Results** | **Conclusions** | **Funding source** |
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| **2013 Review** |  |  |  |
| Rijnsburger et al., 2004209  Fair  Same population as den Heijer et al., 2013193 | **A vs. B vs. C**  Experienced no pain after screening: 92.6% vs. 14.3% vs. 88.0%; p=NR  Experienced no discomfort after screening: 91.5% vs. 30.8% vs. 54.6%; p=NR  Experienced no anxiety after screening: 77.9% vs. 72.4% vs. 63.0%; p=NR  **Before screening (T0) vs. day of screening (T1) vs. after screening (T2)**  Mean VAS: 81.9 vs. 79.0 vs. 80.7; p<0.01 T0 vs. T1 and p<0.05 T1 vs. T2  **Before screening vs. after screening (A, B, and C groups combined) vs.**  **reference group (Dutch general population)**  Mean on SF-36 subscales; p=NS for before and after screening  Physical functioning: 89.9 vs. 89.4 vs. 86.3; p<0.01 for reference group vs. before screening  Role-physical: 85.7 vs. 84.1 vs. 77.6; p<0.01 for reference group vs. before screening  Bodily pain: 82.4 vs. 83.0 vs. 72.8; p<0.01 for reference group vs. before screening  General health perceptions: 76.4 vs. 77.3 vs. 72.2; p<0.01 for reference group vs. before screening  Vitality: 67.1 vs. 68.9 vs. 64.8; p=NS  Social functioning: 87.7 vs. 87.9 vs. 83.5; p<0.01 for reference group vs. before screening  Role-emotional: 85.2 vs. 88.1 vs. 80.1; p<0.05 for reference group vs. before screening  Mental health: 76.8 vs. 77.7 vs. 74.4; p<0.05 for reference group vs. before screening  Mean SCL-90: 17.5 vs. 17.1 vs. 18.7; p<0.05 for reference group vs. before screening  Mean EQ-5D utility score (compared to Swedish reference group): 0.88 vs. 0.88 vs. 0.85; p<0.01 for reference group vs. before screening | Women who received MRI experienced less pain and discomfort than those who received mammographies. Women in screening showed better health-related quality of life per the SF-36 than the reference group. | Health Care Insurance Board, The Netherlands |

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| **Author, year**  **Quality** | **Sub-category** | **Purpose** | **Study type** | **N** | **Country** | **Population and Setting** |
| **2013 Review** |  |  |  |  |  |  |
| Spiegel et al., 2011210  NA | Psychological | To compare women with recall examinations following MRI to those without recall examinations on breast cancer worry and anxiety. | Before and after | Eligible: 221  Enrolled: 134  Analyzed: 55 | Canada | Women participating in an MRI screening trial. |

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| **Author, year**  **Quality** | **Demographics** | **Inclusion and exclusion criteria** | **Risk level definition** |
| **2013 Review** |  |  |  |
| Spiegel et al., 2011210  NA | Mean age, years: 45 (range 25 to 60) | Inclusion: Women participating in MRI screening trial who agreed to participate  Exclusion: Not reported | All were mutation carriers |

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| **Author, year**  **Quality** | **Mutation status** | **Measures** | **Interventions** | **Duration of followup** |
| **2013 Review** |  |  |  |  |
| Spiegel et al., 2011210  NA | 54.5% (30/55) *BRCA1*  45.5% (25/55) *BRCA2* | Breast Cancer Worry Interference Scale (WIS, scores 7 to 35)  Hospital Anxiety and Depression Scale (HAD, subscales 0 to 21) | All received annual mammography, MRI, and ultrasound; and semi-annual CBE   1. Women with recall examinations (n=18) 2. Women without recall examinations (n=37) | Years: NR  6 months |

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| **Author, year**  **Quality** | **Results** | **Conclusions** | **Funding source** |
| **2013 Review** |  |  |  |
| Spiegel et al., 2011210f  NA | **Before screening vs. 4 to 6 weeks after screening vs. 6 months after screening**  Mean HADS-A (SD): 7.15 (4.2) vs. 6.85 (4.5) vs. 6.31 (3.9); NS  Mean HADS-D (SD): 2.65 (3.6) vs. 2.60 (3.5) vs. 2.60 (3.5); NS  Mean WIS (SD): 10.27 (4.2) vs. 11.07 (4.9) vs. 10.44 (4.7); NS  **A vs. B 4 to 6 weeks after screening**  Mean HADS-A (SD): 8.8 (5.2) vs. 5.9 (3.9); p=0.03  Mean HADS-D (SD): 3.3 (4.3) vs. 2.2 (3.1); NS  Mean WIS (SD): 13.6 (6.4) vs. 9.8 (3.5); NS  **A vs. B 6 months after screening**  Mean HADS-A (SD): 7.1 (3.8) vs. 5.9 (4.0); NS  Mean HADS-D (SD): 3.1 (4.3) vs. 2.3 (3.1); NS  Mean WIS (SD): 12.4 (6.3) vs. 9.4 (3.2); NS | Women who were recalled for examinations after screening had increased anxiety 4 to 6 weeks after screening, but by 6 months all scores returned to baseline levels. | Canadian Breast Cancer Research Alliance grant  #012345 and private donation from Florence and Maury Rosenblatt |

**Abbreviations:** BRCA=breast cancer susceptibility gene; BSI=Brief Symptom Inventory; CBE=clinical breast exam; EQ-5D=EuroQoL-5 Dimensions; FP=false positive; HADS=Hospital Anxiety and Depression Scale; IES=Impact of Events Scale; MRI=magnetic resonance imaging; MRISC-B study=Magnetic Resonance Imaging Screening for Breast Cancer study; NA=not applicable; NCI=National Cancer Institute; NR=not reported; NS=not significant; QOL=quality of life; RRSO=risk-reducing salpingo-oophorectomy; SCL-90=Symptom Checklist-90; SD=standard deviation; SF-36=Short Form 36 Health Survey; U.S.=United States; VAS=Visual Analogue Scale; WIS=Breast Cancer Worry Interference Scale