

Table S1: Age induced decline in the expression of DNA DSB repair gene expression

Ages	All Samples	≤ 35	≥ 36
BRCA1			
r squared	0.401	0.1068	0.006
slope	-4.2163	-4.0292	-0.9502
t	-3.8381	-1.2466	-0.1897
p	0.001	0.2345	0.8558
r correlation	-0.6333	-0.3268	-0.0772
BRCA2			
r squared	0.0253	0.0011	0.4201
slope	-0.0171	-0.0089	-0.0161
t	-0.7559	-0.1218	-2.0849
p	0.75	0.9049	0.0822
r correlation	-0.1591	-0.0338	-0.6482
ATM			
r squared	0.1758	0.0086	0.5769
slope	-4.4356	2.0796	-10.3118
t	-2.1664	0.3361	-2.8603
p	0.01	0.7422	0.0288
r correlation	-0.4193	0.0928	-0.7595
MRE11			
r squared	0.2053	0.0233	0.5253
slope	-0.5353	-0.3312	-2.743
t	-2.3839	-0.5564	-2.5769
p	0.05	0.5871	0.0419
r correlation	-0.4531	-0.1525	-0.7248
RAD51			
r squared	0.2474	0.0005	0.6446
slope	-0.4241	0.037	-1.4106
t	-2.6275	0.0755	-3.299
p	0.01	0.9411	0.0164
r correlation	-0.4974	0.0218	-0.8029

Table S2. Human (H) and mouse (M) specific primers used for single oocyte qRT-PCR.

BRCA1 f-H	AGCTGTGTGGTGCTTCTGTGGT
BRCA1 r-H	TGGCTGCACAACCACAATTGGG
BRCA2 f-H	CTTGCTTTCAAATTGGCACTGA
BRCA2 r-H	GTTTAAAAGGGCATAGGCTCTG
Rad51 f-H	TAGCAAAGGGAATGGGTCTGC
Rad51 r-H	GCACAAGACTCCATAACCAAAC
ATM f-H	TGCTCAGTGTTGGTGGACAGGT
ATM r-H	TCCATCCTGGGAAAAGTCGGCT
Mre11 f-H	AATAGCGCAGTGTCTGGATGC
Mre11 r-H	CAGAAGCACCACTTGTGGCAA
HPRT f-H	TGACACTGGCAAAACAATGCA
HPRT r-H	GGTCCTTTTCACCAGCAAGCT
BRCA1 f-M	AGTTGTGATCGTGCAGCCAAGC
BRCA1 r-M	ACAAGACGTGCCTTGCACAGCT
BRCA2 f-M	ACAGAAGGCTTTTCAGCCGCCA
BRCA2 r-M	TTCTGAAATGGCGTTCTCCGCG
Rad51 f-M	GGCTGGTTTACTGTGTCTTT
Rad51 r-M	TGGAAATACTCCTGATGCAG
ATM f-M	TGGGTGGACAGGTGAACTTGCT
ATM r-M	ACCAAGCTTTCCATCCTGGGA
Mre11 f-M	TCTGGCTCACGCTTCCACAACA

Mre11 r-M	TTTTTCAGGCATCTCGGGGCTGT
GAPDH f-M	CTGGAGAAACCTGCCAAGTA
GAPDH r-M	TGTTGCTGTAGCCGTATTCA

Table S3. Primers used for genotyping BRCA-deficient mice.

B004	CTG GGT AGT TTG TAA GCA TGC
B005	CAA TAA ACT GCT GGT CTC AGG
B007	ATC GCC TTC TAT CGC CTT CTT GAC GAG TTC
B016	GGA GGA GGA GGA GTT GTT GA
B017	ATC TCG TTC TCT CCA CTC CA
B018	CAA AAA AGC CCA GAT GAT GAG

Table S4. Specific BRCA mutations in study participants.

Patient No	BRCA Gene	Specific mutation*
1	1	185delAG
2	1	187delAG
3	1	187delAG
4	1	187delAG
5	1	187delAG
6	1	187delAG
7	1	187delAG
8	1	448insA
9	1	2388delG
10	1	3875del4
11	1	5385insC
12	1	exons14-20del26kb
13	1	3875del4
14	1, 2	1: 5382insC, 2: 6174delT
15	1, 2	1: 5382insC, 2: S1179N(37640>A)
16	2	6174delT
17	2	6174delT
18	2	6174delT
19	2	3951delT
20	2	4265delCT
21	2	5682delA

22	2	C738X(2442T to A)
23	2	L2745V(6251A>G)
24	2	3573delT

*Four subjects with mutations of clinical unknown significance were excluded and not reported in this table.