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Chromatin remodeling in response to DNA damage

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Our cells are constantly under attack from both endogenous and exogenous genotoxic agents. These genomic insults result in potentially harmful DNA lesions, the most dangerous of which is the chromosomal DNA double strand break (DSB). In response to a DSB cells activate a multitude of responses, including chromatin structural changes, cell cycle checkpoints and DNA repair. How cells signal and repair DSBs within chromatin is however poorly understood. Through genetic screens in yeast and worms, we identified several factors, including chromatin remodelers, as novel regulators of the DSB response in humans. We found that these factors assemble directly at DSB sites to orchestrate the signaling and repair of these lesions and promote cell survival in response to genotoxic insult. The results of this ongoing work will be presented at the meeting.

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