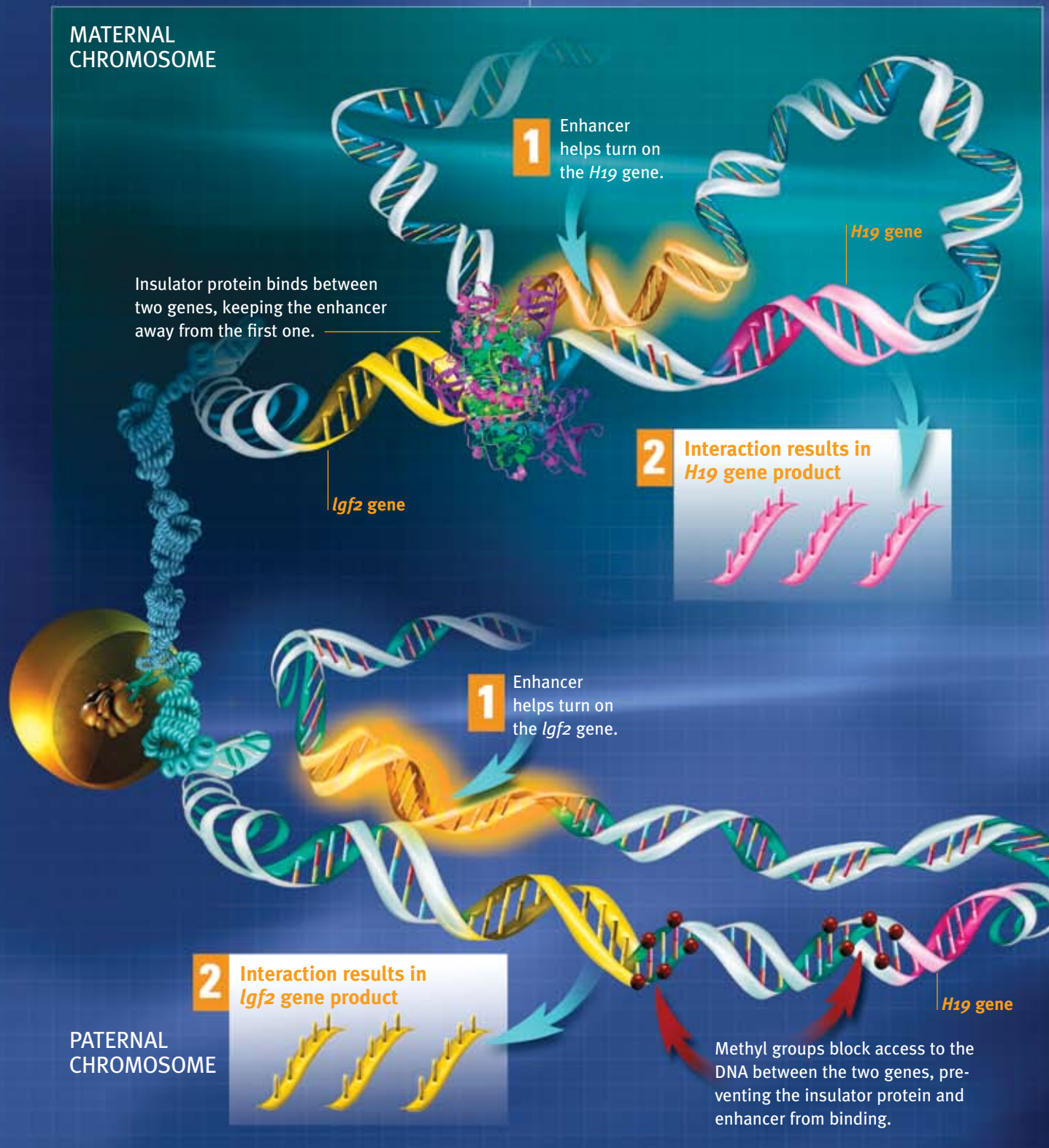
THE LINK BETWEEN EPIGENETICS AND CANCER

A. NON-CANCEROUS CELL

One copy of a single chromosome pair is methylated.



THERE ARE TWO KNOWN TYPES OF epigenetic marks—methyl groups and DNA-packaging proteins—which help cells turn on specific genes at the right time and place. Strategically placed methyl groups (shown here in red) can block access to key regions of DNA. Each methyl group consists of a carbon atom surrounded by hydrogen. In the example on the right, misplaced methyl groups on one copy of a single chromosome contribute to cancer by disrupting the balance between two gene products. Ordinarily, only one copy of the chromosome pair is methylated at the location illustrated. ☙

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B. CANCEROUS CELL

Both copies of a single chromosome pair are methylated.