

**Long noncoding RNAs and human disease.**

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**Public Summary:**

A new class of transcripts, long noncoding RNAs (lncRNAs), has been recently found to be pervasively transcribed in the genome. Multiple lines of evidence increasingly link mutations and dysregulations of lncRNAs to diverse human diseases. Alterations in the primary structure, secondary structure, and expression levels of lncRNAs as well as their cognate RNA-binding proteins underlie diseases ranging from neurodegeneration to cancer. Recent progress suggests that the involvement of lncRNAs in human diseases could be far more prevalent than previously appreciated. We review the evidence linking lncRNAs to diverse human diseases and highlight fundamental concepts in lncRNA biology that still need to be clarified to provide a robust framework for lncRNA genetics.

**Scientific Abstract:**

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