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## Is external noise a risk to fetal hearing development? A review

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### Abstract

Some researchers have suggested that excessive noise in a pregnant woman's environment can adversely affect the developing **fetal** ear, and studies have reported that each year up to three per 1000 newborns have some degree of **hearing** loss. Should noise be considered a causative factor in some cases of congenital **hearing** loss? Whereas some experimental animal studies have shown that loud noise external to the pregnant mother's abdomen has detrimental effects on the developing **fetal** ear, resulting in measurable **hearing** loss in the newborn animal, other studies have not supported the hypothesis. Two retrospective studies reported **hearing** loss in some children (ranging in age from 4 to 14 years) born to mothers who worked in noisy environments while pregnant, but the findings are controversial. Intrauterine ambient noise levels vary from 50 to 80 dB, mostly from normal internal maternal sounds. Most transmitted external sounds are attenuated by maternal tissues before they reach the fetus; however, lower-frequency sounds are attenuated less than are higher frequencies. Whether or not resultant sound levels can cause permanent damage to the developing **fetal** ear is still not firmly established. This is a brief review of the pertinent literature. Copyright © 2008 by Thieme Medical Publishers, Inc.