

# The cell phone connects to the hip bone

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U.S. scientists are developing a technology that allows mobile electronic devices to communicate by sending vibrations through bones.

Rice University Assistant Professors Michael Liebschner and Lin Zhong said cellular telephones now contain vibrators and many newer models have sensors that could be used to receive signals.

"So, it's feasible to think of the devices we are already carrying as a platform for this technology," said Zhong.

The Microsoft Corp. awarded the engineers a grant to develop OsteoConduct, the technology the two men invented last year. OsteoConduct transmits digital information through bones using acoustic sound patterns. The sounds can be created by anything that vibrates.

"Microsoft is interested in computing applications related to both healthcare and mobile devices, and this hits both of those," said Liebschner, who noted one of the most exciting discoveries about the research has been how clearly sound travels through bone.

"We were all surprised to see these signals propagate through 20 or more joints," Liebschner said. "It worked much better than we'd anticipated for the power-levels we used."

Bioengineering graduate student Michael Cordray and undergraduate Mimi Zhang are co-inventors of the technology.

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