THE VICTOR CHANG
CARDIAC RESEARCH INSTITUTE

MEDIA RELEASE

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Shape is just as important as what's inside

Scientists have found that the shape of cells is just as important as the proteins inside them when it comes to how cells communicate during normal baby development. Cell-shape in a fetus has been shown to have significant influence on events that are known to play a role in specific birth defects, including spina bifida and congenital deafness.

Proteins are key ingredient in normal development. Proteins are the factories within cells that tell them what to do and how to communicate with other cells. This is essential for building specialised body parts including tissues and organs.

New studies, by Dr Jeff Axelrod, from Stanford University School of Medicine, USA, have shown that the shape and orientation of the cells is critical to normal development. For example, signals that are important for proper neural tube closure, and for development of the inner ear depend on the shape of the cells as they use proteins to communicate with each other. When the cells are misshapen, misdirected communication can occur between cells and have devastating affects on the developing fetus, possibly resulting in birth defects including spina bifida and congenital deafness.

Conversely, development of some structures depends on the ability of protein-based signals to control cell-shapes. One important signal controls the placement and formation of grooves in tissues that are necessary for it to fold into the proper form.

Dr Axelrod will present his findings during the 15th International Society of Developmental Biologists Congress in Sydney in September, which is organised by scientists at the Victor Chang Cardiac Research Institute.

For more information and to arrange access to Dr Axelrod's talk and an interview with him at the Congress, please call Samantha Lucia - Communications and Marketing Manager-VCCRI on 02 8382 8415 or 0415 140 595.