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Cambridge scientists grow artificial bile duct

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Cambridge scientists have developed a new method for growing and transplanting artificial bile ducts that could in future be used to help treat liver disease in children, reducing the need for liver transplantation.

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Bile ducts are long, tube-like structures that carry bile, which is secreted by the liver and is essential for helping us digest food. If the ducts do not work correctly, for example in the childhood disease biliary atresia, this can lead to damaging build of bile in the liver.

The researchers extracted healthy cells or cholangiocytes from bile ducts and grew these into functioning 3D duct structures known as biliary organoids. When transplanted into mice, the biliary organoids assembled into intricate tubular structures, resembling bile ducts.

These artificial bile ducts will not only be useful for transplanting, but could also be used to model other diseases of the bile duct and potentially develop and test new drug treatments.