

MRI detects early effects of chemotherapy on children's hearts

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MRI scans of children who have had chemotherapy can detect early changes in their hearts finds research in biomed Central's open access journal *Journal of Cardiovascular Magnetic Resonance*.

Chemotherapy with anthracyclines, such as Doxorubicin, is one of the most effective treatments against many types of cancer, including leukaemia and Hodgkin's lymphoma, breast, lung, and ovarian cancer. However it can also lead to irreversible heart damage, which may not be apparent until several years after treatment. Being able to detect this damage at an early stage, in order to initiate preventative therapy of affected people, is especially important in children.

Researchers from University of Alberta performed MRI scans on children and young adults (aged 7 to 19) at the Stollery Children's Hospital who were in remission following anthracycline treatment. They found that they were able to identify changes in heart muscle related to the formation of fibrosis, using an emerging MRI method called T1 mapping, even in children whose heart function was apparently normal by ultrasound.

Explaining in more detail, the study funded by the Women's and Children's Health Research Institute led by Dr Edythe Tham and Dr Richard Thompson said, "In [childhood cancer survivors](#), MRI changes were related to anthracycline dose given to the children. These changes are also mirrored by thinning of the heart wall and a reduction in the [exercise capacity](#). By detecting these changes early we can only hope

that future research using these techniques may guide early identification and treatment in attempts to delay the onset of [heart damage](#) in children who have survived cancer."

More information: Diffuse myocardial fibrosis by T1-mapping in children with subclinical anthracycline cardiotoxicity: relationship to exercise capacity, cumulative dose and remodeling, Edythe B Tham, Mark J Haykowsky, Kelvin Chow, Maria Spavor, Sachie Kaneko, Nee S Khoo, Joseph J Pagano, Andrew S Mackie and Richard B Thompson, Journal of Cardiovascular Magnetic Resonance, 2013 15:48
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