



# Late Effects of Cancer Treatment in Childhood

Michael Rice  
Women's and Children's Hospital




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**“Leukaemia is a fatal disease,  
with suppressive anti-  
leukaemic therapy, life can be  
prolonged in the majority of  
instances for months to a year  
or so”**

**Nelson, Textbook of Paediatrics,  
8<sup>th</sup> Edition, 1964.**



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# Changing survival in childhood cancer

> % survival	1960	2000
> Acute lymphoblastic leukaemia	1	80+
> Acute myeloid leukaemia	0	50
> Non-Hodgkin lymphoma	10-20	80+
> Hodgkin lymphoma	30-40	90
> Wilms' tumor	40	90+
> Osteosarcoma	10-15	60



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# Survival in acute lymphoblastic leukaemia – WCH 1967-99

	1967-72	1973-79	1980-89	1990-99
<b>No. patients</b>	<b>54</b>	<b>94</b>	<b>113</b>	<b>126</b>
<b>No. survivors</b>	<b>3 (5%)</b>	<b>39 (41%)</b>	<b>65 (51%)</b>	<b>86 (68%)</b>
<b>CNS disease during course</b>	<b>29 (53%)</b>	<b>20 (21%)</b>	<b>16 (14%)</b>	<b>9 (7%)</b>



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# LC 35y

**Dec 1983            ALL**  
**Nov 1985            Bone marrow relapse**  
**June 1986            Allogeneic marrow transplant**

**Subsequent complications include –**

- > Ovarian failure**
- > Multiple hepatic adenomas**
- > Multi-nodular goitre → total thyroidectomy**
- > Type II diabetes**
- > Cataracts**
- > Neuro-cognitive problems → employment difficulties**



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# Second tumors in ALL – WCH 1967 -99

**No. survivors 197**

**No. with second tumors 23**

- malignant glioma 3
- meningioma 4
- basal cell carcinoma of skin 13
- thyroid cancer 2
- malignant melanoma 1



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# A resilient survivor

**BW 39y**

- 1974** Extensive (inoperable) pelvic rhabdomyosarcoma  
Treated with multi-agent chemotherapy and local radiation therapy  
Responded well – achieved a complete remission and has remained tumor free
- 1984** Perthe's disease of L. hip – multiple orthopaedic procedures
- 1993** Acute cardiac failure (Anthracycline cardiomyopathy)
- 2005** Cardiac deterioration despite treatment → heart transplant
- 2011** Hip replacement
- 2012** Transplant games swimming medallist  
Successful professional career



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# Cause of death in patients with Hodgkin lymphoma – WCH 1967-99

**No. of patients**

**53**

**No. of deaths**

**11**

- late cardiovascular disease 3
- second malignancy 3
- radiation pneumonitis 2
- accident 1
- progressive disease 2



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# Future needs in childhood cancer survivorship

- > **1. For the individual**
  - **Promote a comprehensive end of treatment assessment**
  - **Place more emphasis on mental health, psychosocial development and a healthy lifestyle**
  - **Develop better systems so that fewer people are “lost to follow-up”**
  - **Develop better means of communicating relevant health information**



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# Future needs in childhood cancer survivorship

- > **2. From the delivery of care perspective**
  - **Ensure that long-term surveillance is recognised as an integral part of holistic cancer care and is funded adequately**
  - **Develop better means of communication between health professionals to ensure comprehensive data capture**
  - **Decide how long-term surveillance of childhood cancer survivors is best conducted and how continuity of care is best achieved**



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# **KV 26y – registered nurse**

**1991 Stage IV R Wilms' tumor with bilateral lung metastases and tumor extension into inferior vena cava**

**Treatment – chemotherapy, delayed nephrectomy, post-operative radiation therapy to whole lungs and tumor bed**

**Good response – subsequently remained tumor free. Last seen 2003.**



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# **KV 26y – registered nurse – cont.**

## **Contact re-established November 2012 – various concerns, namely**

- **Limited exercise tolerance, dizziness with exercise**
- **Mild hypertension – on medication**
- **Recurrent ankle swelling**
- **Problems with weight control**
- **Anxiety re fertility and breast development**
- **?Abnormal lung function (self-tested)**



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