Melanoma

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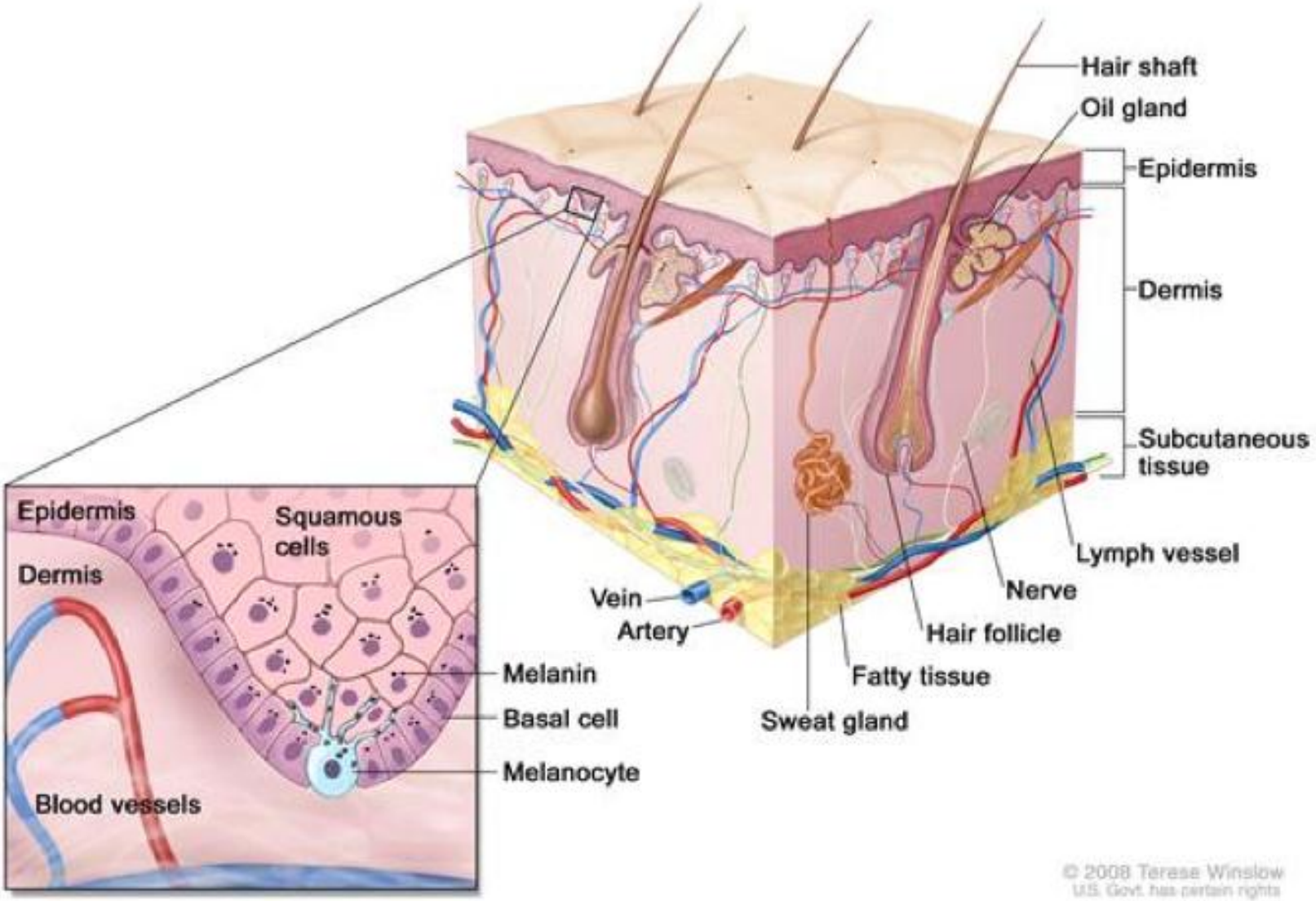
Hair shaft
Oil gland
Epidermis
Dermis
Subcutaneous tissue
Lymph vessel
Nerve
Hair follicle
Fatty tissue
Sweat gland
Vein
Artery
Epidermis
Squamous cells
Dermis
Melanin
Basal cell
Melanocyte
Blood vessels
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Who gets it?

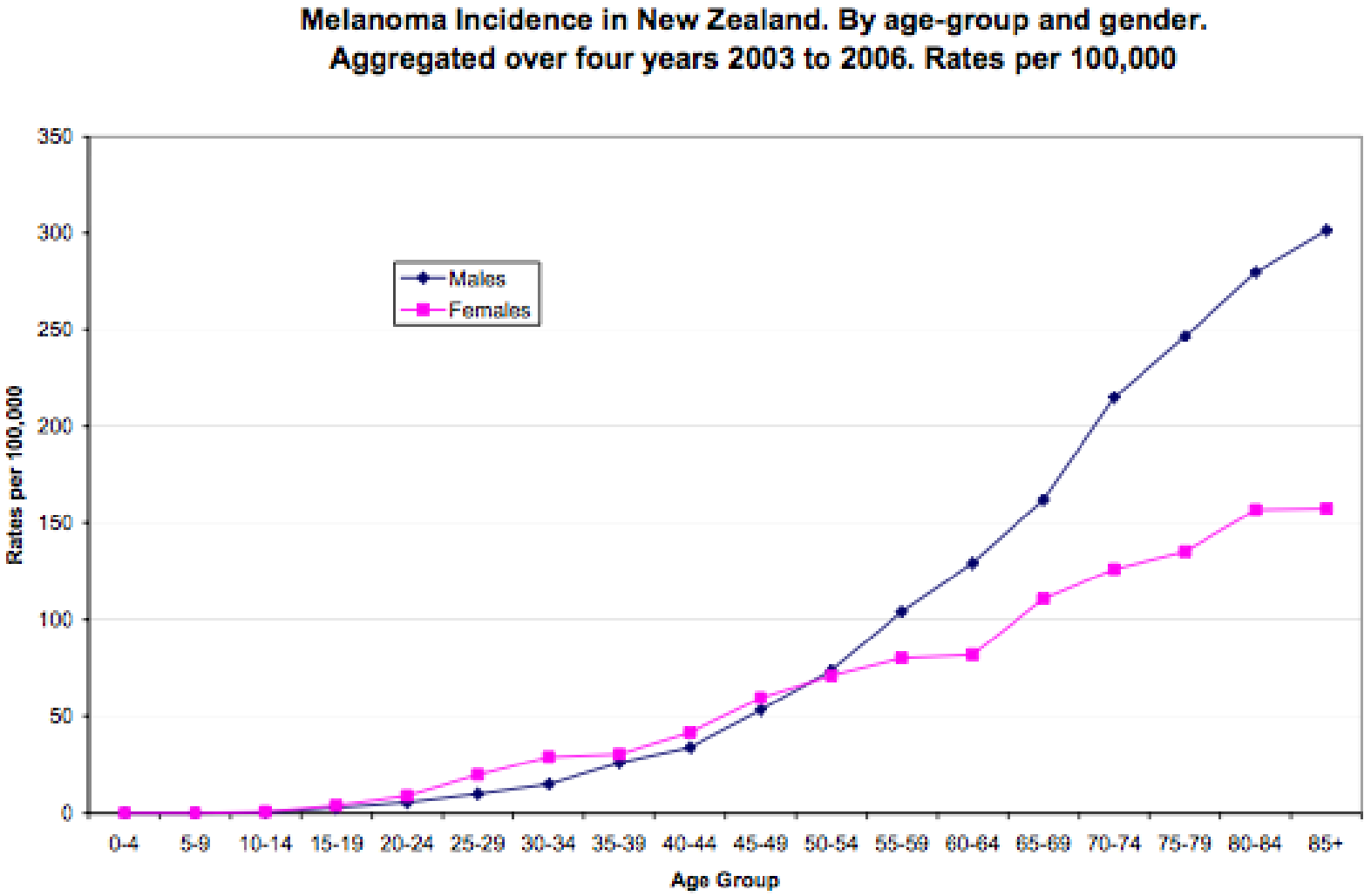
Who gets it?

Who gets it?

Who gets it?

Who gets it?

Who gets it?


Melanoma Incidence in New Zealand. By age-group and gender.
Aggregated over four years 2003 to 2006. Rates per 100,000
Rates per 100,000
350
300
250
200
150
100
50
0
Males
Females
0-4
5-9
10-14
15-19
20-24
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70-74
75-79
80-84
85+
Age Group

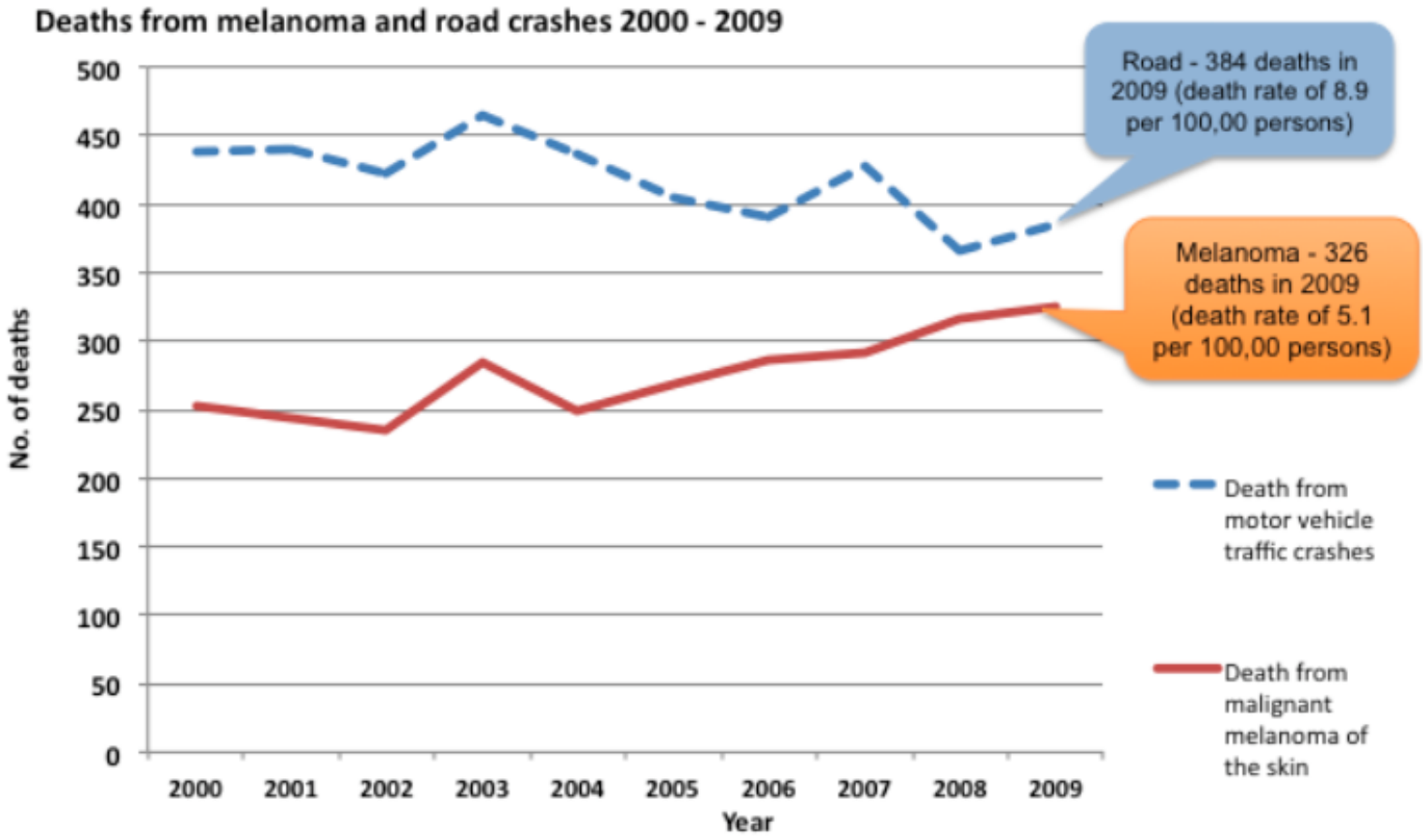

Deaths from melanoma and road crashes 2000 - 2009
No. of deaths
500
450
400
350
300
250
200
150
100
50
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Year
Road - 384 deaths in 2009 (death rate of 8.9 per 100,00 persons)
Melanoma - 326 deaths in 2009 (death rate of 5.1 per 100,00 persons)
Death from motor vehicle traffic crashes
Death from malignant melanoma of the skin

Table 7.1 **Costs of Skin Cancer and Related Conditions to New Zealand 2006.**

$ values in 2007/08 prices.

	Melanoma	Non-melanoma (incl. related neoplasms)	Total
Lost life-years	3,811	930	4,741
Health-care Costs (NZ $mn; excl GST)	$5.7 mn	$51.4 mn	$57.1 mn
'Lost Production' (NZ $mn)	$59.3 mn	$ 6.7 mn	$66.0 mn

plus Preventive Expenditures

Personal e.g. sunscreen	Unknown but many millions.
NGO and government e.g. Cancer Society	Approx. $ 2 mn.

What causes Melanoma?

- Predisposition
  - Fair skin, moles, immune suppression, family history, past personal history of melanoma
- UV light
  - Intermittent, intense

UV Index by region

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Auckland	10	8	7	4	2	1	2	2	3	6	8	9
Wellington	9	8	6	3	1	1	1	2	2	5	7	8
Christchurch	8	7	5	2	1	1	1	1	2	4	7	8
Central Otago	8	7	5	2	1	1	1	1	2	4	6	8
Invercargill	7	6	4	2	1	0	0	1	2	3	5	6

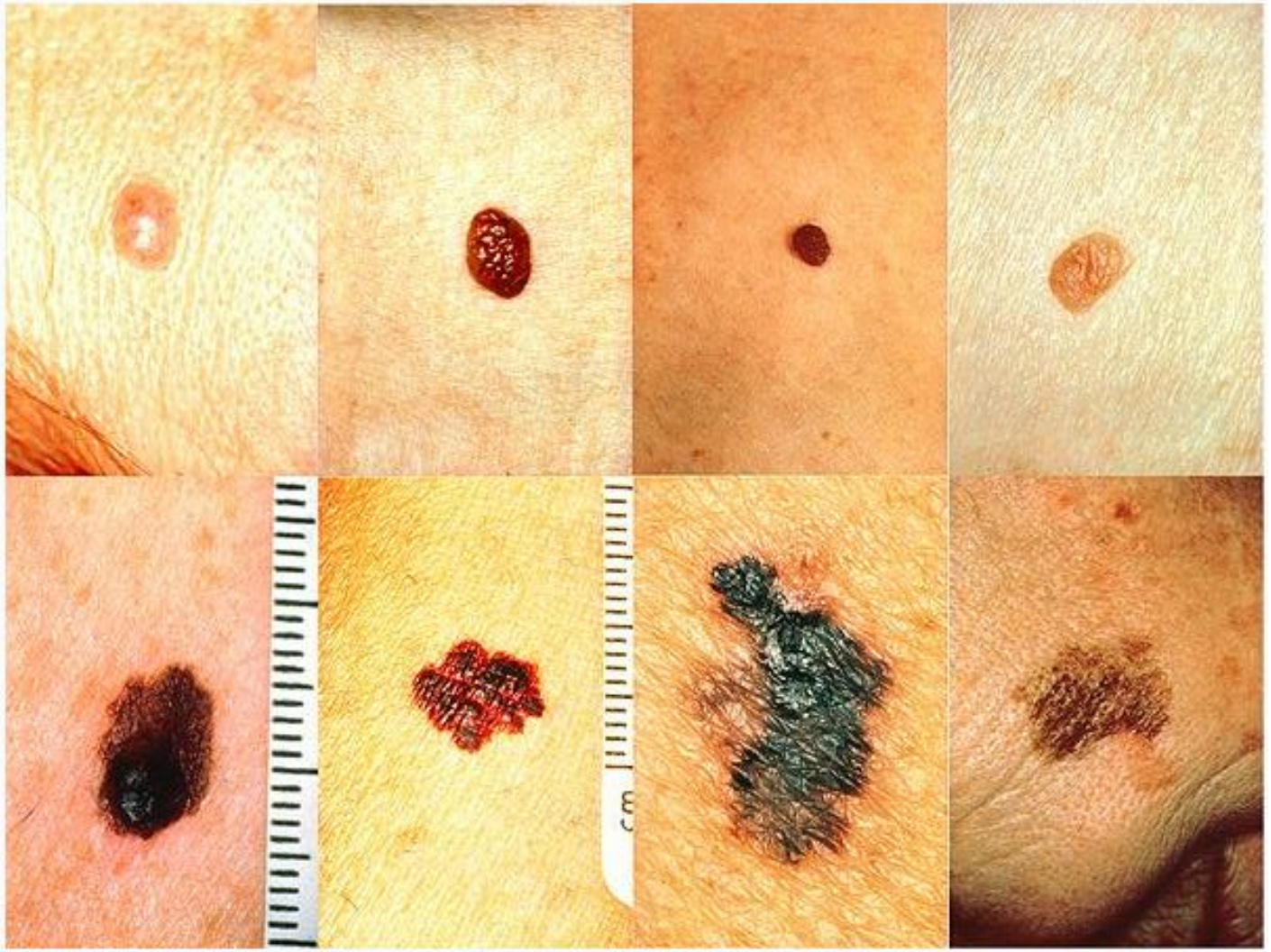
Mean UVI (including clouds)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Auckland	13	11	7	4	2	2	3	5	6	8	11	13
Wellington	13	9	6	3	2	1	2	4	5	8	11	12
Christchurch	12	8	5	3	1	1	2	3	4	8	10	11
Central Otago	10	8	5	2	1	1	1	3	4	7	10	11
Invercargill	8	7	4	2	1	1	1	2	3	5	9	10

Peak UVI (cloudless)


Tanning
RATES
BASAL CELL 11.99
SQUAMOUS CELL 15.99
MELANOMA 19.99

Identification



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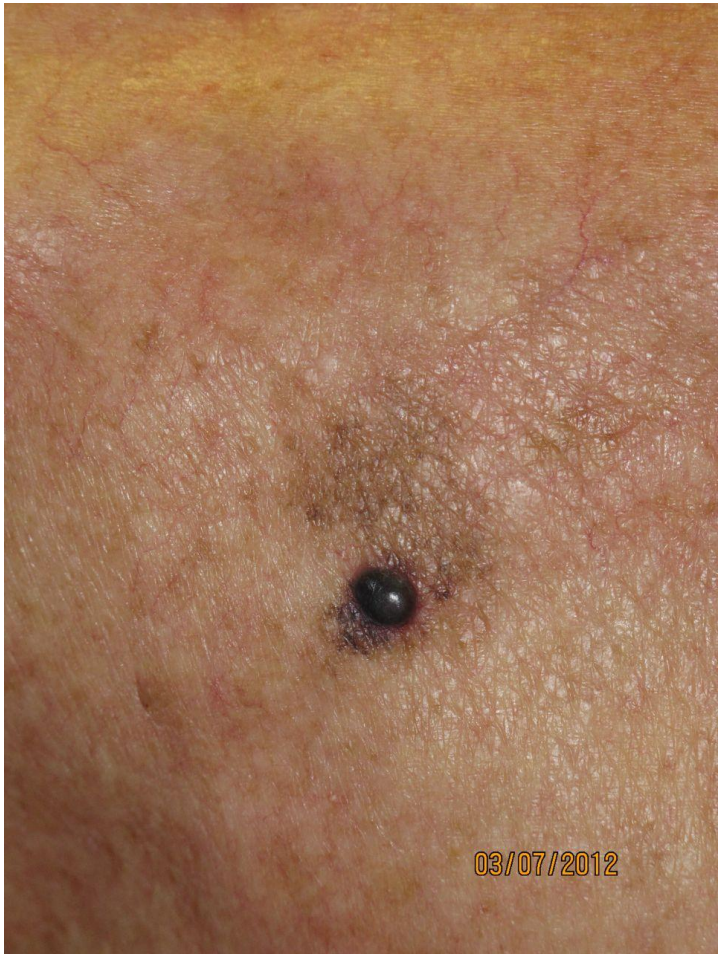
Melanoma in situ


03/07/2012

2.65 mm Breslow melanoma


mm 10 20 30 40

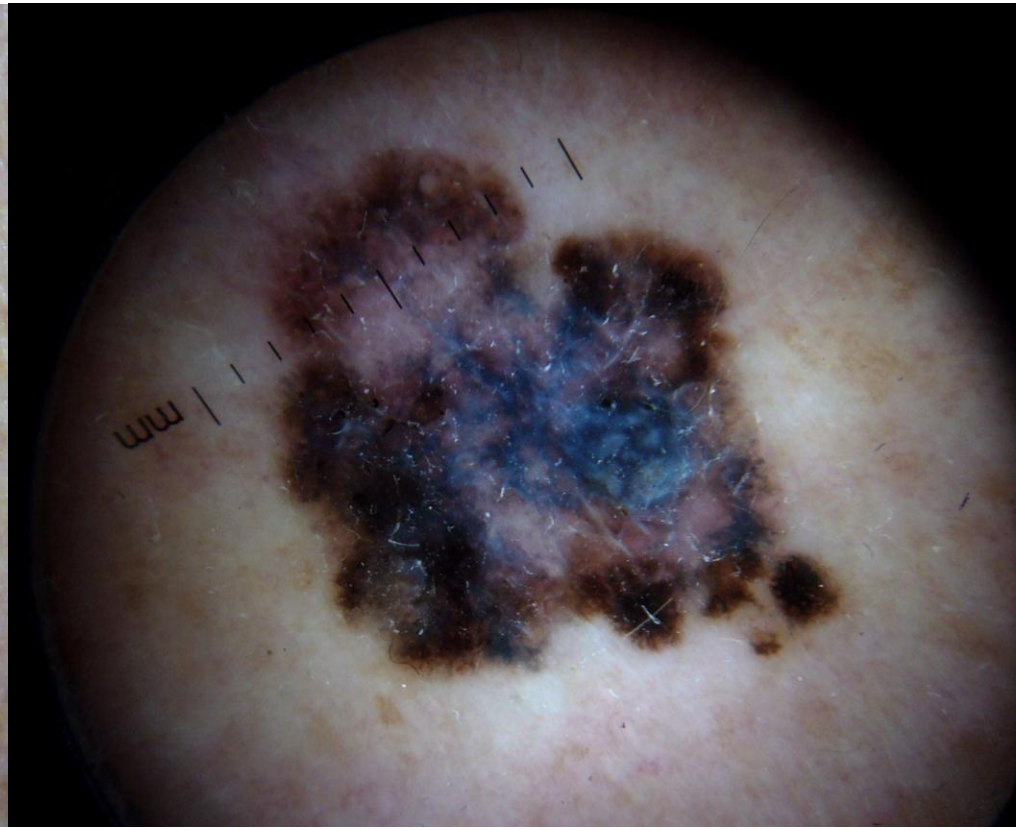

2.2 mm Breslow melanoma
mm 10 20 30 40


1.1 mm Breslow melanoma


Bad

Dermatoscopy

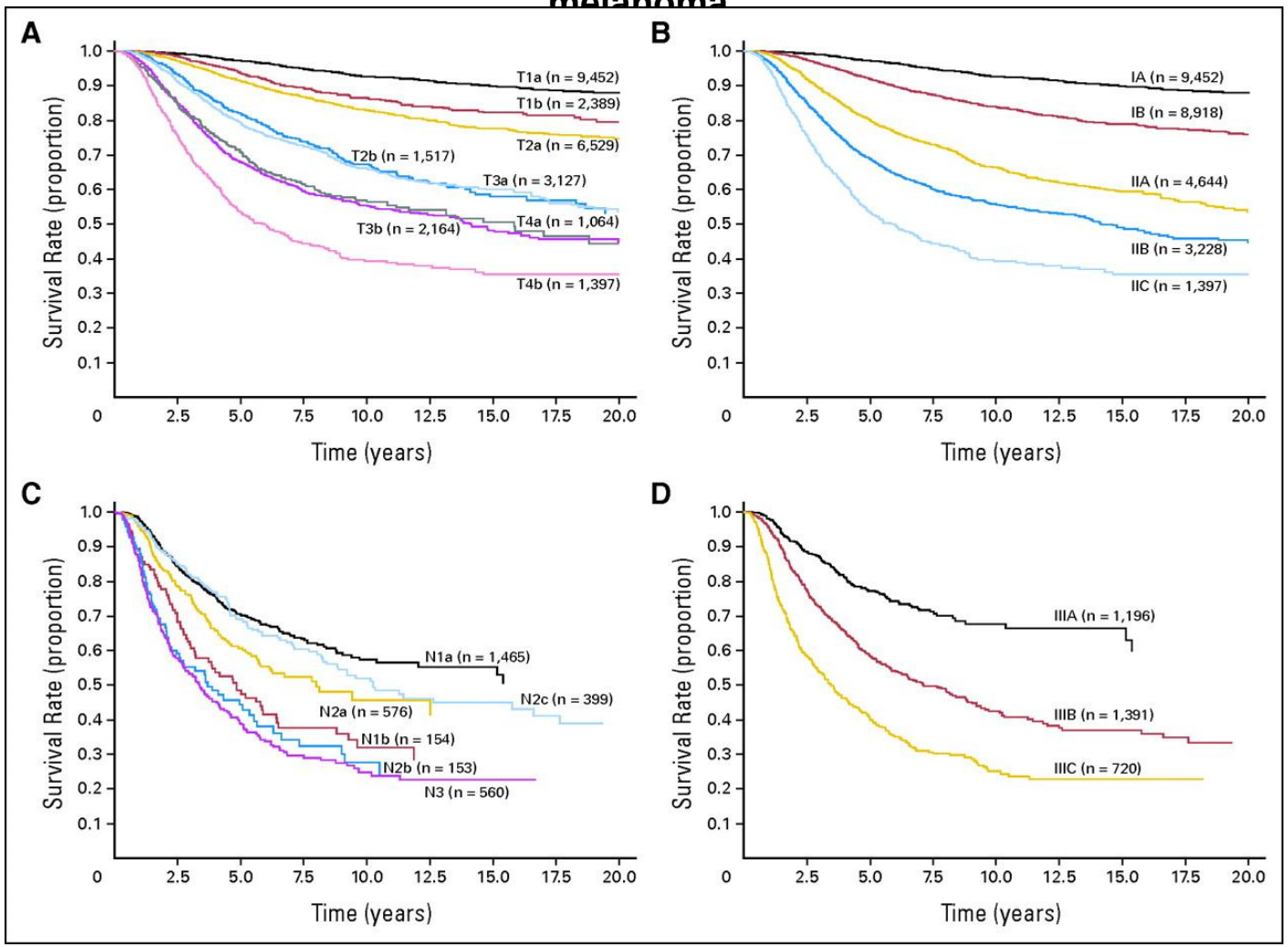
Dermatoscopy



Prognosis

- Histology Primary tumour
  - Breslow thickness
  - ~~Clarkes level~~
  - Mitotic rate
  - Ulceration
  - Lymph, nerve, vessel invasion
  - Regression
  - Subtype
- Lymph nodes
- Distant metastases

Survival curves from the American Joint Committee on Cancer Melanoma Staging Database comparing (A) the different T categories and (B) the stage groupings for stages I and II melanoma



Balch C M et al. JCO 2009;27:6199-6206

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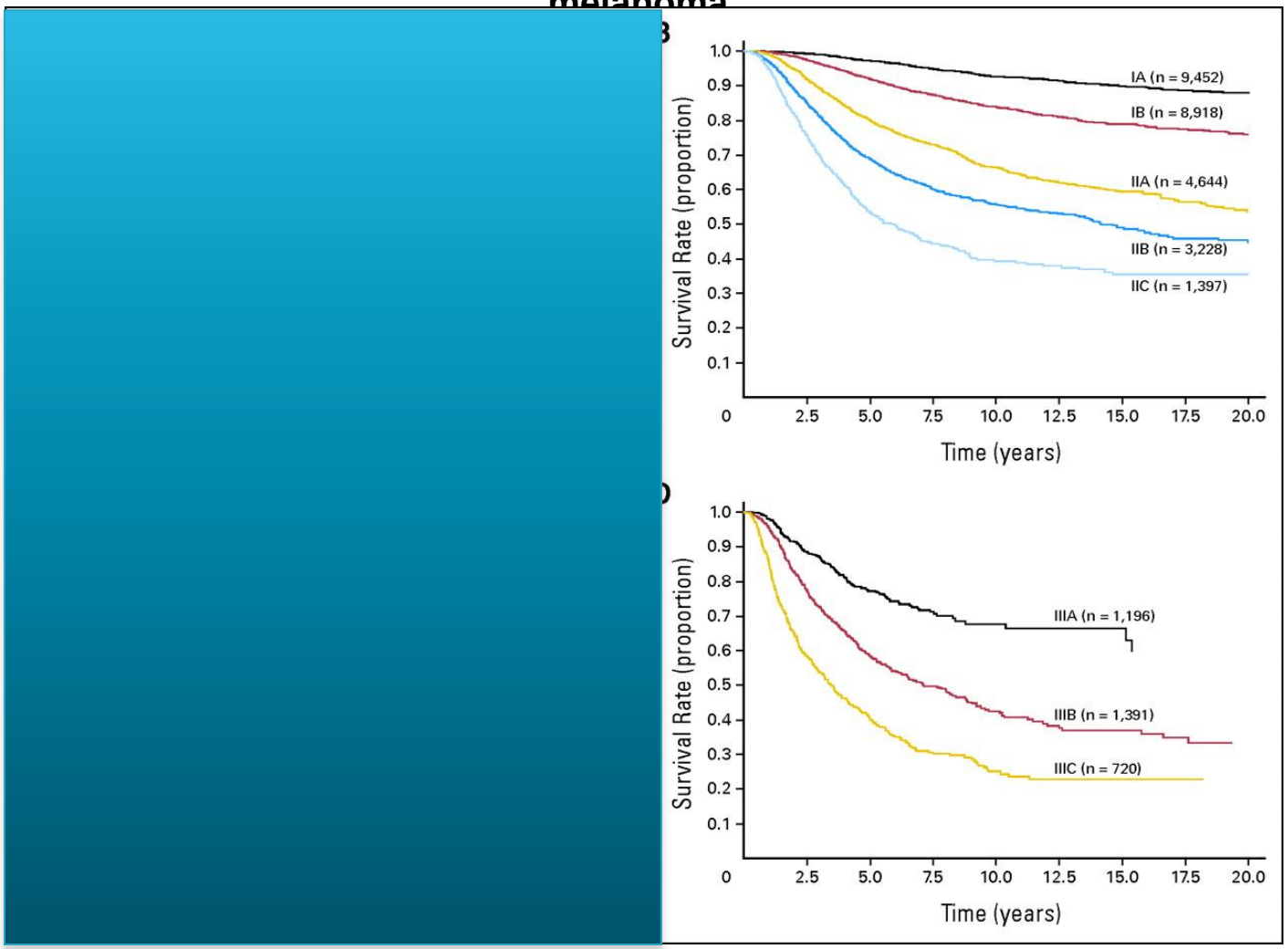

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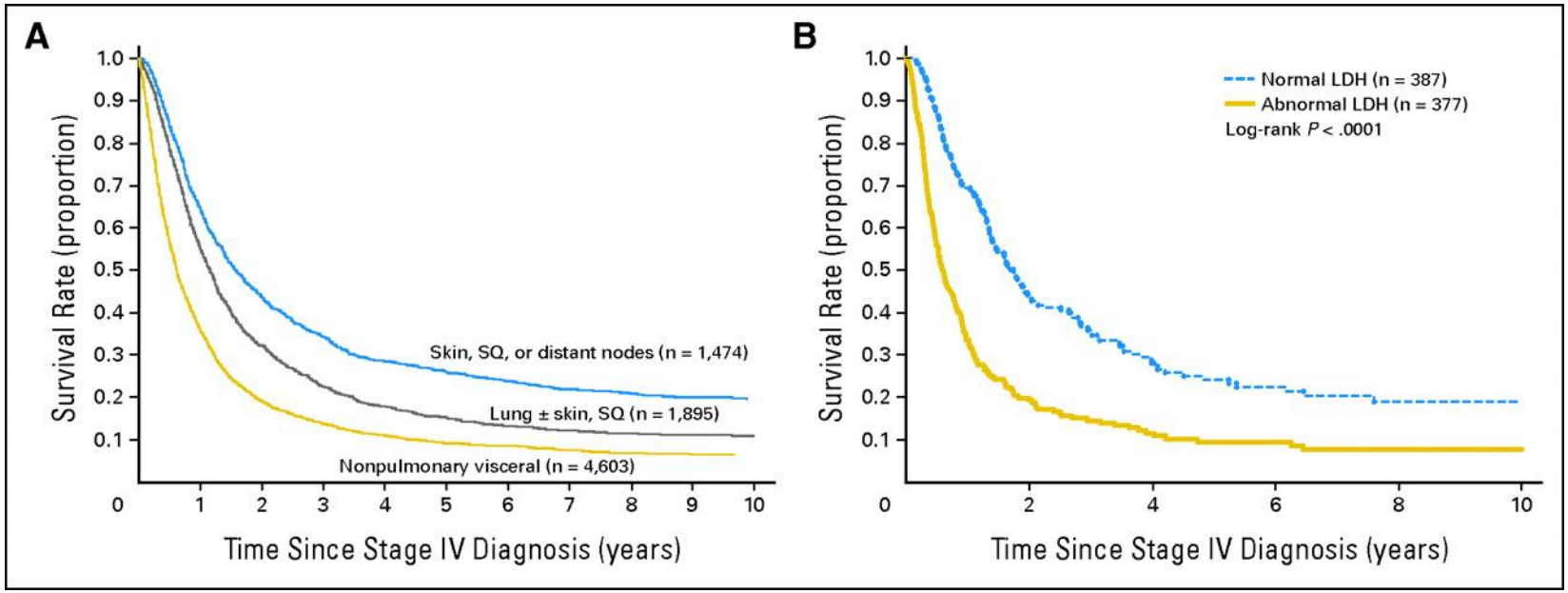
Survival curves of 7,635 patients with metastatic melanomas at distant sites (stage IV) subgrouped by (A) the site of metastatic disease and (B) serum lactose dehydrogenase (LDH) levels.



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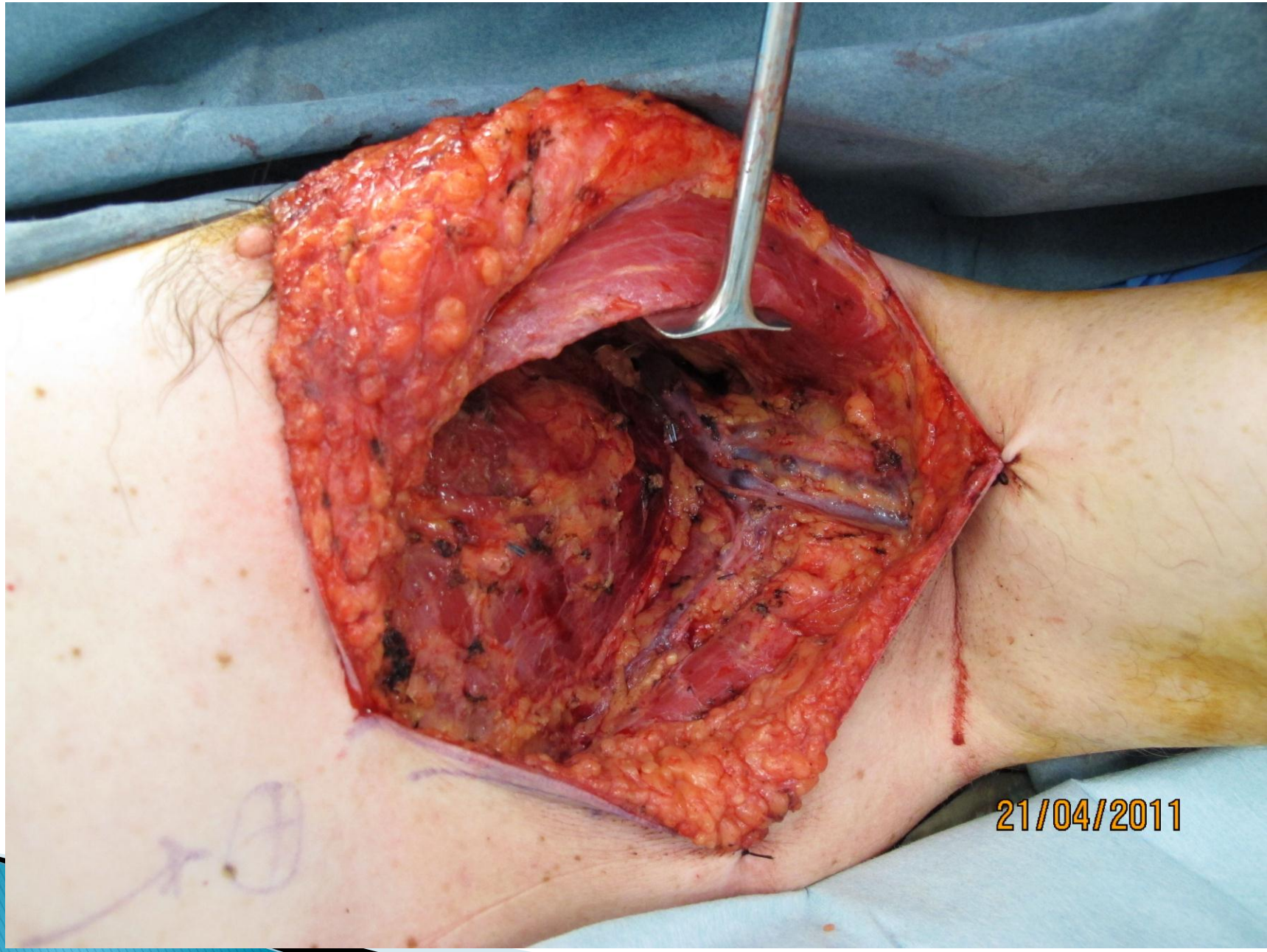
Treatment

- Based on histology of primary tumour
  - **SURGICAL**
  - Excision margins
  - Need for sentinel node biopsy

- Lymph nodes present?
- Distant Mets present?

Lymphatic Disease

- Lymphadenectomy for palpable/'radiological' disease
  - Neck
  - Groin
  - Axilla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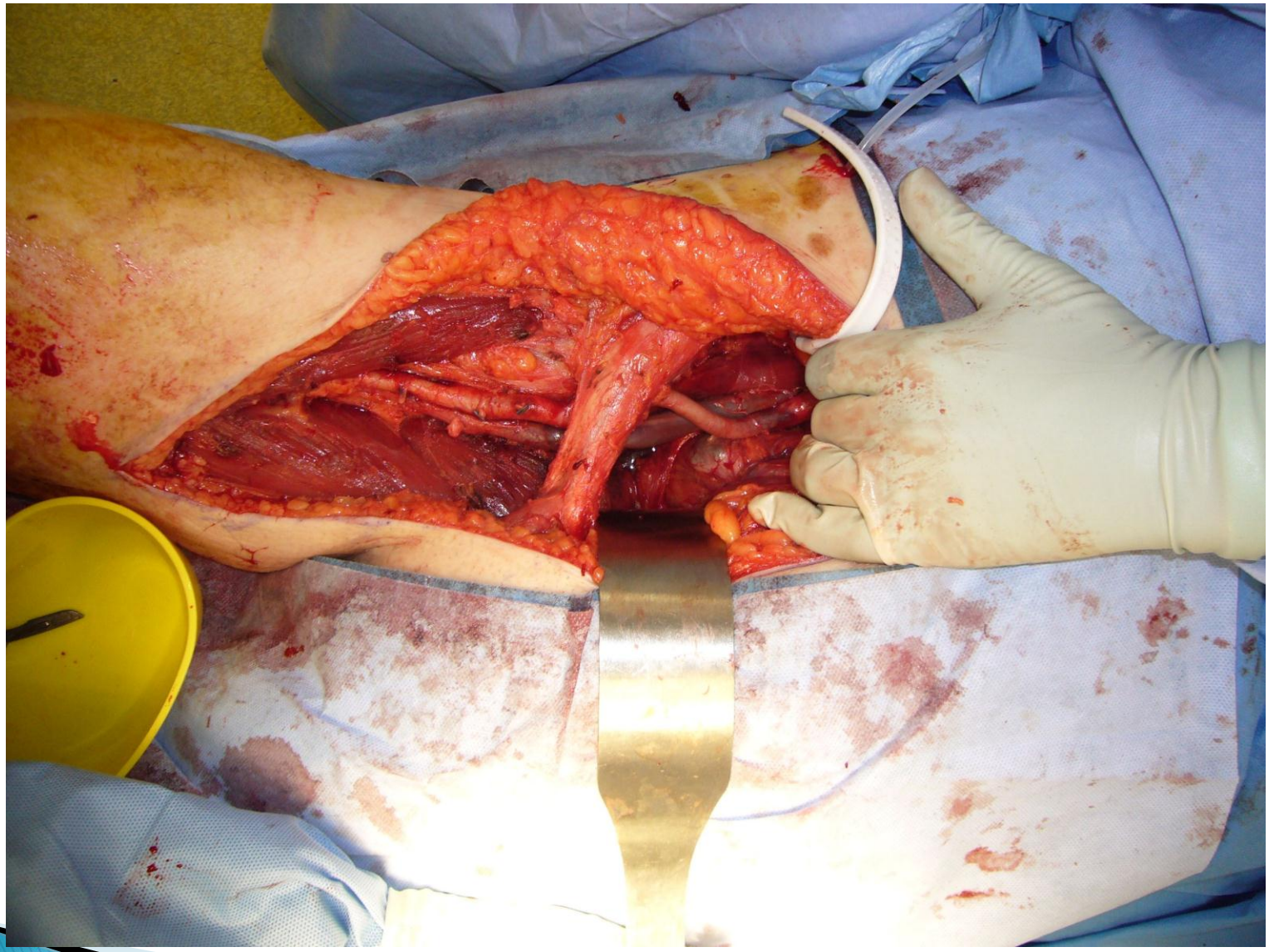
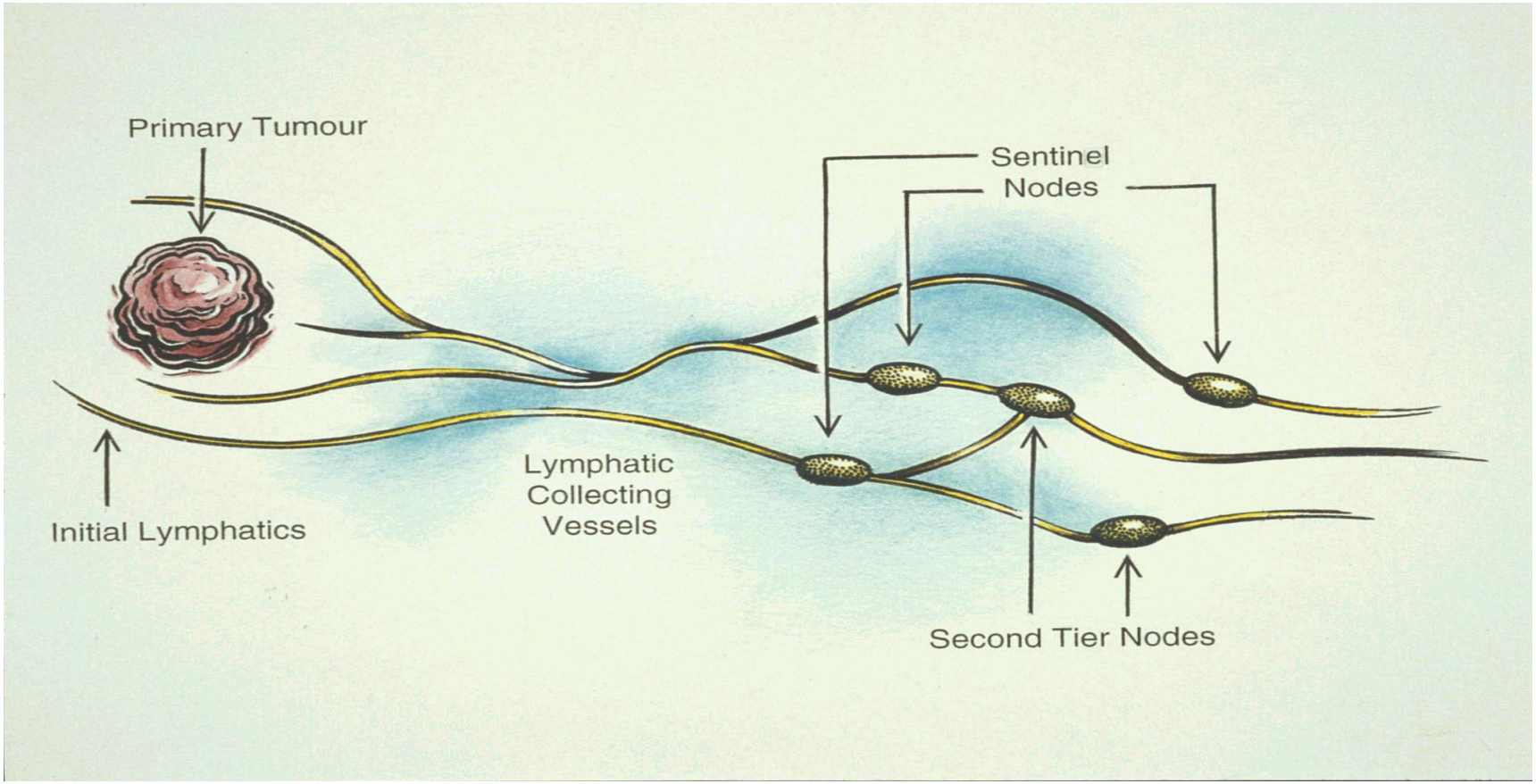


What if there are no palpable Nodes?

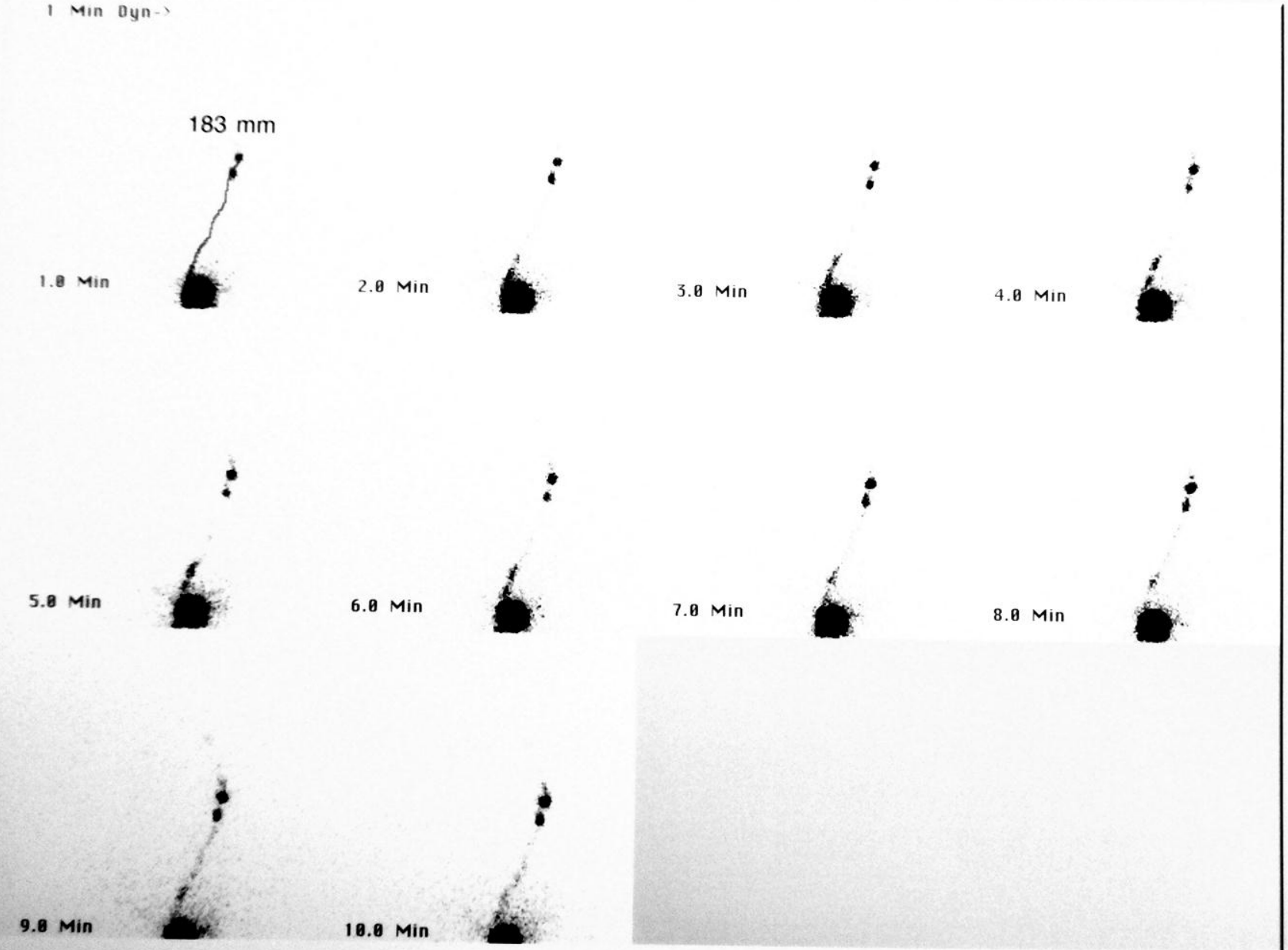
- Observe
- Sentinel Lymph Node Biopsy
  - MSLT I
    - Intermediate thickness
    - About 20% regional melanoma
    - Disease specific survival advantage

Sentinel Node

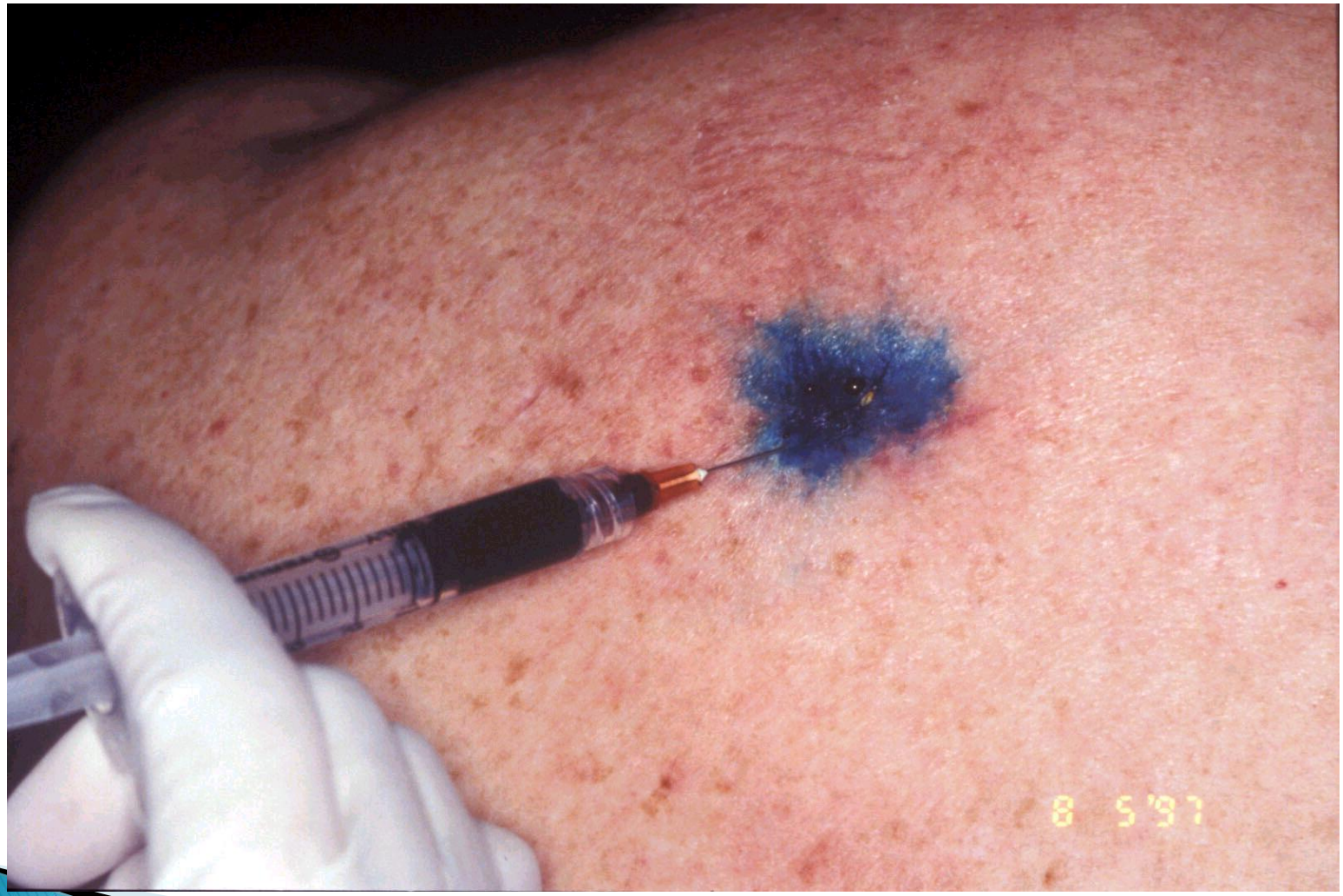


PATIENT NAME [redacted]
PATIENT ID
BIRTH DATE

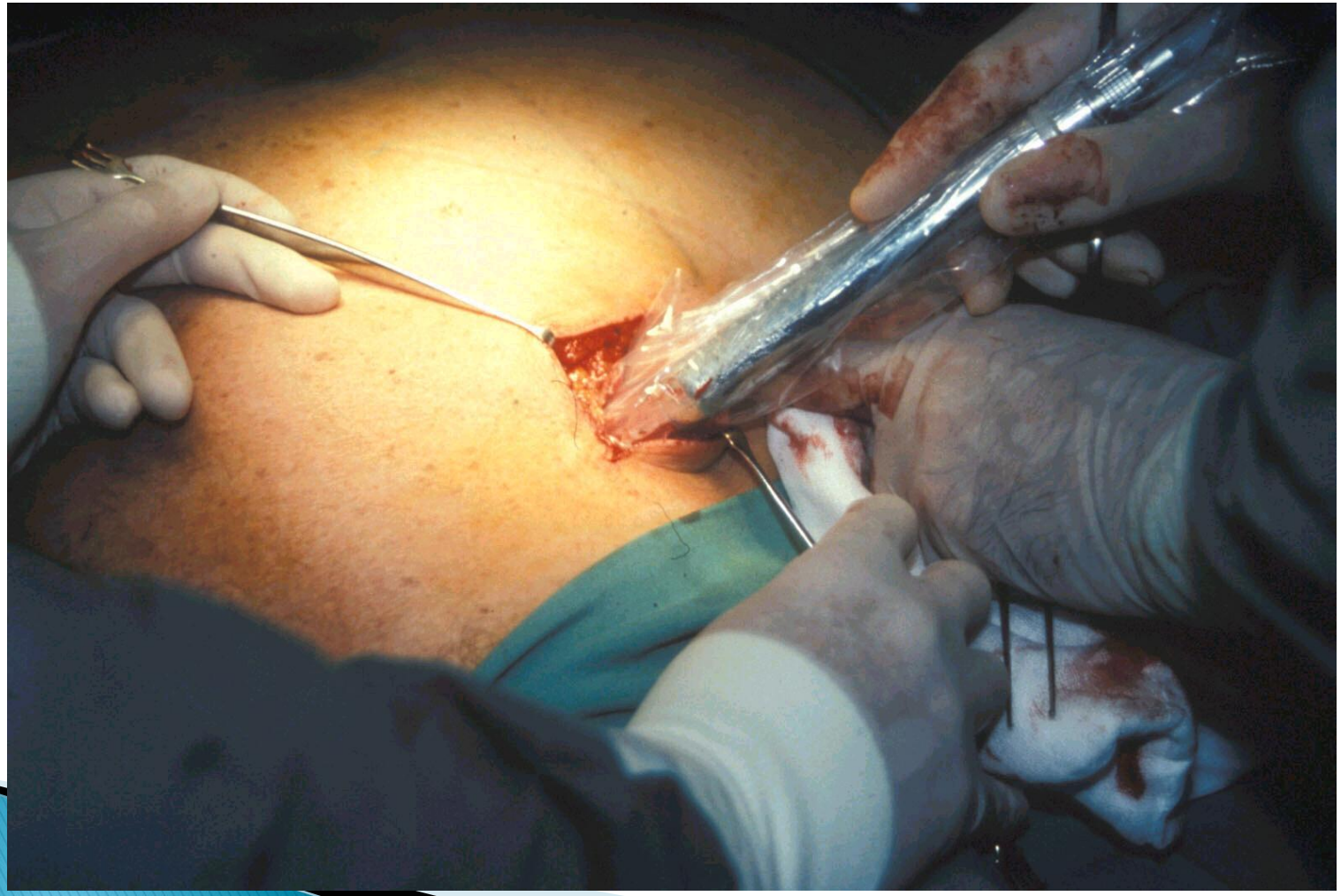
INSTITUTE : DRS R.F.UREN, R.HOWMAN-GILES & D.CHUNG
PROTOCOL : ANTERIOR DYN LYMPHOSCINTIGRAPHY
ACQ. DATE : 03-NOV-2008



Intra-Operative Blue dye

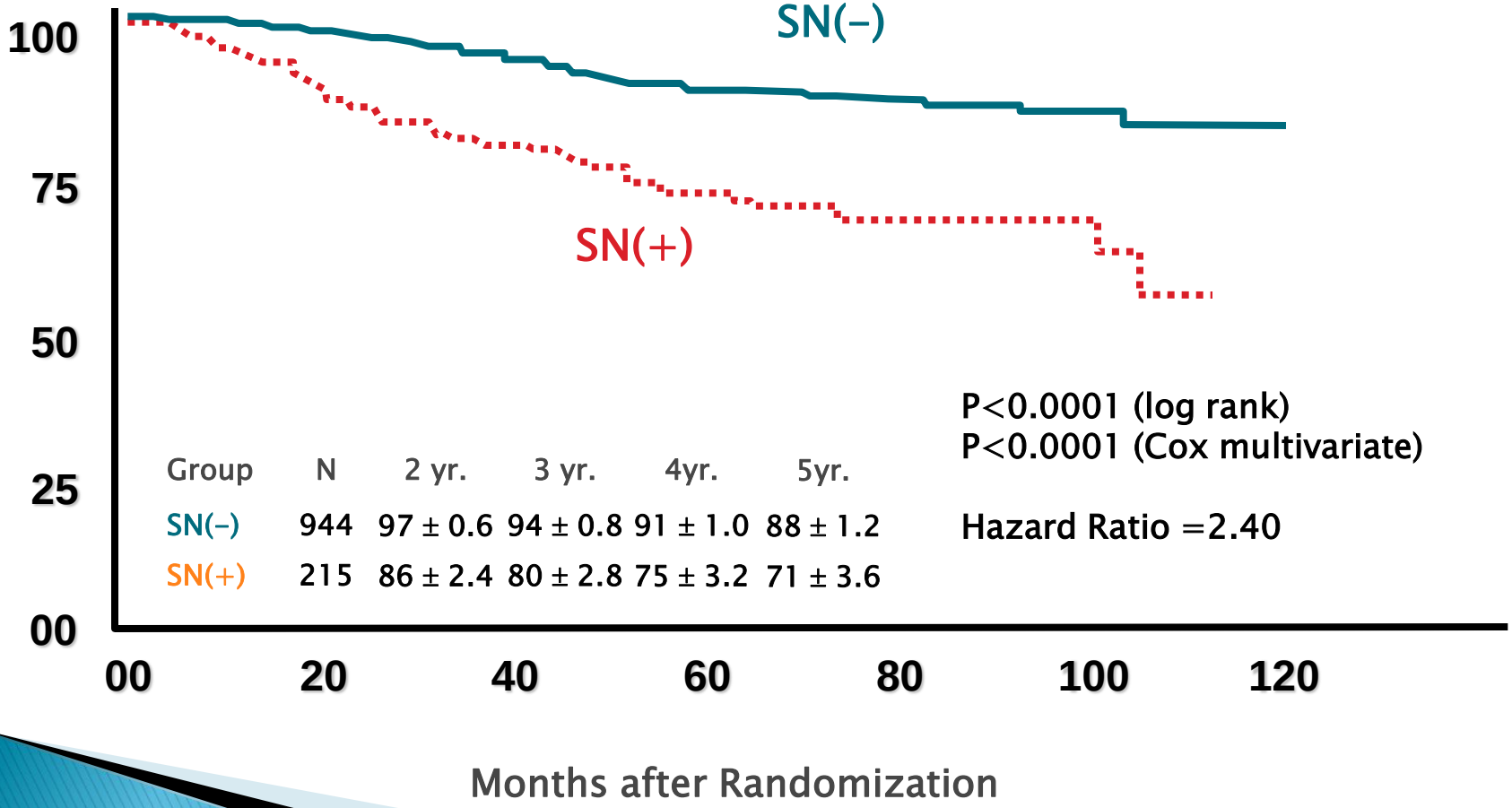


Intra-operative Gamma Probe



SLNBx

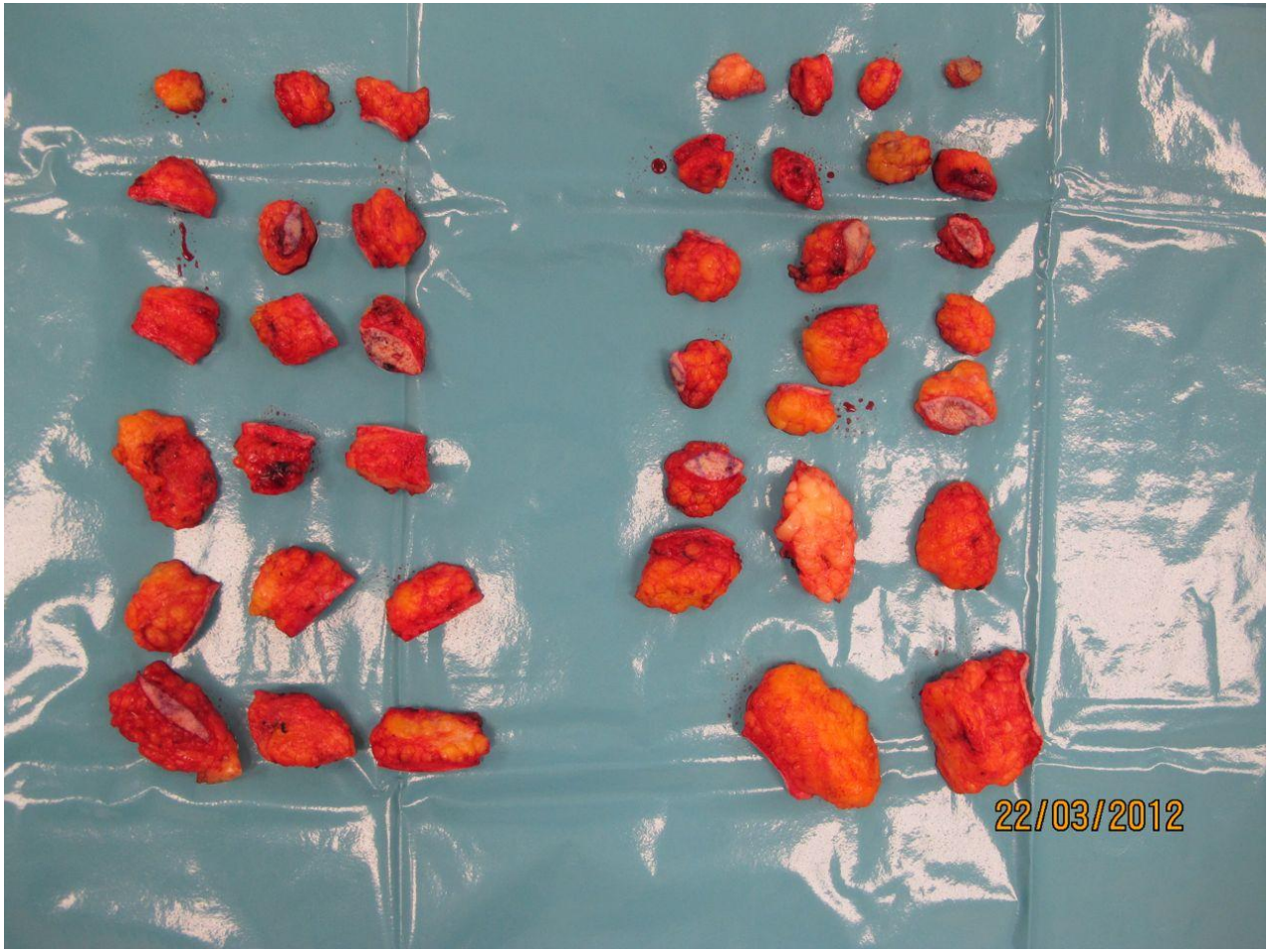
- Positive
  - Staging Scans
  - Completion Lymphadenectomy
- Negative
  - observation


100
75
50
25
00
SN(–)
SN(+)
Group N 2 yr. 3 yr. 4yr. 5yr.
SN(–) 944 97 ± 0.6 94 ± 0.8 91 ± 1.0 88 ± 1.2
SN(+) 215 86 ± 2.4 80 ± 2.8 75 ± 3.2 71 ± 3.6
P<0.0001 (log rank)
P<0.0001 (Cox multivariate)
Hazard Ratio =2.40
00 20 40 60 80 100 120
Months after Randomization

- Positive Sentinel node
  - Bad but better to find out early than late

Metastatic Disease

Metastatic Disease



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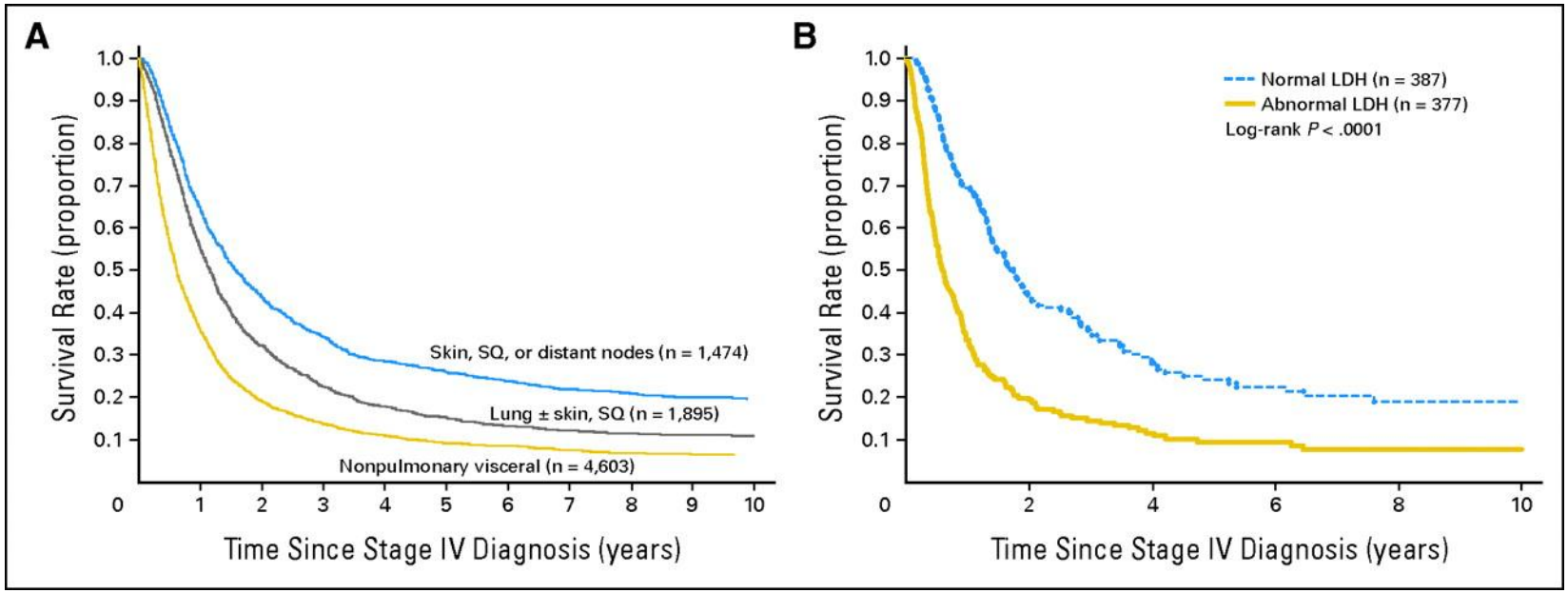

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Adjuvant Therapy: Radiotherapy

- Generally Palliative
  - XRT
    - To painful metastases
    - May reduce regional recurrence in bulky nodal disease
    - May reduce cerebral recurrence
    - May have a role in Melanoma in-situ

Adjuvant Therapy: Chemo

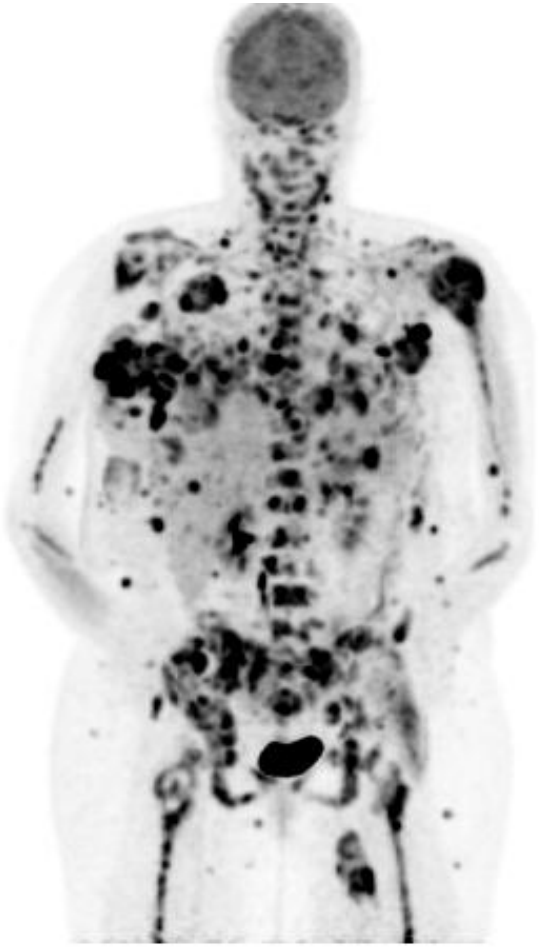
- Generally Palliative
- Systemic
  - DTIC (dacarbazine)
- Regional
  - Isolated limb infusion
    - Melphalen, actinomycin-D

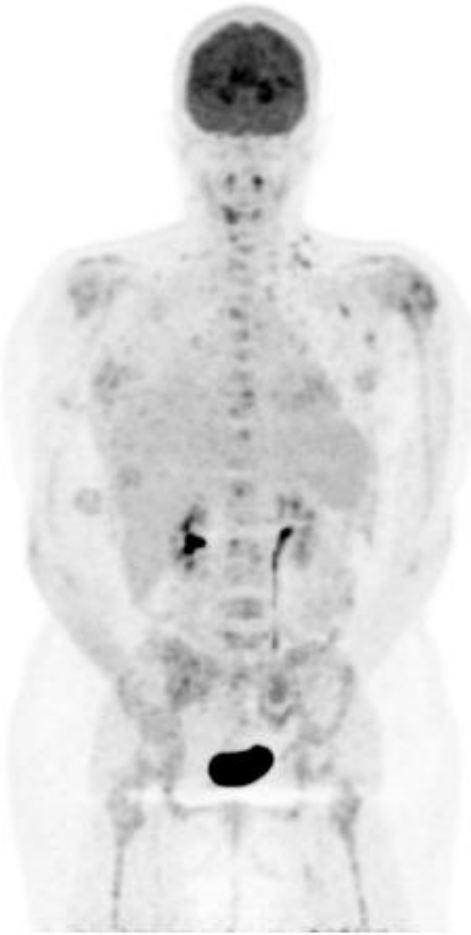
Adjuvant therapy: Immunotherapy

- Immune therapy
  - Patchy success with vaccines
  - Patchy success with Interferon, IL2 etc

Adjuvant therapy: Targeted Therapy

- Based on specific gene mutations
- Much more effective than chemo
  - Vemurafenib Debrafenib (BRAF V600E mutation specific)
  - Ipilimumab (C-Kit Mutation specific)
  - Trametinib MEK inhibitor



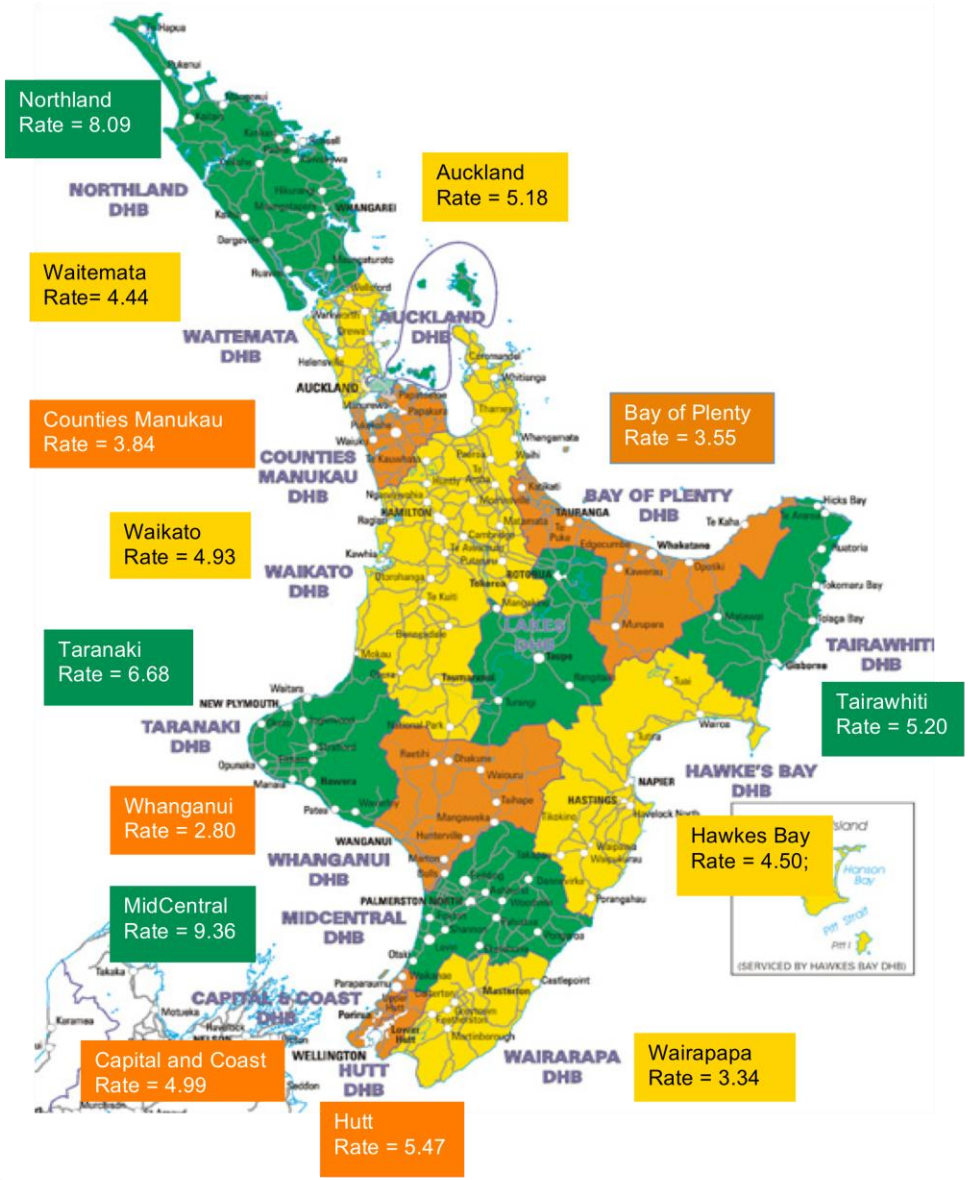


Conclusions

- Prevention better than ‘cure’
- Early detection better than late
- Primarily a surgical problem, despite recent advances in targeted therapy
- Large burden on society

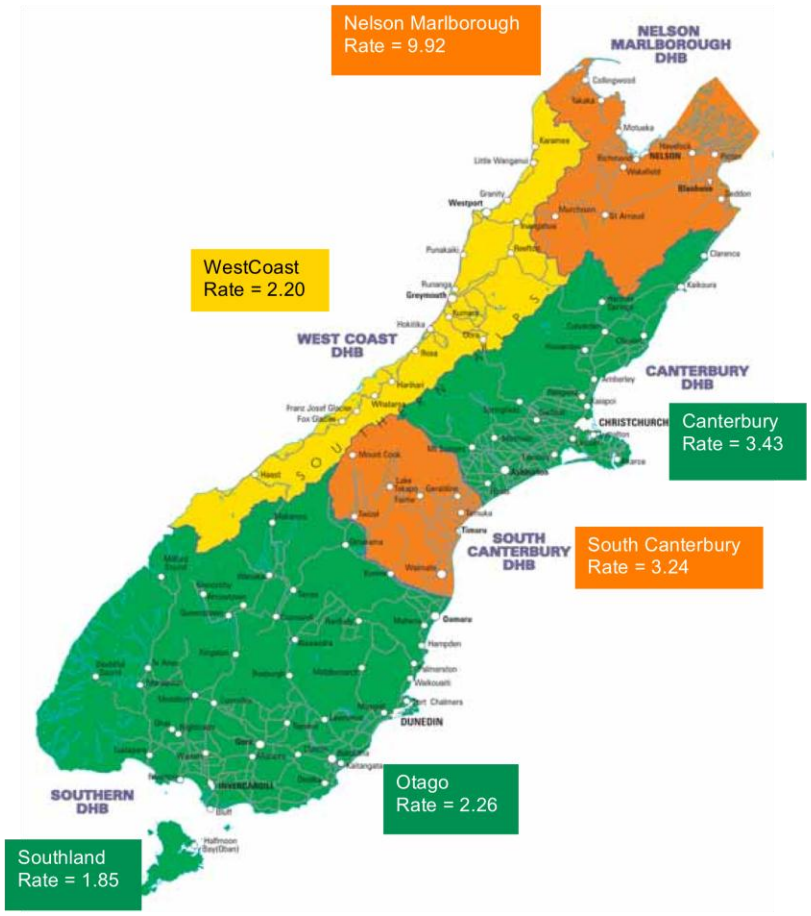
Questions?

Age-standardised mortality rate for melanoma in 2007 by North Island DHB regions



Source: Deaths from Melanoma skin cancer, Ministry of Health August 2011
Road crashes data received from Injury Prevention Research Unit, Otago University Sept 2011
Health Sponsorship Council Data Analysis team

Age-standardised mortality rate for melanoma in 2007 by South Island DHB regions



Mortality rates are standardized using the WHO standard population.

Source: Deaths from Melanoma skin cancer, Ministry of Health August 2011
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