



Provincial Health Services Authority



CUTANEOUS MELANOMA AN OVERVIEW

FRANCIS SI WAI ZIH, MD, MSC, FRCSC, FACS
GENERAL SURGERY & SURGICAL ONCOLOGY

SURREY MEMORIAL HOSPITAL & JIM PATTISON OUTPATIENT CARE CENTRE
UNIVERSITY OF BRITISH COLUMBIA

The image features a dark blue background with white, stylized circuit board traces in the corners. These traces form various geometric shapes and paths, some ending in small circles, resembling a network or data flow diagram. The central text is white and reads "No Disclosures".

No Disclosures



Males
113,000
New cases

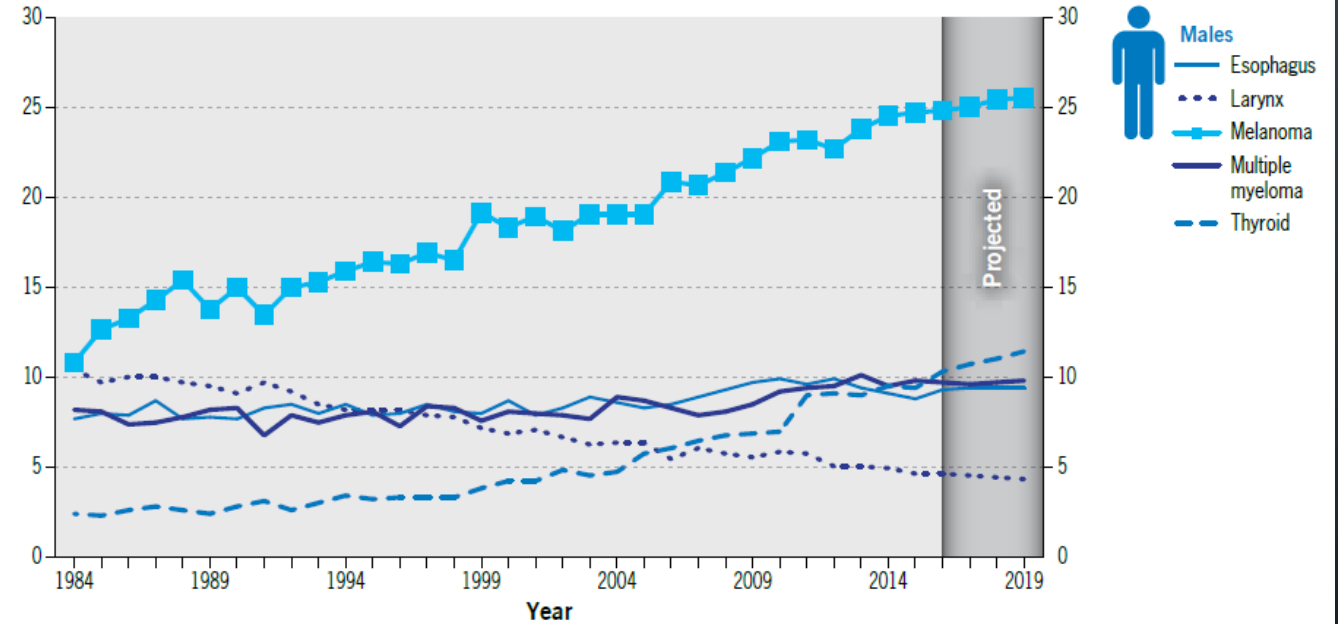
Prostate	20.3%
Lung and bronchus	13.2%
Colorectal	12.9%
Bladder	8.1%
Non-Hodgkin lymphoma	5.0%
Kidney and renal pelvis	4.2%
Melanoma	3.8%
Leukemia	3.5%
Oral	3.3%
Pancreas	2.7%
Stomach	2.3%
Liver	1.9%
Thyroid	1.9%
Multiple myeloma	1.7%
Esophagus	1.6%
Brain/CNS	1.5%
Testis	1.0%
Larynx	0.9%
Hodgkin lymphoma	0.5%
Breast	0.2%
All other cancers	9.7%



Females
107,400
New cases

Breast	25.0%
Lung and bronchus	13.5%
Colorectal	10.9%
Uterus (body, NOS)	6.7%
Thyroid	5.7%
Non-Hodgkin lymphoma	4.1%
Melanoma	3.3%
Ovary	2.8%
Pancreas	2.6%
Leukemia	2.5%
Bladder	2.5%
Kidney and renal pelvis	2.3%
Oral	1.5%
Stomach	1.4%
Multiple myeloma	1.3%
Cervix	1.3%
Brain/CNS	1.2%
Liver	0.7%
Esophagus	0.5%
Hodgkin lymphoma	0.4%
Larynx	0.2%
All other cancers	9.6%

ASIR (per 100,000)



- 2020: 8000 new cases
- Lifetime probability: 2.1%
- Mortality rate: 3.1 per 100,000



© 2010 PIRELLA GÖTTSCHE LOWE

Scenario 1

55F w suspicious upper back pigmented lesion



Question 1: What's your next step in management?

- A. Excisional biopsy
- B. Shave biopsy
- C. Punch biopsy
- D. Refer to dermatologist
- E. Refer to plastic surgeon
- F. Refer to general surgeon

Question 2: Do you routinely perform skin biopsy in your office?











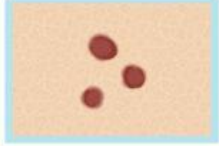

A. Yes

B. No

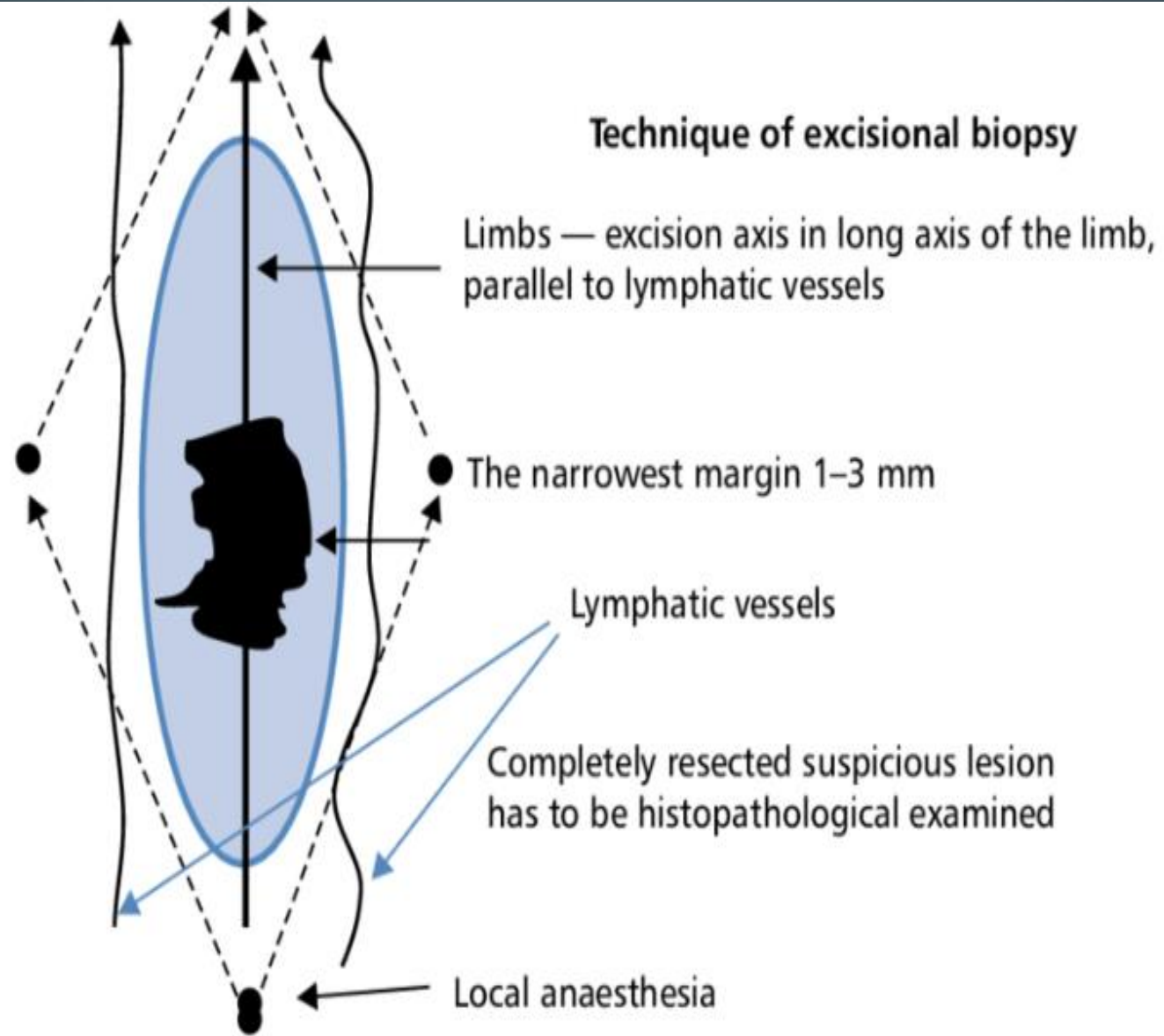


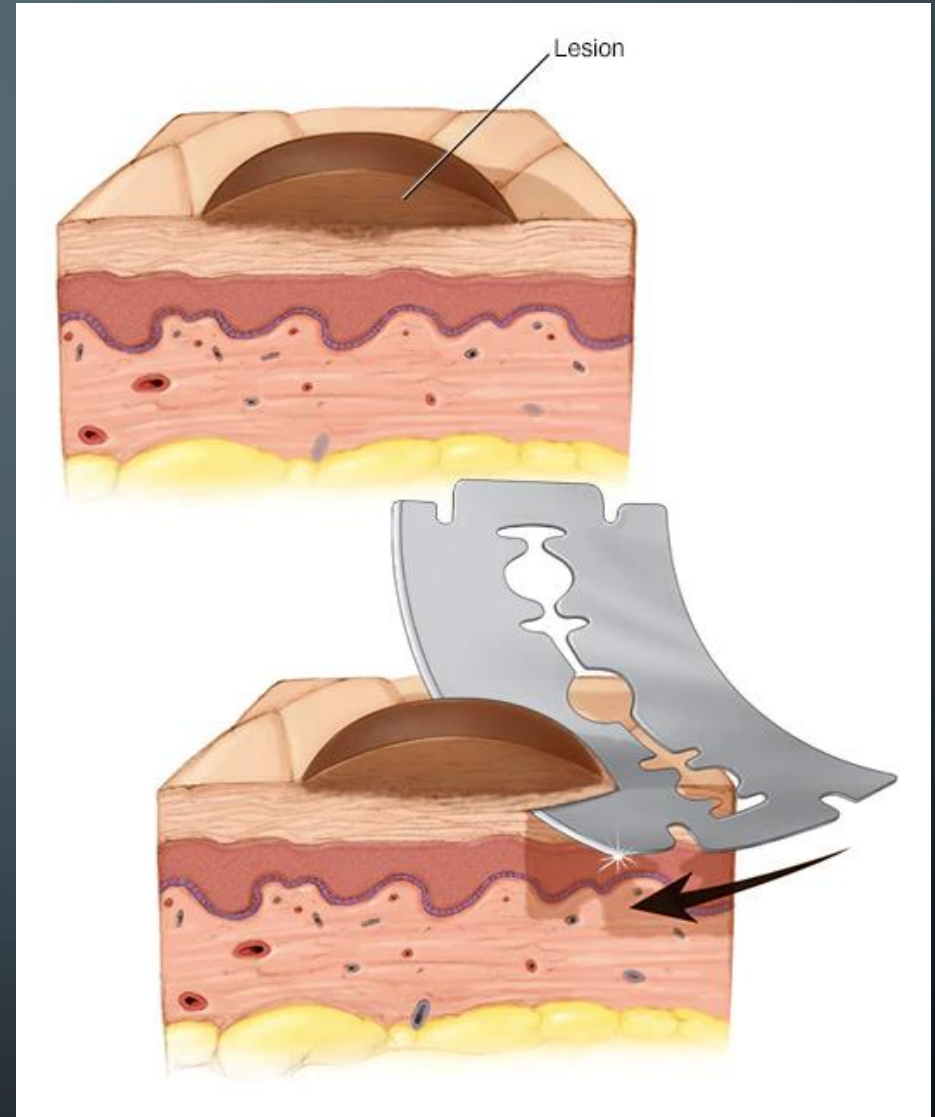
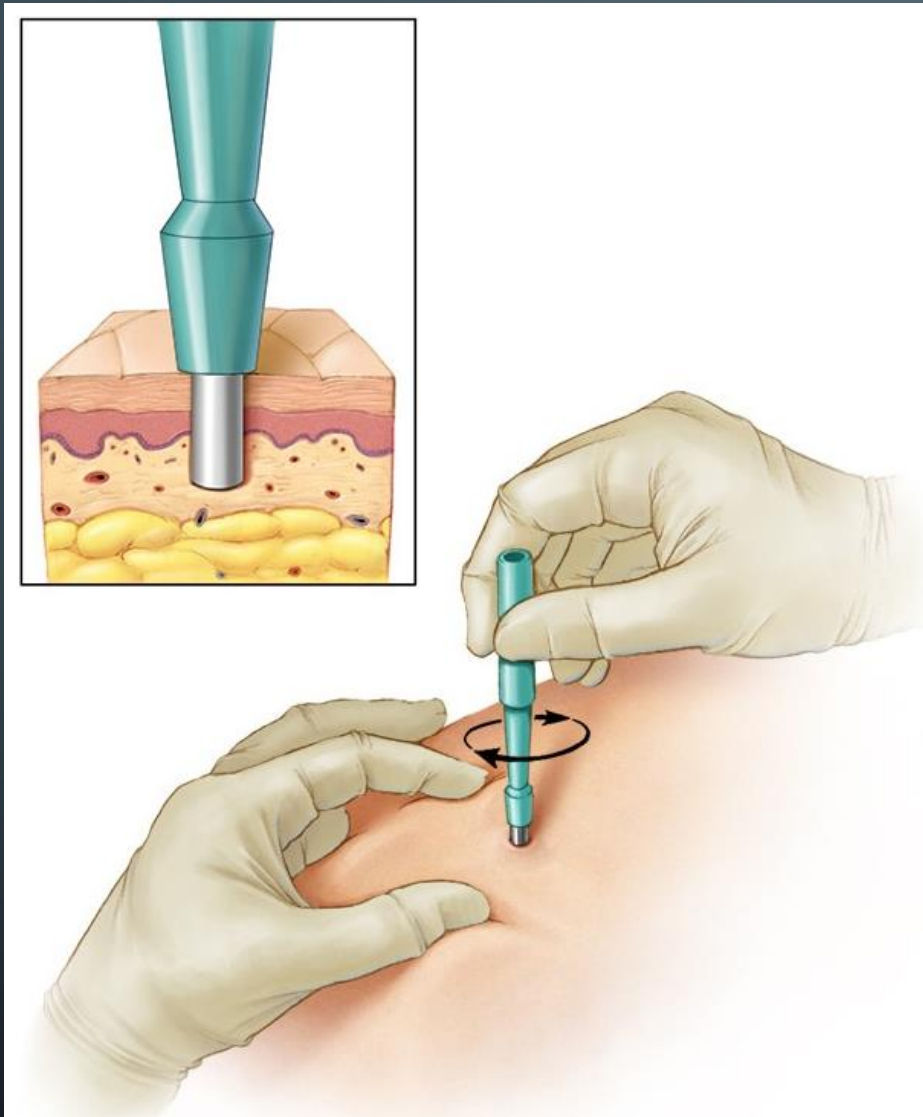
ABCDEs

MOLE OR MELANOMA?

MOLE FEATURES	BENIGN	SEE DOCTOR
A ASYMMETRY ONE HALF OF A MOLE DOES NOT MATCH THE OTHER.		
B BORDER THE EDGES ARE IRREGULAR, RAGGED, NOTCHED, OR BLURRED. NORMAL MOLES ARE ROUND OR OVAL.		
C COLOR THE MOLE IS NOT EVENLY COLORED. IT MAY INCLUDE SHADES OF BROWN OR BLACK, OR PATCHES OF PINK, RED, WHITE OR BLUE.		
D DIAMETER THE SPOT IS LARGER THAN 6 MILLIMETERS ACROSS	 LESS THAN .25 IN	 GREATER THAN .25 IN
E EVOLVING THE MOLE IS CHANGING IN SIZE, SHAPE, OR COLOR.		

Technique of excisional biopsy







PRINCIPLES OF BIOPSY OF A SUSPICIOUS PIGMENTED LESION¹

- **Excisional biopsy (elliptical, punch, or saucerization/deep shave) with 1- to 3-mm margins preferred. Avoid wider margins to permit accurate subsequent lymphatic mapping.**
- **The orientation of an elliptical/fusiform excisional biopsy should be planned with definitive wide local excision in mind (eg, longitudinally [axially] and parallel to the underlying lymphatics on the extremities).**
- **Full-thickness incisional or punch biopsy^a of clinically thickest or most atypical portion of lesion is acceptable in certain anatomic areas (eg, palm/sole, digit, face, ear) or for very large lesions. Multiple "scouting" biopsies may help guide management for very large lesions. Superficial shave biopsy^{a,b} may compromise pathologic diagnosis and complete assessment of Breslow thickness, but is acceptable when the index of suspicion is low. However, a broad shave biopsy may be optimal for histologic assessment for melanoma in situ, lentigo maligna type.**
- **Repeat narrow-margin excisional biopsy is recommended if an initial partial biopsy is inadequate for diagnosis or microstaging but should not be performed if the initial specimen meets criteria for SLN staging.**

**Table 1. American Joint Committee on Cancer (AJCC)
Definitions for T, N, M**

T Category	Thickness	Ulceration Status
TX: Primary tumor thickness cannot be assessed (eg, diagnosis by curettage)	Not applicable	Not applicable
T0: No evidence of primary tumor (eg, unknown primary or completely regressed melanoma)	Not applicable	Not applicable
Tis (melanoma <i>in situ</i>)	Not applicable	Not applicable
T1	≤1 mm	Unknown or unspecified
T1a	<0.8 mm	Without ulceration
T1b	<0.8 mm	With ulceration
	0.8–1.0 mm	With or without ulceration
T2	>1.0–2.0 mm	Unknown or unspecified
T2a	>1.0–2.0 mm	Without ulceration
T2b	>1.0–2.0 mm	With ulceration
T3	>2.0–4.0 mm	Unknown or unspecified
T3a	>2.0–4.0 mm	Without ulceration
T3b	>2.0–4.0 mm	With ulceration
T4	>4.0 mm	Unknown or unspecified
T4a	>4.0 mm	Without ulceration
T4b	>4.0 mm	With ulceration

<1mm

1 – 2mm

2 – 4mm

>4mm

PRINCIPLES OF SURGICAL MARGINS FOR WIDE EXCISION OF PRIMARY MELANOMA

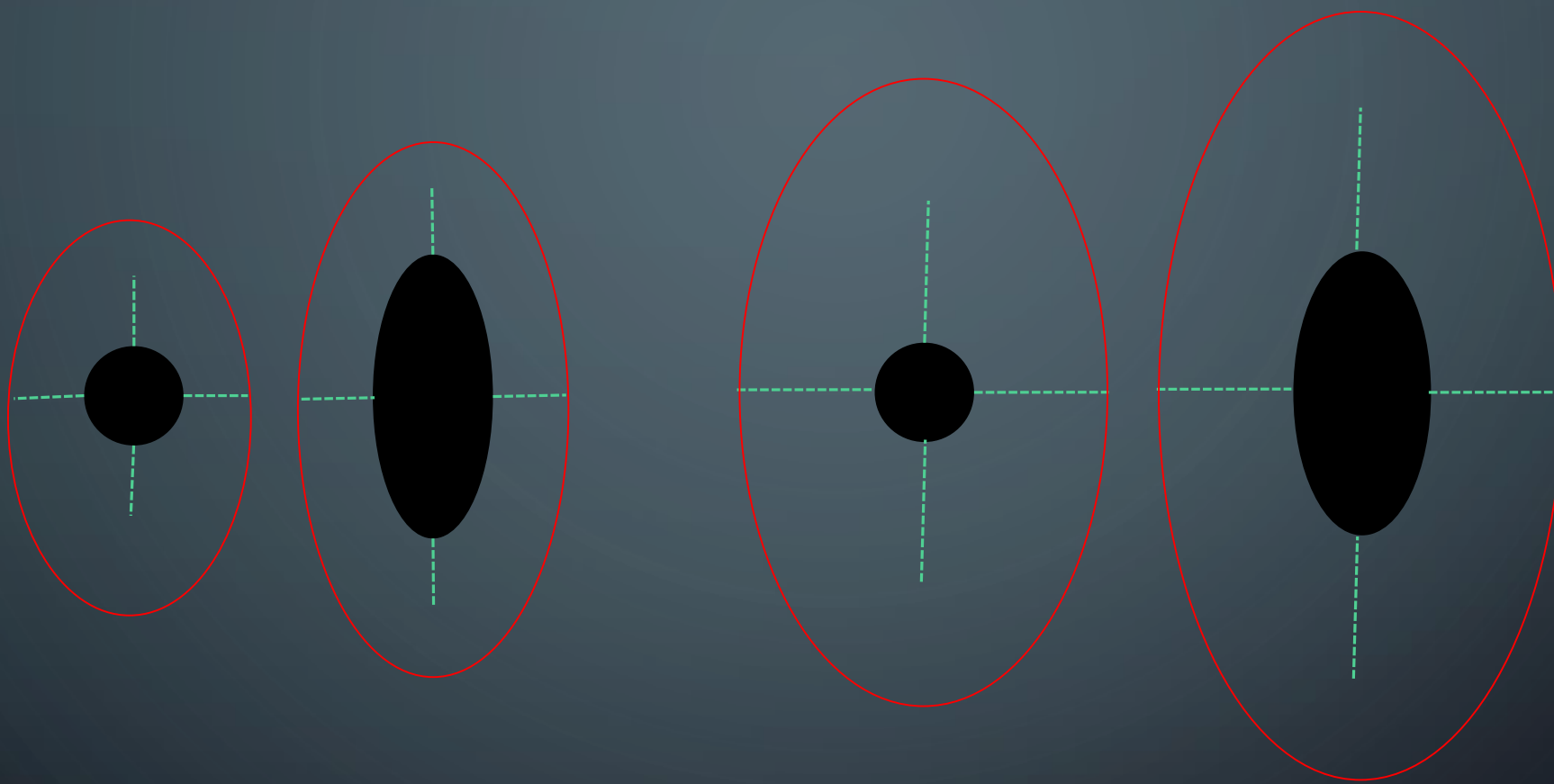
<u>Tumor Thickness</u>	<u>Recommended Clinical Margins^b</u>
In situ ^a	0.5–1.0 cm
≤1.0 mm	1.0 cm (category 1)
>1.0–2 mm	1–2 cm (category 1)
>2.0–4 mm	2.0 cm (category 1)
>4 mm	2.0 cm (category 1)

Table 3. Studies That Evaluated Surgical Margins of Wide Excision of Melanoma

Study	Year	N	Follow-up (years)	Thickness (mm)	Margin (cm)	LR	OS
WHO ^{222,223}	1991	612	8	≤2	1 vs. ≥3	NS	NS
Sweden ²²⁴	2000	989	11	>0.8–2.0	2 vs. 5	NS	NS
Intergroup ²²⁷	2001	468	10	1–4	2 vs. 4	NS	NS
France ²²⁵	2003	326	16	≤2	2 vs. 5	NS	NS
UK ^{230,237}	2016	900	8.8	>2	1 vs. 3	NS	NS ^a
Sweden ²²⁶	2011	936	6.7	>2	2 vs. 4	NS	NS

LR, local recurrence; OS, overall survival; NS, non-significant

^a Analysis after a median follow-up of 5.7 years showed no significant difference in overall survival or melanoma-specific survival, but analysis after a median follow-up of 8.8 years showed significantly better melanoma-specific survival for patients with 3-cm vs. 1-cm excision margins (unadjusted HR, 1.24; 95% CI, 1.01–1.53; $P = .041$) but no significant improvement in overall survival (unadjusted HR, 1.14; 95% CI, 0.96–1.36; $P = .14$).



1 cm margin

2 cm margin

Scenario 1

Punch biopsy showed 1.2mm deep melanoma w
ulceration



Question 3: What's your next step in management?

- A. Refer for surgery
- B. Ultrasound axilla and neck
- C. CT Chest/Abdomen/Pelvis
- D. MRI Brain
- E. PET Scan

CLINICAL STAGE

WORKUP^{d,e}

PRIMARY TREATMENT

Stage 0 in situ
Stage IA
(<0.8 mm thick,
no ulceration)ⁱ

- H&P
- Routine imaging/lab tests not recommended
- Imaging^j only to evaluate specific signs or symptoms^k

Wide excisionⁿ
(category 1 for stage IA)

[See Follow-Up \(ME-9\)](#)

Stage IB (T1b)
(<0.8 mm thick with ulceration or $0.8-1.0$ mm thick \pm ulceration)ⁱ

- H&P
- Routine imaging/lab tests not recommended
- Imaging^j only to evaluate specific signs or symptoms^k

Discuss and consider sentinel node biopsy^{l,m}

Wide excisionⁿ
(category 1)

Wide excisionⁿ
(category 1) with sentinel node biopsy^{o,p}

Sentinel node negative

Sentinel node positive

[See Stage III Workup and Primary Treatment \(ME-4\)](#)

Stage IB (T2a) or II
(>1 mm thick, any feature, N0)^q

- H&P
- Routine imaging/lab tests not recommended
- Imaging^j only to evaluate specific signs or symptoms^k

Discuss and offer sentinel node biopsy^{m,q,r}

Wide excisionⁿ
(category 1)

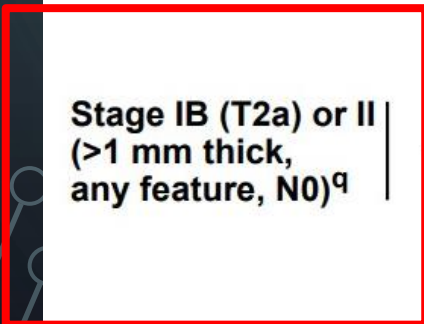
Wide excisionⁿ
(category 1) with sentinel node biopsy^{o,p}

Sentinel node negative

Sentinel node positive

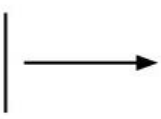
[See Follow-Up \(ME-9 and ME-10\)](#)

[See Stage III Workup and Primary Treatment \(ME-4\)](#)



**CLINICAL/
PATHOLOGIC STAGE**

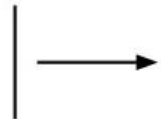
Stage IIIA
(sentinel node
positive)



WORKUP^s

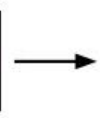
- Consider imaging^j for baseline staging
- Imaging^j to evaluate specific signs or symptoms

Stage IIIB/C/D
(sentinel node
positive)



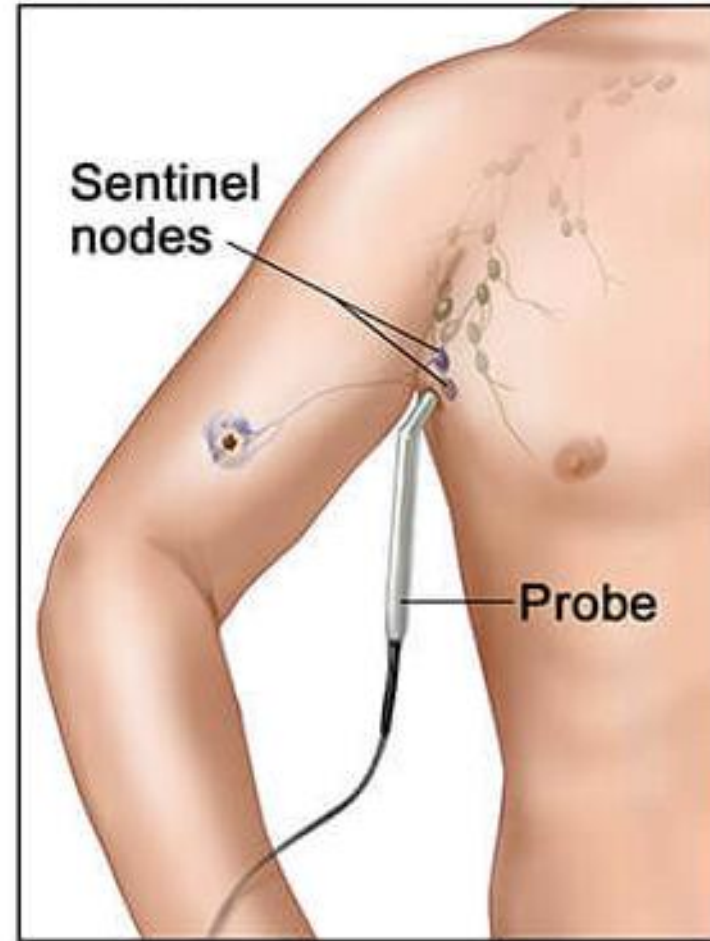
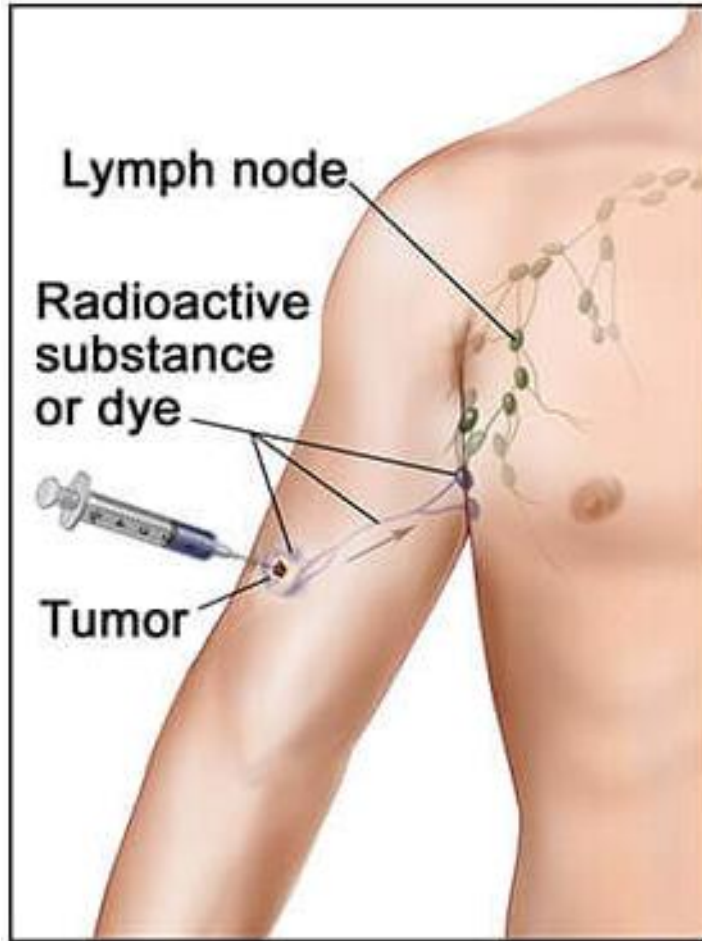
Imaging^j for baseline staging
and to evaluate specific signs
or symptoms

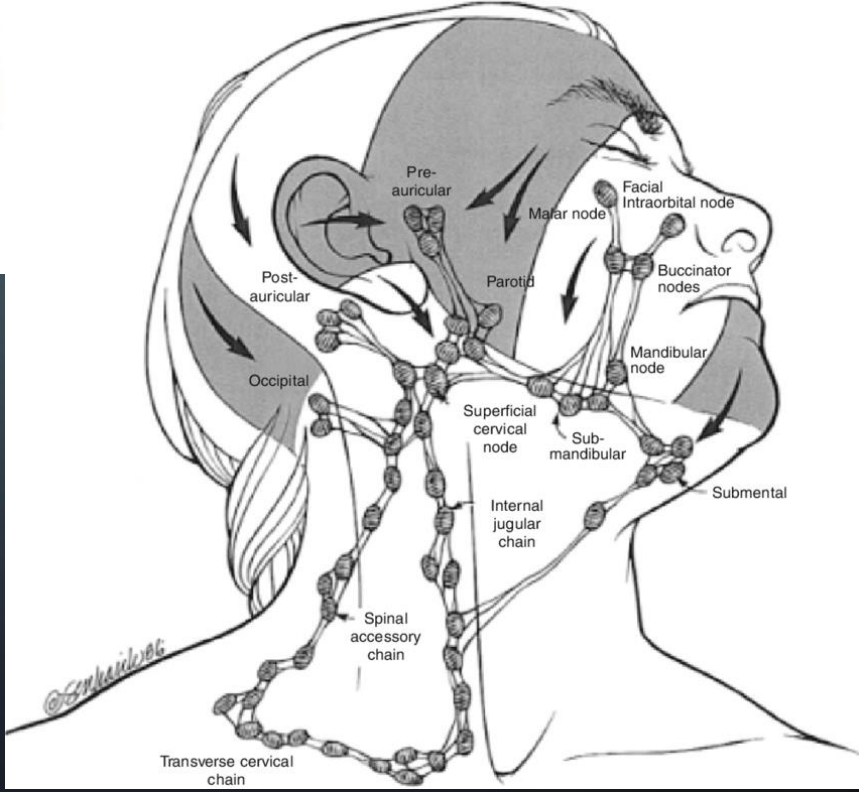
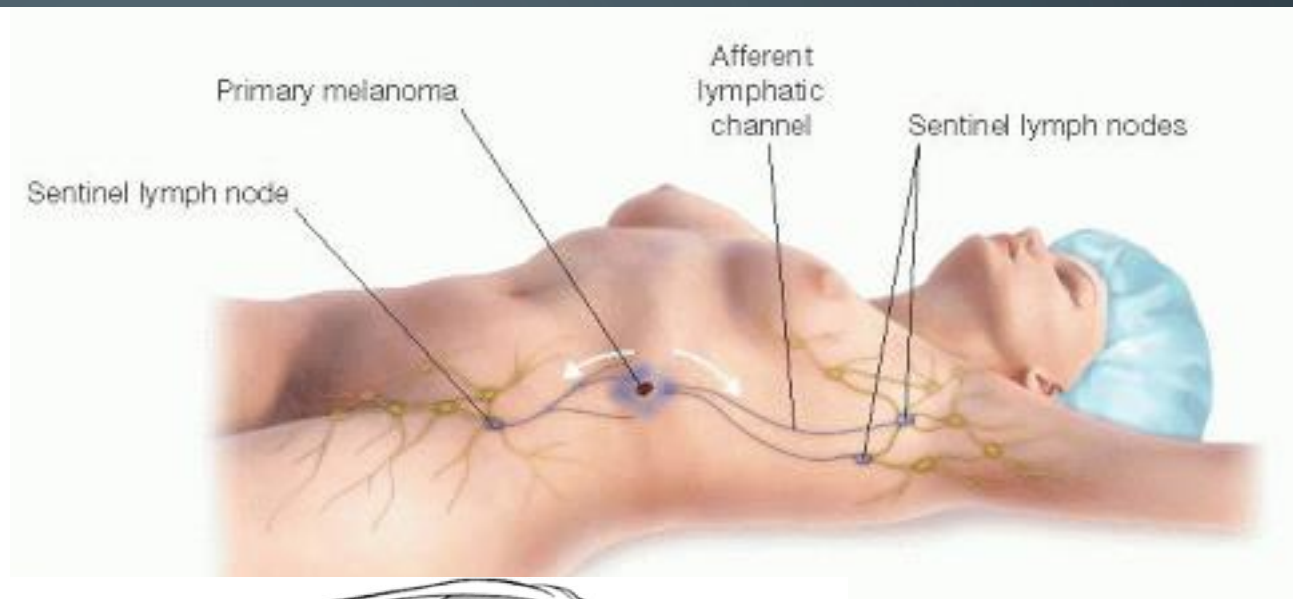
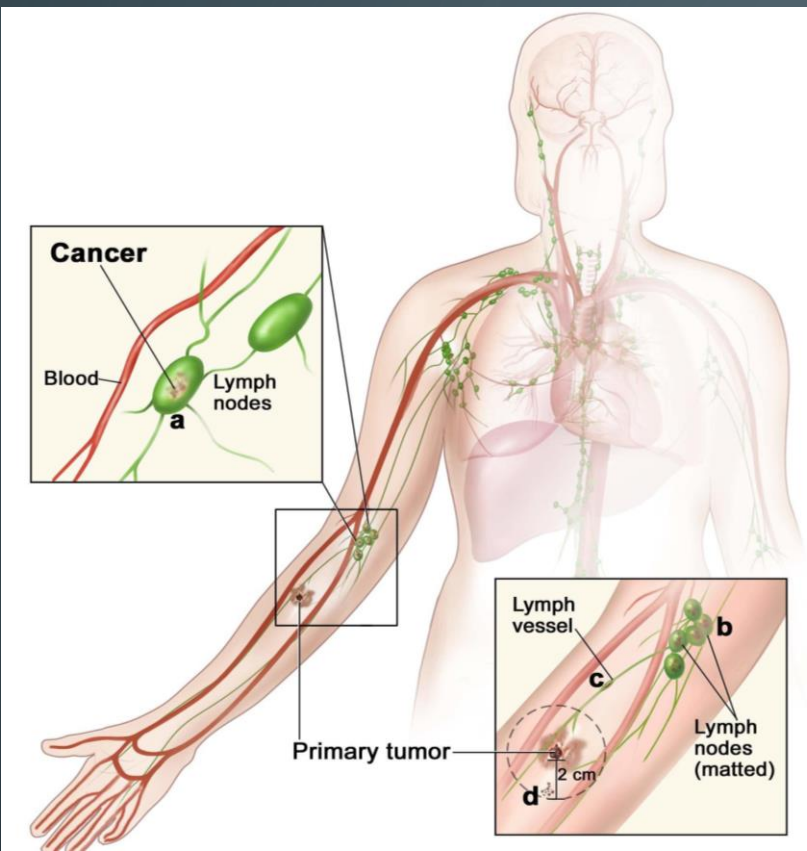
Stage III
(clinically positive
node[s])



[See ME-5](#)









Scenario 1

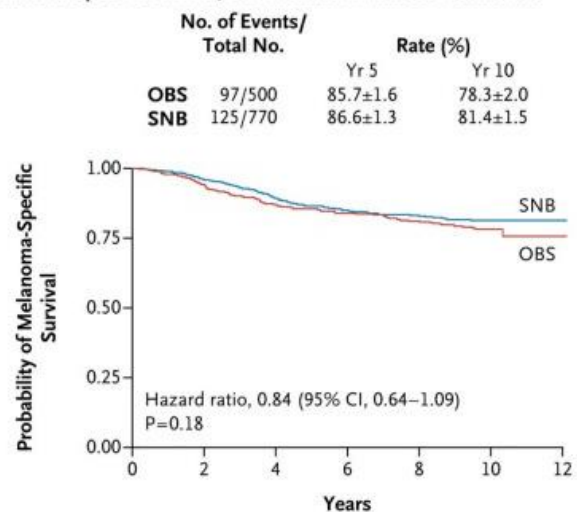
55F underwent wide local excision + SLNB
Sentinel node showed 1 positive lymph node



Question 4: What's the next step in management?

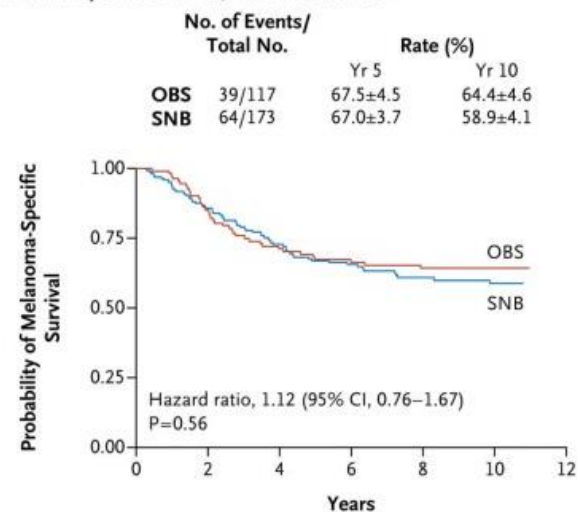
- A. Completion axillary dissection
- B. Imaging (CT, PET)
- C. Radiation
- D. Chemotherapy
- E. Immunotherapy

A Melanoma-Specific Survival, Intermediate-Thickness Melanomas



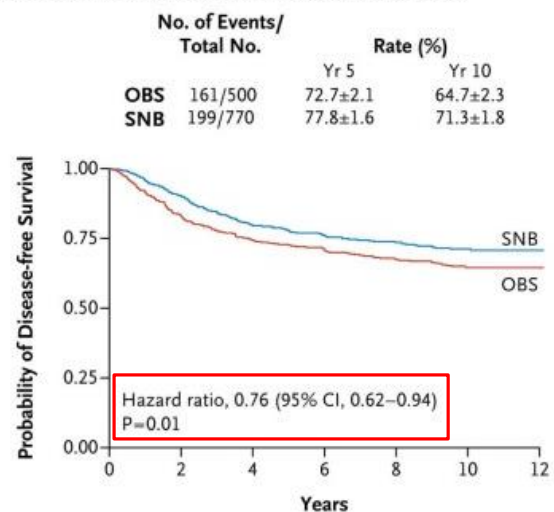
No. at Risk							
OBS	500	448	390	351	318	191	4
SNB	770	700	611	530	467	282	5

B Melanoma-Specific Survival, Thick Melanomas



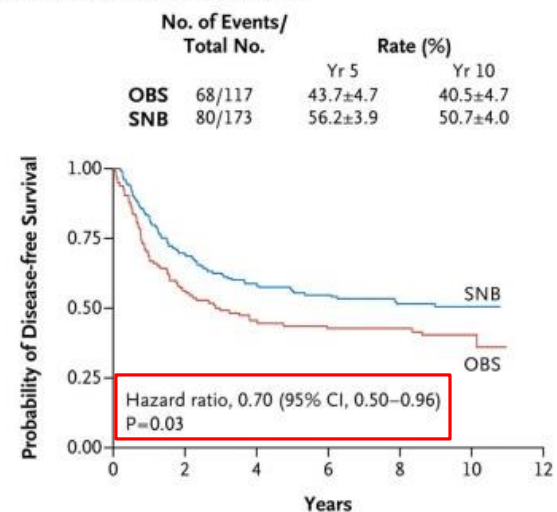
No. at Risk							
OBS	117	94	76	68	57	34	0
SNB	173	143	115	91	70	41	0

C Disease-free Survival, Intermediate-Thickness Melanomas

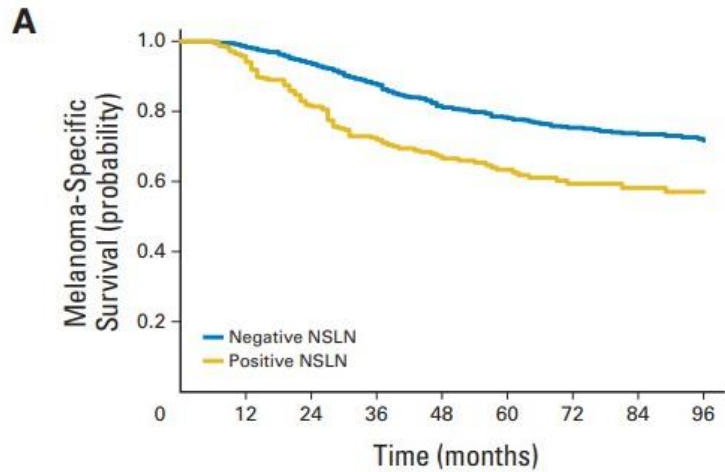


No. at Risk							
OBS	500	395	334	299	265	164	4
SNB	770	658	547	480	419	254	5

D Disease-free Survival, Thick Melanomas

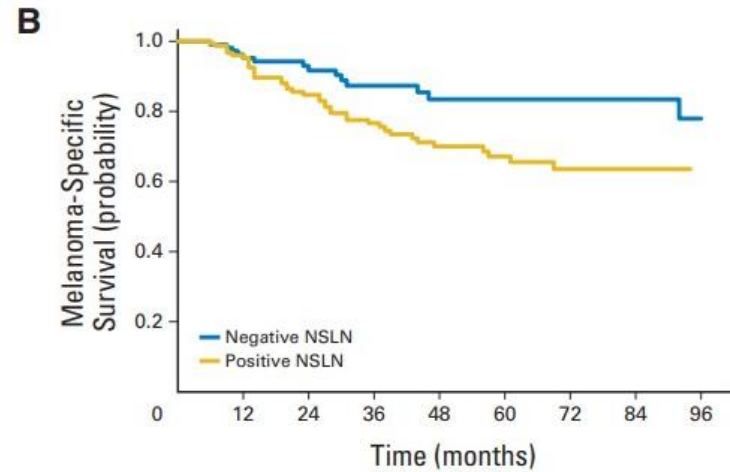


No. at Risk							
OBS	117	63	49	44	40	20	0
SNB	173	116	92	75	58	36	0



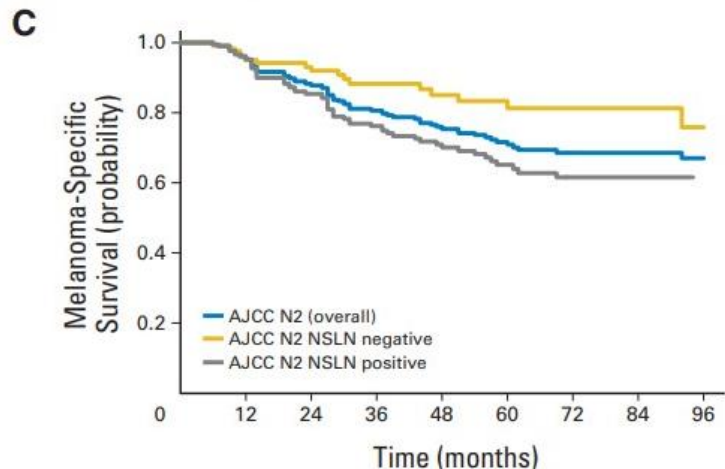
No. at risk

Negative NSLN	1,185	959	757	596	464	376	275	218	150
Positive NSLN	353	276	196	148	115	88	66	51	40



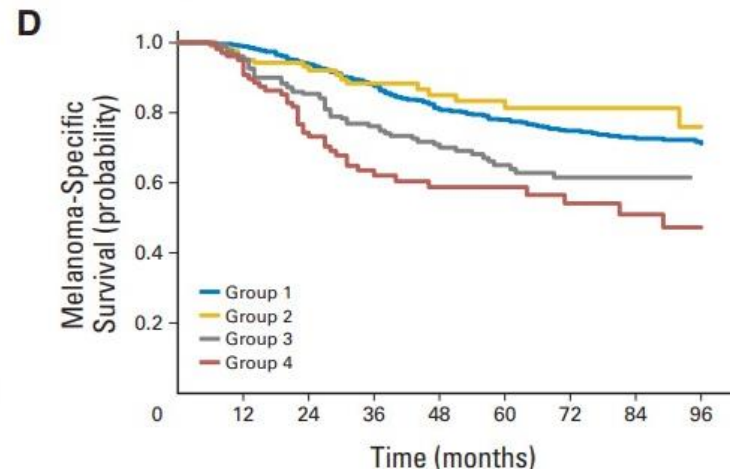
No. at risk

Negative NSLN	124	100	71	55	40	36	25	21	11
Positive NSLN	170	138	100	76	57	42	32	26	0



No. at risk

AJCC N2 (overall)	387	306	222	172	132	102	71	59	40
AJCC N2 NSLN negative	144	115	83	65	49	43	27	22	11
AJCC N2 NSLN positive	243	191	139	107	83	59	44	37	0

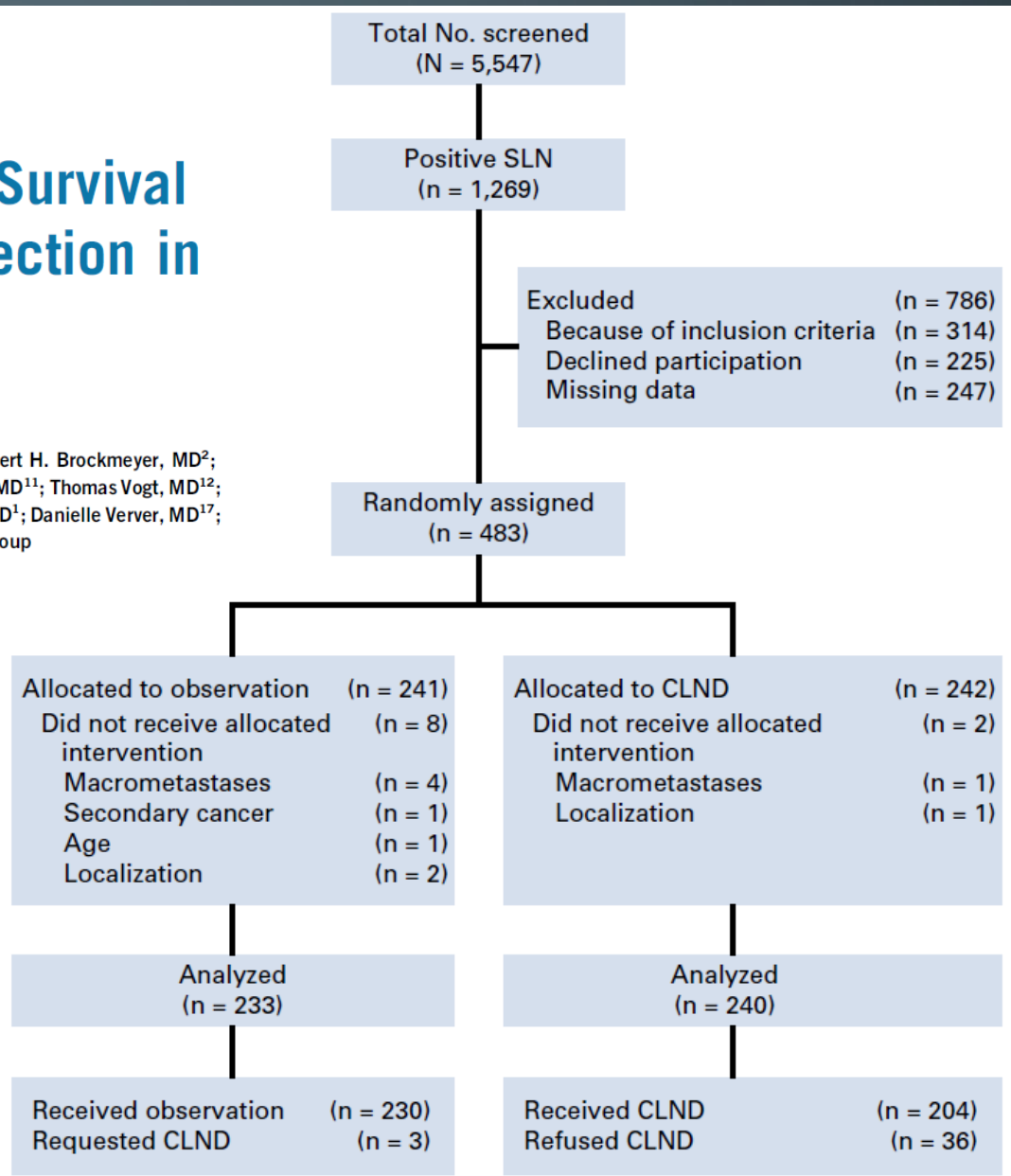


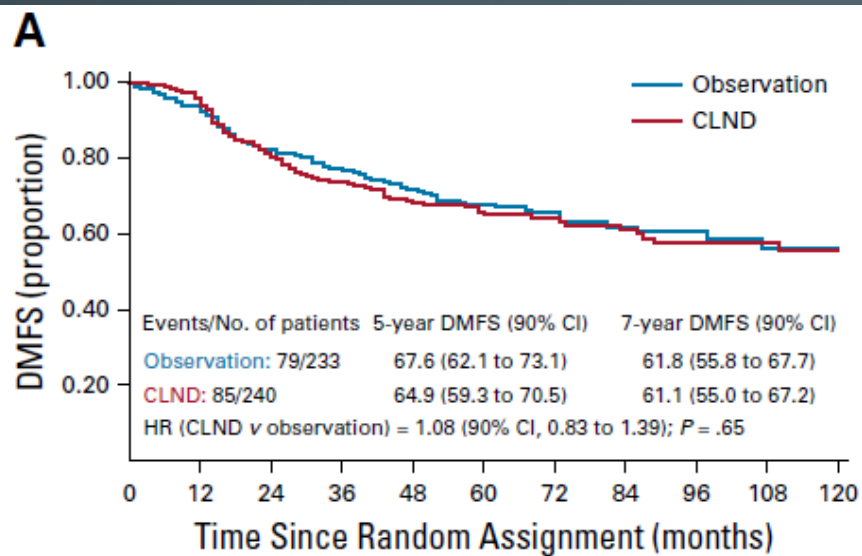
No. at risk

Group 1	1,035	840	671	529	414	332	247	195	138
Group 2	144	115	83	65	49	43	27	22	11
Group 3	243	191	139	107	83	59	44	37	0
Group 4	116	89	60	43	33	30	23	15	12

Final Analysis of DeCOG-SLT Trial: No Survival Benefit for Complete Lymph Node Dissection in Patients With Melanoma With Positive Sentinel Node

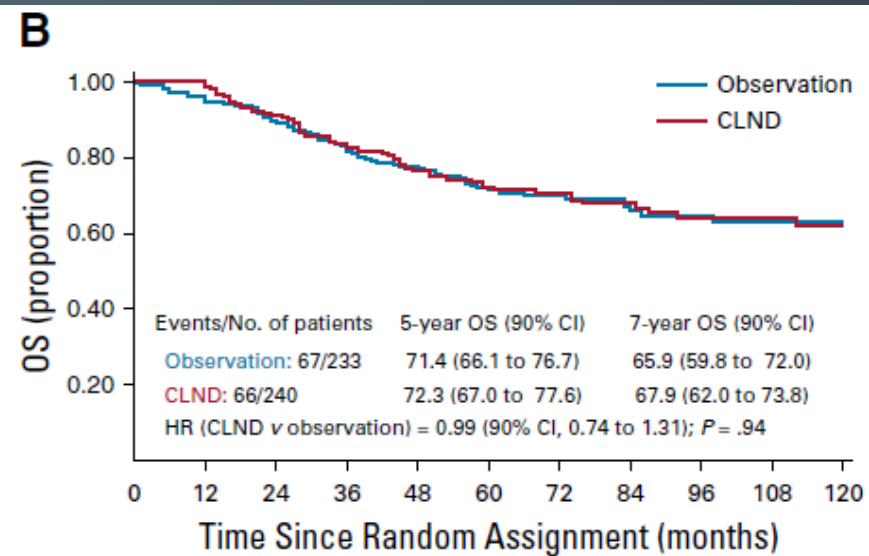
Ulrike Leiter, MD¹; Rudolf Stadler, MD, PhD²; Cornelia Mauch, MD, PhD³; Werner Hohenberger, MD⁴; Norbert H. Brockmeyer, MD²; Carola Berking, MD⁵; Cord Sunderkötter, MD^{6,7}; Martin Kaatz, MD^{8,9}; Kerstin Schatton, MD¹⁰; Percy Lehmann, MD¹¹; Thomas Vogt, MD¹²; Jens Ulrich, MD¹³; Rudolf Herbst, MD¹⁴; Wolfgang Gehring, MD¹⁵; Jan-Christoph Simon, MD¹⁶; Ulrike Keim, PhD¹; Danielle Verver, MD¹⁷; Peter Martus, PhD¹; and Claus Garbe, MD¹; on behalf of the German Dermatologic Cooperative Oncology Group





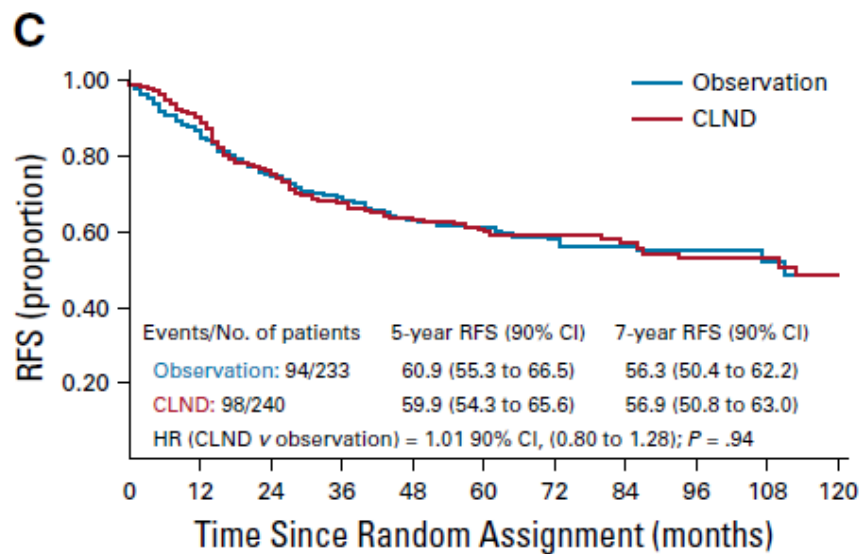
No. at risk:

Observation	233	211	181	157	135	107	80	55	37	17	7
CLND	240	214	180	153	124	94	73	52	37	30	19



No. at risk:

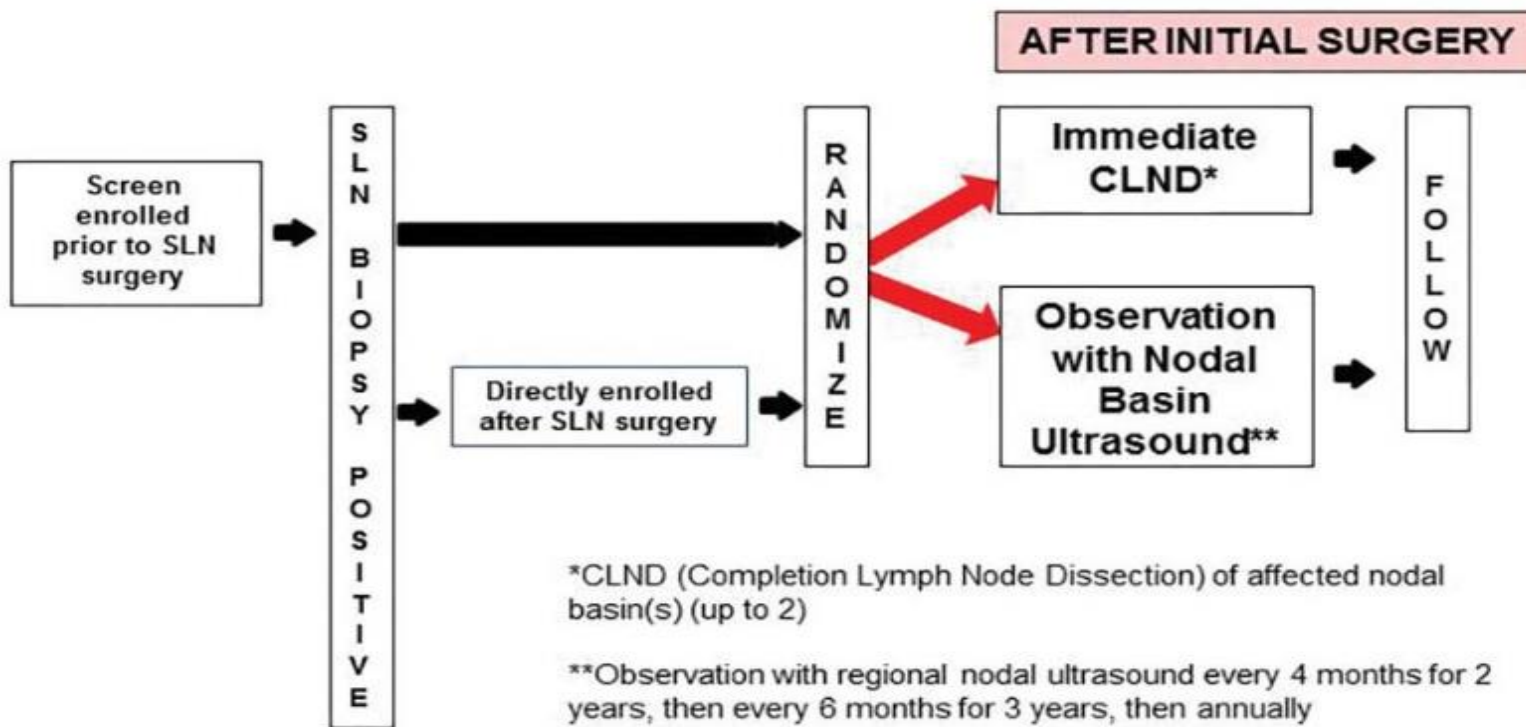
Observation	233	217	197	170	146	114	87	59	39	19	8
CLND	240	223	200	173	136	102	78	57	41	32	21

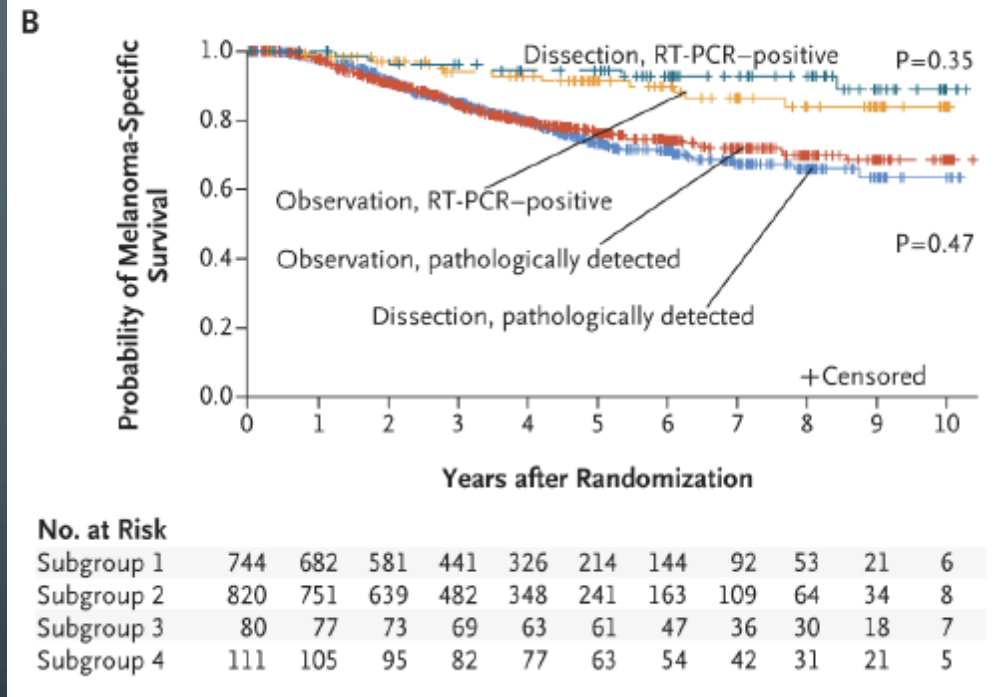
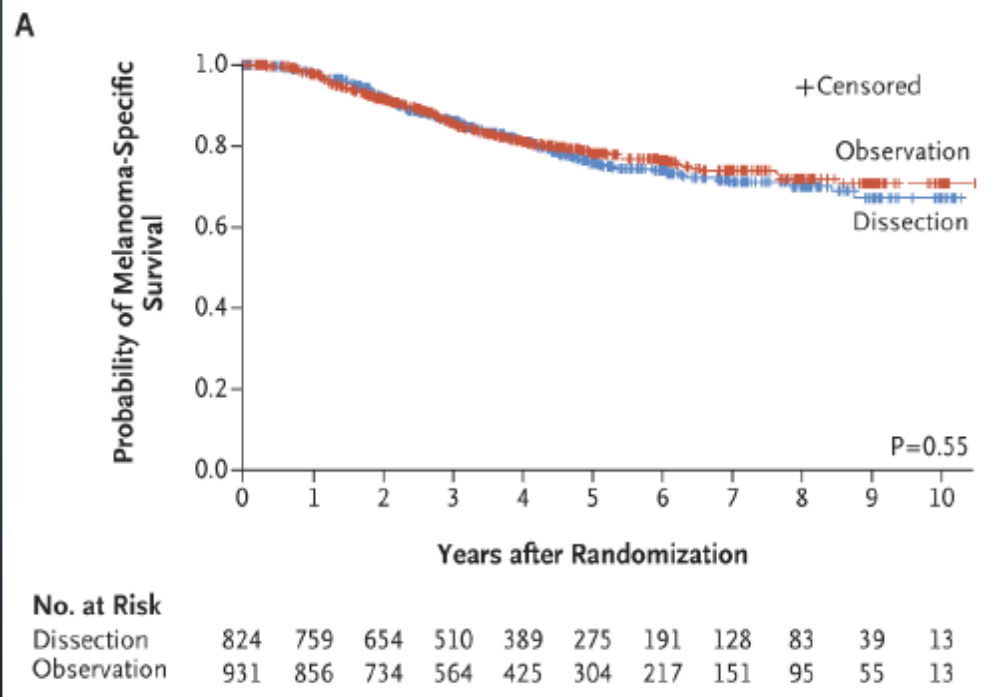


No. at risk:

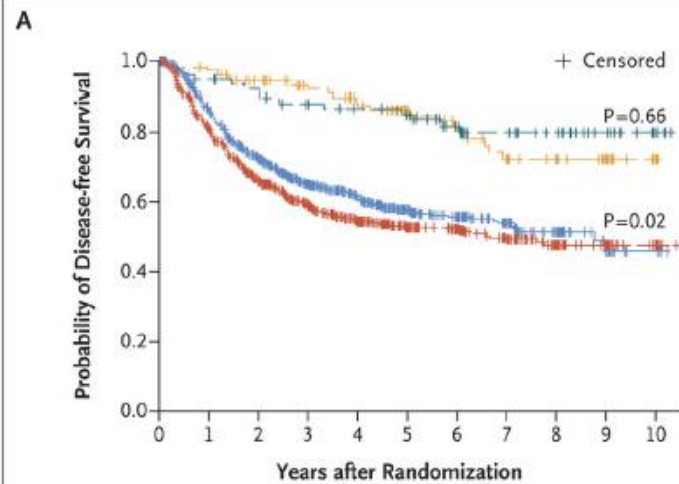
Observation	233	197	166	141	118	96	70	50	32	16	7
CLND	240	201	169	141	115	85	65	46	34	27	17

MSLT-II



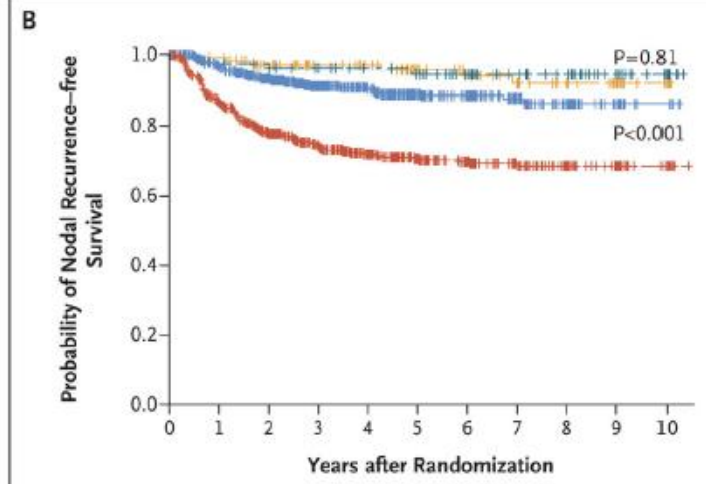


— Dissection, RT-PCR–positive — Observation, RT-PCR–positive — Dissection, pathologically detected — Observation, pathologically detected



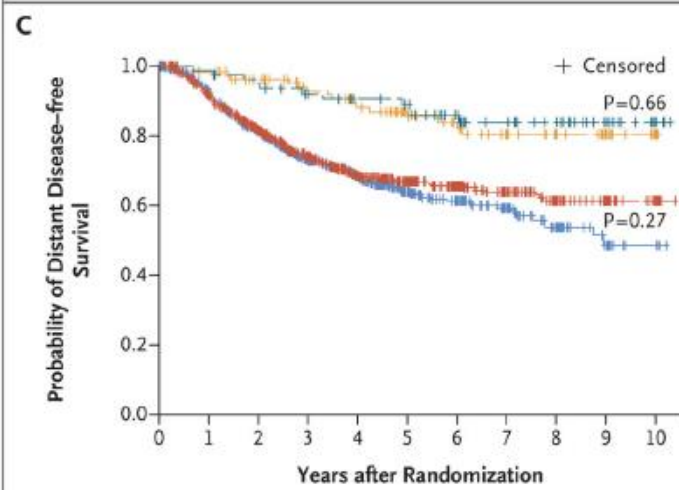
No. at Risk

Subgroup 1	744	606	465	343	260	174	114	77	41	15	5
Subgroup 2	820	629	477	346	249	171	124	87	50	28	6
Subgroup 3	80	73	69	63	59	56	42	32	26	17	6
Subgroup 4	111	103	93	81	73	59	49	36	27	18	4



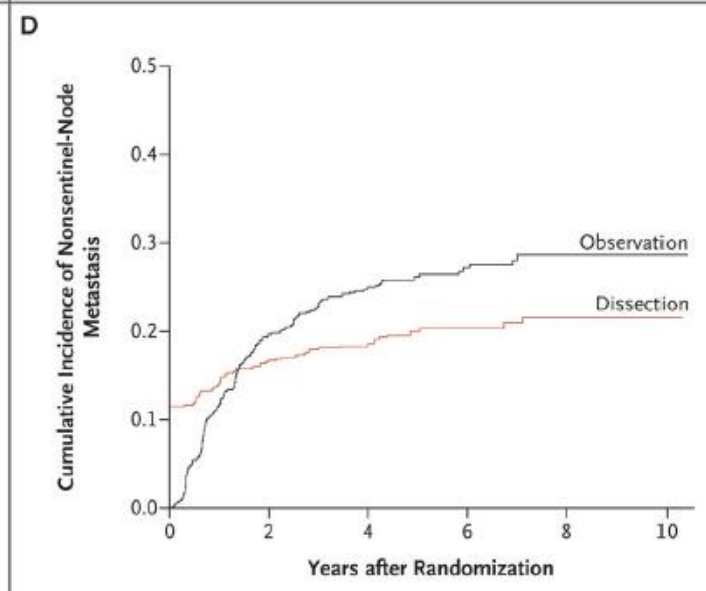
No. at Risk

Subgroup 1	744	662	552	412	308	201	138	89	50	21	6
Subgroup 2	820	659	525	386	282	194	137	96	56	31	7
Subgroup 3	80	75	72	67	62	59	47	36	30	18	7
Subgroup 4	111	105	94	82	77	62	53	41	30	20	4



No. at Risk

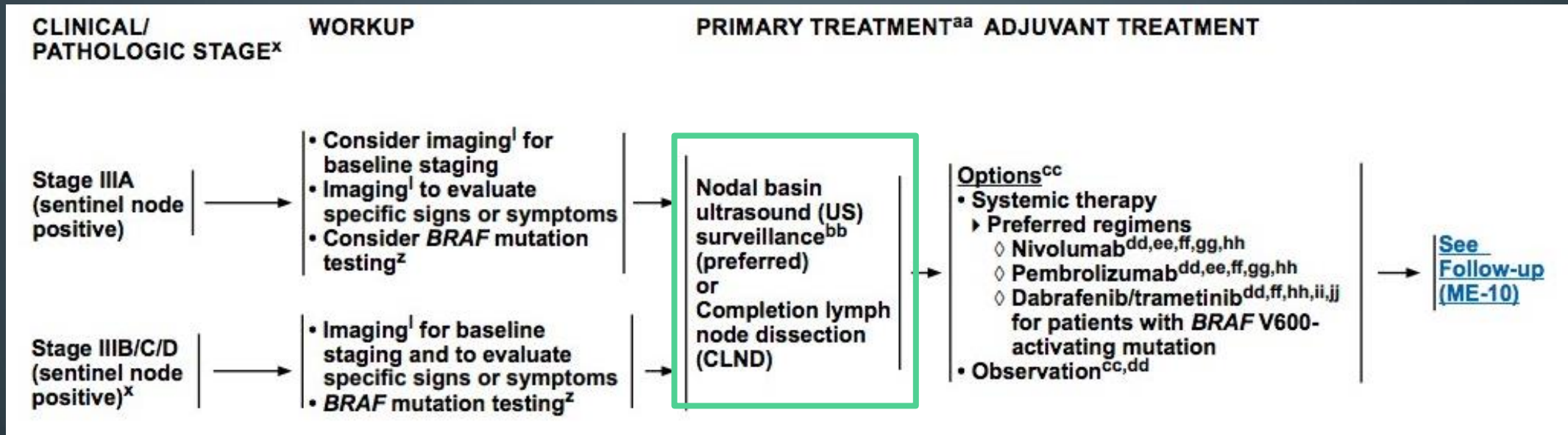
Subgroup 1	744	649	520	384	286	192	128	86	45	17	5
Subgroup 2	820	708	580	431	312	217	154	106	62	34	8
Subgroup 3	80	76	72	66	61	58	44	33	27	17	6
Subgroup 4	111	104	94	81	73	59	50	38	28	19	5



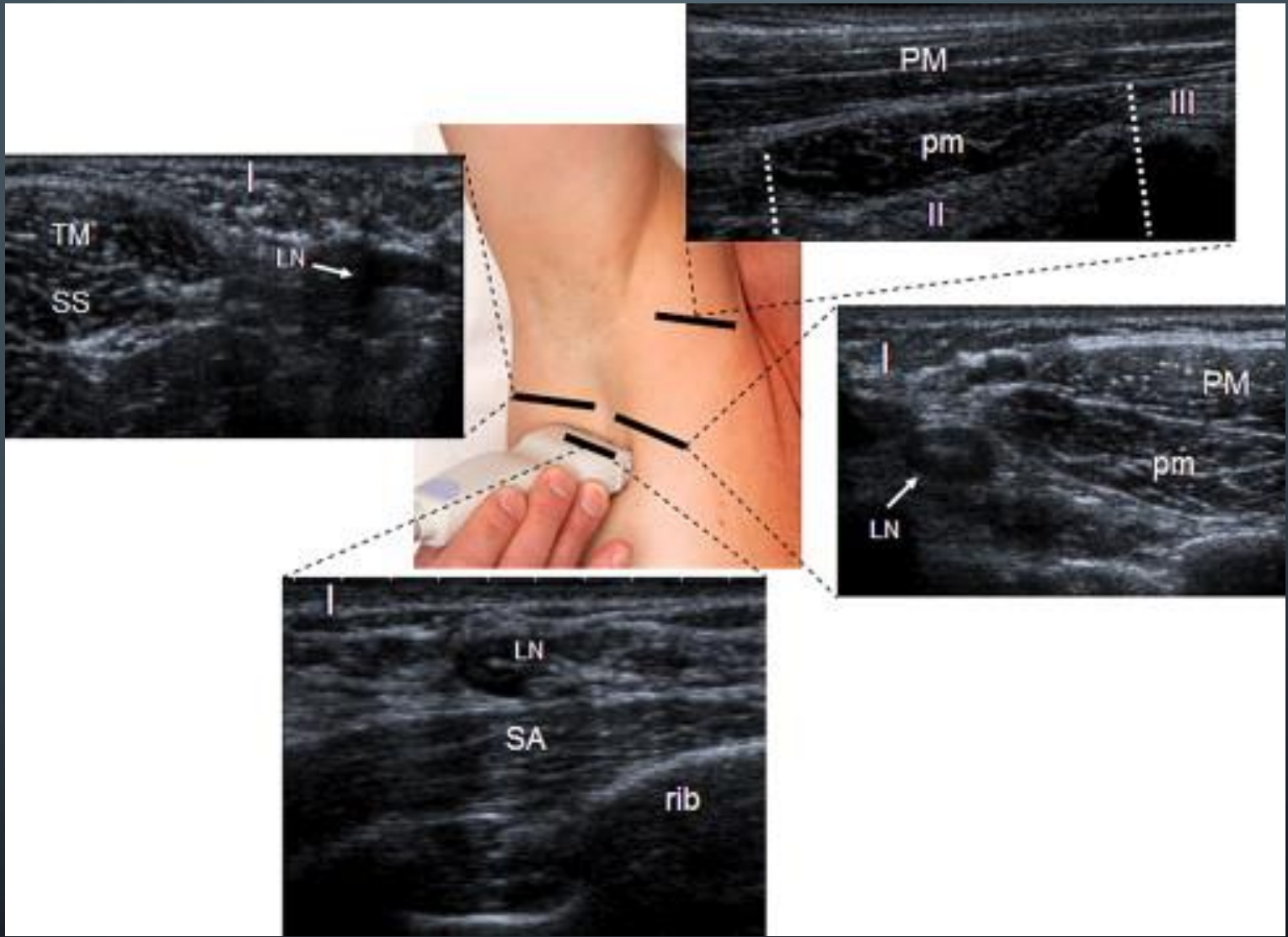
Who needs a completion axillary dissection?

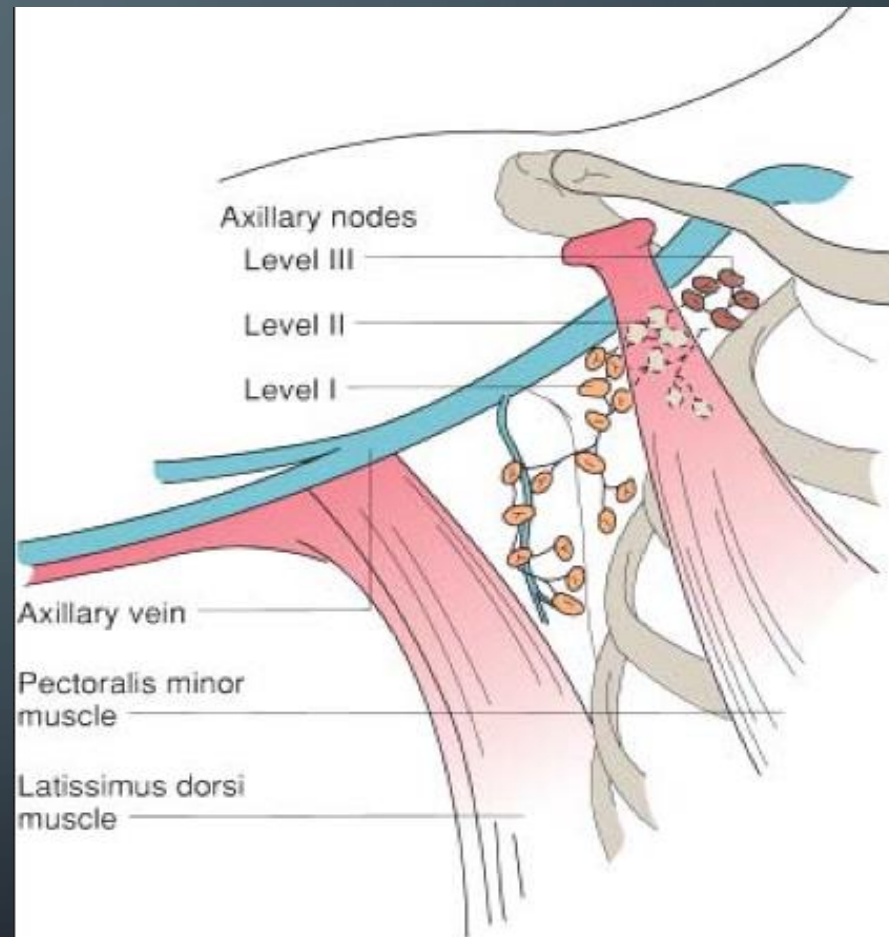
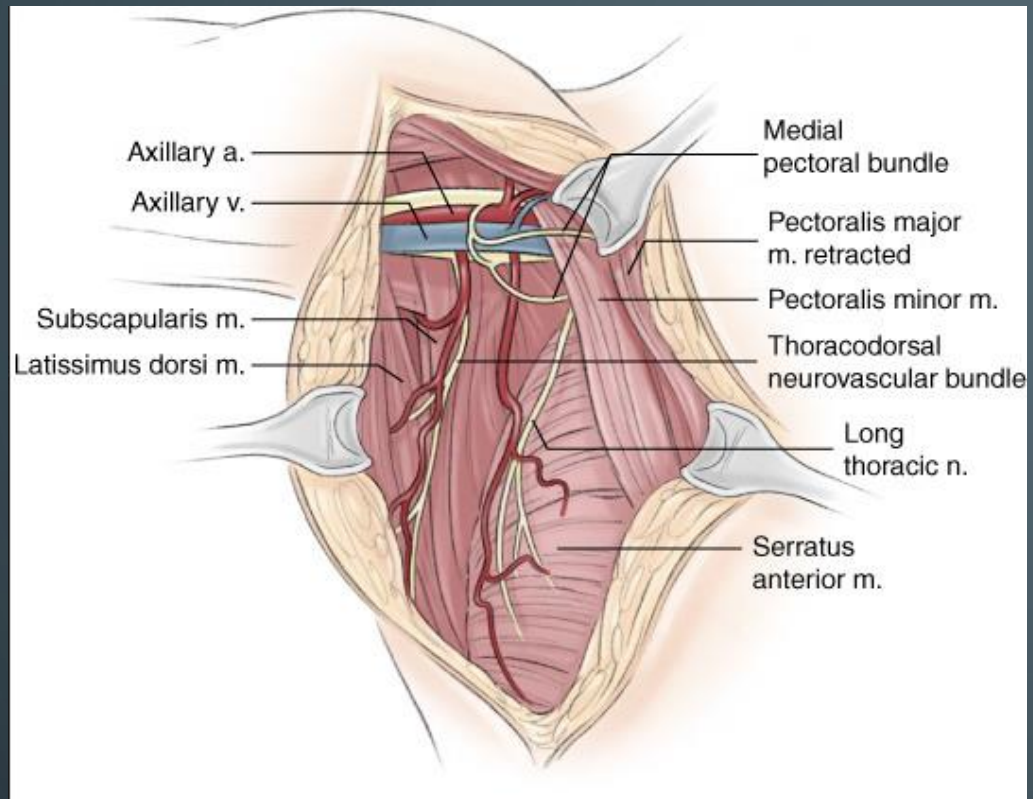
**American Society of Clinical Oncology (ASCO) –
SSO Consensus Guidelines**

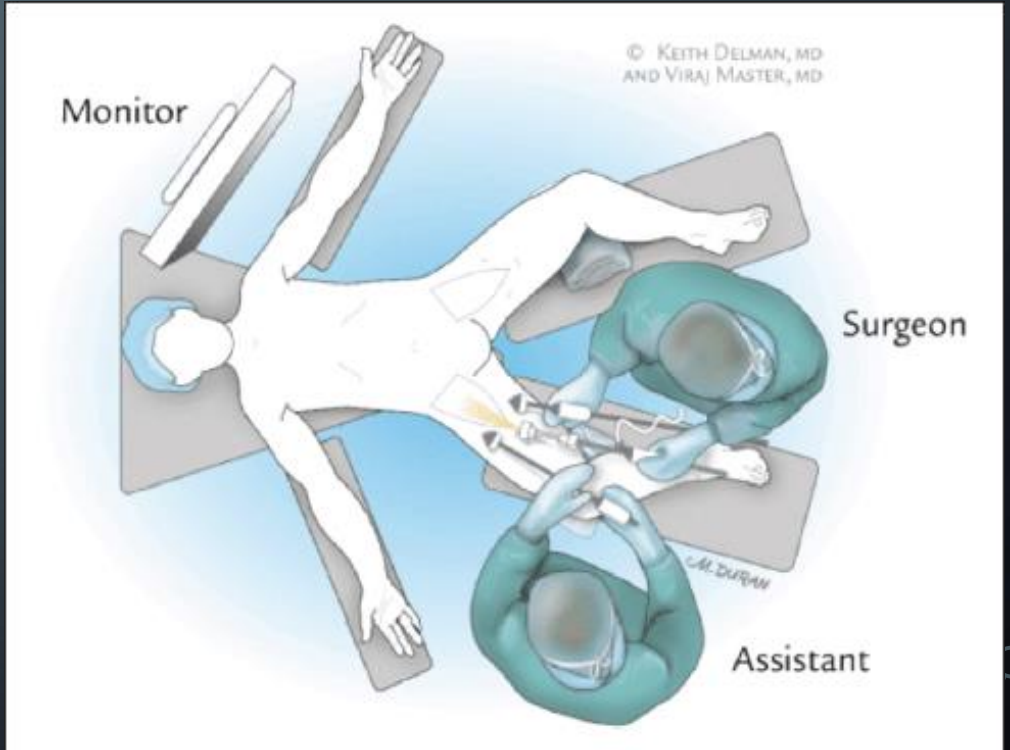
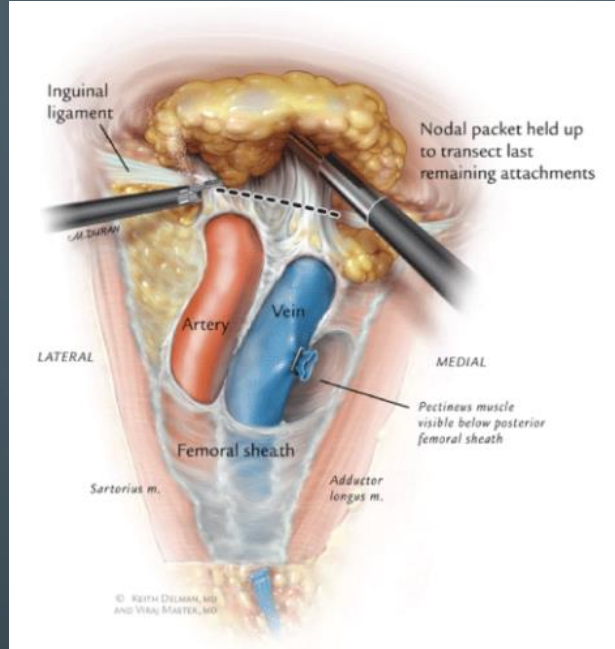
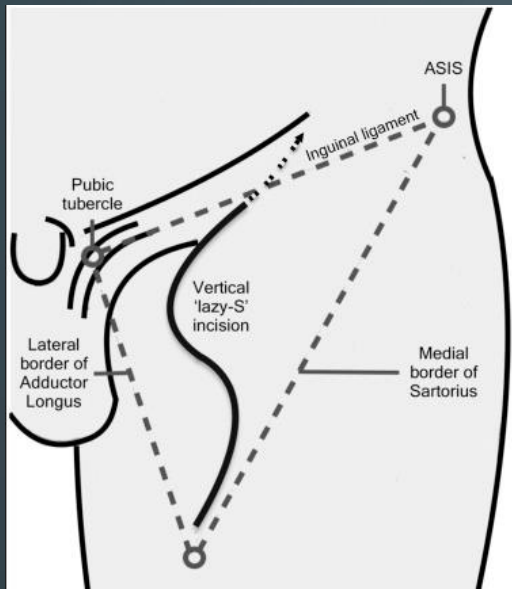
- All patients with clinically positive lymph nodes
- CLND or observation = options for patients with low risk micrometastatic disease
- Higher risk features of SLN- Extracapsular extension, microsatellitosis of primary tumor, ≥ 3 involved nodes, ≥ 2 nodal basins and immunosuppression \rightarrow CLND

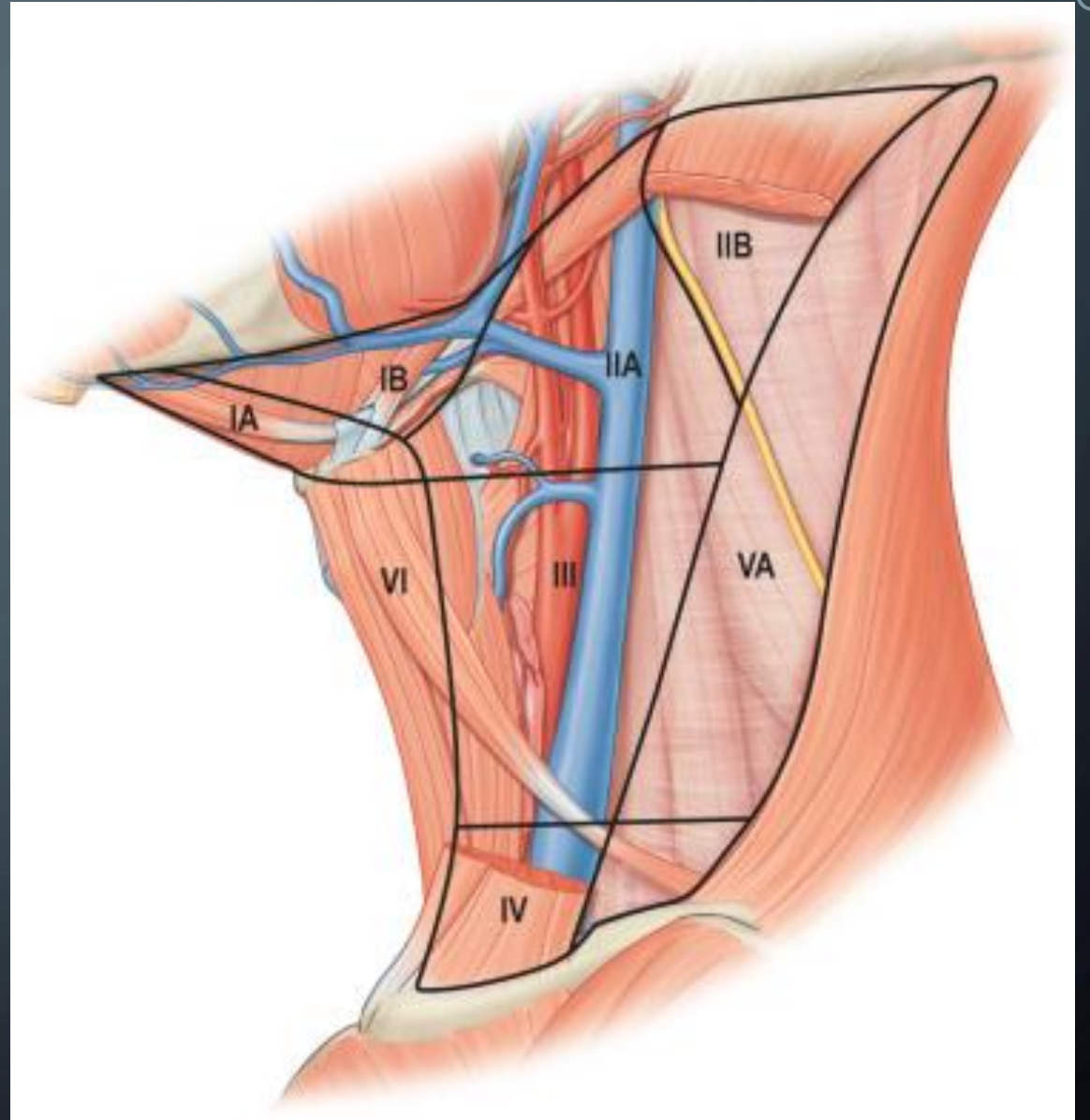


- Ultrasound at least q4 months x 2 years, then q6 months x 3









Scenario 2

55F post-op day 7 axillary dissection

Question 5: What's your next step in management?



A. Observe

B. Aspirate

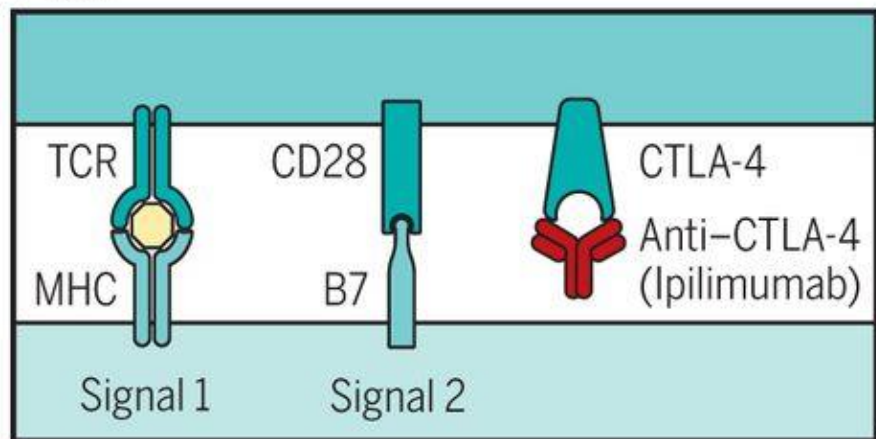
C. Incision & Drainage

D. Antibiotics

E. Ultrasound

Lymph node

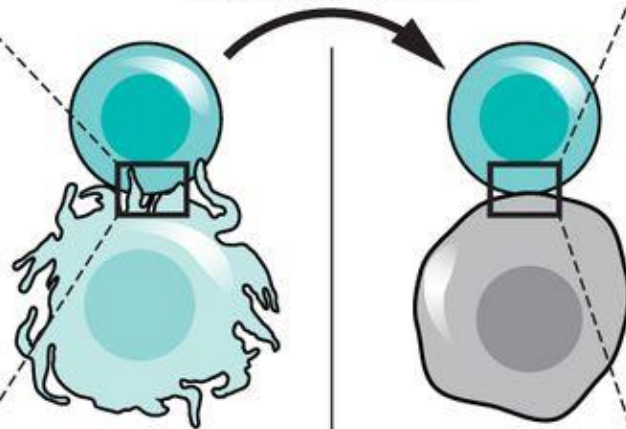
T cell



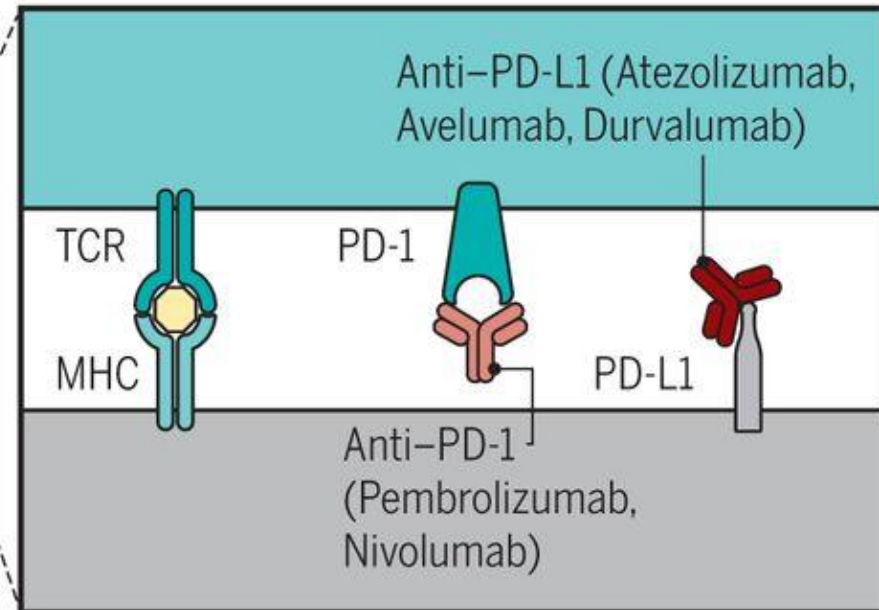
Dendritic cell

Tumor

Via bloodstream



T cell



Cancer cell

DRUG TYPE	EXAMPLES
CTLA-4 inhibitors	Ipilimumab
PD-1 inhibitors (targeting the “lock”)	Nivolumab
	Pembrolizumab
PD-L1 inhibitors (targeting the “key”)	Atezolizumab
	Avelumab
	Durvalumab
Combination therapy	Ipilimumab + nivolumab

ENDOCRINE ORGANS

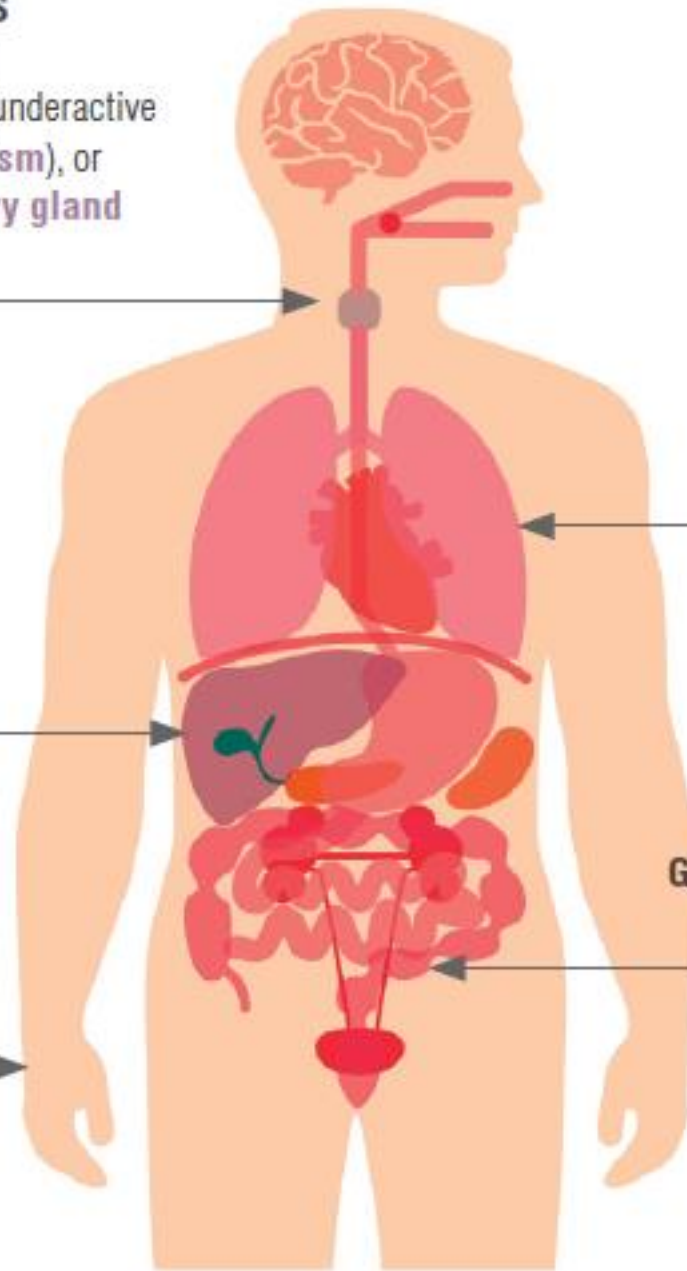
e.g., overactive **thyroid** (**hyperthyroidism**) or underactive **thyroid** (**hypothyroidism**), or inflammation of **pituitary gland** (**hypophysitis**)

LIVER

e.g., liver inflammation (**hepatitis**)

SKIN

e.g., rash, itching (**pruritus**), loss of pigment (**vitiligo**)

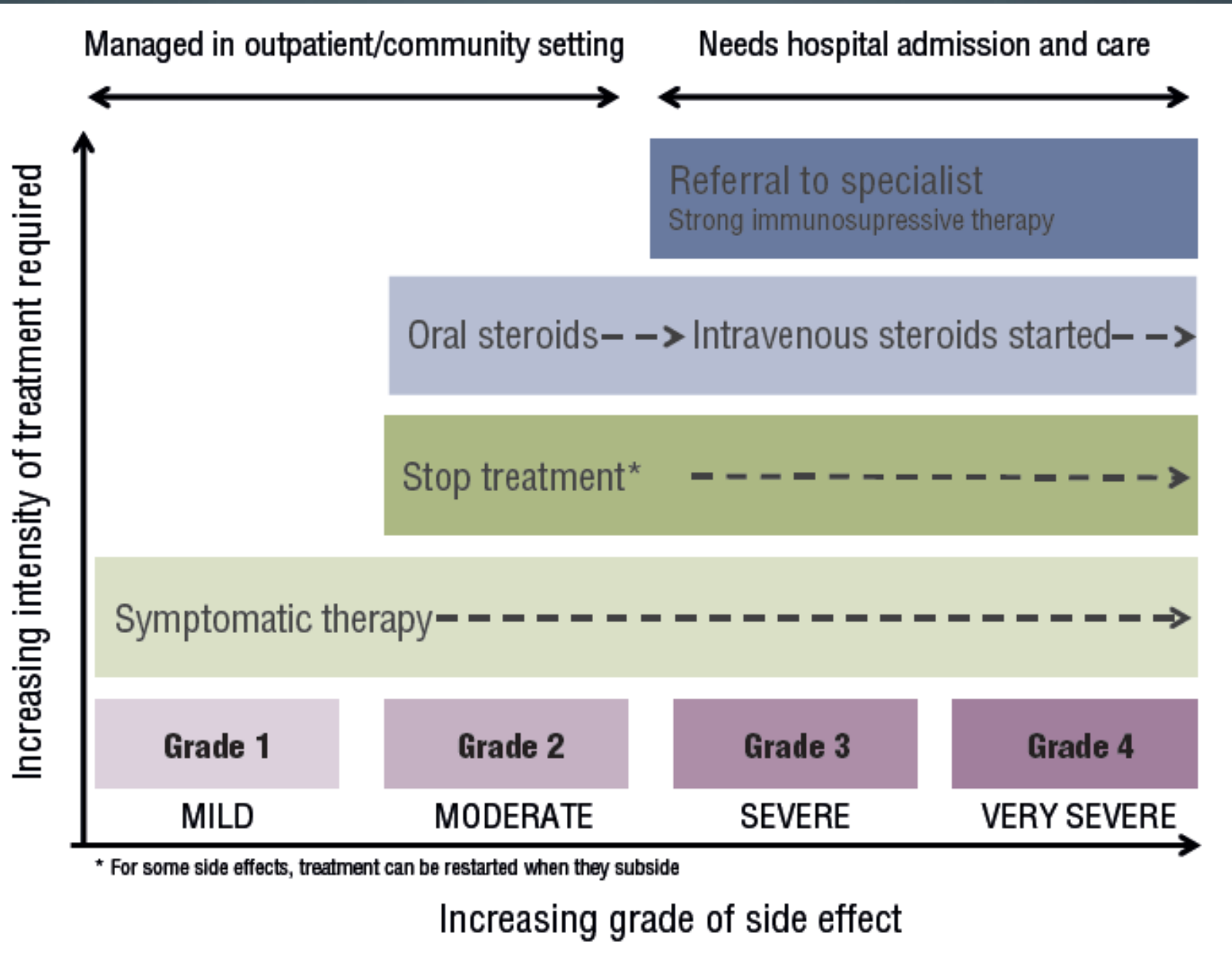


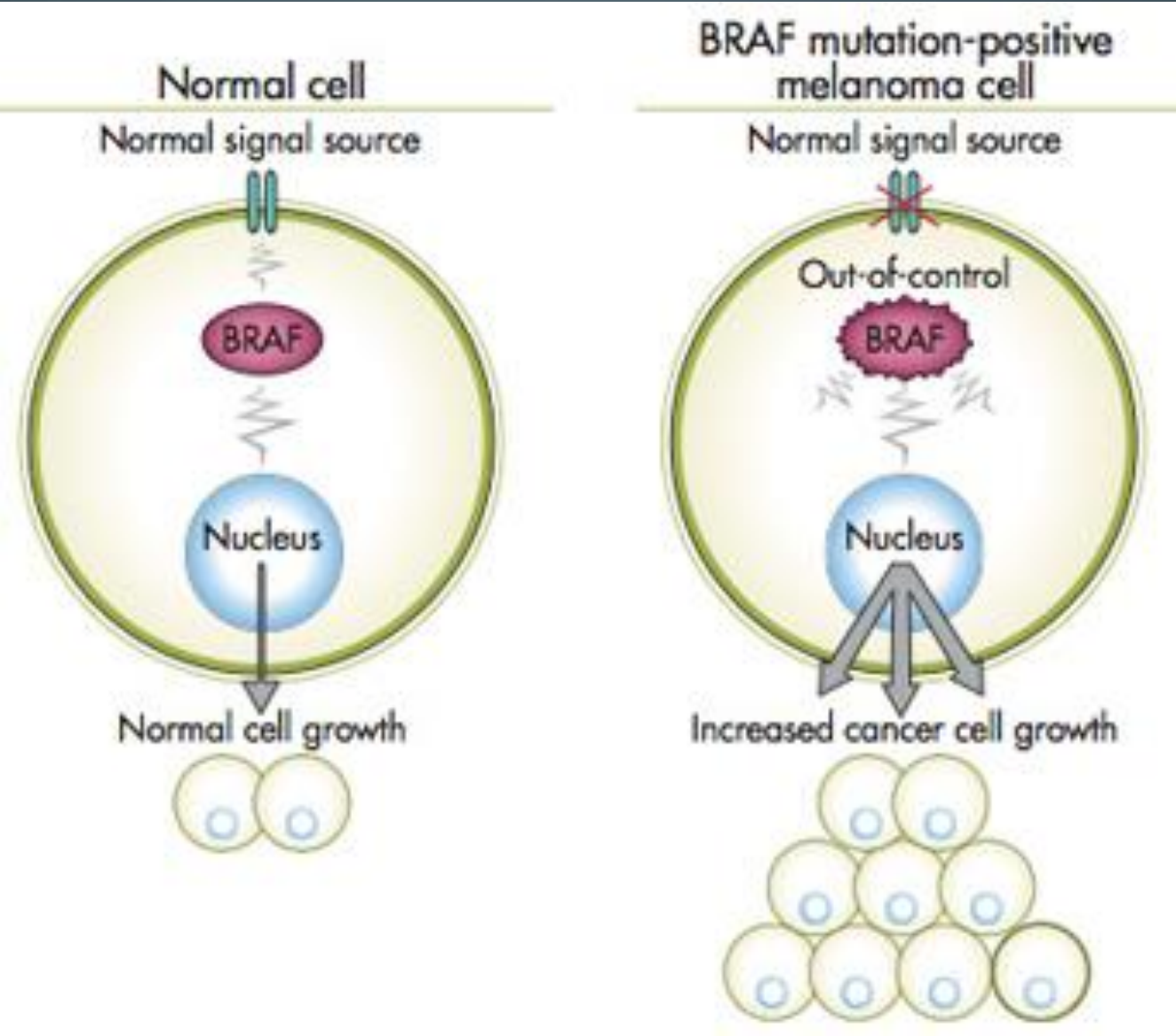
LUNGS

e.g., lung inflammation (**pneumonitis**)

GASTROINTESTINAL TRACT

e.g., **diarrhoea**, **colitis**







Scenario 3

55F with a history of left foot melanoma now presenting w 2 lesions on the shin

Question 6: What's your next step in management?

- A. Biopsy one of the lesions
- B. Examine popliteal fossa + groin
- C. PET scan
- D. Refer to surgeon
- E. Refer to BC Cancer
- F. All of the above

- **In-Transit Melanoma** - Metastases within regional dermal and subdermal lymphatics 2cm or more from primary melanoma
- 75% develop nodal or distant metastases



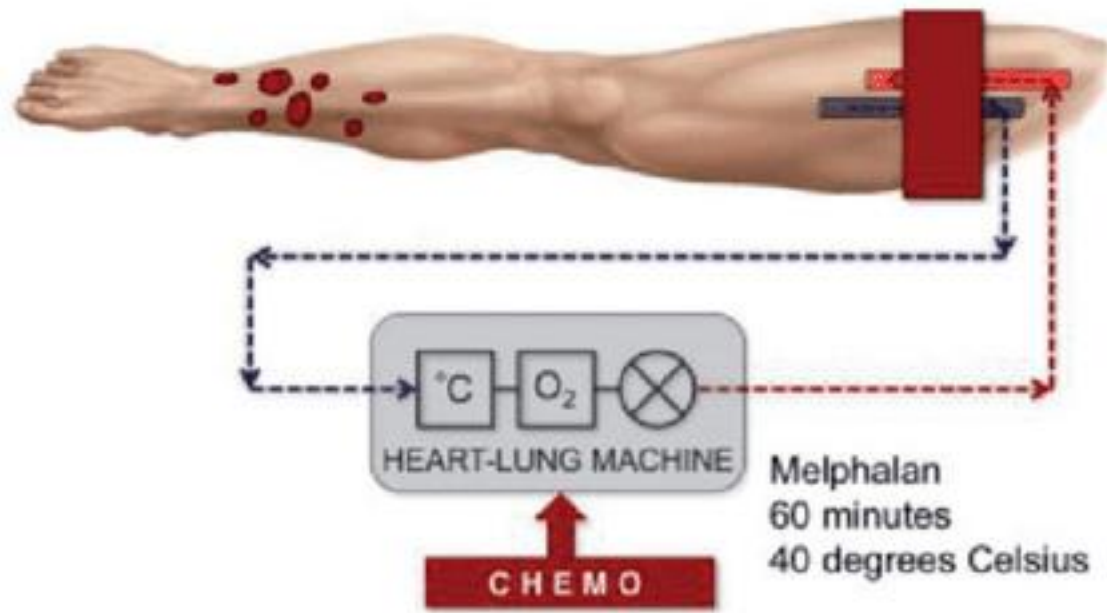
Intralesional injection options:

- **T-VEC**
- **BCG**
- **IL-2**

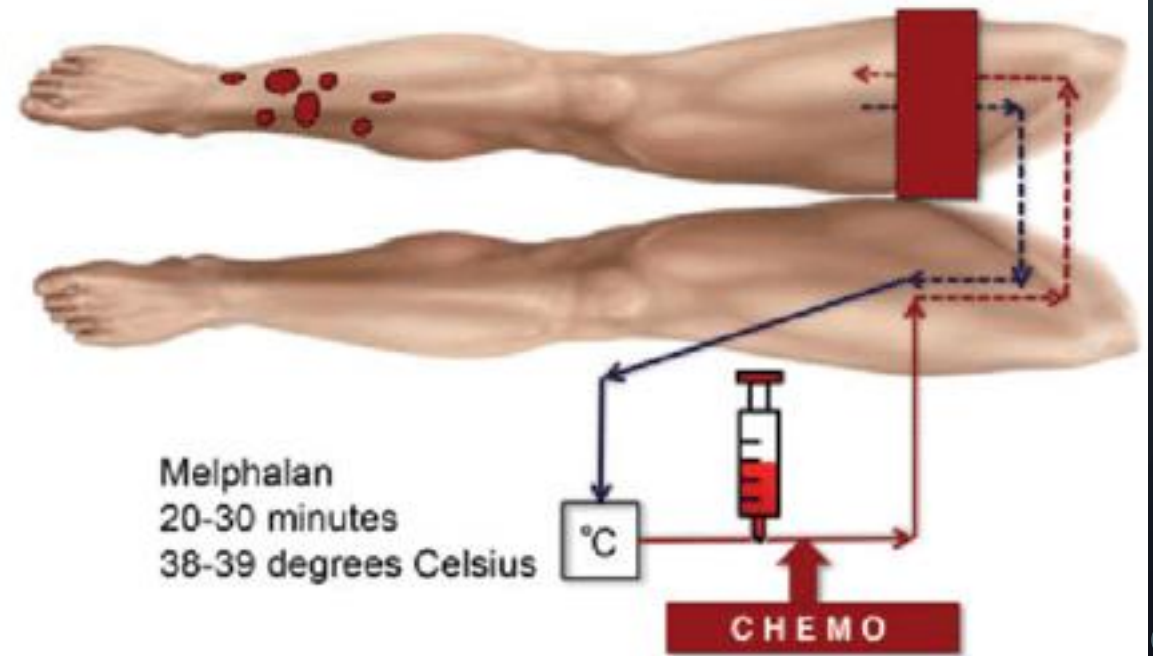


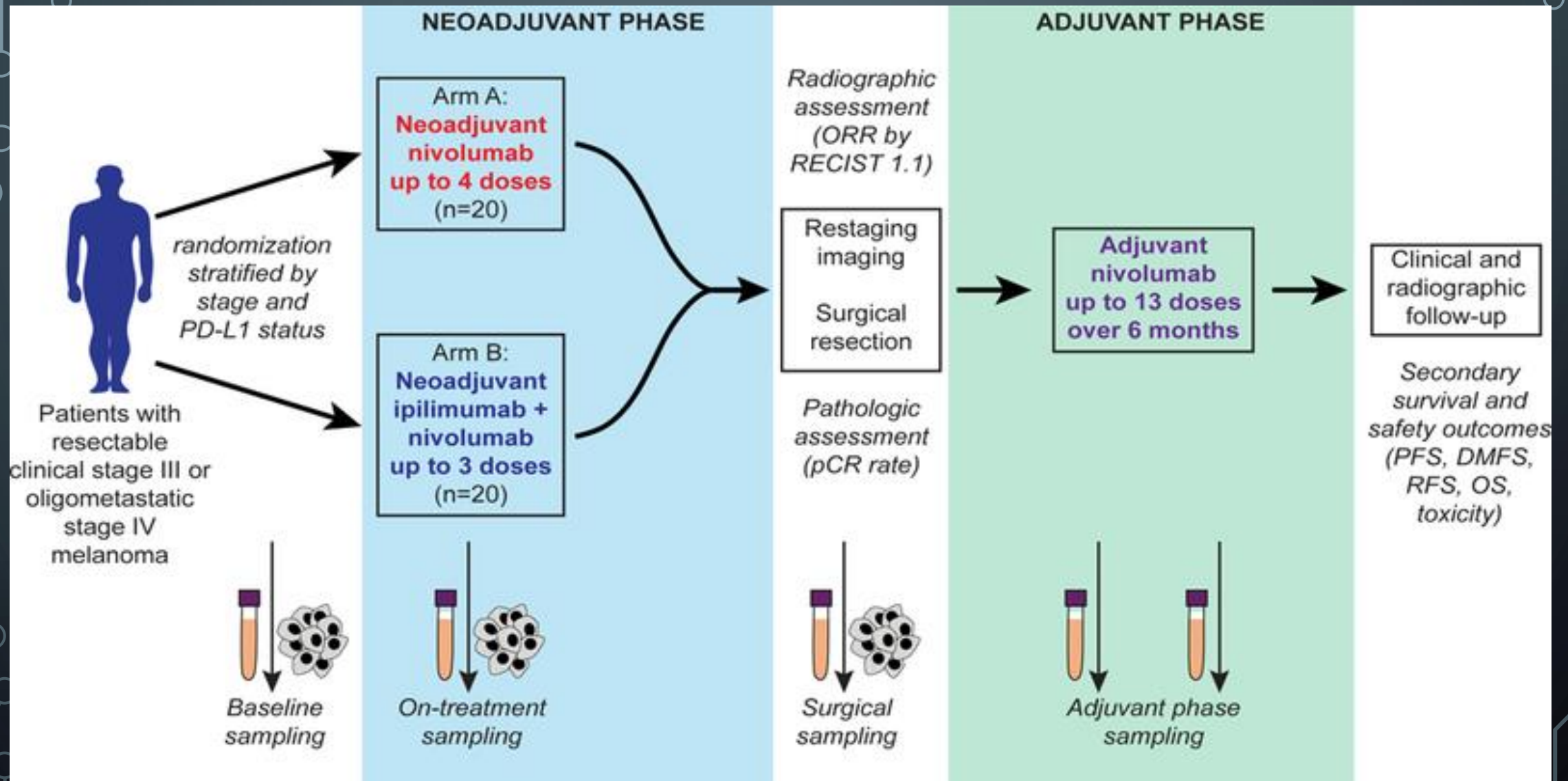


Isolated limb perfusion



Isolated limb infusion





Questions?

