



The International Federation of Head and Neck Oncologic Societies

Current Concepts in Head and Neck Surgery and Oncology 2018



www.ifhnos.net

Thyroid Cancer

Surgery for the primary

Jatin Shah, MD

Thyroid Cancer

Incidence & Mortality

1974 to 2018

USA

Thousands

60

34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0

1974 1978 1982 1986 1990 1994 1998 2002 2006 2010 2018

Overall

53990

Women

40900

Men

13090

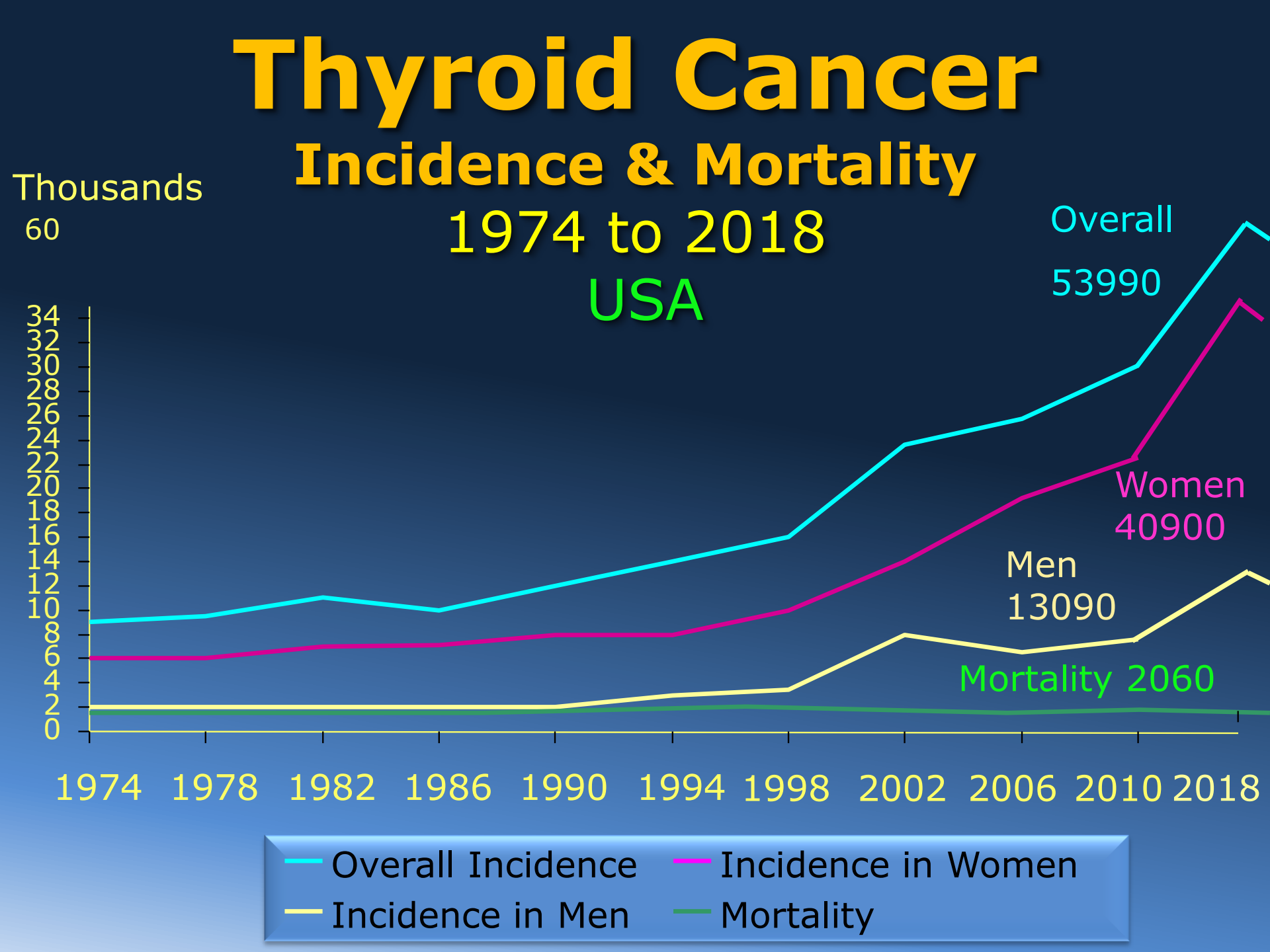
Mortality 2060

Overall Incidence

Incidence in Women

Incidence in Men

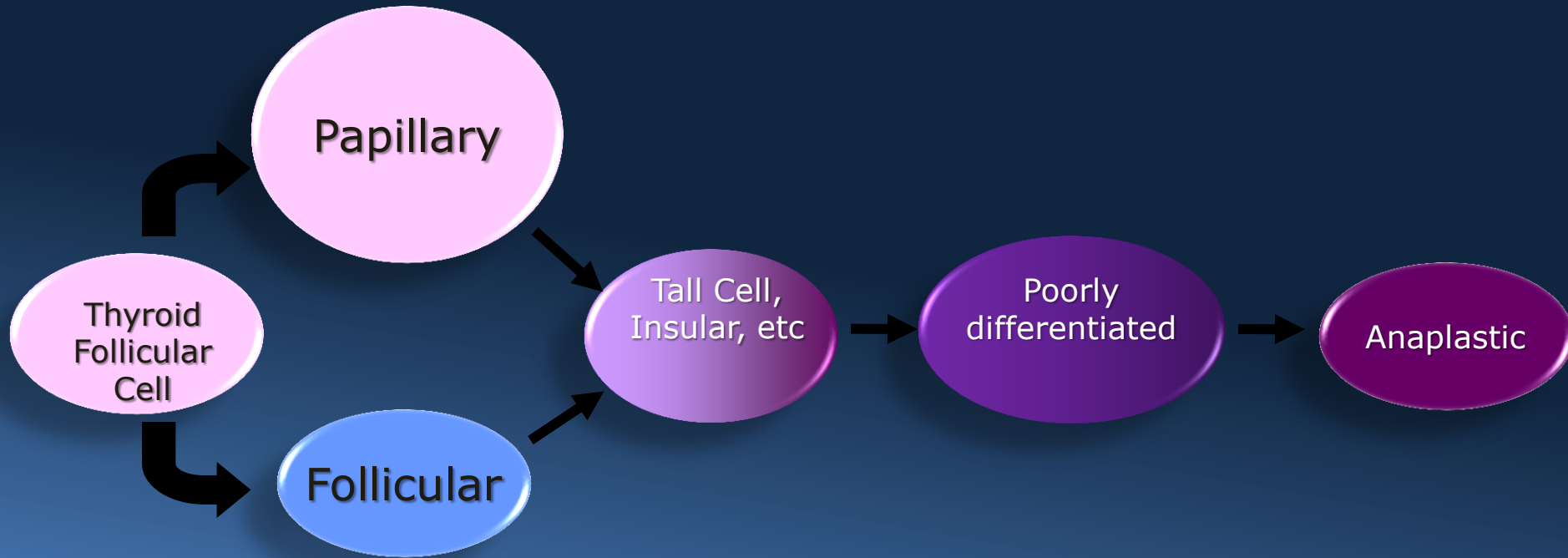
Mortality



Some Common Misconceptions about Thyroid Cancer

- All patients need subtotal or near total Thyroidectomy
- All patients need Post Operative Radio Active Iodine ablation
- Post operative TSH should be brought down to '0'
- Follow up requires annual whole body RAI scans

Pathology and Biology of Follicular Cell Derived Cancer of the Thyroid



Prognosis

Good

Bad

Ugly

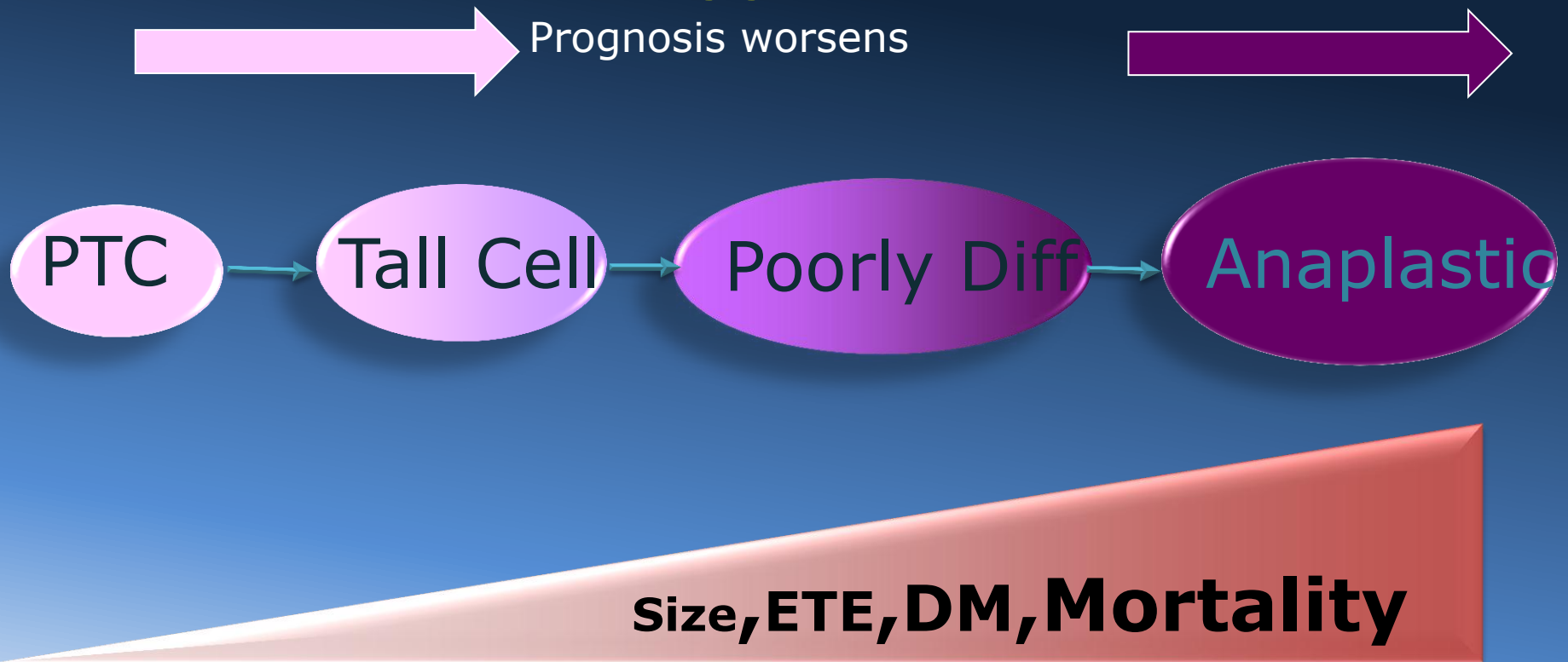
~85%

~14%

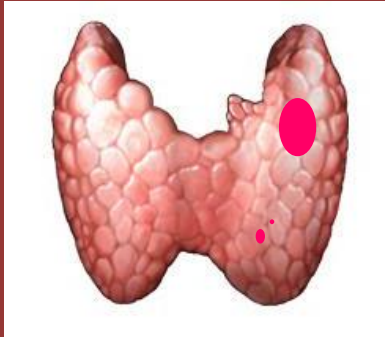
<1%

Prognosis in Thyroid Cancer

A very small proportion $\sim 10\%$ of Papillary carcinomas will undergo progression to more aggressive variants



Prognosis in Thyroid Cancer



**Thyroid
Cancer**

- **Well Differentiated**
- **Nearly All Curable**

- **Poorly Differentiated**
- **Need Aggressive Rx**
- **Majority Curable**

- **Anaplastic**
- **Rarely Curable**

Differentiated Thyroid Cancer

Prognostic Factors

Mayo

Lahey

Mayo

Karolinska

MSKCC

AGES

AMES

MACIS

DAMES

GAMES

Age
Grade

Age
Metastases

Metastases
Age
Completeness
Of resection

DNA
Age
Metastases

Grade
Age
Metastases

Extension

Extension

Invasion

Extension

Extension

Size

Size

Size

Size

Size

Staging Changes

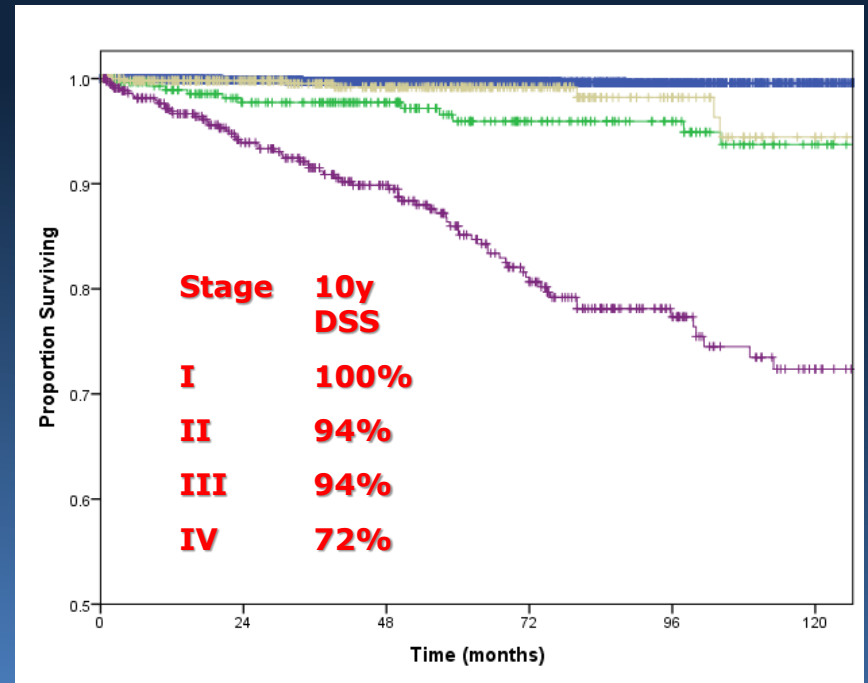
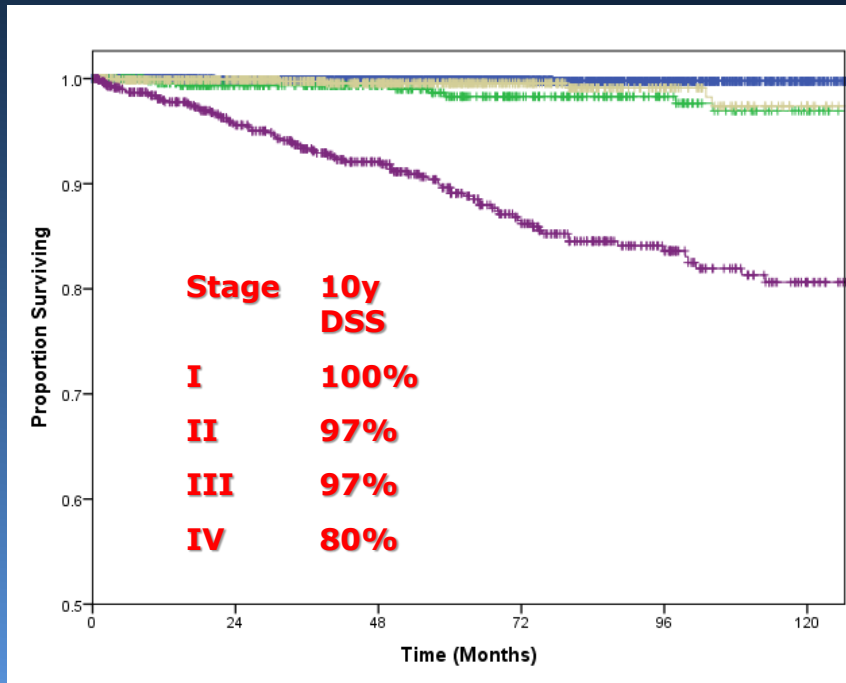
AJCC / UICC - 8th Edition – Jan.1. 2018

- Age stratification at 55
- Microscopic ETE will not upstage to T3
- Lymph nodes at Levels VI and VII are now N1a
- Significant changes in ATA and NCCN guidelines

Disease Specific Survival

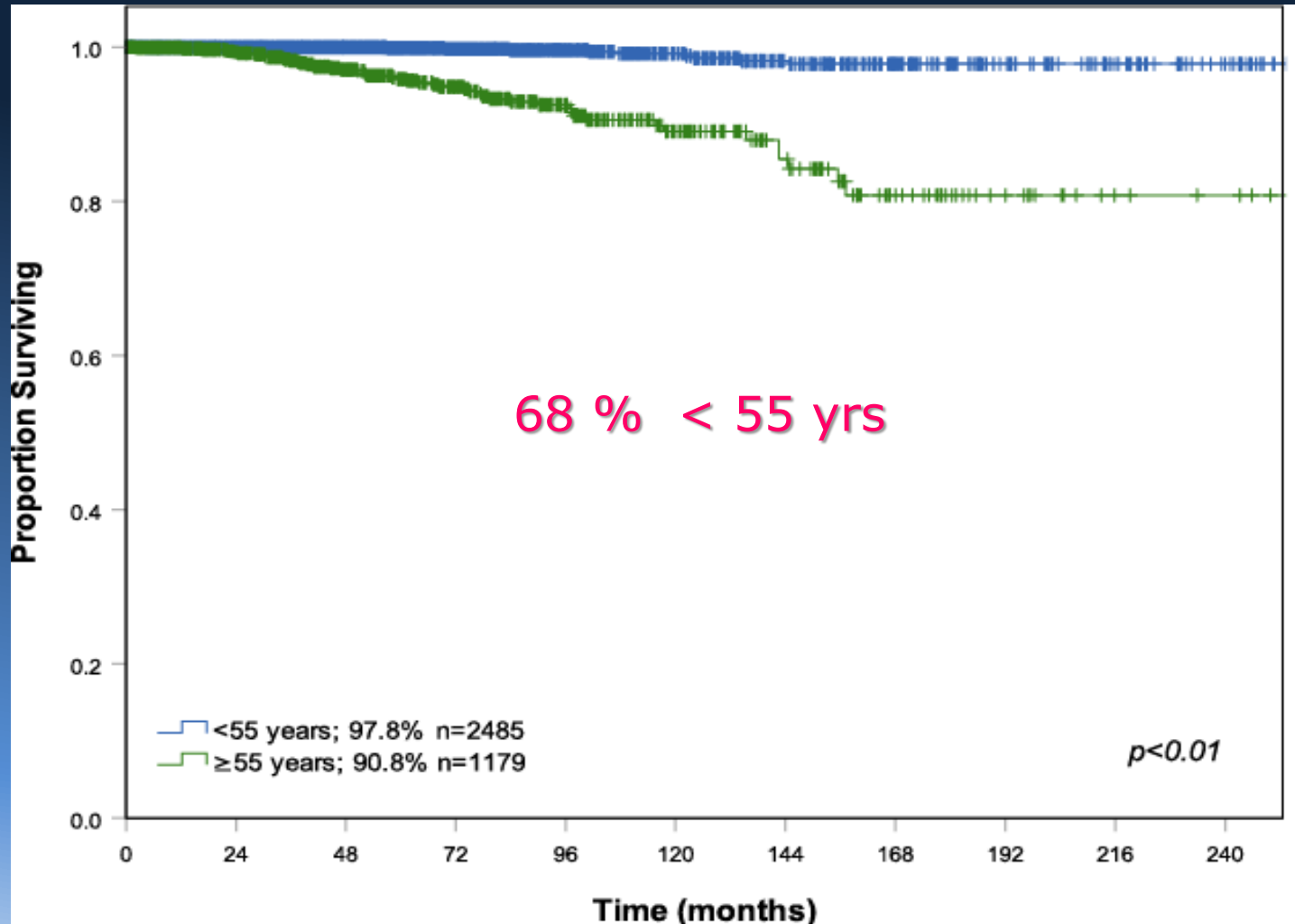
Age 45 years cut off

Age 55 years cut off



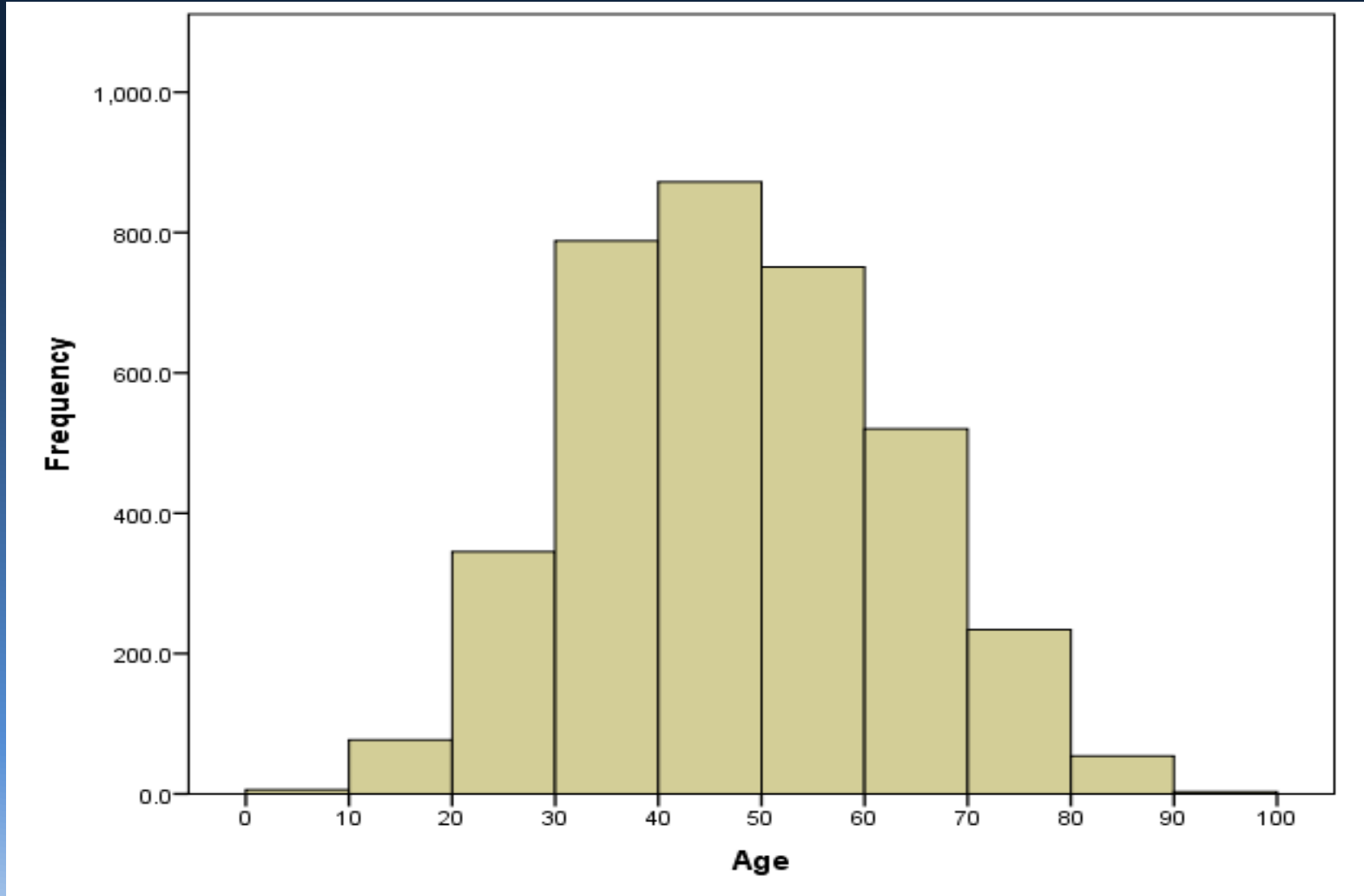
Disease Specific Survival Age stratification at 55

3664 Patients. MSKCC (1986-2012)



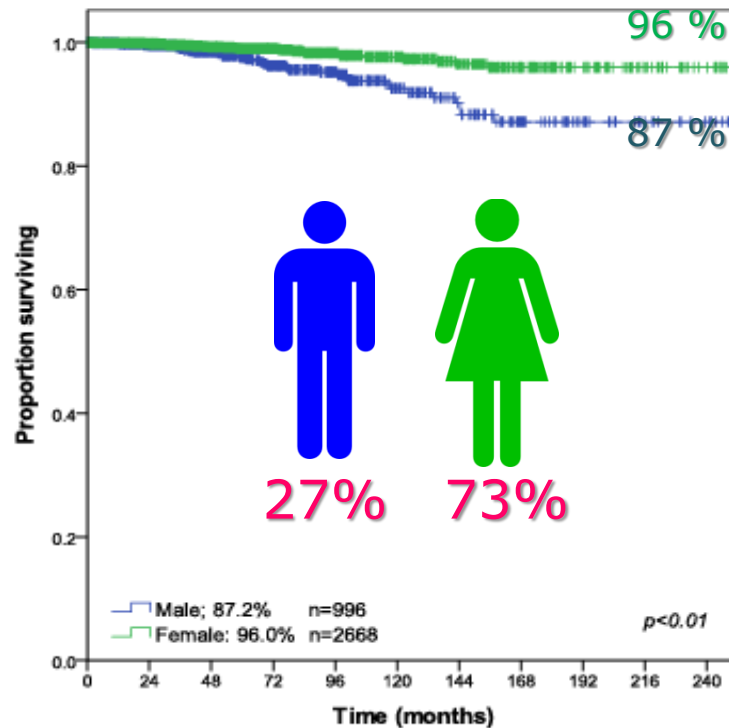
Age Distribution

3664 Patients. MSKCC (1986-2012)

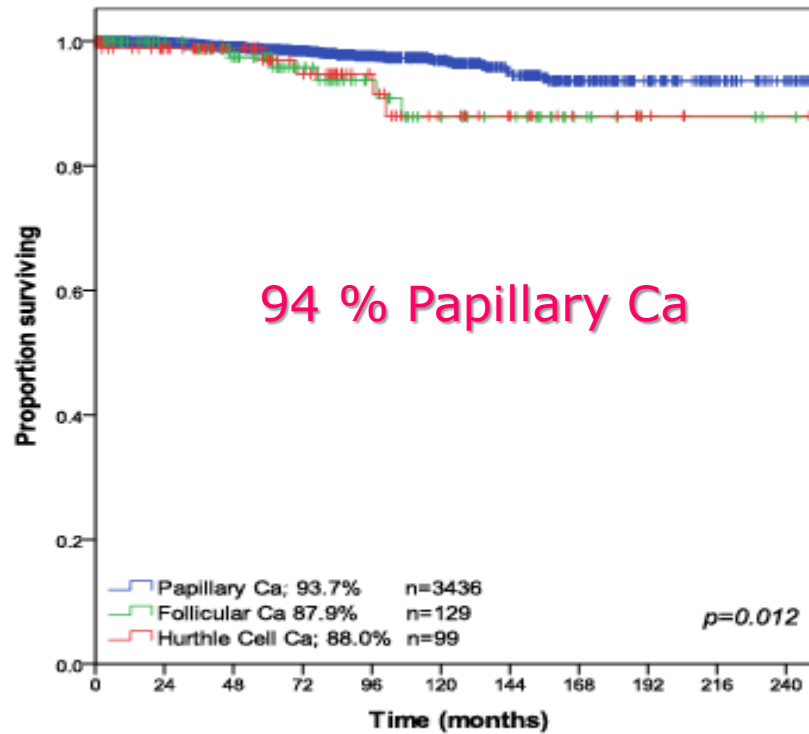


Disease Specific Survival Gender

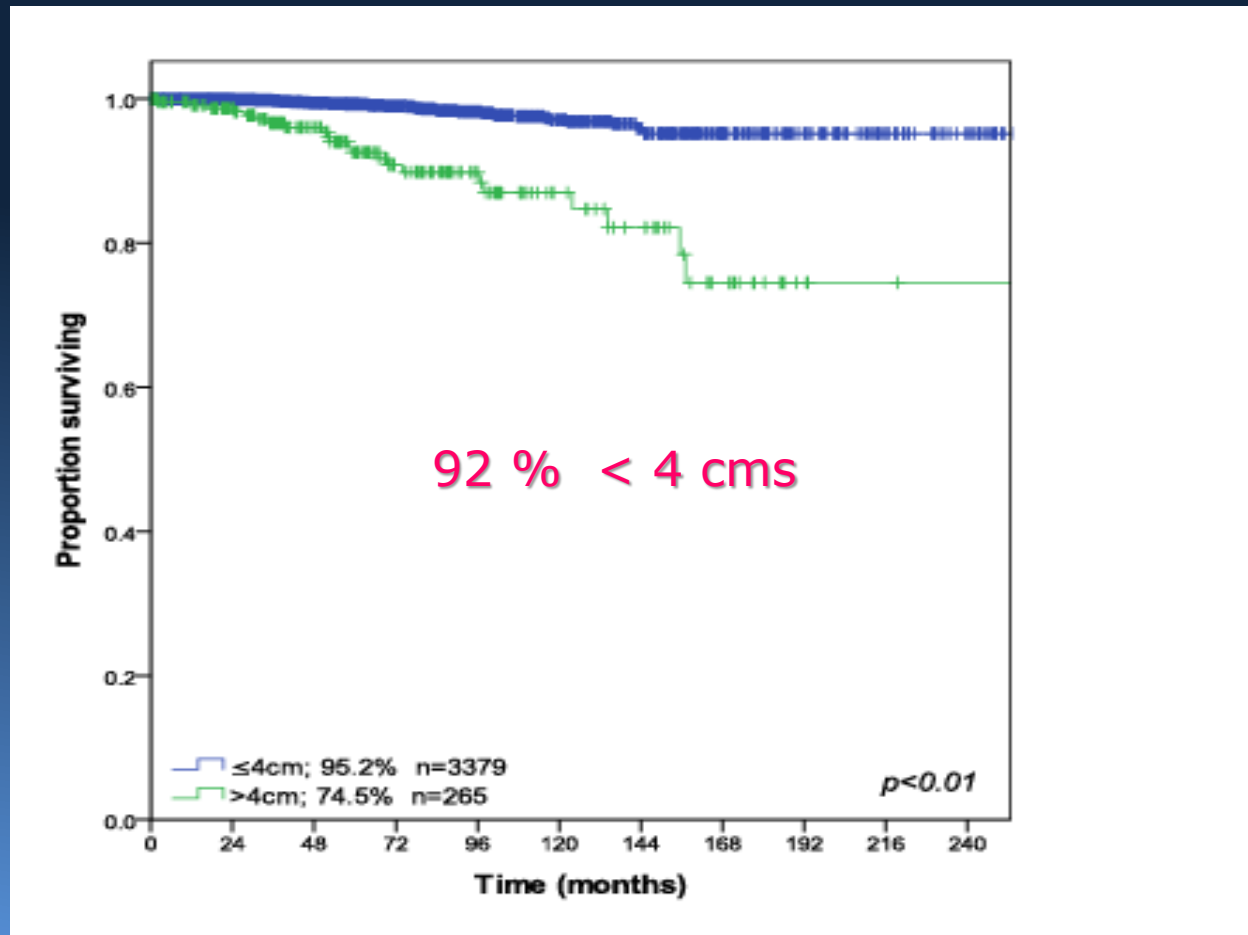
3664 Patients. MSKCC (1986-2012)



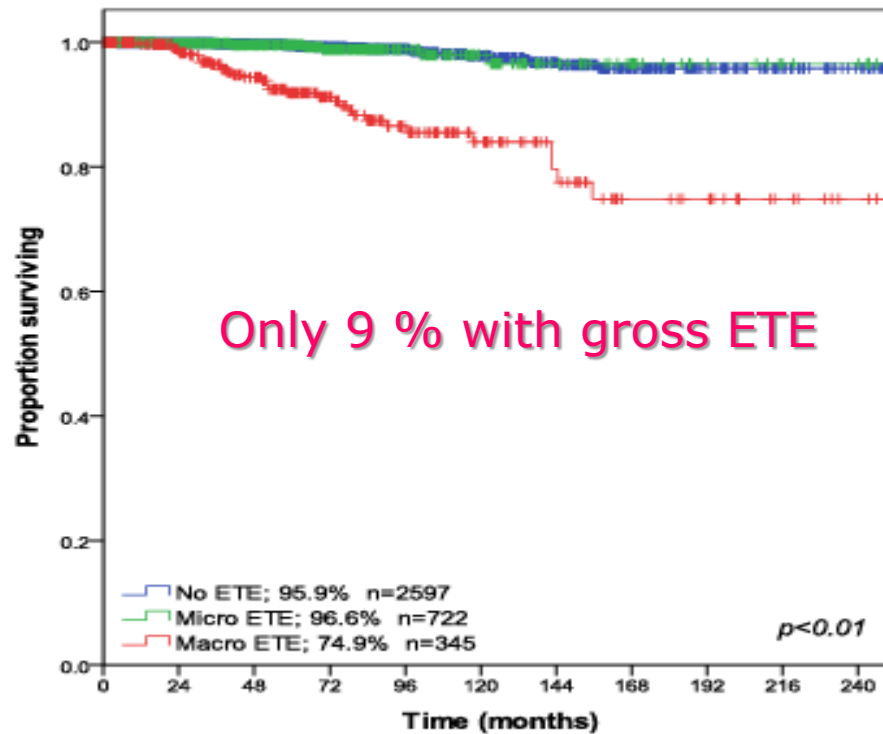
Disease Specific Survival Tumor Histology



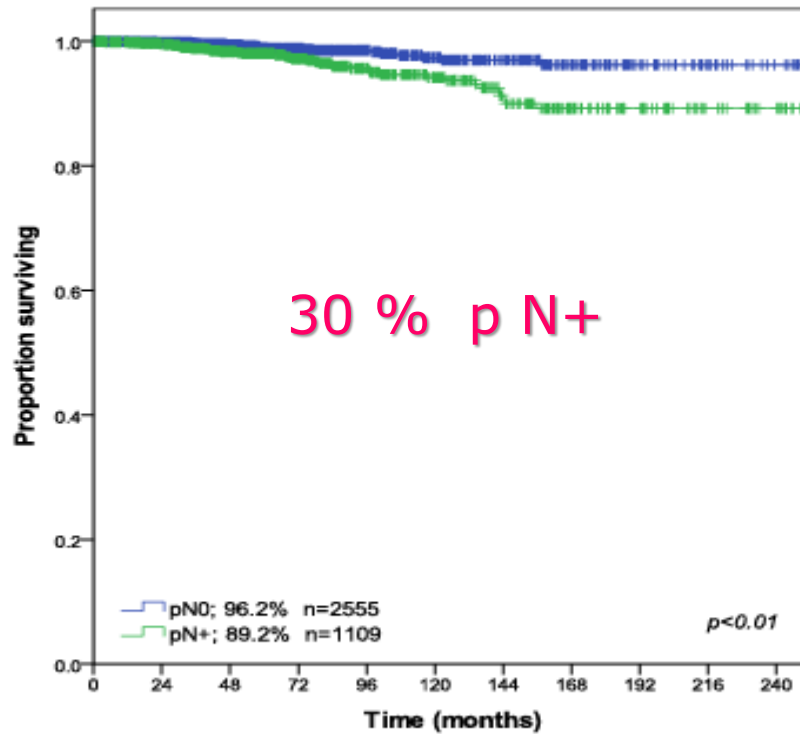
Disease Specific Survival Tumor Size



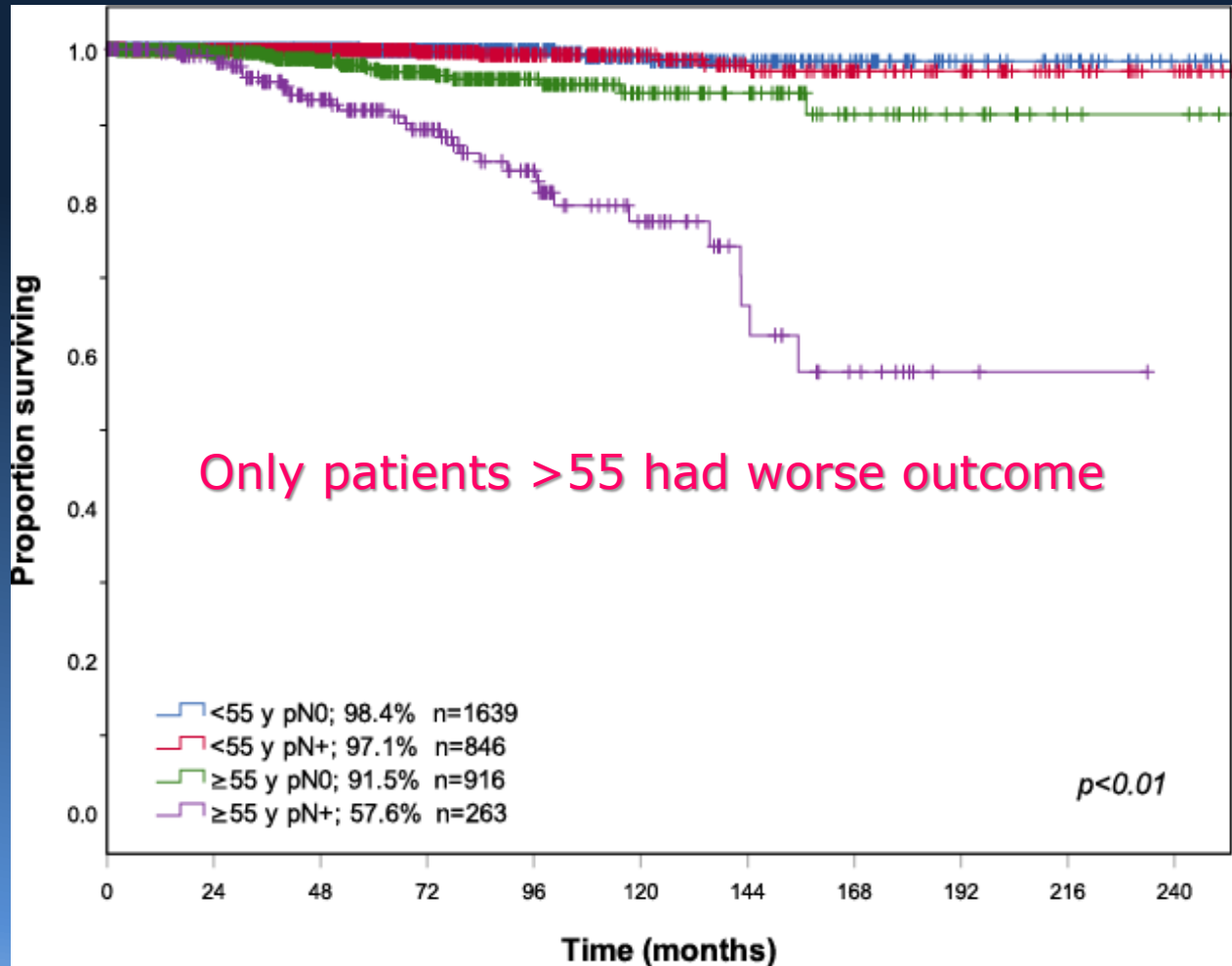
Disease Specific Survival Extrathyroid Extension



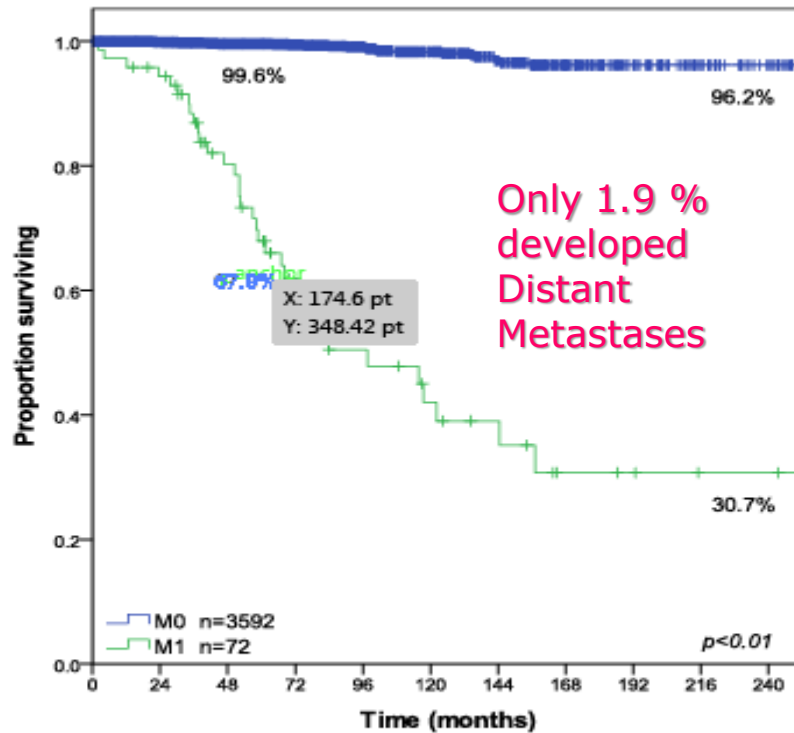
Disease Specific Survival Lymph Node Metastases. N0 vs N+



Disease Specific Survival Lymph Node Metastases and Age

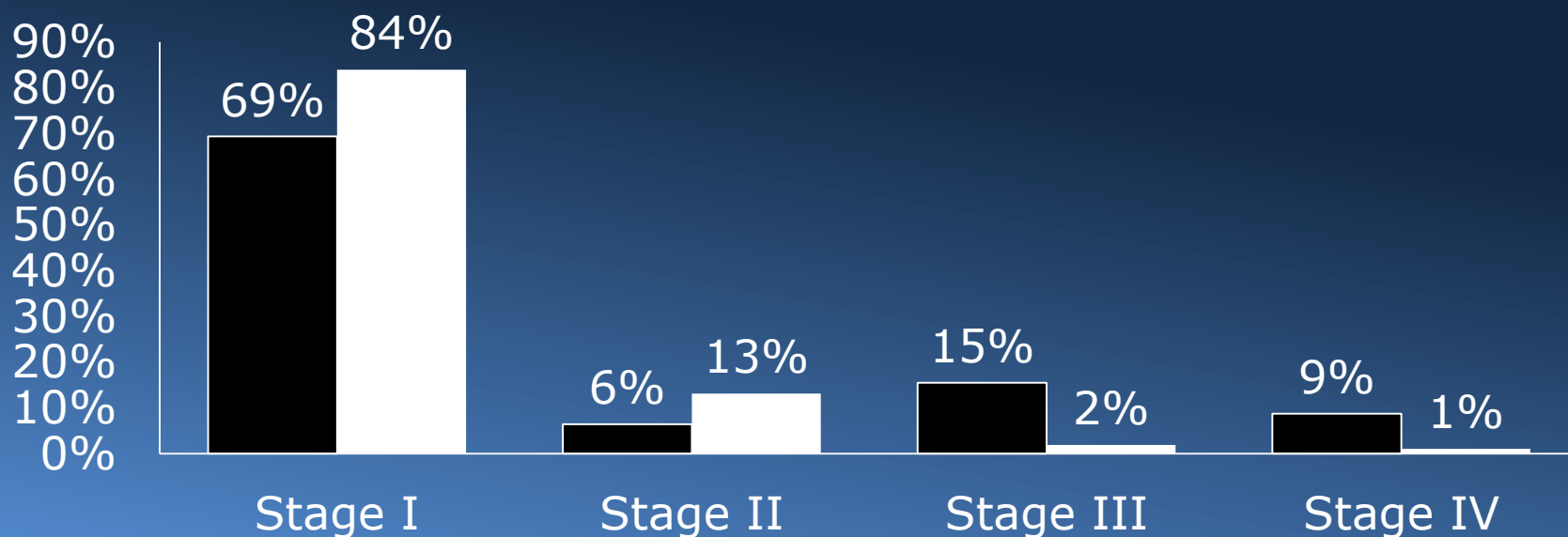


Disease Specific Survival Distant Metastases



Stage Grouping - Stage Migration

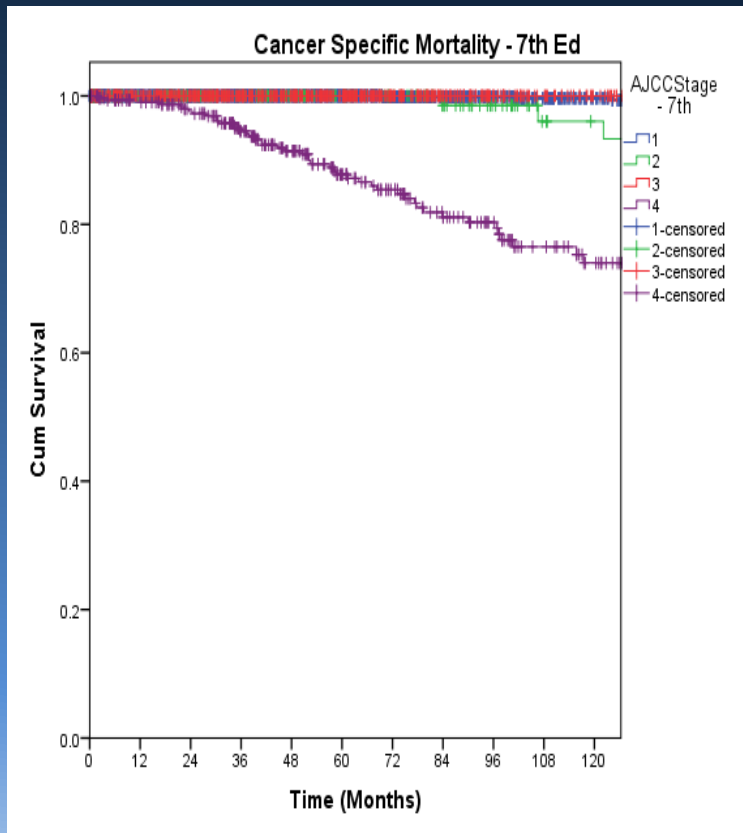
7th Edition and 8th Edition



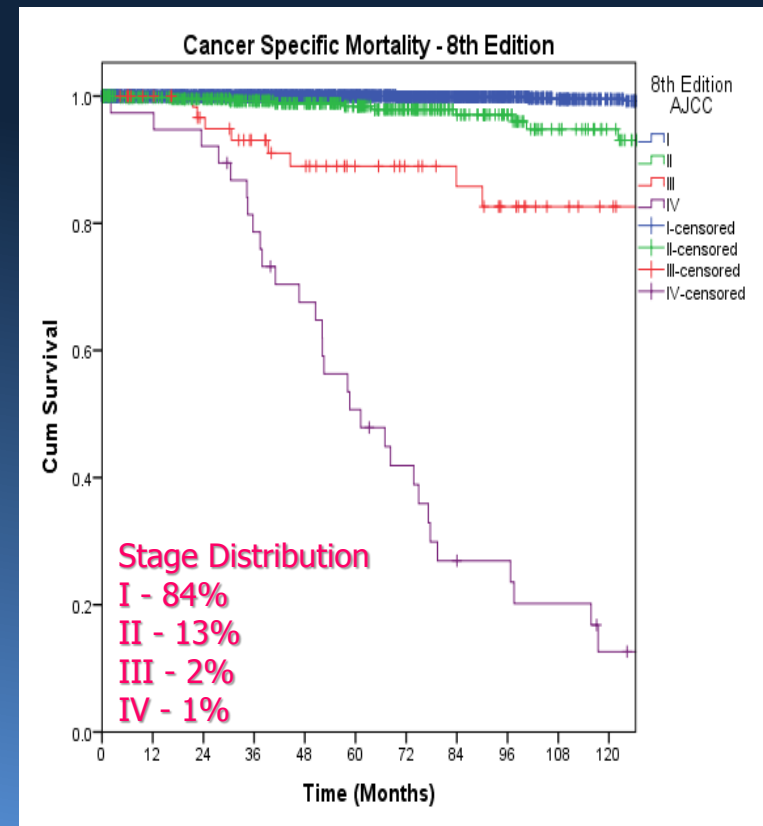
■ 7th Edition AJCC TNM Staging ■ 8th Edition AJCC TNM Staging

Cancer Specific Survival

7th Edition



8th Edition



Differentiated Cancer of the Thyroid

Prognostic Factors



Age

Risk Groups (GAMES)

Low

Intermediate

High

<55

>55

<55

>55

Gender

Size

Extent

Grade

Dist. Mets.

Female
< 4 cms.

Intraglandular

Low

Absent

Male
> 4 cms.

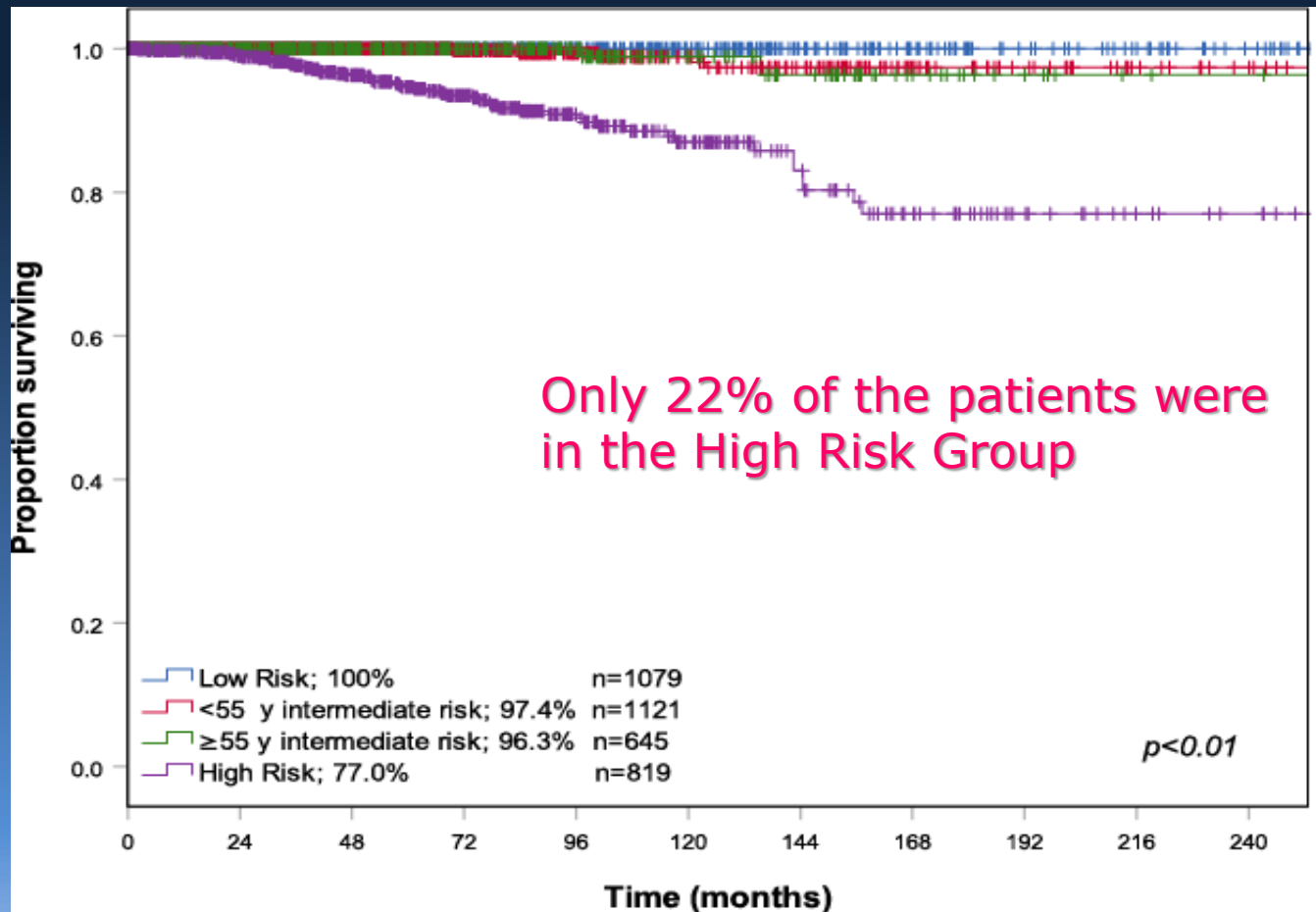
Extraglandular

High

Present



Disease Specific Survival Risk Groups



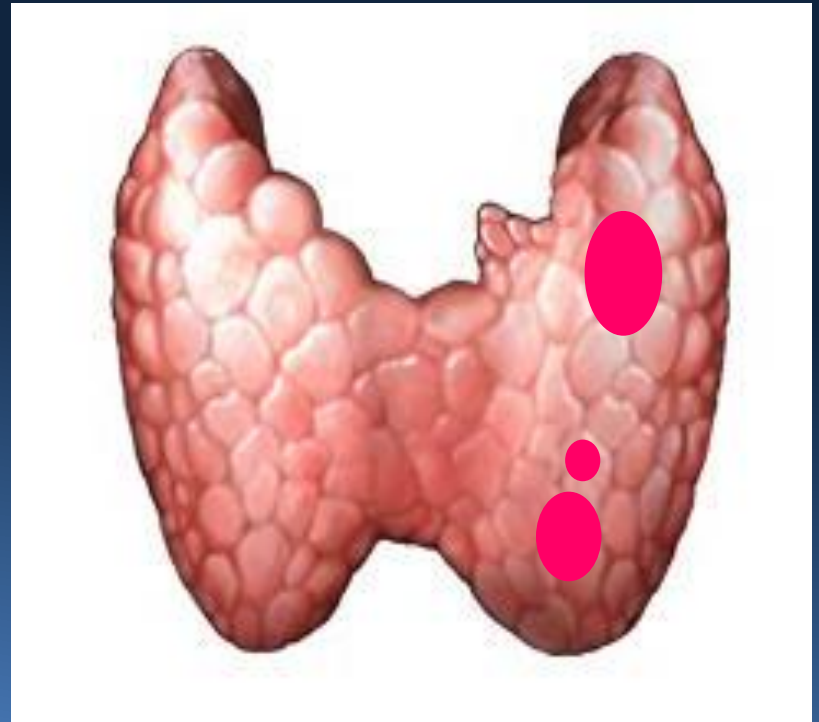
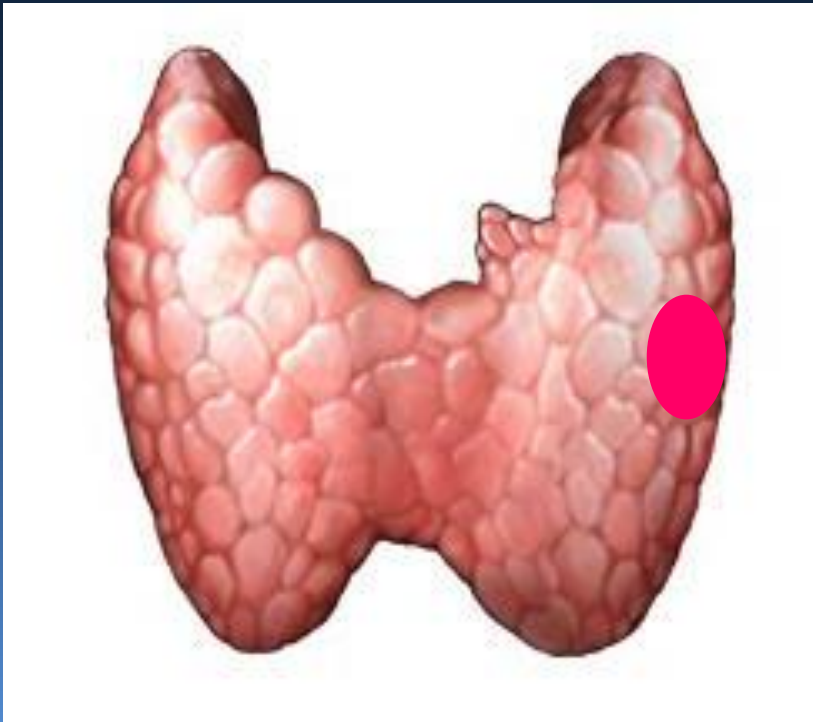
Extent of Thyroidectomy for Intrathyroidal Cancer

- All thyroid operations done for proven or suspected Cancer should be **“Extra capsular”**
- **“Subtotal Thyroidectomy”** and **“Near Total Thyroidectomy”** transgress thyroid tissue, and therefore are not Cancer operations, and should not be performed
- There are only two Oncologic operations: **“Lobectomy”** or **“Total Thyroidectomy”**

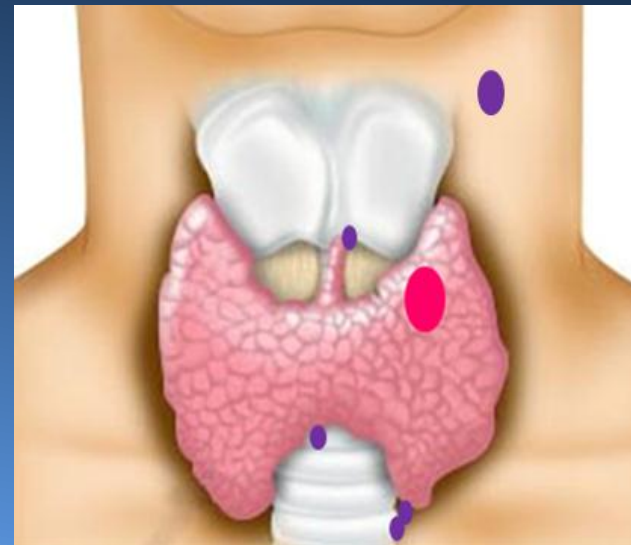
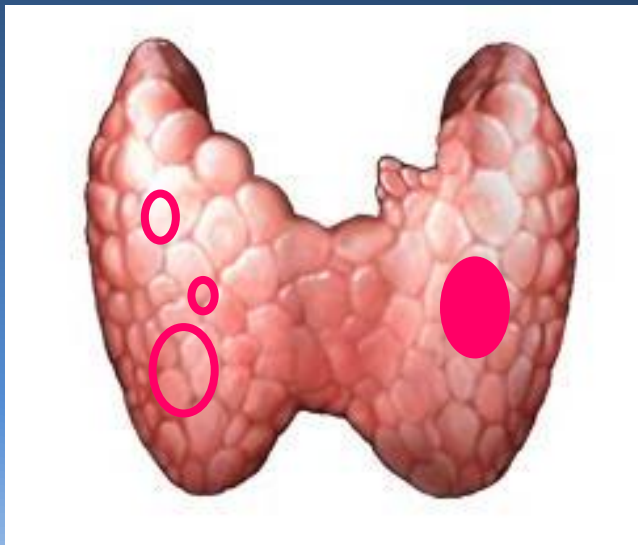
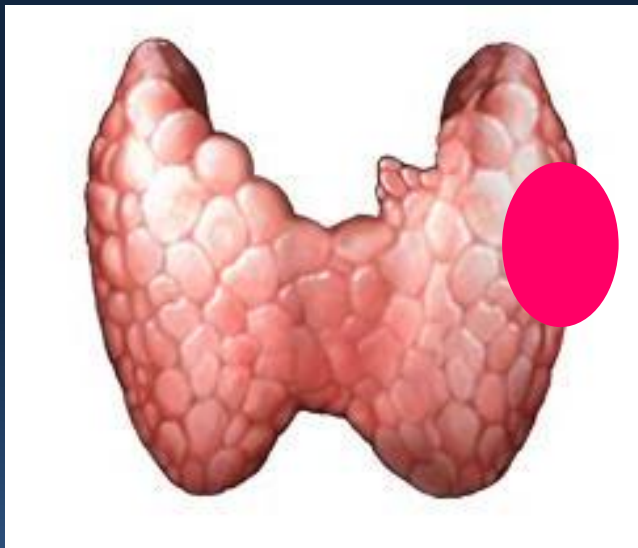
Extent of Thyroidectomy for Intrathyroidal Cancer

- “Extra capsular” operations leave no residual thyroid tissue behind, and thus avoid the need for RAI ablation of Thyroid remnants
- Pay special attention to the upper pole, pyramidal lobe and the region of the cricothyroid membrane
- Following an “extracapsular total thyroidectomy”, post operative TgAb is not measurable at 6 weeks, and thus it “... ..” without RAI

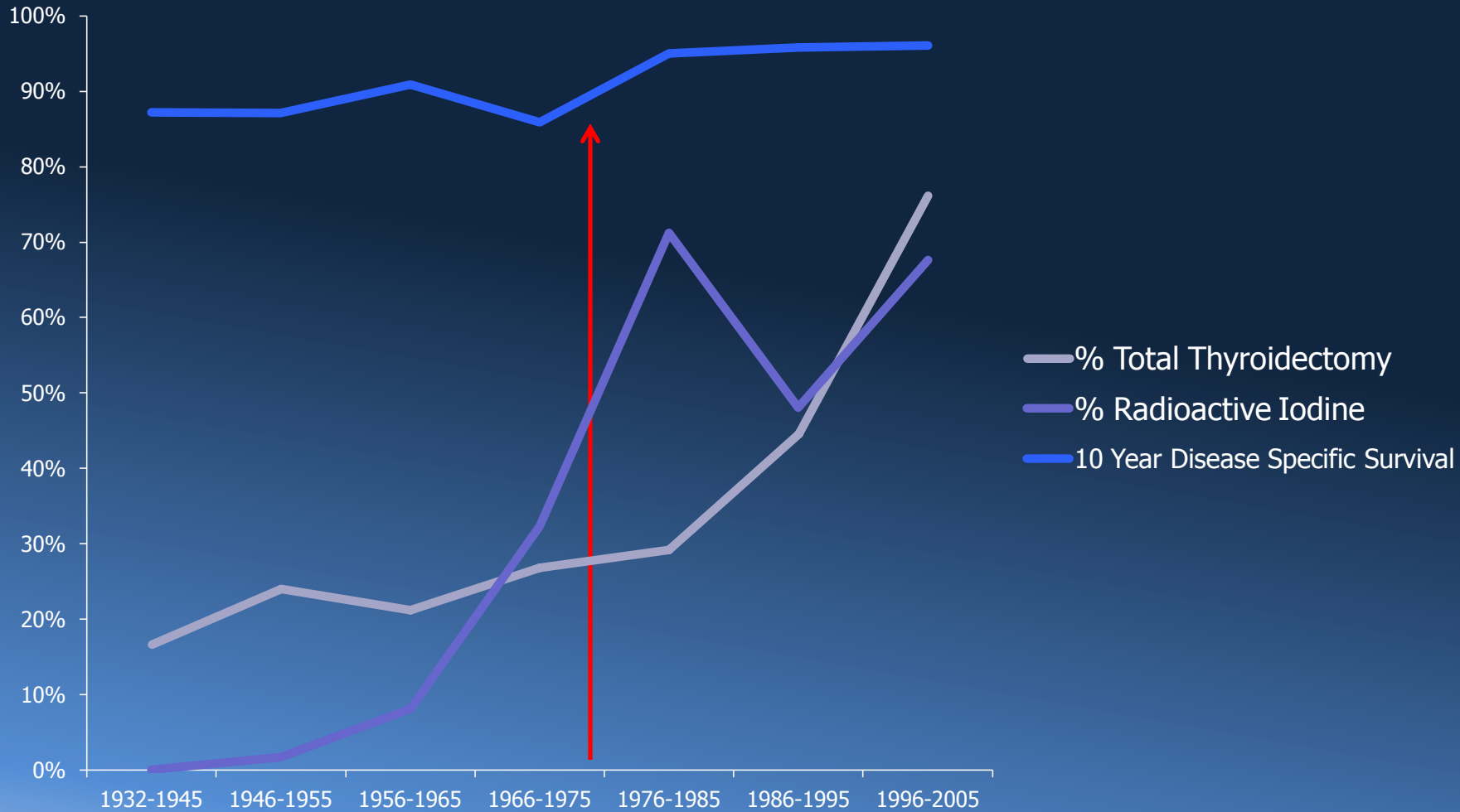
Lobectomy



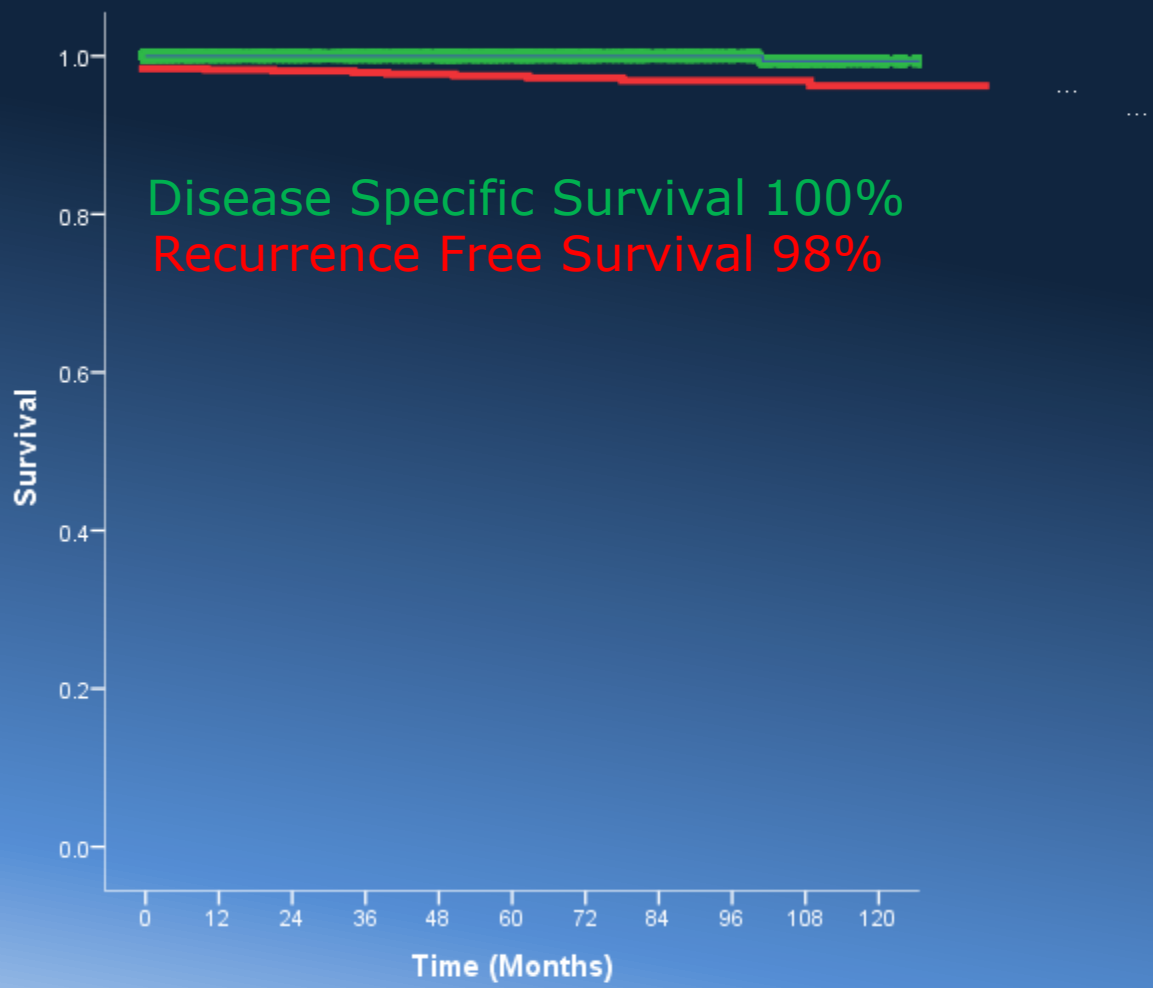
Total Thyroidectomy



Changes in Outcomes ???



Intra Thyroidal Tumors (up to 4 cms)



Lobectomy vs Total Thyroidectomy

- 884 consecutive pts
- All Intrathyroidal tumors
- All N 0 patients
- All M 0 patients
- All Differentiated

Characteristics (n=884)	Number (%)
Age	
<45y	421 (48%)
>45y	463 (52%)
Gender	
Male	185 (21%)
Female	699 (79%)
pT Stage	
T1	634 (72%)
T2	250 (28%)
Pathology	
Papillary	798 (90%)
Follicular	50 (6%)
Hurthle Cell	36 (4%)
Risk Group	
Low	370 (42%)
Intermediate	449 (51%)
High	65 (7%)
Surgery	
Lobectomy	362 (41%)
Total Thyroidectomy	522 (59%)

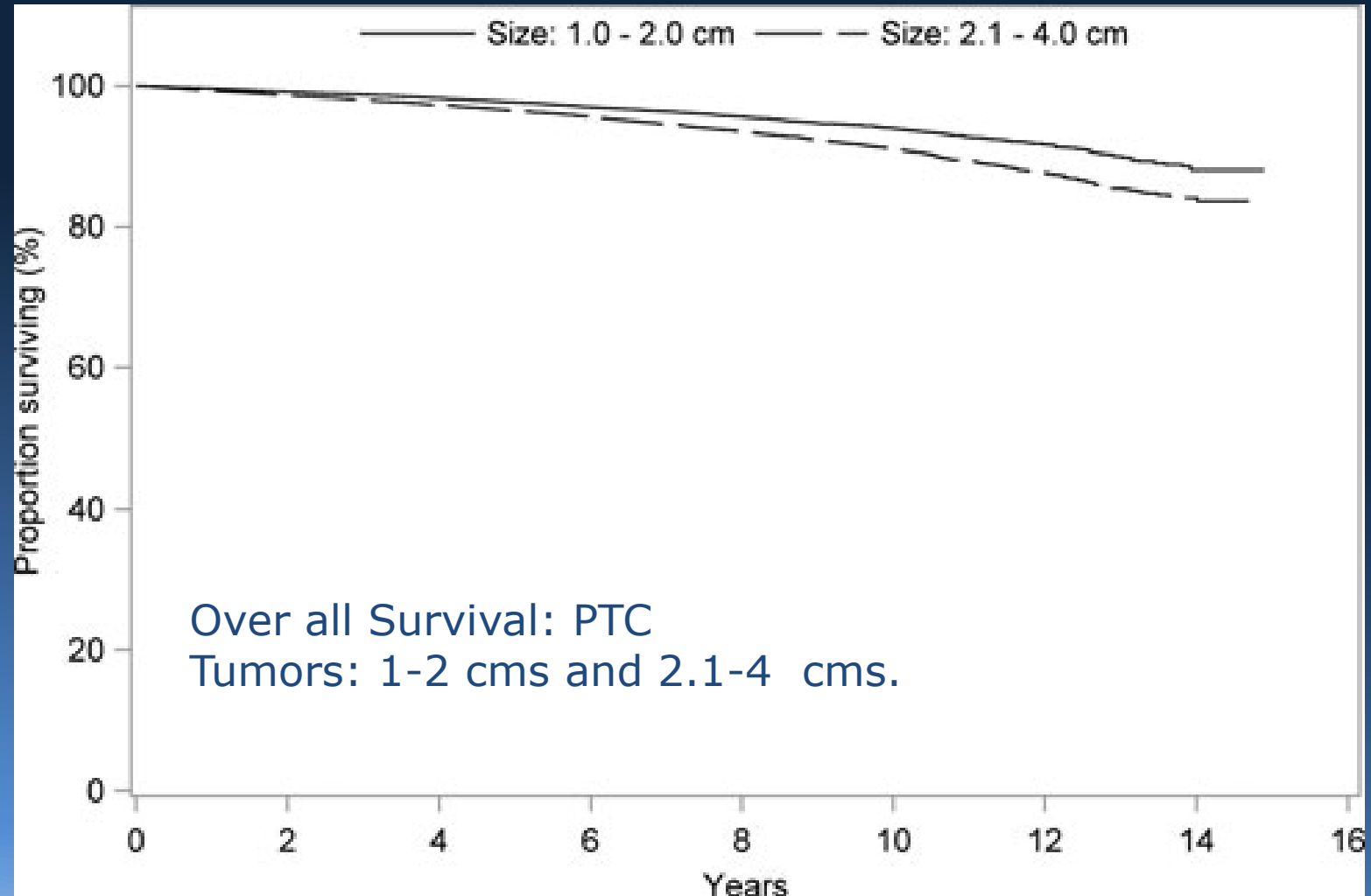
10 Year Survival

Intra Thyroidal Tumors

Outcome	Lobectomy	Total Thyroidectomy	p Value
Local Recurrence Free Survival	100%	100%	NS
Neck Recurrence Free Survival	99.7%	99.2%	NS
Distant Recurrence Free Survival	99.7%	99.4%	NS
Disease Specific Survival	100%	100%	NS
Overall Survival	91%	94%	NS

Extent of Surgery for Papillary Thyroid Cancer Is Not Associated With Survival

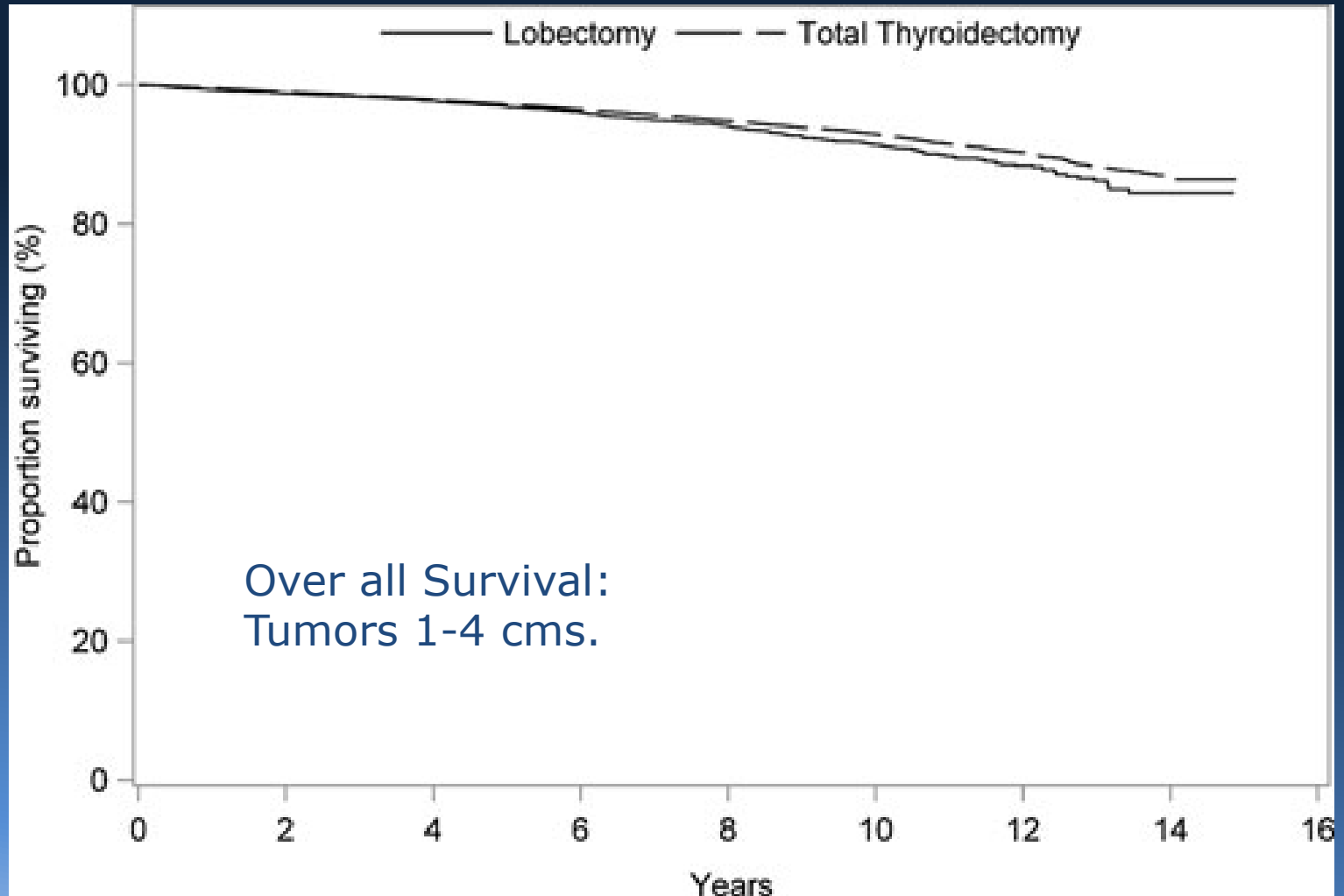
An Analysis of 61,775 Patients (ACS, NCDB 1998 – 2006)



(Ann Surg 2014;260:601-607)

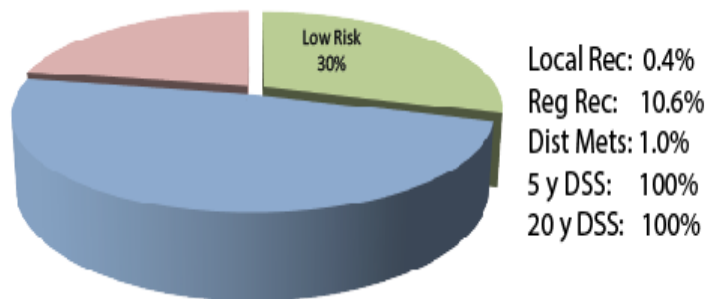
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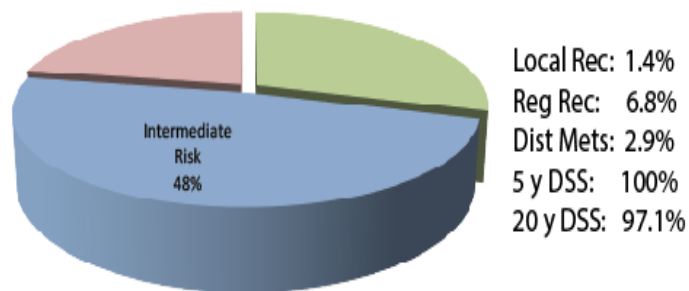
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Patterns of Treatment Failure Risk Groups

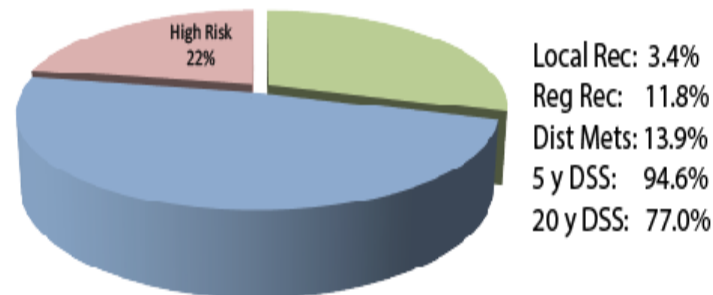


Low

Intermediate




High



Differentiated Cancer of the Thyroid

Trends in Mortality

Author	Year	Death Rate	Central Neck Disease
Tollefsen	1964	10%	>40% 
Smith	1988	7%	36%
Shaha	1996	9%	10%
Kobayashi	1996	5%	<28%
Ronga	2002	4%	12%
**Nixon	2012	1%	0% ** 

* Locoregional recurrence **was a common** cause of death

** Locoregional recurrence **is a rare** cause of death

Differentiated Cancer of the Thyroid

Follow up strategies

- Follow up tailored to Risk Group
- Low and Intermediate Risk Groups: 6monthly physical exam. for 2 years and thereafter annually
- Thyroglobulin and Ultrasound (prn)
- Anatomic imaging (prn)
- High risk groups: More intense and more frequent follow up strategies

Thyroid Cancer Summary

- ★ Rising incidence of favorable low risk cancers
- ★ Appreciation of pathology and exploiting biology to deliver cost effective treatment
- ★ Significance of prognostic factors and risk group stratification
- ★ Discretion in selection of surgical treatment
- ★ Discretion in use of adjuvant therapy and follow up strategy
- ★ Research in molecular biology and new therapies

Thank You