

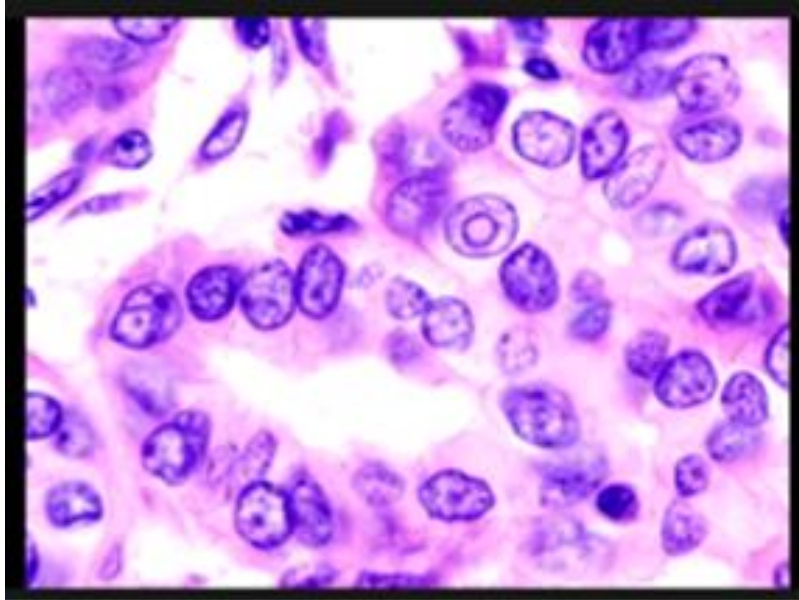
# Thyroid quiz

Dr. Lakshmi Nalini Kopalle

Consultant Endocrinologist

HYDERABAD

**1. A 26-year-old man presents to his GP with a 4cm mobile anterior neck mass. A fine needle aspirate is performed which reveals this:**



**What is the most likely diagnosis?**

- A. Thyroglossal duct cyst
- B. Follicular carcinoma
- C. Medullary carcinoma
- D. Papillary carcinoma

## 2. Which of the following features is NOT typical for Graves disease?

- A. Hyperplasia of the follicles
- B. Extensive infiltration of the mononuclear cells into the thyroid parenchyma
- C. Irregular shaped follicles
- D. Scalloping of the colloid

**3. How many isotopes of radioactive iodine exist?**

A.34

B.35

C.36

D.37

## **4. Probable mechanisms by which metformin reduces TSH level include all except:**

- A. Changes the affinity of thyroid hormone receptors
- B. Decreases the central dopaminergic tone
- C. Directly changes TSH regulation
- D. Inhibits AMPK activity in Hypothalamus

## **5. Usual peak incidence of thyroiditis is:**

- 1<sup>st</sup> and 2<sup>nd</sup> decade
- 2<sup>nd</sup> and 3<sup>rd</sup> decade
- 3<sup>rd</sup> and 4<sup>th</sup> decade
- 4<sup>th</sup> and 5<sup>th</sup> decade

**6. In 2013, Ministry of Health and Family Welfare launched child health screening and early intervention services in India. Name it.**

- A. Rashtriya Bal Swasthya Karyakram (RBSK) program
- B. Rashtriya Bal Vikas Karyakram (RBVK) program
- C. Rashtriya Bal Swasthya Suraksha (RBSS) program
- D. Rashtriya Bal Swasthya aur Chikithsa (RBSC) program

**7. During revision thyroid gland surgery, the risk of parathyroid injury is:**

- A. Two times
- B. Four times
- C. Ten times
- D. Twenty times



**8. What thyroid cancer has the worst prognosis? (choose the answer that shows the correct descending order)**

- A. anaplastic > medullary > follicular > papillary
- B. anaplastic > medullary > papillary > follicular
- C. medullary > anaplastic > papillary > follicular
- D. medullary > anaplastic > follicular > papillary

## **9. Treatment options for methimazole induced hepatotoxicity**

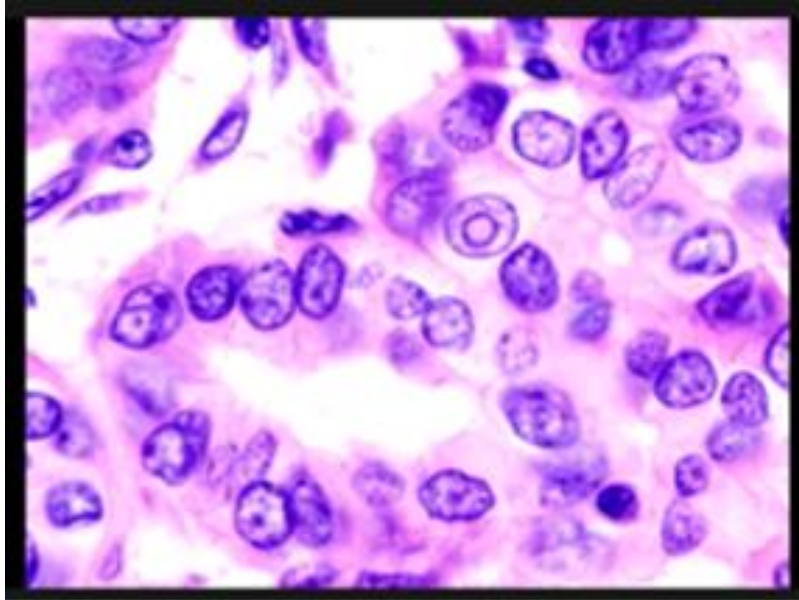
- A. Lithium
- B. Intravascular glutathione
- C. Oral zinc
- D. Ethanol

**10. An 18-year-old female presents with a painless 1cm mass in the anterior neck region. A biopsy is taken revealing fluid contained within pseudostratified columnar epithelium. What is the most likely diagnosis?**

- A. Branchial cyst
- B. Thyroglossal cyst
- C. Anaplastic carcinoma
- D. De quervains

# Answers

**1. A 26-year-old man presents to his GP with a 4cm mobile anterior neck mass. A fine needle aspirate is performed which reveals this:**



**What is the most likely diagnosis?**

A. Thyroglossal duct cyst

B. Follicular carcinoma

C. Medullary carcinoma

D. Papillary carcinoma

- ‘Orphan Annie eye’ nuclei are pathognomonic for papillary carcinoma. Although clinically a thyroglossal duct cyst is likely, the histology findings indicate papillary carcinoma. (Ref: Cotrans, Pathoma)

## 2. Which of the following features is NOT typical for Graves disease?

- A. Hyperplasia of the follicles
- B. Extensive infiltration of the mononuclear cells into the thyroid parenchyma
- C. Irregular shaped follicles
- D. Scalloping of the colloid

- Extensive infiltration into the parenchyma is typically seen in Hashimoto's thyroiditis.
- All other features are typical of Graves disease.
- In Graves disease IgG TSH-like autoantibodies cause stimulation of the TSH receptor causing hyperplasia of the follicles.
- These follicles are irregular shape and display scalloping of the colloid.



### **3. How many isotopes of radioactive iodine exist?**

A.34

B.35

C.36

D.37

There are 37 known isotopes of iodine, and only one is not radioactive (Iodine-127)

<https://www.epa.gov/radiation/radionuclide-basics-iodine#:~:text=There%20are%2037%20known%20isotopes,a%20byproduct%20of%20a%20fission>



## **4. Probable mechanisms by which metformin reduces TSH level include all except:**

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Dhanpal V, Dharmalingam M, Kalra P. Effect of metformin therapy on thyroid-stimulating hormone levels in women with polycystic ovarian syndrome. *Thyroid Res Pract* 2021;18:6-10

## 5. Usual peak incidence of thyroiditis is:

- 1<sup>st</sup> and 2<sup>nd</sup> decade
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Martino E, Buratti L, Bartalena L, Mariotti S, Cupini C, Aghini-Lombardi F, *et al.* High prevalence of subacute thyroiditis during summer season in Italy. *J Endocrinol Invest* 1987;10:321-3.

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# Rashtriya Bal Swasthya Karyakram (RBSK)

## JOB AIDS

Child Health Screening and Early Intervention Services  
National Rural Health Mission

Ministry of Health & Family Welfare  
Government of India  
DECEMBER, 2013

Rashtriya Bal  
Swasthya  
Karyakram  
(RBSK) program

## **7. During revision thyroid gland surgery, the risk of parathyroid injury is:**

- A. Two times
- B. Four times
- C. Ten times**
- D. Twenty times

Janardhan D, Suresh S, Balagopal P G, George NA, Jagathnath Krishna K M. Long-term hypocalcemia prediction post thyroidectomy. *Thyroid Res Pract* 2021;18:14-8

Prim MP, de Diego JI, Hardisson D, Madero R, Gavilan J. Factors related to nerve injury and hypocalcemia in thyroid gland surgery. *Otolaryngol Head Neck Surg* 2001;124:111-4

**8. What thyroid cancer has the worst prognosis? (choose the answer that shows the correct descending order)**

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B. anaplastic > medullary > papillary > follicular

C. medullary > anaplastic > papillary > follicular

D. medullary > anaplastic > follicular > papillary

- Anaplastic has a ~20-35% survival at 1 year. Medullary 50% at 10 years. Follicular 92% at 10 years. Papillary 98% at 10 years.



## 9. Treatment options for methimazole induced hepatotoxicity

A. Lithium

B. Intravascular glutathione

C. Oral zinc

D. Ethanol

↑

Venditti P, Balestrieri M, Di Meo S, De Leo T. Effect of thyroid state on lipid peroxidation, antioxidant defences, and susceptibility to oxidative stress in rat tissues. *J Endocrinol* 1997;155:151-7.

Komosinska-Vassev K, Olczyk K, Kucharz EJ, Marcisz C, Winsz-Szczotka K, Kotulska A, et al. Free radical activity and antioxidant defense mechanisms in patients with hyperthyroidism due to graves' disease during therapy. *Clin Chim Acta* 2000;300:107-17.

Niveditha K, Menon AS, Kumar H, Eapen M, Gopalakrishna R. A case of acute liver injury induced by methimazole. *Thyroid Res Pract* 2021;18:34-6

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- Thank you