



# تفسیر نگاری بالینی در آزمایشگاه پزشکی

دکتر علیرضا لطفی کیان

دکترای علوم آزمایشگاهی بالینی

از دانشگاه علوم پزشکی ایران



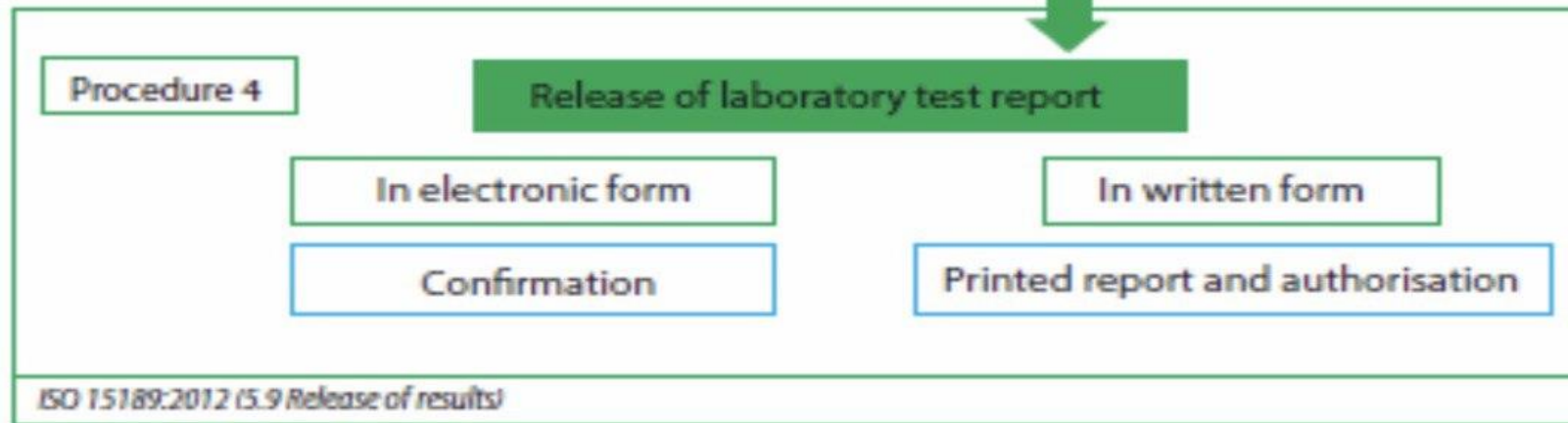
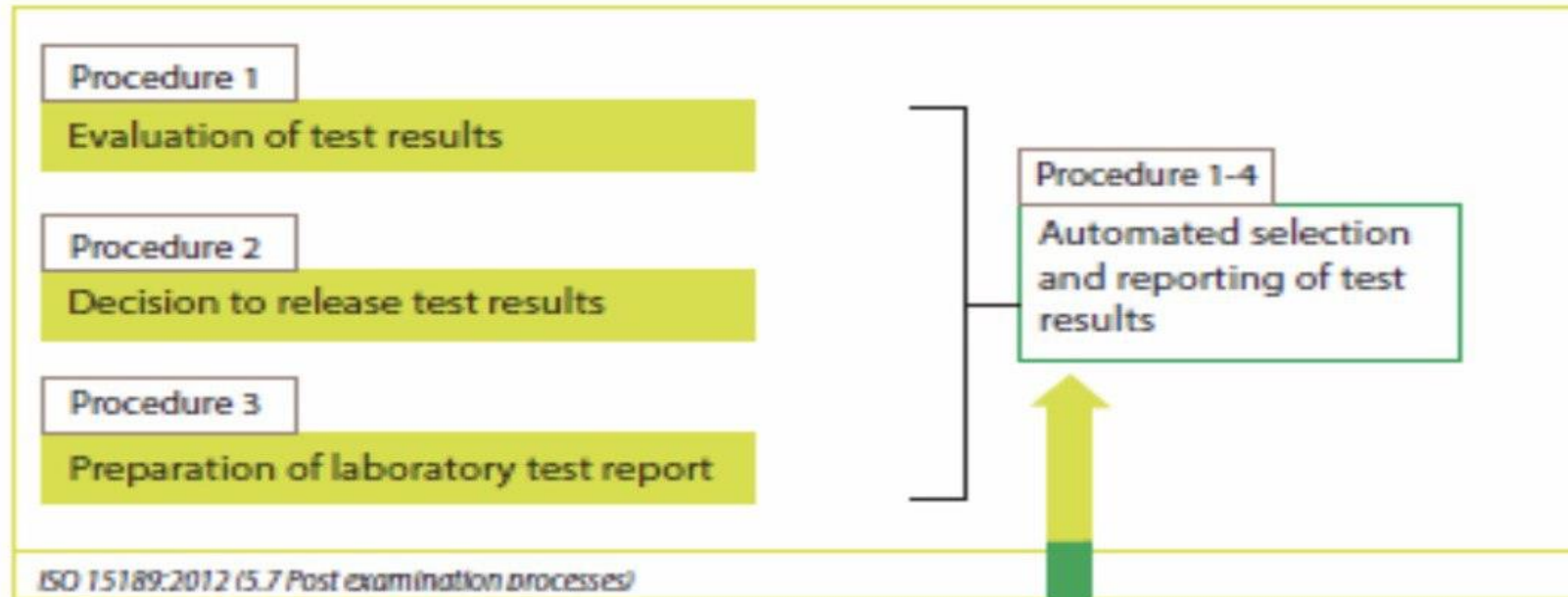
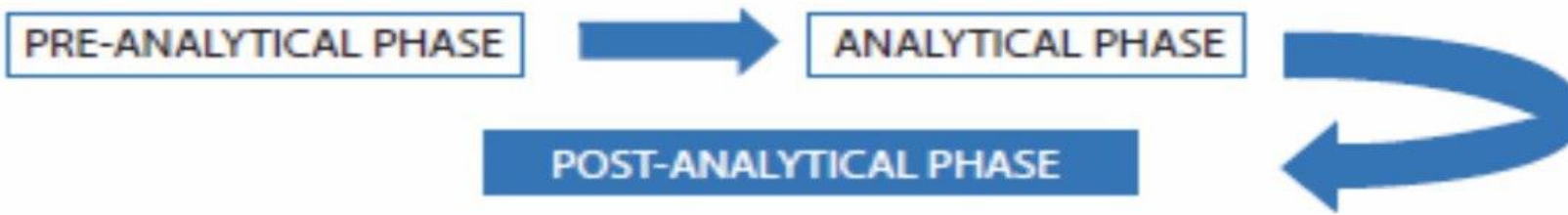
# “Interpretative Commenting; Approaching the Clinic and Laboratory “

Dr.Alireza Lotfi Kian, DCLS

A blue-tinted photograph of a laboratory. In the foreground, there are two blue microcentrifuge racks. The left rack contains two test tubes with white caps. The right rack contains several smaller test tubes. In the background, a person wearing white gloves is looking at a document. A bottle of 'SIEMENS' reagent is visible. The overall scene is a laboratory environment.

# Delivering Confidence in Laboratory Results

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Procedure 5

Reporting of test report

Orally

By telephone or other channel:  
Critical limits or unexpected results

ISO 15189:2012 (5.8 Reporting of results)

Procedure 6

Sample storage and disposal

ISO 15189:2012 (5.7.2 Storage, retention and disposal of clinical samples)

Procedure 7

Archiving of laboratory documentation

ISO 15189:2012 (5.13 Control of records)

Procedure 8

Post-analytical quality indicators

ISO 15189:2012 (5.14 Evaluation and audits; 4.14.7 Quality Indicators)

## Comments

1. Comments on sample quality that may have negatively affected the analysis
2. Comments on sample stability and acceptability if sample is not within the laboratory defined criteria
3. Where applicable, comments about analysis results, which may include automatically generated interpretations
4. Name of the person requesting additional tests to be performed
5. Name of the person responsible for continuation of analysis of samples of unacceptable quality
6. Identification of tests that are part of a research or development programme and for which special requests are not required (in the case of laboratory tests made for the purpose of medical research)
7. Patient history of drug treatment and possible interferences

## Table 2

Examples 2 and 3.

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Pregnancy test (hCG) in serum

**Comment:** A pregnancy test is considered positive if hCG >25 U/L. HCG values between 5 and 25 U/L are equivocal and should be repeated. In the first 8–10 weeks of a normal pregnancy hCG doubles every 3 days.

Troponin request for acute chest pain

**Comment:** Troponin I  $\geq 0.40$   $\mu\text{g/L}$  in association with ischaemic symptoms or ECG changes is compatible with MI. Troponin between 0.10 and 0.40 may suggest increased risk in the setting of Acute Coronary Syndrome.

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## Table 4

Example 6.

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Thyroid Function Tests		
Free T4	14 pmol/L	(10–23)
TSH	5.90 mU/L	(0.40–4.00)

The comment, depending on the context, could be:

**Mild elevation of TSH may be found in patients with subclinical hypothyroidism or non-thyroidal illness. Thyroid antibody testing may be useful in subclinical hypothyroidism.**

or

**Elevated TSH suggests inadequate thyroid hormone replacement if the dose has not been changed for at least 6 weeks and the patient has been taking the medication regularly. Suggest review of thyroid hormone treatment and repeat TFTs in 2–3 months.**

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	2008 WHO Classification	2016 WHO Classification
Major Criteria	<ol style="list-style-type: none"> <li>Hb &gt; 18.5 g/dL in men/Hb &gt; 16.5 g/dL in women or other evidence of increased RCM;</li> <li>Presence of <i>JAK2V617F</i> or other functionally similar mutation such as <i>JAK2</i> exon 12 mutation</li> </ol>	<ol style="list-style-type: none"> <li>Hb &gt; 16.5 g/dL in men/Hb &gt; 16.0 g/dL in women, or Hct &gt; 49% in men/Hct &gt; 48% in women, or increased RCM;</li> <li>BM biopsy showing hypercellularity for age with trilineage growth (panmyelosis) including prominent erythroid, granulocytic, and megakaryocytic proliferation with pleomorphic, mature, megakaryocytes (differences in size);</li> <li>Presence of <i>JAK2V617F</i> or <i>JAK2</i> exon 12 mutation</li> </ol>
Minor Criteria	<ol style="list-style-type: none"> <li>BM biopsy showing hypercellularity for age with trilineage growth (panmyelosis) with prominent erythroid, granulocytic, and megakaryocytic proliferation;</li> <li>Subnormal serum EPO level;</li> <li>Endogenous erythroid colony formation in vitro</li> </ol>	Subnormal serum EPO level
Criteria required for diagnosis	All 2 major and 1 minor or the first major and 2 minor criteria	All 3 major or the first 2 major and the minor criterion

Abbreviations: Hb: hemoglobin; Hct, hematocrit; RCM, red cell mass; BM, bone marrow; EPO, erythropoietin.

Diagnostic criteria for polycythemia vera according to the World Health Organization (WHO) classification.

*Subclinical hypothyroidism*  
elevated TSH, normal T<sub>4</sub>

TPO (thyroid peroxidase) antibodies

Positive

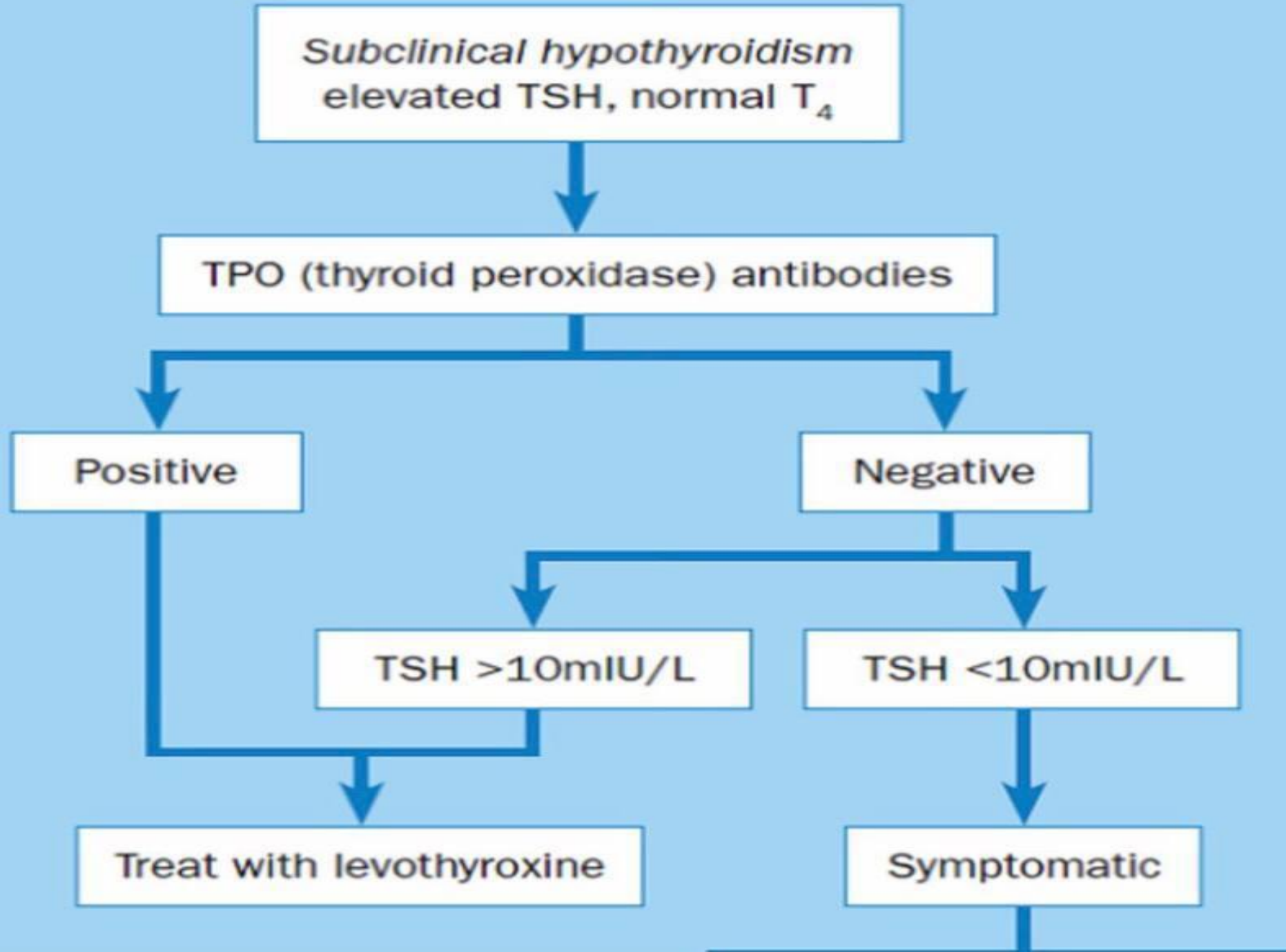
Negative

TSH >10mIU/L

TSH <10mIU/L

Treat with levothyroxine

Symptomatic




A decorative graphic on the left side of the slide features a solid pink arrow pointing right, with several thin, curved pink lines extending from its base. The background is a dark blue gradient.

# Concerns and Risks



# **Pitfalls in Interpretative Commenting**

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- ❖ **Comment: Measurement of serum TFTs and anti-TPO test before and during lithium therapy is recommended.**
  - ❖ **Note: The patient is on Biotin daily. Biotin can cause a false effect on the result of TFTs. It is recommended that patient abstain from taking Biotin for 48 to 72 hours before specimen collection.**
  - ❖ **If the patient is asymptomatic , presence of macro-TSH should be considered. So macro-TSH screening is recommended by pre and post PEG recovery.**