

NORMAL RESULTS

Definition: All measured parameters are within the normal range and FEV₁/FVC ratio is > LLN

Report: Spirometry is within normal limits.

Possible Intervention:

1. Review patient in 12 months following repeat spirometry

OBSTRUCTIVE PATTERN

Definition: FEV₁/FVC ratio is ≤ LLN (or z-score ≤ -1.645)

Severity based on FEV₁ z-score (as per ATS/ERS guidelines)

**Z-score of -1.645 corresponds to the lower 5th percentile of the normal range*

Mild	≤ -1.645
Moderate	-2.5 to -4.0
Severe	< -4.0

Report: Spirometry reflects a <severity> obstructive abnormality. COPD or chronic asthma should be considered given the correct clinical context.

Possible Interventions:

1. Consider bronchodilator therapy
2. Review patient in 3 months following repeat flow volume loops
3. If no improvement and/or symptoms persist – consider referral to Respiratory Physician and/or full lung function testing

RESTRICTIVE PATTERN

Definition: FEV₁/FVC ratio is within normal range (or elevated) with FVC < LLN

Severity based on FEV₁ z-score

(adapted from ATS/ERS guidelines)

Mild	≤ -1.645
Moderate	-2.5 to -4.0
Severe	< -4.0

Report: Spirometry suggests a <severity> restrictive abnormality. An interstitial or chest wall pathology should be considered given the correct clinical context. Full lung function testing (static lung volumes) recommended to confirm.

Possible Interventions:

1. Consider further investigation such as chest imaging (CXR or CT chest) and full lung function testing (CLF)
2. Review patient in 3-6 months following repeat spirometry
3. If no improvement and/or symptoms persist – consider referral to Respiratory Physician and/or full lung function testing to confirm restrictive abnormality

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IF FEV₁ & FVC ARE WITHIN NORMAL RANGE BUT MFEF_{75/25} OR MFEF₅₀ ≤ LLN

Report: FEV₁ and FVC within normal range, but with a non-specific small airway abnormality.

Possible Interventions:

1. Consider bronchodilator therapy if symptomatic and/or respiratory risk factors present
2. Consider investigation for asthma e.g. mannitol challenge test
3. Review patient in 6-12 months following repeat spirometry
4. If no improvement and/or symptoms persist – consider referral to Respiratory Physician and/or full lung function testing

BRONCHODILATOR RESPONSE

Definition: If FEV₁ and/or FVC increase ≥ 10% following bronchodilator (as per ATS/ERS guidelines)

Report: Significant response following bronchodilator, suggestive of asthma.

Possible Interventions:

1. Prescribe inhaled therapy
2. Review patient in 3 months following repeat spirometry
3. If no improvement and/or symptoms persist – consider referral to Respiratory Physician

If these thresholds are not met:

Report: No significant response following bronchodilator. If asthma is still suspected, consider Bronchial Provocation (Mannitol) testing.

Please note that this guide is intended for clinical support only and is not a substitute for a respiratory physician review.

Abbreviations

FEV₁ Forced Expiratory Volume in 1 second
FVC Forced Vital Capacity
LLN Lower Limit of Normal
FEF Forced Expiratory Flow (between 25 and 75% of VC or at 50% of VC)
ERS European Respiratory Society
ATS American Thoracic Society
GOLD Global Initiative for Chronic Obstructive Lung Disease

References

1. Agusti, A., *et al.* Global Initiative for Chronic Obstructive Lung Disease. 2021
2. Abramson, M., *et al.* COPD-X Concise Guide for Primary Care. Brisbane. Lung Foundation Australia. 2014
3. Graham, B., *et al.* Standardization of Spirometry 2019 Update. American J Resp and Critical Care Med. 2019
4. Stanojevic, S., *et al.* ERS/ATS Technical Standard on Interpretive Strategies for Routine Lung Function Tests. Eur Respir J. 2021

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